



## Cabarrus County Government

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Cabarrus County Planning and Zoning Commission  
Wednesday September 9, 2020 @ 7:00 p.m.  
Cabarrus Arena, Cabarrus Room  
4751 Highway 49 N, Concord, NC 28025

### Agenda

1. Oath of Office to Re-Appointed Members
2. Selection of Chair and Vice-Chair, also appoint a member to be Chair of the Board in the absence of the Chair and Vice-Chair
3. Roll Call
4. Approval of March 10, 2020 PZ Meeting Minutes
5. New Business – Board of Adjustment Function:
  - A. Petition VARN2020-00001 –Request for relief from front setback for accessory structure. Applicant/owner is Richard Strube. 6755 Sisk Carter Road (PIN 5663-49-1428).
  - B. Petition CUSE2020-00001 - Conditional Use Permit for Accessory Helipad. Applicant, Dr. Werner Barkhuizen, Acting Agent, Jeff Young. Property owner is Intellectus Sigma, LLC. 4011 Abshire Lane (PIN 5640-86-5402).
  - C. Petition CUSE2020-00002 - Conditional Use Permit for Wireless Telecommunications Tower. Applicant is Diamond Communications, LLC. Owner is Nathaniel McManus. Subject property is located at 11979 McManus Road (PIN 5554-89-1609).
6. Directors Report
7. Legal Update
8. Adjourn

Planning and Zoning Commission Minutes  
March 10, 2020

Mr. Jeffrey Corley, Chair, called the meeting to order at 6:30 p.m. Members present, in addition to the Chair, were Mr. Adam Dagenhart, Mr. David Hudspeth, Ms. Ingrid Nurse, Mr. Chris Pinto, Mr. Charles Paxton, Mr. Chris Pinto, Mr. Brent Rockett and Mr. Stephen Wise. Attending from the Planning and Zoning Division were, Ms. Susie Morris, Planning and Zoning Manager, Mr. Phillip Collins, Senior Planner, Ms. Arlena Roberts, Clerk to the Board and Mr. Richard Koch, County Attorney.

**Roll Call**

**Approval of January 14, 2020 Meeting Minutes**

Mr. James Litaker **MOTIONED, SECONDED** by Mr. Adam Dagenhart, to **APPROVE** the January 14, 2020, meeting minutes. The vote was unanimous.

**New Business – Planning Board acting as Design Review Committee - Revised ARCH2018-00001 Architectural Design Review for Funeral Home – Cabarrus Memorial Gardens, 3892 NC Highway 73E (PIN#5640-98-4952).**

The Chair asked if any Board members had any conflict of interest or information related to the case that need to be disclosed. There being none, the Chair called on Mr. Phillips Collins to present the staff report.

Mr. Phillip Collins, Senior Planner, address the Board presenting the staff report for Revised ARCH2018-00001 - Architectural Design Review for Funeral Home – Cabarrus Memorial Gardens.

The Design Review Committee reviewed this in February 2018 and approved the façade and the site layout for the funeral home located at 205 Cold Springs Road. Since that time the building and site have been under construction.

In January 2020, a complaint was filed with the Zoning office about the site development, that it was not being developed in accordance with the approved plans.

Following up on the complaint, Senior Zoning Enforcement Officer (SZEO), Mr. James Lowe, visited the site on January 3, 2020 and talked with the property owner. It was determined that the development indeed was not consistent with the approved plans.

Planning and Zoning Staff has been working with Mr. Dan Sullivan, the property owner and applicant, since that time to gain compliance since there were deviations from the original approved plans. As part of that process, the Design Review Committee will need to consider changes to the plans that were approved in February of 2018.

Mr. Collins said included in the Board Packet were:

- A narrative provided by the applicant, Mr. Dan Sullivan, that explains the changes to the building along with pictures as currently constructed and a presentation that outlines the reasons for the changes.
- An updated staff report. Changes to the staff report are noted in red text.
- The original approved building plans.
- Photos from Mr. Lowe's site visit.

The Planning and Zoning Commission, acting as Design Review Committee, will need to consider the proposed changes and vote to approve or deny the request.

Mr. Collins will go through each one of the proposed changes.

**Roofline** Changes proposed (showed diagram)

- During construction, the height of a portion of the roof on the back side of the structure on the western side was modified. The height of this section was increased to accommodate the installation of an incinerator. A chimney for the incinerator extends from this same roof section around two and a half feet higher than the main portion of the roof.
- The proposed changes are in compliance with the roofline section of the Architectural Design Standards and are in keeping with the original design proposal.

**Fenestration** Changes proposed (showed diagram)

- During construction, the applicant deleted one non-essential door on the south side of the building. The application materials state that it was viewed as a potential safety hazard for the kitchen area since it would open directly into the area that houses the transformer and the exterior panels. The primary entry for the back of the building is located approximately 15' away with clear passage.
- The proposed structural change related to the door complies with the fenestration requirements of the Architectural Design Standards.

**Articulation** Changes proposed (showed diagram)

- During construction, the canopies at all entrance doors were modified from open faced timber to the same cement-based material used on the rest of the building. With this modification, the canopies are now enclosed. The application materials state the change

was made because of the concern for elderly and frail funeral attendees that will be under the canopies and walking through the canopies. It further states that with the design of the original plan, birds and bees would likely nest in the open-faced timbers. The design created concerns that there would likely be bird problems including droppings, nests, and aggressive behavior to protect the nests as well as wasp and beetles.

- The altered canopies are in compliance with the articulation requirements of the Architectural Design Standards and are consistent with the building materials used on other parts of the building.

He said there is canopy on each façade north, south, east and west.

**Materials** Changes proposed (showed diagram)

- The application materials state that the stone color along the bottom section of all façades is similar to the stone on the existing gate near the NC Highway 73 cemetery entrance. The design incorporates stacked stone which the application states is more fitting with the surrounding area.
- The continued use of stone as a building material complies with the materials section of the Architectural Design Standards.

He said that refers to sections along the bottom of the building on all sides.

Mr. Stephen Wise asked if the door that was removed was okay for egress and if the Fire Marshal and the County had approved it. He asked if it was a means of egress out the building.

Mr. Dan Sullivan, Property Owner, 1800 S. Lentz Harness Shop Road, Mt. Pleasant, address the Board and said it was not essential. He said a lot of these changes were made because of poor architectural design in the beginning and frankly, some just needed to be modified.

For instance, the gables which is what started all this questioning; allowing birds and droppings on folks just would not go over very well. Inappropriately, he thought he had verbal approval to do some of these changes, but as he is finding out, that was not the case and he is asking for the Board's permission to go forward with it.

Mr. Chris Pinto asked if the incinerator was part of the original plan.

Mr. Sullivan said the incinerator and the chimney was always a part of it. The only change on that roof was lifting it up two and a half feet to accommodate the inside requirements.

Mr. David Hudspeth said was it to accommodate the inside ceiling?

Mr. Sullivan said yes, to accommodate the inside ceiling so it would not burn. It is still an

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elevation differential, which is one of the requirements from Planning and Zoning; it would just change by a couple of feet.

Mr. Wise asked if the front porch and the canopy all have a ceiling in them now, not open at all; they have a hard ceiling?

Mr. Sullivan said they do; it is a solid ceiling. They look pretty nice from what people have said.

He said this building is nearly 400 feet off the main road with another property in front of it. It is not highlighted on the main drag and is not a huge visibility to the road if at all. The chimney for instance cannot be seen at all from the road.

Mr. Charles Paxton asked if Mr. Sullivan was also the owner of the property in front of it or is that a different individual.

Mr. Sullivan said yes, he owns the cemetery with the funeral home.

Mr. Hudspeth asked if it had a kitchen.

Mr. Sullivan said it has a stove and sink, no dishwasher.

Mr. Pinto asked if that was the original chimney height.

Mr. Sullivan said yes.

Mr. Adam Dagenhart assumes what happened is, you came before us back in February 2018, to get your architectural's. He assumes that Mr. Sullivan had to have the building plans approved by the State.

Mr. Sullivan said the plans were approved; these are changes that just develop as you are building. One of them was required and that is the incinerator.

Mr. Dagenhart said the specs on the incinerator required the roof to be higher?

Mr. Sullivan said it was not known at the time how high it had to be.

Mr. Wise said are we allowed to ask who filed the complaint, is it a neighbor or someone riding by?

Ms. Susie Morris, Planning and Zoning Manager said we take anonymous complaints.

Mr. Sullivan said that is a question that has been on his mind. It is a little bit odd that someone

would pick up on something like this. He has tried to figure out who it was because he wanted to be their friend. It is not public knowledge and he thinks it is just a little bit odd.

There being no further questions for staff or Mr. Sullivan, the Chair stated he would go through item by item with the certain categories where the changes have occurred to facilitate some discussion for the record.

**Roofline:**

We know the roofline was changed to facilitate some inside height requirements above the incinerator. The Chair asked how the Board felt about that specific issue.

Mr. David Hudspeth thinks it is important for safety.

The Chair asked if it makes a major change to the design of the building.

Mr. Adam Dagenhart said we still have the separation between the two roof lines as required.

It was the consensus of the Board, that the proposed changes to the roofline do not make a major change to the design of the building.

**Fenestration:**

This is involving the door that was removed with the location to the electrical service and some other utility items on the back. Does the removal of this door impact the overall design?

It was the consensus of the Board that the removal of the door did not impact the overall design.

With this door being removed, does the building still meet the intent of the Ordinance?

Mr. Hudspeth asked how many doors were designed for the building to begin with and is this the only one being omitted?

Mr. Sullivan said this is the only one being omitted, but there is a main door, a back door which is a double door, two side doors and there are five emergency doors and a garage door. There are a lot of other doors.

It was consensus of the Board that with the removal of the door, the building still meets the intent of the Ordinance.

**Articulation:**

This is mainly the canopies that were changed from the open timber type canopies to the

enclosed canopies. You have heard the reasoning for those changes. Does it impact the overall design of the building?

Mr. Hudspeth thinks it improves the design of the building, so that the droppings do not cause a problem.

The Chair said does the Board feel that the changes, specifically in the front, facing the street, the change of those canopies do not negatively impact the design of the building. Is that correct?

It was consensus of the Board that with the change to the canopies, it does not negatively impact the design of the building and still meets the intent of the Ordinance.

**Materials:**

The materials, specifically, the stone at the bottom was originally proposed to better match the gate out front and it has been changed to a more stacked stone. Does it detract from the overall building design?

Mr. Stephen Wise said the sign is older, so it would be hard to match a building built here. The sign is probably 20 years old.

Mr. Hudspeth said you would not notice it anyway.

Mr. Dagenhart said the material being used is more current with what you see in the building industry as opposed to the flat face rock.

The Chair said the change still meets the intent of the Ordinance with the overall building design?

It was consensus of the Board that with the changes to the rock, it does not negatively impact the design of the building and still meets the intent of the Ordinance.

The Chair said there were three conditions that were part of the original approval that he thinks needs to be adopted as part of this as well.

1. Site plan review and approval is required subsequent to Board of Adjustment approval in order to ensure compliance with all applicable development requirements and conditions.
2. The front property line shall be shifted to align with the southern side of the existing driveway.
3. The Applicant shall procure any and all applicable federal, state, and local permits prior to commencement of the project.

The Chair said we are going to tag these on as part of the approval as well, since they were part of the original conditions.

Ms. Susie Morris, Planning and Zoning Manager stated that we just noticed that there is a typo in the original conditions. Instead of saying Board of Adjustment approval, because the funeral home itself was permitted by right in that district, it should say Design Review Committee approval. She will double check in the Ordinance to make sure that it is permitted by right.

The Chair said those conditions (original) will stand, with the exception of the rewording of Board of Adjustment to Design Review Committee in condition number one.

Mr. Sullivan asked if someone could explain what the other three conditions were.

The Chair said those were conditions, he believes were in the original approval and you have pretty much passed the phase of most of those. It is sealing up some of those things that may be lingering. He does not think there is anything new.

Mr. Collins explained to Mr. Sullivan away from the podium the previous conditions (inaudible).

Mr. Sullivan said okay, he did not know if it was something he did not understand.

There being no further discussion, Mr. James Litaker, **MOTIONED, SECONDED**, by Mr. Brent Rockett to **APPROVE** the Revised ARCH2018-00001, Architectural Design Review for Funeral Home – Cabarrus Memorial Gardens with the proposed changes to the building design along with the three conditions and all the original conditions of approval. The vote was unanimous.

#### **Directors Report:**

Ms. Susie Morris, Planning and Zoning Manager addressed the Board stating that we are still working on the Census. The postcards should be hitting mailboxes somewhere around March 12, 2020.

She said if you go online to complete the Census, it looks like it is a lot easier to complete and easier to understand than the form they will send. Encourage other people if you have the opportunity, to go online to complete the census, that way it is done.

There is also a mapping program that is out there that our Partnership Specialist will be using to see areas of the County where maybe the responses are not coming in. She believes, they will be accepting responses until July 31<sup>st</sup>, in hopes of having everything wrapped up late in August.

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We only have one Partnership Specialist in Cabarrus County right now. But, if you belong to any groups and would like to have someone come speak to that group about the census and how important it is, he can try to make your meeting.

She can send the Board a link to a website where there is a lot of information; if you want to post something at your place of business or place of worship. The County is posting some information on Facebook that you can share as well.

Ms. Morris said her local cable station is running ads about the census and they are actually pretty good; it is talking about why you need to complete the census.

We had a class on flood training the last week of February and about 35 people from all over the State attended. We were going to try to follow up on that with another training, where our engineer would come in and do the training. The class would be much smaller and there would be an opportunity for question and answer. If any of you are interested in that, let her know and she will put you on the list for whenever we decide what that date is going to be.

Along with that, she has offered up to the Swamp School to host a session. It is for people to be able to determine, when they walk a site, whether it is a perennial stream, an intermittent stream or wetlands.

There are a lot of changes coming down the pike as far as the U.S. Waters rules. These folks are very respected. They have an office in Raleigh, and they do a lot of stuff in Georgia. The training they were offering this Thursday was going to be in Hampton, Georgia and it was free, if you let them know in advance that you were coming.

She responded to the email and told them that we could not be in Georgia in three days, but we would love to host a session if they would like to have it here. Since, they have an office in Raleigh, it would get them to somewhere other than Raleigh. That will also be coming down the pike if you are interested.

Ms. Morris and Mr. Koch have been working on Statute 160D. We are working on Chapter 1 and we are going to have to take it chapter by chapter. There are some things that we can do now, some things if we want to do them, will have to wait until after January 1, 2021, to implement. Most of those things we probably will not do because they are geared more toward higher density type of jurisdictions.

Having said that, she does not think there is any reason the Board would have to sit through training on 160D. The Text Amendment Committee, as we work through those will provide the supporting documentation as to why those changes are being made. We will probably start with Chapter 3, because that is our permitted use table; looking at that again.

Then looking at Chapter 3, 7 and 8, because we will no longer be allowed to call our Conditional Use Permits, Conditional Use Permits. They will have to be called "Special Use Permits".

There are some definitions that need to be updated, but for the most part, since we have been keeping up with court cases that have happened, and we also track the legislation and what is happening, we know when things happen in the legislature that require ordinance changes. So, we are not going to have to do a complete overhaul of our Ordinance, it will just be tweaking it to be sure that we are in compliance with those new statutes.

**Legal Update**

Mr. Koch said he gave a pretty comprehensive report in January and really nothing has changed, unless someone has a question about something.

There being no further discussion, Mr. James Litaker, **MOTIONED, SECONDED** by Mr. Adam Dagenhart to **ADJOURN**. The vote was unanimous. The meeting ended at 7:57 p.m.

**APPROVED BY:**

Mr. Jeffrey Corley, Chair

**SUBMITTED BY:**

Arlena B. Roberts

**ATTEST BY:**

Susie Morris, Planning and Zoning Manager

PLANNING STAFF REPORT  
CABARRUS COUNTY PLANNING AND ZONING COMMISSION  
08/11/2020

Staff Use Only:  
Approved: \_\_\_\_\_  
Denied: \_\_\_\_\_  
Tabled \_\_\_\_\_

**Variance: VARN2020-00001**

Applicant Information: Richard and Peggy Strube  
6755 Sisk Carter Road  
Rockwell, NC 28138

Owner Information: Richard and Peggy Strube  
6755 Sisk Carter Road  
Rockwell, NC 28138

PIN: 5663-49-1428

Area in Acres: +/- 6.44

Purpose of Request: The purpose of this request is for relief from the 75-foot front setback requirement of Section 5-5.B of the Cabarrus County Development Ordinance.

In October of 2019, the Applicant obtained a zoning permit to build an accessory structure on the subject property. The plot plan provided showed the accessory building located 100 feet from the front property.

According to the survey provided, the new structure is located 42.6 feet and 43.1 feet from the front property line (See Exhibit C). This is a 32.4 foot encroachment and 31.9 foot encroachment into the required 75 foot setback. Therefore, the applicant is seeking a variance for the building to be located at a 42.6 foot setback (greatest encroachment point) instead of the required 75 foot for the AO zoning district.

Site Description: Currently, a single family residence occupies the subject property. It is situated towards the front of the property and close to the western property line. A small shed is located towards the front of the property near the western property line. The rear half of the subject property is wooded. There is no floodplain located on the subject property, but it is located within the Protected Area of the Dutch Buffalo Creek Watershed.

Current Land Uses: Residential

Adjacent Land Uses:	Residential and Agricultural
Permitted Uses:	Any use permitted within the AO zoning district would be allowed on the subject property
Existing Zoning:	AO (Agricultural/Open Space)
Surrounding Zoning:	North: AO (Agricultural/Open Space) East: AO (Agricultural/Open Space) South: AO (Agricultural/Open Space) West: AO (Agricultural/Open Space)
Signs Posted:	08/17/2020
Newspaper Notification 1:	08/26/2020
Newspaper Notification 2:	09/02/2020
Notification Letters:	08/17/2020

### Exhibits

- Exhibit A – Staff Report
- Exhibit B – Application
- Exhibit C – Survey
- Exhibit D – Staff Maps
- Exhibit E – Advertisement Information
- Exhibit F – Setback Maps
- Exhibit G – Contour Map
- Exhibit H – Permit

### Agency Review Comments

#### **Emergency Services Review:**

*No comments. (per Justin Brines, EMS Assistant Director).*

#### **Fire Review: Approved**

*No code related issues at this time. (per Matthew Hopkins, Fire Marshal's Office).*

#### **NCDOT Review: Approved with conditions**

*No comments. (per Marc Morgan, NCDOT) UPDATE COMMENTS*

#### **Sherriff's Department Review:**

*No comments. (per Ray Gilleland, Lieutenant Sherriff).*

**Soil & Water Conservation Review:**

*No comments (per Tammi Remsburg)*

**Cabarrus Health Alliance:**

The accessory building meets the setbacks to the septic system and does not compromise the public's health. The variance is approved from CHA (Chrystal Swinger, Cabarrus Health Alliance)

**Zoning Review: Approved**

*See staff report (per Phillip Collins, Sr. Planner)*

**History / Other Information**

- The subject property is currently zoned AO.
- According to the tax card, it has been used for residential purposes since 1994.
- The subject property is approximately 6.44 acres.
- On October 25, 2019, a zoning permit (ZN2019-01167) was issued to construct an accessory structure. The plot plan attached to the zoning permit shows the accessory building located 100 feet from the front property line.
  - Applicant contends that the property drops off a great deal at the tree line. The tree line begins approximately 100 feet from the front property line, which is the location that was proposed when presented for zoning permitting.
  - The applicant began constructing the accessory structure closer to the front property line and away from the tree line, creating a 32.4 foot encroachment.
- The Zoning Enforcement Officer visited the property on March 17, 2020 and found that the structure was indeed located in the front setback and out of compliance with the development standards established for the AO district.
  - The Zoning Enforcement Officer instructed the property owner to consult with staff and to consider seeking a variance at that time as a means for the accessory structure to comply with the ordinance.
- The applicant is seeking a variance for the building to remain at the current location as construction is well under way. The building is not a pre-fab building, it is stick built. It would have to be dismantled to move it to a different location.

- Applicant contends that neighbors located in the vicinity of this same property have buildings located close to the road.
  - Measuring 500 feet in either direction from the subject property, there are no structures near the front property lines on the same side of the road. Therefore, the property does not qualify for an administrative adjustment per Section 6-13, Exceptions and Modifications. A variance must be requested.
  - On the opposite side of the road and to the west, however, there are several structures close to the property ranging in distance from approximately 23 feet to 67 feet (see exhibit F).

### **Conditions of Approval**

Should the Board of Adjustment grant approval of the variance, the following conditions should be considered as part of the approval and case record:

- The Granting Order, stating restrictions and applicable conditions of approval, shall be recorded with the deed of the property.



## CABARRUS COUNTY VARIANCE APPLICATION

### STAFF USE ONLY:

Application/Accela#: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

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

Amount Paid: \_\_\_\_\_

### INSTRUCTIONS/PROCEDURES:

1. Schedule a pre-application meeting with Staff. During this meeting, Staff will assess the proposed variance request to evaluate options that may be available to you through the zoning ordinance. If it is necessary to proceed with the request, Staff will explain the procedures and requirements, including the thresholds of consideration for Variance requests.
2. Submit a complete application to the Planning Division. All applications must include the following:
  - Cabarrus County Land Records printout of all adjacent property owners. This includes properties located across the right-of-way and all on-site easement holders. The list must include owner name, address, and Parcel Identification Number.
  - A recent survey or legal description of the property.
  - 18 folded copies of the proposed site plan. At a minimum, the site plan shall show the following:
    - The subject property and any adjacent properties.
    - All existing buildings, including setbacks from property lines.
    - All proposed buildings, parking facilities and accessory uses, including setbacks from property lines (if applicable).
    - The location and type of screening and buffering proposed (if applicable).
    - Impervious surface ratio (if applicable).
    - Waterbody buffers (if applicable).
    - Delineation of the proposed Variance on the site plan so that type of variance the applicant is seeking is clear. (This may be accomplished by submitting two site plans. One to show the requirements of the ordinance and a second to show what the variance request will achieve.)
    - Any additional item(s) that should be illustrated on the plan as determined during the pre-application meeting.
  - Any additional documents essential for the application to be considered complete. (Determined at pre-application meeting)
3. Submit cash, check, or money order made payable to Cabarrus County.
 

Fees: Residential Variance request = \$500.00 first acre + \$15.00 Each additional acre  
 Non-residential Variance request = \$600.00 first acre + \$15.00 Each additional acre  
 (Plus cost of advertising and engineering fees if applicable)

The deadline for submittal is always the same day as the Planning and Zoning Commission Meeting which is the second Tuesday of the month. Applications must be submitted before 2:00 PM that day for consideration on the next available agenda.

**Incomplete applications will be returned to the applicant and will not be processed.**

### PROCESS SUMMARY:

1. Hold a pre-application meeting with Staff to discuss your request and the variance process.
2. Submit a complete application with the appropriate fees to the Cabarrus County Planning Division.
3. When the complete application is received, Staff and appropriate agents will review the application and site plan and will make comments on the proposed request.

4. Staff will begin to prepare a staff report, schedule a public meeting date and notify adjacent property owners of the public meeting/public hearing date. A sign advertising the public hearing will also be placed on the property being considered for the Variance request.

**Meeting Information:** Meetings are held the second Tuesday of each month at 6:30 PM in the Cabarrus County Governmental Center located in downtown Concord at 65 Church Street, SE.

**Variance:** Variance requests are considered by the Board of Adjustment during a quasi-judicial hearing. This means that anyone wishing to speak regarding the application must be sworn in. The vote requirement for the Variance request to pass is 80% or greater. Additional conditions may be added as part of the Variance approval process.

**Questions:** Any questions related to the Variance process may be directed to the Planning Division at 704-920-2141, between 8 AM and 5 PM, Monday through Friday.

APPLICANT	PROPERTY OWNER
<u>Richard N. Strube</u> NAME	<u>Richard + Peggy Strube</u> NAME
<u>6755 Sisk Carter Rd</u> ADDRESS	<u>6755 Sisk Carter Rd.</u> ADDRESS
<u>Rockwell N.C. 28138</u> CITY, STATE, ZIP CODE	<u>Rockwell N.C. 28138</u> CITY, STATE, ZIP CODE
<u>704 785 7735</u> PHONE NUMBER	<u>704 361-4432</u> PHONE NUMBER
<u>None</u> FAX NUMBER	<u>None</u> FAX NUMBER
<u>rstrube@niblockhomes.com</u> E-MAIL ADDRESS	<u>MANishboy1000@yahoo.com</u> E-MAIL ADDRESS
Legal Relationship of Applicant to Property Owner	<u>Husband + Wife</u>
Existing Use of Property	<u>Family Residential</u>
Existing Zoning	<u>A0</u>
Property Location	<u>6755 Sisk Carter</u>
Tax Map and Parcel Identification Number (PIN)	<u>5663-49-1428</u>

**TO THE BOARD OF ADJUSTMENT**

I, Richard N. Strube HEREBY PETITION THE BOARD OF ADJUSTMENT FOR A **VARIANCE** FROM THE LITERAL PROVISIONS OF THE **ZONING ORDINANCE**. UNDER THE INTERPRETATION GIVEN TO ME BY THE ZONING ADMINISTRATOR, I AM PROHIBITED FROM USING THE AFOREMENTIONED PARCEL OF LAND. I REQUEST A **VARIANCE** FROM THE FOLLOWING PROVISION(S) OF THE ORDINANCE.

**The following information shall be completed by applicant(s) seeking a variance:**

1. Variance Request Including Related Zoning Ordinance Section(s)

Section: CHAPTER 7-3 DEVELOPMENT ORDINANCE  
CHAPTER 5-5 DEVELOPMENT ORDINANCE

2. Reason(s) for Seeking a Variance

THE ONLY WAY TO REMEDY THIS UNLESS I TEAR DOWN THE BUILDING, WHICH I DO NOT WANT TO DO. I HAVE NEIGHBORS ALL AROUND ME WITH BUILDINGS AS CLOSE TO THE ROAD OR CLOSER.

**FACTORS RELEVANT TO THE ISSUANCE OF A VARIANCE:**

The Board of Adjustment does not have unlimited discretion in deciding whether to grant a Variance. Direction is received by both state legislation and local ordinance. Under the state enabling act, the Board is required to reach four (4) conclusions as a prerequisite to the issuance of a Variance:

1. Unnecessary hardship would result from the strict application of the ordinance. It shall not be necessary to demonstrate that, in the absence of the variance, no reasonable use can be made of the property.
2. The hardship results from conditions that are peculiar to the property, such as location, size, or topography. Hardships resulting from personal circumstances, as well as hardships resulting from conditions that are common to the neighborhood or the general public, may not be the basis for granting a variance.
3. The hardship did not result from actions taken by the applicant or the property owner. The act of purchasing property with knowledge that circumstances exist that may justify the granting of a variance shall not be regarded as a self-created hardship.
4. The requested variance is consistent with the spirit, purpose, and intent of the ordinance, such that public safety is secured, and substantial justice is achieved.

In order to make its determination, the Board will review the evidence submitted in this application as well as receive public comment during the scheduled public hearing. This application will be entered into the official record of the public hearing.

THE RESPONSIBILITY FOR PRESENTING EVIDENCE TO SUPPORT THE VARIANCE REQUEST, AS DESCRIBED DURING THE MEETING AND TO THE BOARD OF ADJUSTMENT, LIES COMPLETELY WITH THE APPLICANT.

**FINDING OF FACT CHECKLIST**

Please provide an explanation to each point in the space provided.

1. The alleged hardships or practical difficulties are unique and singular to the property of the person requesting the variance and are not those suffered in common with other property similarly located.

*(The problem must be unique to the property and not a public hardship and must apply to the property, not the property owner).*

Does not effect hardship to public road or neighbors. My land drops off down the hill to a gully starting at the wood line. There is a great deal of fall and not good for trying to put a pole barn.

2. The alleged hardships and practical difficulties, which will result from failure to grant the variance, extend to the inability to use the land in question for any use in conformity with the provisions of the ordinance and include substantially more than mere inconvenience and inability to attain a higher financial return.

*(This often will be the most difficult area in which to make a determination. The issue, as established by court decisions, deals with the nebulous term of "reasonableness." Generally, if the variance is sought to make a greater profit on this property at the expense of others in the area, this point cannot be met. This item is best reviewed with the concept of, "is the property barred from a reasonable use if the strict terms of the ordinance are adhered to"?)*

No change of use of property for any gain. It is just an accessory structure for storage + hobby.

3. The variance, if allowed, will not substantially interfere with or injure the rights of others whose property would be affected by allowance of the variance.

*(This is a second way to address reasonableness. This is also where the issue of "where did the hardship originate from?" should be addressed. Self-inflicted hardships should be carefully reviewed for reasonableness.)*

The accessory structure does not interfere or injure the rights of others. Neighbors have signed saying they don't have any issue of where the structure is located

4. The variance is in harmony with and serves the general intent and purpose of the ordinance.

(If a variance is granted, is the overall "spirit" of the zoning ordinance still intact? While difficult to explain, some types of variance are usually not in accord with the general intent and purpose of the ordinance and therefore must be cautiously reviewed. These often include extending a non-conforming use in scope, a use variance (clearly not allowed), and modifying a dimensional standard so as to the detriment of a neighborhood or area. The second part relates to the question, if granted will the spirit of the adopted plan for proper development of the neighborhood or area be compromised?)

I had the building STAKED on the ground, ZONING told me to CONTACT HEALTH DEPT. THEY CAME OUT AND APPROVED. NOT REALIZING THAT THEY WERE ONLY LOOKING AT SEPTIC. I thought ALL WAS OK TO START

5. The variance will result in substantial justice being done, considering both the public benefits intended to be secured by this ordinance and the individual hardships that will be suffered by a failure of the Board to grant a variance.

(This is the final way to address reasonableness via common sense. Simply put, does the variance make sense? Will its approval or denial endanger any one? Will the essential character of the area be altered if approved or denied?)

THIS ENDANGERS NO ONE AND MY NEIGHBORS ARE OK WITH IT

**POSSIBLE CONDITIONS, SUGGESTED BY THE APPLICANT:**

If the Board of Adjustment finds that a variance may be in order but the Board still has concerns in granting the variance, reasonable conditions can be imposed to assure that any of the five points will continue to be met and not violated. In your review of the five points, are there any conditions that you believe would clarify the justification of a variance? If so, suggest these conditions in the space below.

IT IS JUST AN HONEST MISTAKE, AND I ASK FOR MERCY WITH THE VARIANCE

I CERTIFY THAT ALL OF THE INFORMATION PRESENTED BY ME IN THIS APPLICATION IS, TO THE BEST OF MY KNOWLEDGE, TRUE AND CORRECT.

SIGNATURE OF OWNER: Richard W. Strube DATE: 5-5-20  
Perry R. Strub 5-5-2020

SIGNATURE OF APPLICANT: Richard W. Strube DATE: 5-5-20  
Perry R. Strub 5-5-2020

PAGE 5 of 5

#4 I NEVER thought about BEING OVER THE SET BACKS. WHEN THERE ARE BUILDINGS + HOMES AS CLOSE IF NOT CLOSER TO THE ROAD. THIS ACCESSORY STRUCTURE WILL NOT BE IN CONFLICT WITH THE LAND USE PLAN AS IT IS A RESIDENTIAL ACCESSORY STRUCTURE.

4.4.2020

My name is Richard Strube and I live at 6755 Sisk Carter Road, your neighbor. As you have seen, since approximately November of 2019, I have been in the process of building a new garage that has been at a stand still for 3 weeks. I have done this process correctly thru the county guidelines. A county zoning inspector stopped and then called me telling me the building was encroaching on the setbacks. I have to now ask my neighbors if it's ok for this building to be where it is.

If you have **NO** problem with the garage, I would like you to sign this letter include your address. Thank you, Richard Strube

NAME

ADDRESS

James Wetter

6669 Sisk Carter Rd

Richard Hopson

6708 Sisk-Carter RD.

Rd Carl

6401 Sisk Carter Rd.

Jessica Burch

6711 Sisk Carter Rd.

Richard D. 7501 SISK CARTER RD

Robert + Barbara H. Hash

Robert + Barbara Hash 6900 Sisk Carter Rd.

Ebime BROWN-

6925 Sisk Carter Rd. Rockwell





**Surveyor's Notes**

- Parcel #5663-49-1428
- Current Zoning: AO
- This Property Does Not Lie in a Special Flood Hazard Area Per FEMA Panel #3710566200, Community Name: Cabarrus County, Community Number: 370036
- Panel #56621
- Effective Date: November 5th, 2008
- Area Computed by the Coordinate Method
- This Survey was performed without the benefit of Title Search and is therefore subject to any Easements, Restrictions and/or Rights-of-Ways of Record.
- Setbacks Per AO Zoning: Front = 75' (Minor Collector) Side = 20' Rear = 30'

**Legend**

- Property Corner
- o---Calculated Point (CP)
- FS---Front Setback
- SS---Side Setback
- RS---Rear Setback
- OHE---Overhead Electric
- RCP---Reinforced Concrete Pipe
- PP---Power Pole

I certify that this map was drawn under my supervision from an actual survey made under my supervision (deed description recorded in Book 889, page 278; that the boundaries not surveyed are indicated as drawn from information from other reference sources; that the ratio of precision or positional accuracy is 1:20,000; and that this map meets the requirements of The Standards of Practice for Land Surveying in North Carolina (21 NCAC 56.1600).

This 30th day of April, 2020.

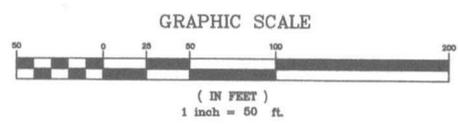


Parcel #5663-39-9608  
James Michael Wetter & Linda K. Wetter  
Deed Book 8823, Page 162  
Zoned AO

Parcel #5663-49-1428  
6.438 Acres  
280,421 Sq. Ft.  
Richard N. Strube & Peggy K. Strube  
Deed Book 889, Page 278  
Zoned AO  
Property Address:  
6755 Sisk Carter Road  
Rockwell, NC 28138

Parcel #5663-49-4299  
Mark Y. Roberston & H. Todd Robertson  
Deed Book 625, Page 285  
Zoned AO

Line	Direction	Length
L1	N20° 26' 23"E	29.93'
L2	S15° 16' 07"W	109.06'
L3	S15° 16' 07"W	49.94'
L4	N57° 09' 50"W	127.37'
L5	N49° 16' 21"W	159.91'
L6	N49° 16' 21"W	86.05'



Parcel #5663-39-7212  
Richard Hopson & Abby Hopson  
Deed Book 1140  
Page 212  
Zoned AO

Parcel #5663-48-2730  
Alvin Moser & Patsy Moser  
Deed Book 2077  
Page 93  
Zoned AO

Parcel #5663-59-2509  
Linda Sue Klutz Peeler  
Deed Book 1301,  
Page 275  
Zoned AO

**Physical Survey for**  
6755 Sisk Carter Road, Rockwell NC 28138  
prepared for Richard & Peggy Strube

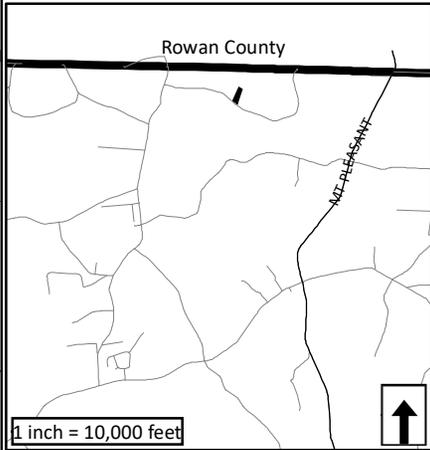
No. 6 Township, Cabarrus County, Concord, NC  
Scale 1" = 50' - Date of Survey, April 23rd, 2020  
Owners: Richard N. Strube & Peggy K. Strube  
6755 Sisk Carter Road, Rockwell, NC 28138  
Parcel #5663-49-1428 - Deed Book 889 Page 278

**PIEDMONT DESIGN ASSOCIATES, P.A.**  
ENGINEERING - SURVEYING - PLANNING  
Suite 101 Westfield Center, 128 E. Plaza Dr., Mooresville, N.C. 28115  
Phone (704) 664-7688 Fax (704) 664-1778  
Corporate License #C-1097

### Eastern Planning Area Existing Zoning

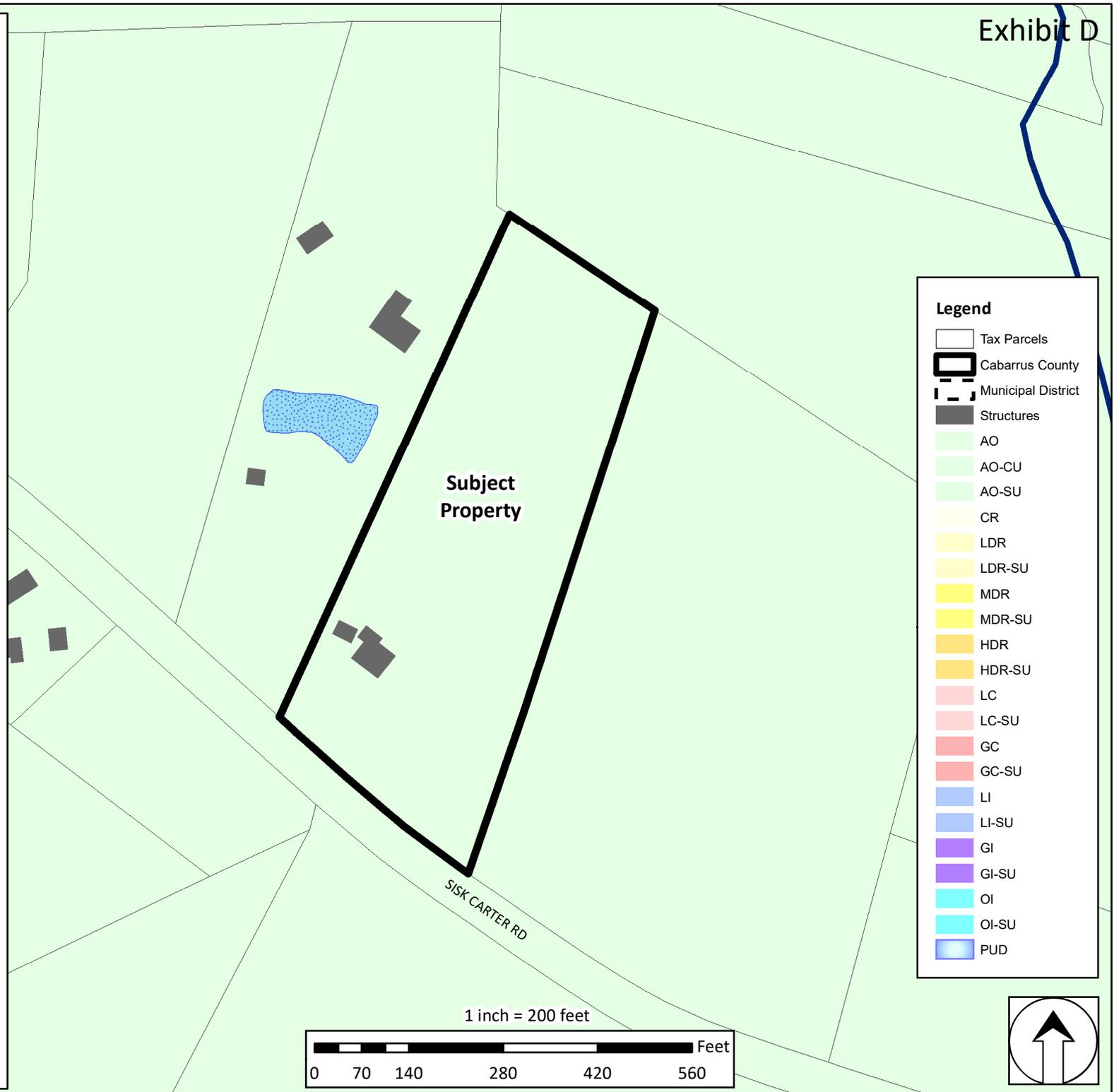


Applicant: Richard Strube  
Owner: Richard Strube  
Case: VARN2020-00001  
Address: 6755 Sisk Carter Road  
Purpose: Setback Encroachment  
PINs: 5663-49-1428



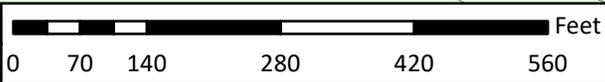
Cabarrus County shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. These data cannot be construed to be a legal document. Primary sources from which these data were compiled must be consulted for verification of information contained within the data.

Map Prepared by Cabarrus County Planning & Development - June 2020



**Legend**

- Tax Parcels
- Cabarrus County
- Municipal District
- Structures
- AO
- AO-CU
- AO-SU
- CR
- LDR
- LDR-SU
- MDR
- MDR-SU
- HDR
- HDR-SU
- LC
- LC-SU
- GC
- GC-SU
- LI
- LI-SU
- GI
- GI-SU
- OI
- OI-SU
- PUD

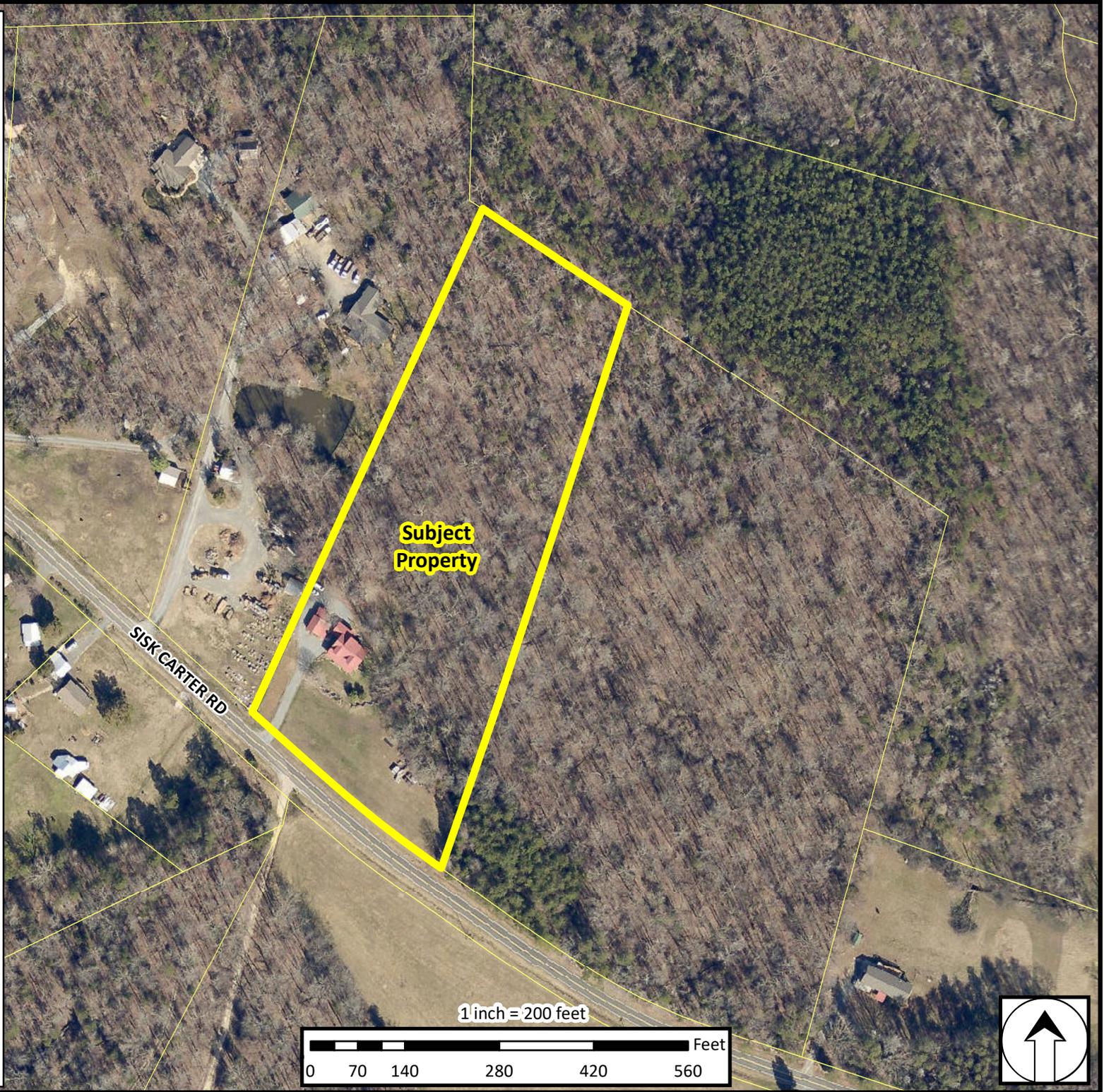
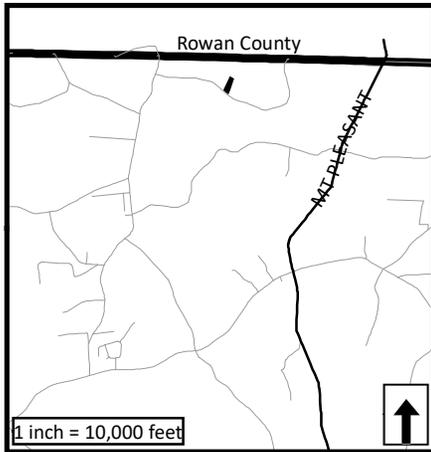


# Eastern Planning Area Aerial Map



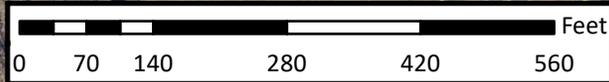
Applicant: Richard Strube  
Owner: Richard Strube  
Case: VARN2020-00001  
Address: 6755 Sisk Carter Road  
Purpose: Setback Encroachment  
PINs: 5663-49-1428

- Cabarrus County
- Municipal District
- Tax Parcels



Cabarrus County shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. These data cannot be construed to be a legal document. Primary sources from which these data were compiled must be consulted for verification of information contained within the data.

Map Prepared by Cabarrus County Planning & Development - June 2020





PIN	Name	Address	City	State	Zip
5663-39-9608	James & Linda Wetter	6669 Sisk-Carter Road	Rockwell	NC	28138
5663-48-2773	Alvin & Patsy Moser	8820 Gold Hill Road	Rockwell	NC	28138
5663-39-7212	Richard & Abby Hopson	6708 Sisk Carter Road	Rockwell	NC	28138
5663-49-4299	Mark & Todd Robertson	PO Box 6826	Ocean Isle Beach	NC	28469
5663-59-2509	Linda Peeler	513 Woodland Drive	Rockwell	NC	28138

Property Owner					
5663-49-1428	Richard & Peggy Strube	6755 Sisk Carter Road	Rockwell	NC	28138



**Cabarrus County Government – Planning and Development Department**

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August 17, 2020

Dear Property Owner:

A Variance Application has been filed in our office for your property. The specifics of the request are listed below. The Cabarrus County Board of Adjustment will consider this petition on Wednesday, September 9, 2020 at 7:00 PM in the Cabarrus Room of the Cabarrus Arena & Events Center, located at 4751 NC Highway 49 North, Concord, NC 28025. A Public Hearing will be conducted and public input will be allowed during that time. If you have any comments about this variance request, I encourage you to attend this meeting.

- |                            |  |
|----------------------------|--|
| • <b>Petitioner</b>        | <b>Richard Strube</b>  |
| • <b>Petition Number</b>   | <b>VARN2020-00001</b>  |
| • <b>Property Location</b> | <b>6755 Sisk Carter Road</b>   |
| • <b>Parcel ID Number</b>  | <b>5663-49-1428</b>  |
| • <b>Existing Zoning</b>   | <b>Agricultural / Open Space (AO)</b>  |
| • <b>Variance Request</b>  | <b>Relief from the requirements of Chapter 5 to allow an accessory structure to encroach into the front setback.</b> |

If you have any questions regarding this petition, or the hearing process, please contact me at Cabarrus County Planning and Development at 704.920.2181.

Sincerely,

A handwritten signature in cursive script that reads "Phillip Collins".

Phillip Collins, AICP  
Senior Planner  
Cabarrus County Planning and Development  
704.920.2181

*If reasonable accommodations are needed please contact the ADA Coordinator at (704) 920-2100 at least 48 hours prior to the public hearing.*



Cabarrus County Government – Planning and Development Department

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August 17, 2020

Dear Property Owner:

A Variance Application has been filed in our office for property **adjacent** to yours. The property and specifics of the request are listed below. The Cabarrus County Board of Adjustment will consider this petition on Wednesday, September 9, 2020 at 7:00 PM in the Cabarrus Room of the Cabarrus Arena & Events Center, located at 4751 NC Highway 49 North, Concord, NC 28025. A Public Hearing will be conducted and public input will be allowed during that time. If you have any comments about this variance request, I encourage you to attend this meeting.

- |                            |  |
|----------------------------|--|
| • <b>Petitioner</b>        | <b>Richard Strube</b>  |
| • <b>Petition Number</b>   | <b>VARN2020-00001</b>  |
| • <b>Property Location</b> | <b>6755 Sisk Carter Road</b>   |
| • <b>Parcel ID Number</b>  | <b>5663-49-1428</b>  |
| • <b>Existing Zoning</b>   | <b>Agricultural / Open Space (AO)</b>  |
| • <b>Variance Request</b>  | <b>Relief from the requirements of Chapter 5 to allow an accessory structure to encroach into the front setback.</b> |

If you have any questions regarding this petition, or the hearing process, please contact me at Cabarrus County Planning and Development at 704.920.2181.

Sincerely,

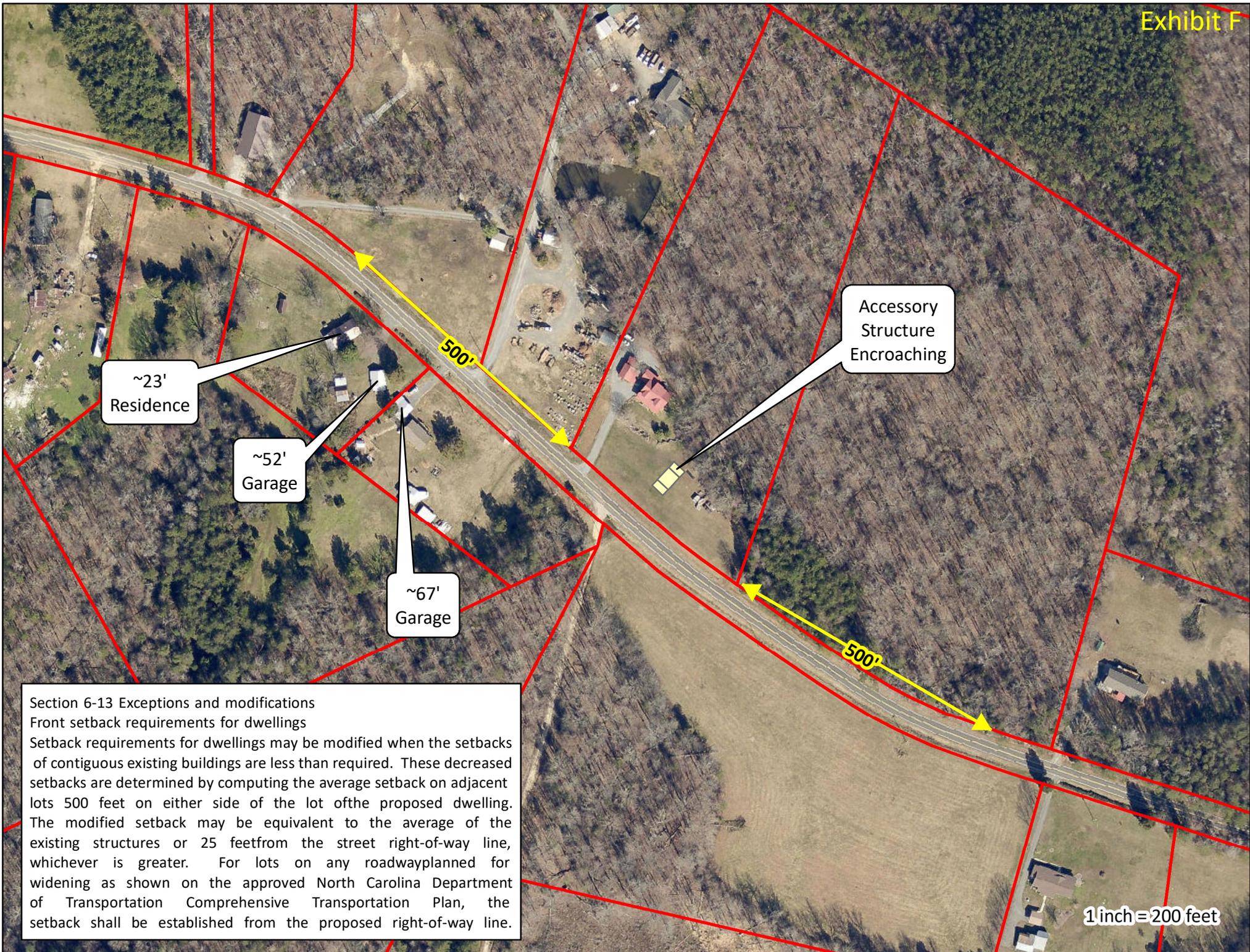
A handwritten signature in cursive script that reads "Phillip Collins".

Phillip Collins, AICP  
Senior Planner  
Cabarrus County Planning and Development  
704.920.2181

*If reasonable accommodations are needed please contact the ADA Coordinator at (704) 920-2100 at least 48 hours prior to the public hearing.*



Aug 17, 2020 1:56:27 PM  
6755 Sisk-Carter Road  
Rockwell  
Cabarrus County  
North Carolina



~23'  
Residence

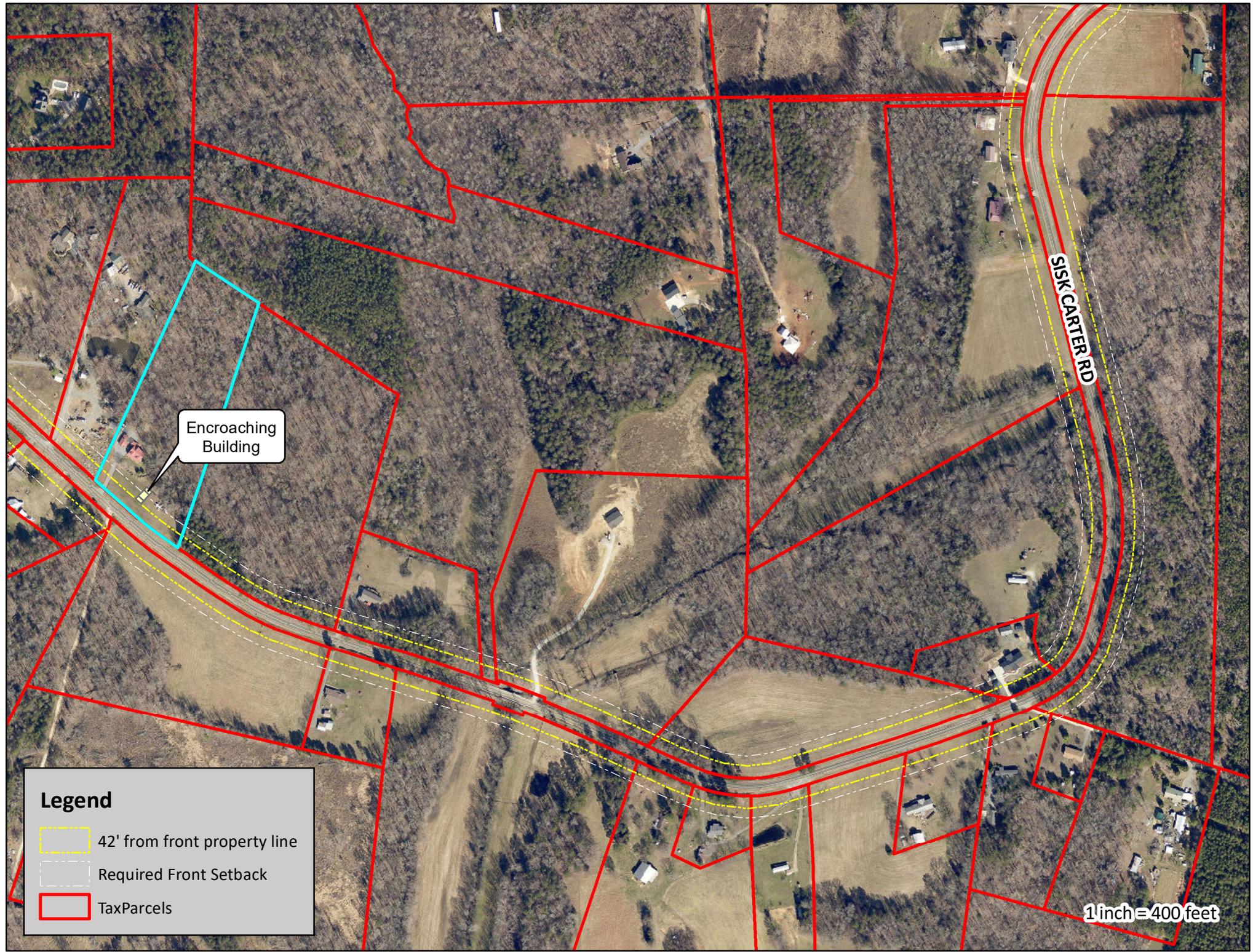
~52'  
Garage

~67'  
Garage

Accessory  
Structure  
Encroaching

Section 6-13 Exceptions and modifications  
Front setback requirements for dwellings  
Setback requirements for dwellings may be modified when the setbacks of contiguous existing buildings are less than required. These decreased setbacks are determined by computing the average setback on adjacent lots 500 feet on either side of the lot of the proposed dwelling. The modified setback may be equivalent to the average of the existing structures or 25 feet from the street right-of-way line, whichever is greater. For lots on any roadway planned for widening as shown on the approved North Carolina Department of Transportation Comprehensive Transportation Plan, the setback shall be established from the proposed right-of-way line.

1 inch = 200 feet



SISK CARTER RD

Encroaching Building

**Legend**

-  42' from front property line
-  Required Front Setback
-  TaxParcels

1 inch = 400 feet



RIMER RD

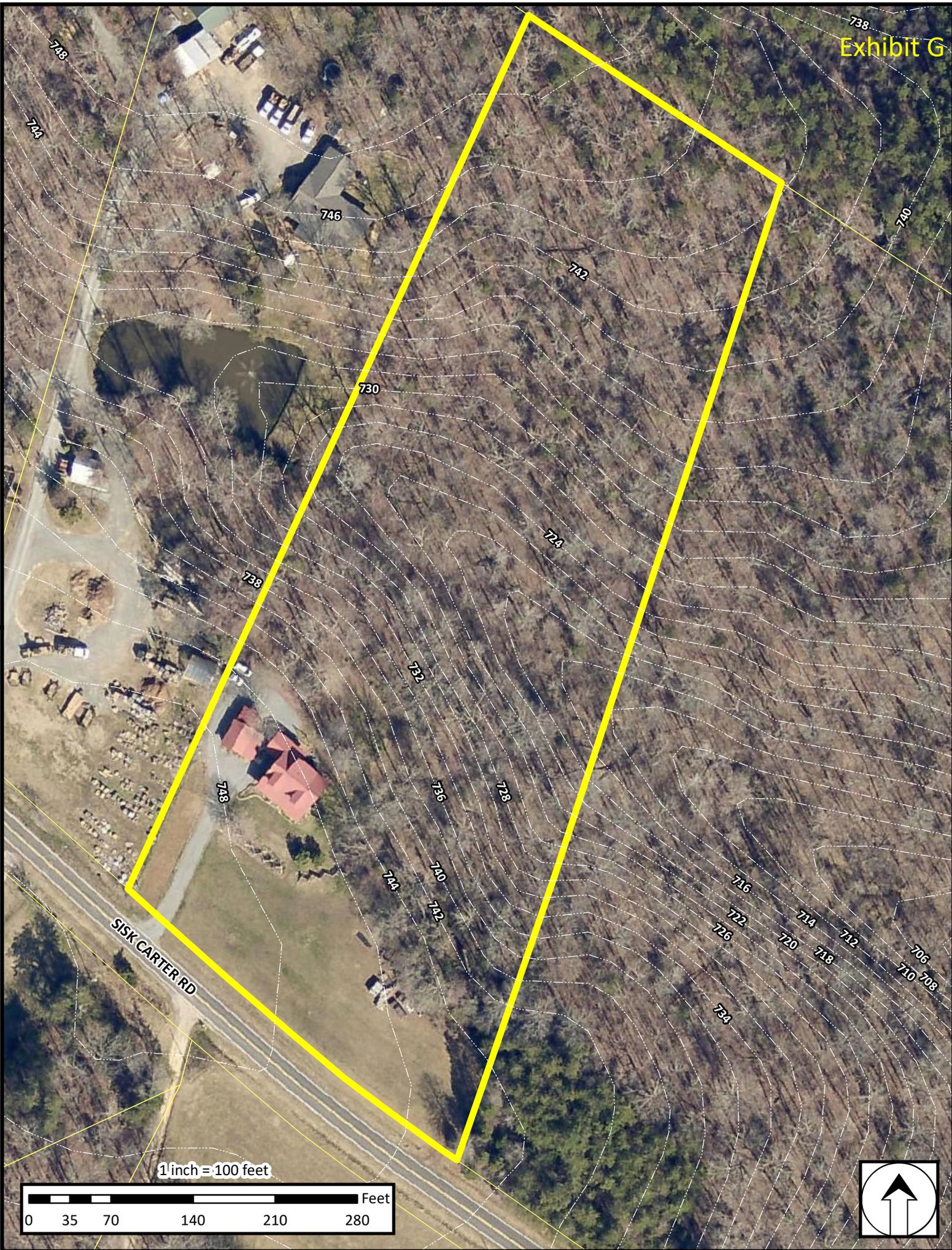
SISK CARTER RD

Encroaching Building

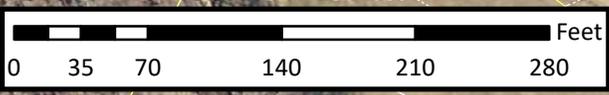
**Legend**

-  42' from front property line
-  Required Front Setback
-  TaxParcels

1 inch = 400 feet



1 inch = 100 feet





# Important Setback Information

CABARRUS COUNTY

65 CHURCH STREET S - PO Box 707

CONCORD, NC 28025

Office - 704-920-2137 Fax - 704-920-2144

This notice is to inform you that all proposed principle and/or accessory structures shall be built or placed on the subject property in compliance with the setback standards listed on your Zoning Compliance Permit.

Example structures shall include but not be limited to:

- Residential Structures: Site Built, Modular, Mobile Homes
- Residential Accessory Structures: Pools, Storage Buildings, Garages
- Non Residential Structures: Offices, Warehouses, Fire Stations, Banks
- Non Residential Accessory Structures: Display Areas, Gas Pumps, ATM's

A structure built or placed on a property which encroaches a setback boundary shall be considered a violation of the Zoning Ordinance. Such violations are subject to all civil penalties and remedies set forth in the Zoning Ordinance.

Prior to construction, verify setbacks to ensure the structure will be properly built or placed on the property.

All setbacks shall be measured from the existing or proposed right of way of record.

If you question the possibility of an encroachment consult with a land surveyor of your choice to plot out the structure placement.

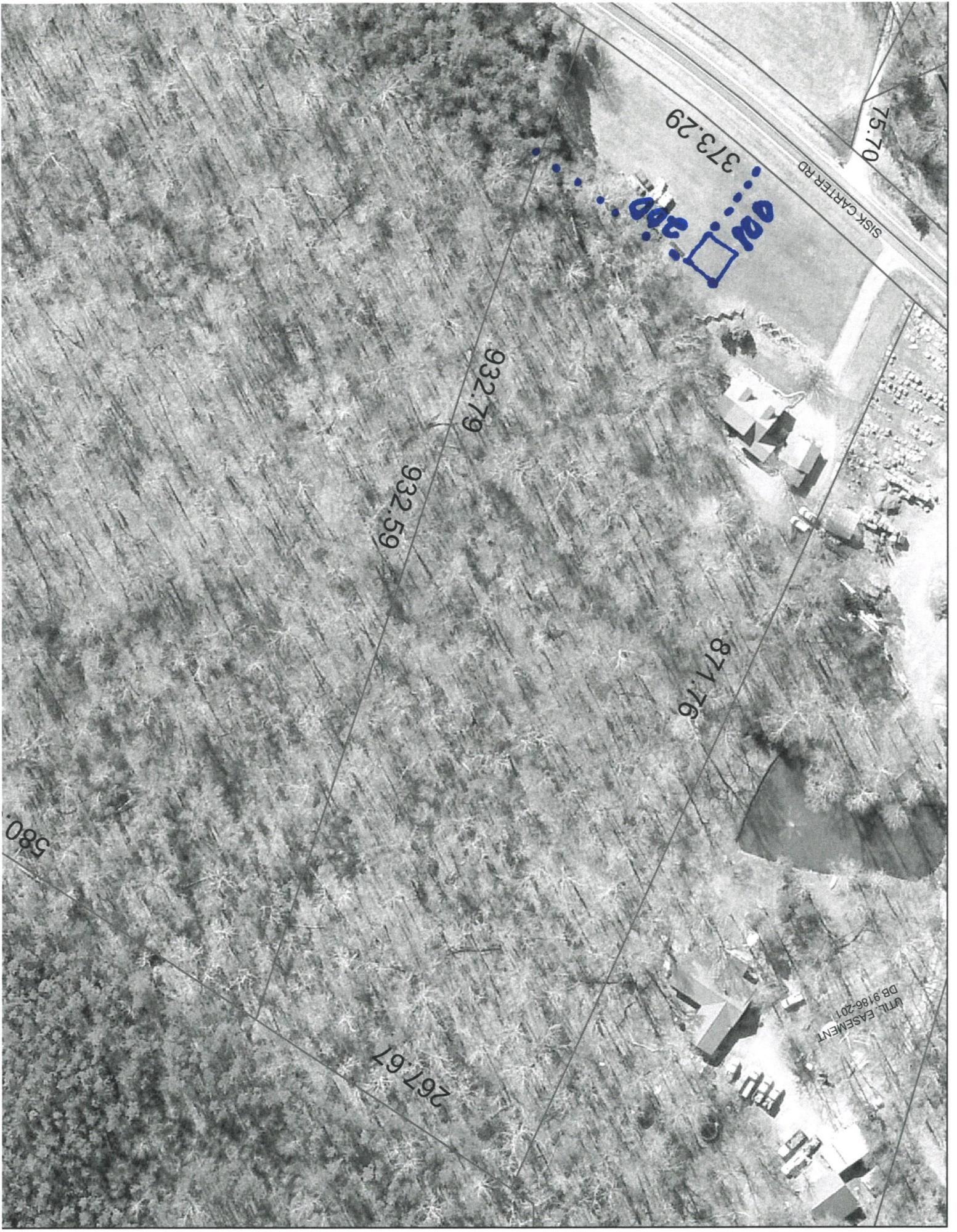
I HAVE READ AND UNDERSTAND THESE REQUIREMENTS:

Applicant: Richard N. Strube Date: 10-25-19

Staff: Martha Date: 10/25/19

Owner Copy

Staff Copy



75.70

SISK CARTER RD

373.29

200

932.79

932.59

871.76

580.0

267.67

UTIL. EASEMENT  
DE 9186-2011



CABARRUS  
HEALTH  
ALLIANCE

*at NC Research Campus*

Date: 10/22/19

Mr. Richard Strube

6755 Sisk Carter Rd.

Rockwell, NC 28138

Dear Mr. Strube

On October 22, 2019 an existing septic inspection was performed at 6755 Sisk Carter Rd. The septic tank system appears to be operating properly at this time and permission is given to construct a pole barn.

The pole barn must be located a minimum of five feet away from any part of the existing septic tank system and twenty five feet away from the well.

You may call or write the local health department if you need any additional information or assistance.  
7049201261

Sincerely,

A handwritten signature in black ink, appearing to read 'Tyler W. Robertson', written over a horizontal line.

Tyler W. Robertson, R.E.H.S. - I

Staff Use Only:

PLANNING STAFF REPORT

CABARRUS COUNTY PLANNING AND ZONING COMMISSION

09/09/2020

Approved: \_\_\_\_\_

Denied: \_\_\_\_\_

Tabled: \_\_\_\_\_

**Conditional Use Permit: CUSE2020-00001**

Applicant Information: Intellectus Sigma, LLC  
4011 Abshire Lane  
Concord, NC 28025

Owner(s) Information: Werner Barkhuizen  
Intellectus Sigma, LLC  
4011 Abshire Lane  
Concord, NC 28025

Agent Information: Jeff Young  
2578 Sunberry lane NW  
Concord, NC 28025

Parcel ID Number: 5640-86-5402

Property Location: 4011 Abshire Lane

Area in Acres: +/-14.5

Purpose of Request: The applicant is proposing a private Helipad and Hanger on the subject property. Helipads are classified as Accessory Airstrips and are permitted in the Agriculture/Open Space (AO) zoning district as a conditional use.

Site Description: The site is currently occupied by a single-family residence and the proposed Helipad and Hanger would be an accessory use to the primary residence. The property is partially wooded and does have previously cleared area for the proposed helipad as shown in the site plan.

Current Land Uses: Single-Family Residential

Adjacent Land Uses: North: Residential/Agricultural  
East: Residential/Agricultural  
South: Residential/Agricultural  
West: Residential/Agricultural

Permitted Uses: Any uses permitted in the AO zoning district

Existing Zoning: AO (Agriculture/Open Space)

Surrounding Zoning: North: AO (Agriculture/Open Space)

East: AO (Agriculture/Open Space)  
South: AO (Agriculture/Open Space)  
West: AO (Agriculture/Open Space)

Signs Posted: 8/17/2020  
Newspaper Notification 1: 8/26/2020  
Newspaper Notification 2: 8/2/2020  
Notification Letters: 8/17/2020

### Exhibits

Exhibit A – Staff Report  
Exhibit B – Application  
Exhibit C – Site Plan  
Exhibit D – Staff Maps  
Exhibit E - Helipad Location Maps  
Exhibit F - Helipad Approach Maps  
Exhibit G – Hanger Renderings  
Exhibit H – FAA Determination Letter and Supporting Documents  
Exhibit I – NCDOT Approval Letter  
Exhibit J – Property Owner and Adjacent Parcels Letters

### Agency Review Comments

#### **Soil-Water Conservation Review: Approved**

The soils on this property are rated as very limited for paving. This is due to low strength and shrink-swell tendencies found there. There may be need of reinforcement or soil replacement prior to paving. The owner may want to consider hiring a soil scientist to confirm that this is the case in that area.

“Soil surveys can be used for general farm, local, and wider area planning. Onsite investigation is needed in some cases, such as soil quality assessments and certain conservation and engineering applications.”-  
Web Soil Survey operated by the USDA Natural Resource Conservation Service.

*Per Tammi Remsburg, Resource Conservation Coordinator, Cabarrus Soil & Water*

#### **NCDOT Review: Approved**

*No comments per Marc Morgan, NCDOT District Engineer*

#### **Fire Review: Approved**

*Comments were addressed...no outstanding issues per Matthew Hopkins, Assistant Fire Marshal*

**EMS Review: Approved**

*No comments per Justin Brines, Cabarrus County EMS Assistant Director*

**Sherriff's Department Review:**

*No comments. (per Ray Gilleland, Lieutenant Sherriff).*

**Cabarrus Heath Alliance Review:**

*Comments were addressed...no outstanding issues per Chrystal Swinger, CHA*

**Zoning Review: Approved**

*Comments were addressed...no outstanding issues per Boyd V. Stanley, Senior Planner*

**History / Other Information**

1. The applicant provided documentation in accordance with Section 8-3 of the Cabarrus County Zoning Ordinance, petitioning for a Conditional Use.
2. The applicant submitted a complete application which includes the "Findings of Fact" sheet along with a site/survey plan and applicable supporting documentation.
3. The applicant is proposing to construct a 2,500 sq. ft. Helipad along with a 3,000 sq. ft. or less Hanger Structure. This area will be accessed off of the existing driveway via a 20' wide paved driveway off of the existing driveway. The existing driveway will be required to be widened to a minimum of 20' all the way from Abshire Lane. The Helipad area will be enclosed by a 7' security fence around the perimeter.
4. The applicant has submitted a Notice of Heliport Airspace Analysis Determination to establish [a] Private Use Heliport. The review resulted in a conditional "No Objection" opinion being rendered regarding the proposed helipad. The determination is for establishment of a helipad on the subject property and is good until 04/23/2021 (see Exhibit H). If this helipad ever includes any construction or alteration, or if it is abandoned, notice to the FAA is required for aeronautical review.
5. The subject property is approximately 14.5 acres in size.is currently occupied by a single-family home
6. The application states that the Helipad will be used approximately 3 times a week between the hours of 7:00 a.m. and 9:00 p.m. during clear weather conditions.
7. The application and approach maps state the aircraft will take off and land from the northwest and southwest of the proposed helipad and property.
8. The property is subject to Chapter 4 – Overlay Districts and Zones, Part II Waterbody Buffer Zone. The required buffers are shown on the site/survey plan. The property is also subject to Chapter 16, Flood Damage Prevention, because there is floodplain located on the site. The floodplain is shown on the plan.

## Conditions of Approval

Should the Board of Adjustment grant approval of the Conditional Use Permit, Staff requests the following conditions become part of the approval and case record:

1. Site plan review and approval is required subsequent to Board of Adjustment approval in order to ensure compliance with all applicable development requirements and conditions. (Zoning)
2. The Granting Order stating restrictions and applicable conditions of approval, shall be recorded with the deed for the property. (Zoning)
3. The applicant shall procure any and all applicable federal, state, and local permits prior to zoning permitting. (Zoning)
4. Any future expansion of property, as well as modifications or changes to the approved site plan, must receive Board of Adjustment approval in the form of an amendment to the Conditional Use Permit. (Zoning)
5. Applicant shall provide copy of notification to FAA and the Airport Master Report that the airstrip has been established on the subject property. (Zoning)
6. Applicant shall comply with all safety measures regarding construction and approach/departure standards as outlined in the letter dated August 11, 2020. (Zoning)
7. Applicant shall comply with the standards of the FAA Advisory Circular 150/5390-2C, Heliport Design, including the Touchdown and Liftoff Area (TLOF), Final Approach and Takeoff Area (FATO), Safety Area, and 8:1 approach/departure surfaces.



## CONDITIONAL USE PERMIT APPLICATION

### STAFF USE ONLY:

Application/Accela#: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

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

Amount Paid: \_\_\_\_\_

### **INSTRUCTIONS/PROCEDURES:**

1. Schedule a pre-application meeting with Staff to discuss the procedures and requirements for a Conditional Use Permit request.

Date of Pre-Application Meeting: 8/1/19 & 3/20/20 Staff Facilitator(s): Susie Morris, Boyd Stanley

2. Submit a complete application to the Planning Division. All applications must include the following:
  - Cabarrus County Land Records printout of all adjacent property owners. This includes properties located across the right-of-way and all on-site easement holders. The list must include owner name, address, and Parcel Identification Number.
  - A recent survey or legal description of the property.
  - 15 folded copies of the proposed site plan.
  - Any additional documents essential for the application to be considered complete. (Determined at pre-application meeting)
3. Submit cash, check, or money order made payable to Cabarrus County.
 

Fees: Conditional Use Permit \$550.00 +\$5.00 *per acre*  
+3% technology fee based on total application fee

The deadline for submittal is always the same day as the Planning and Zoning Commission Meeting which is the second Tuesday of the month. Applications must be submitted before 2:00 PM that day for consideration on the next available agenda.

**Incomplete applications will be returned to the applicant and will not be processed.**

### **PROCESS SUMMARY:**

1. Hold a pre-application meeting with Staff to discuss your Conditional Use Permit request and the Conditional Use Permit process.
2. Submit a complete application with the appropriate fees to the Cabarrus County Planning Division.

Staff and appropriate agents will review your complete application and site plan and comments will be forwarded to you. You will need to address the comments in writing, revise the site plan accordingly and resubmit a site plan showing that all comments are addressed and errors corrected.

3. Once advised that the site plan is correct and ready to be presented to the Board of Adjustment, you will need to submit 18 folded copies of the plan.
4. When the copies of the plan are received, Staff will begin to prepare a staff report, schedule a public meeting date and notify adjacent property owners of the public meeting/public hearing date. A sign advertising the public hearing will also be placed on the property being considered for the Conditional Use Permit.

**Meeting Information:** Meetings are held the second Tuesday of each month at 6:30 PM in the Cabarrus County Governmental Center located in downtown Concord at 65 Church Street, SE.

**Conditional Use Permit:** Conditional Use Permits are considered by the Board of Adjustment during a quasi-judicial hearing. This means that anyone wishing to speak regarding the application must be sworn in. The vote requirement for the Conditional Use Permit to pass is a simple majority. Additional conditions may be added as part of the Conditional Use Permit approval process.

**Questions:** Any questions related to the Conditional Use Permit process may be directed to the Planning Division at 704-920-2141, between 8 AM and 5 PM, Monday through Friday.

**TO THE BOARD OF ADJUSTMENT:**

**I HEREBY PETITION THE BOARD OF ADJUSTMENT TO GRANT THE ZONING ADMINISTRATOR THE AUTHORITY TO ISSUE A CONDITIONAL USE PERMIT FOR THE USE OF THE PROPERTY AS DESCRIBED BELOW.**

<b>APPLICANT</b>	<b>PROPERTY OWNER</b>
<u>Werner Barkhuizen, Ph.D. c/o Jeff Young</u>	<u>INTELLECTUS SIGMA LLC (Barkhuizen)</u>
NAME	NAME
<u>2578 Sunberry Lane NW</u>	<u>4011 Abshire Lane</u>
ADDRESS	ADDRESS
<u>Concord, NC 28027</u>	<u>Concord, NC 28025</u>
CITY, STATE, ZIP CODE	CITY, STATE, ZIP CODE
<u>704.920.8061 (WB) 704.796.1766 (JY)</u>	<u>704.920.8061</u>
PHONE NUMBER	PHONE NUMBER
<u>N/A</u>	<u>N/A</u>
FAX NUMBER	FAX NUMBER
<u>youngjj@twc.com werner@drwrnr.com</u>	<u>Unknown</u>
E-MAIL ADDRESS	E-MAIL ADDRESS

**PARCEL INFORMATION:**

Existing Use of Property	<u>Rural residence</u>
Proposed Use of Property	<u>Rural residence w helipad</u>
Existing Zoning	<u>AO Agricultural/Open Space</u>
Property Location	<u>4011 Abshire Lane, Concord</u>
Property Acreage	<u>14.5 acres</u>
Parcel Number (PIN)	<u>5640 86 5402 0000</u>

**LAND USE OF ADJACENT PROPERTIES:**

NORTH <u>Rural residence</u>	SOUTH <u>Vacant/wooded/pond</u>
EAST <u>Rural residence/vacant</u>	WEST <u>Vacant/wooded</u>

**GENERAL REQUIREMENTS:**

The Zoning Ordinance imposes the following general requirements on the use requested by the applicant. Under each requirement, the applicant should explain, with reference to the attached plans (when applicable) how the proposed use satisfies these requirements.

1. The Board must find that the uses(s) as proposed “are not detrimental to the public health, safety or general welfare.”  
SEE ATTACHED PAGES

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2. The Board must find that the use(s) as proposed “are appropriately located with respect to transportation facilities, water supply, fire and police protection, waste disposal, etc.”

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3. The Board must find that the use(s) as proposed “will not violate neighborhood character nor adversely affect surrounding land uses.”

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4. The Board must find that the use(s) as proposed “will comply with the general plans for the physical development of the County or Town, as embodied in the Zoning Ordinance or in the area development plans that have been adopted.”

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**SPECIFIC REQUIREMENTS:**

The Zoning Ordinance also imposes SPECIFIC REQUIREMENTS on the use(s) requested by the applicant. The applicant should be prepared to demonstrate that, if the land is used in a manner consistent with the plans, specifications, and other information presented to the Board, the proposed use(s) will comply with specific requirements concerning the following:

Nature of use (type, number of units, and/or area):  
SEE ATTACHED PAGES

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Accessory uses (if any):  
SEE ATTACHED PAGES

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**SETBACK PROVISIONS:**

Principle Use:

Front: 50'      Side yard Single: 20'      Side yard Total: 40'      Rear: 30'

Accessory Use:

Front: 50'      Side yard Single: 20'      Side yard Total: 40'      Rear: 5'

Height provisions:      Principle Use: 40'      Accessory Use: 15'

Off street parking and loading provisions: (include calculations)

Two parking space, a garage and long driveway provide parking

Sign provisions: (include sketch drawing with dimensions)

No sign is proposed.

Provisions for screening landscaping and buffering: (show on site plan)

The perimeter of the subject property is heavily wooded, effectively screening surrounding properties.

Provisions for vehicular circulation and access to streets: (provide NCDOT permit and/or TIA)

Motor vehicle access to Abshire Lane already exists.

Adequate and safe design for grades, paved curbs and gutters, drainage systems, and treatment or turf to handle storm waters, prevent erosion, subdue dust:

The helipad and hangar will not add significantly to stormwater runoff on this large site, but will be addressed. Ground vegetation in the form of turf will minimize and subdue dust during takeoffs and landings. Turf will prevent erosion, as well.

An adequate amount and safe location of play areas for children and other recreational uses according to the concentration of residential property:

Play areas for children and other recreational uses and activities will take place at the residence and the yard surrounding it.

Compliance with applicable overlay zones: (see Chapter 4 of Zoning Ordinance)

There are no applicable overlay zones.

Compliance with the Flood Damage Prevention Ordinance: (see County Code Chapter 38)

The existing flood plain of the stream along the western boundary of the property is wooded and will not be disturbed.

Other requirements may be requested by the applicant or specified by the Board for protection of the public health, safety, welfare, and convenience:

Other requirements requested by the Board will be considered.

**PREDEFINED STANDARDS:**

Each individual Conditional Use listed in the Zoning Ordinance may have specific standards imposed. Refer to Chapter 8, the Conditional Use section of the Zoning Ordinance for these requirements. Each standard should be addressed in the site plan submitted along with this application.

**CERTIFICATION:**

I hereby confirm that the information contained herein and herewith is true and correct and that this application shall not be scheduled for official consideration until all of the required contents have been submitted to the Planning and Development Department.

Signature of Applicant  Date: 04/20/20

Signature of Owner  Date: 04/20/20

**GENERAL REQUIREMENTS:**

The Zoning Ordinance imposes the following general requirements on the use requested by the applicant. Under each requirement, the applicant should explain, with reference to the attached plans (when applicable) how the proposed use satisfies these requirements.

1. The Board must find that the uses(s) as proposed “are not detrimental to the public health, safety or general welfare.”

The proposed use is continuance of the rural residence with an added personal helipad and hangar permitted as an "accessory airstrip," however, no runway for winged aircraft is proposed. The applicant plans to use the helicopter three times per week, at most, and between 7:00 AM and 9:00 PM. In addition, helicopter flights will only be done when visibility conditions are good, in other words, when weather conditions allow the pilot to see clearly in front of, and around the helicopter. Such occasional use of the private and personal helipad will not be detrimental to the public health, safety or general welfare. Flight paths for the helicopter will be planned in order to stay as far as possible from other residences. The helicopter will be flown to avoid flying over homes until it is positioned over the subject property for a direct vertical descent to land on the helipad.

2. The Board must find that the use(s) as proposed “are appropriately located with respect to transportation facilities, water supply, fire and police protection, waste disposal, etc.”

The proposed use is appropriately located with respect to transportation facilities, water supply, fire and police protection, as well as waste disposal and other public infrastructure. That is already the case with the residence. The proposed helipad is approximately 11 miles from Concord Regional Airport and will not pose conflicts with airport operations. Concord Aviation Director, Dirk Vanderleest has been informed of the proposed helipad and provided an email stating there is no issue. The proposed helipad and hangar are strictly for the private personal use of Werner Barkhuizen, who will reside on the property as his personal residence.

3. The Board must find that the use(s) as proposed “will not violate neighborhood character nor adversely affect surrounding land uses.”

The proposed use will not violate neighborhood character nor adversely affect surrounding land uses. This is a low density rural section of the County. In contrast, there are several other accessory airstrips in the County for winged aircraft, some of which are in urbanized areas within municipalities. Those accessory airstrips operate without violating nor adversely affecting surrounding land uses. That will also be the case with the proposed helicopter, which will takeoff and land avoiding surrounding residential uses. Most of the immediate area surrounding the subject property, particularly to the north, south and west, is vacant and wooded with scattered rural residences. Along Cold Springs Road farther to the east and along NC 73 even farther to the north are residences and a few scattered businesses. In addition, the proposed hangar will replicate the design of the residence, contributing positively to the visual character of the area.

4. The Board must find that the use(s) as proposed “will comply with the general plans for the physical development of the County or Town, as embodied in the Zoning Ordinance or in the area development plans that have been adopted.”

The proposed use will comply with the general plans for the physical development of the

County, as embodied in the Development Ordinance and in the Central Area Plan that has been adopted. Accessory airstrips, in this case a helipad, are permitted uses.

**SPECIFIC REQUIREMENTS:**

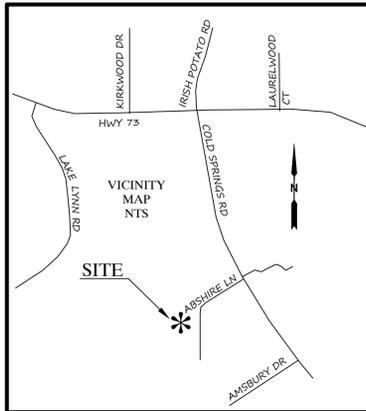
The Zoning Ordinance also imposes SPECIFIC REQUIREMENTS on the use(s) requested by the applicant. The applicant should be prepared to demonstrate that, if the land is used in a manner consistent with the plans, specifications, and other information presented to the Board, the proposed use(s) will comply with specific requirements concerning the following:

Nature of use (type, number of units, and/or area):

One existing residence and a helipad with the associated hangar for one privately owned and operated helicopter

Accessory uses (if any):

Permitted accessory airstrips, in this case a helipad and hangar, are accessory uses.



**SITE DATA**  
 OWNER: INTELLECTUS SIGMA, LLC  
 ADDRESS: 4011 ABSHIRE LANE, CONCORD  
 PIN# 5640-86-5402  
 ZONING: AO  
 SETBACKS: FRONT 50' (LOCAL RD)  
 SIDE: 20'  
 REAR: 30'  
 HEIGHT: 40' MAX.  
 SURVEY DATA PROVIDED BY ACCUTECH SURVEYING & MAPPING JULY 9, 2008.

PROPERTY IS SERVICED BY EXISTING WELL & SEPTIC SYSTEM.

TOTAL SITE ACREAGE: 14.45 ±  
 EXISTING IMPERVIOUS AREA: 14204.36 SF. / 0.33 AC  
 PROPOSED IMPERVIOUS AREA: BUILDING & PAD: 5360.86 SF. / 0.12 AC  
 POST CONSTRUCTION TOTAL IMPERVIOUS 0.45 AC OR 3.11%  
 MAX IMPERVIOUS ALLOWED 15%  
 PERVIOUS PAVEMENT: 20' WIDE: 11088 SF  
 WIDENED DRIVE 3800 SF  
 TOTAL PERVIOUS DRIVE 0.34 AC

DENUDED AREA: 38881 SF. / 0.89 AC  
 DEVELOPMENT CONSISTS OF LESS THAN 20,000 SF OF IMPERVIOUS AND LESS THAN ONE ACRE OF DISTURBANCE, THEREFORE AN EROSION CONTROL PERMIT AND STORM WATER PERMIT IS NOT REQUIRED.

SITE PLAN SHALL COMPLY WITH ALL CONDITIONS AS SET FORTH IN CUP PROCESS.

DISTURBING ACTIVITY IS AT LEAST 260 LF FROM THE STREAM, WHICH WELL EXCEEDS THE MAXIMUM 120' WATER QUALITY BUFFER.

THE OWNER AGREES TO MEET OR EXCEED THE 8:1 APPROACH AS REQUIRED BY THE FAA.

**GENERAL NOTES**

ALL WORK TO BE DONE IN ACCORDANCE WITH CABARRUS COUNTY, NCDOT, NCE&NR STANDARD SPECIFICATIONS AND PROJECT SPECIFICATIONS. WHEN SPECIFICATIONS ARE IN CONFLICT THE STRICTER SHALL BE HELD.

ALL BENCHMARK LOCATIONS AND ELEVATIONS ARE TO BE VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION.

EXISTING UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS ONLY. ANY DAMAGE DONE TO EXISTING UTILITIES, WHETHER SHOWN OR NOT ON THIS PLAN, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN ON THE PLAN, PRIOR TO BEGINNING CONSTRUCTION. TO ENSURE PROPER LOCATION OF UTILITIES, THE CONTRACTOR SHALL CONTACT NCCOC (NC ONE CALL CENTER) AT 1-800-632-4949 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL PROVIDE THE APPROPRIATE BARRICADES, WARNING LIGHTS AND SIGNS TO ENSURE THE SAFETY OF THE PUBLIC AT ALL TIMES.

CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS PRIOR TO CONSTRUCTION. ANY SIGNIFICANT VARIATIONS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.

DIMENSIONS AS SHOWN, ARE TO FACE OF CURB, FACE OF BUILDING, AND EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

LANDSCAPE CONTRACTOR SHALL HAVE UNDERGROUND UTILITY CONTRACTOR LOCATE LINES PRIOR TO INSTALLATION OF TREES AND SHRUBS.

THE ENGINEER HAS MADE NO EXAMINATION TO DETERMINE WHETHER ANY HAZARDOUS OR TOXIC MATERIALS ARE PRESENT OR CONTAINED IN, UNDER, OR ON THE SUBJECT PROPERTY OR ITS WATERS; OR IF ANY HAZARDOUS OR TOXIC MATERIALS HAVE CONTAMINATED THIS OR OTHER PROPERTIES OR ITS WATERS IN ANY WAY WHATSOEVER. NO SUBSURFACE EXAMINATION OF ANY TYPE HAS BEEN MADE BY THE ENGINEER AND ACCORDINGLY, NO OPINION EXPRESSED OR INFERRED ON ALL SUCH MATTERS. FURTHER, NO OPINION IS RENDERED AS TO ANY VIOLATION OF ANY ENVIRONMENTAL LAWS OR REGULATIONS, EITHER FEDERAL, STATE OR LOCAL, RELATED TO THE INFORMATION SHOWN ON THIS PLAN AND THE ENGINEER IS IN NO WAY LIABLE FOR ANY VIOLATION OF SUCH ENVIRONMENTAL LAWS SHOULD THEY EXIST.

THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY KIND OF LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OR ANY WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

AT ALL TIMES, THE CONTRACTOR SHALL PERFORM PROJECT DEMOLITION WITH MINIMAL DISTURBANCE TO THE ADJACENT PROPERTIES. ALL DEBRIS GENERATED DURING THE DEMOLITION PHASE OF THE PROJECT, SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

alley, willams, carmen & king, inc.  
 CONSULTING ENGINEERS, SURVEYING & INSPECTION  
 Firm License No. F-0203  
 120 S. MAIN STREET  
 PO BOX 1248  
 KANNAPOLIS, NC 28081  
 704.938.1515  
 www.awcck.com



This drawing is the property of Alley, Williams, Carmen & King, Inc. It is not to be reproduced, copied, or used on any other project without written permission.

Prepared for:  
 Werner Barkhuizen  
 4011 Abshire Lane  
 Concord, NC 28025  
 704-920-8061

**Barkhuizen Helpad**  
 4011 Abshire Lane  
 Concord, NC  
**SITE PLAN**

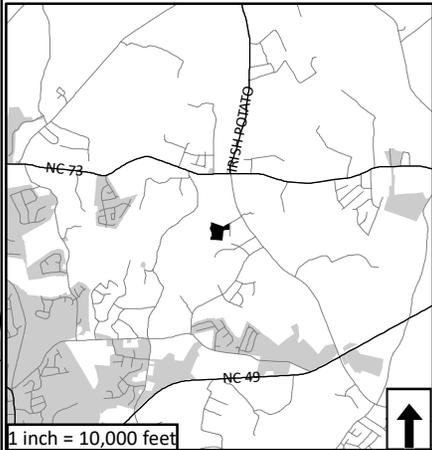
#	DATE	REVISION	BY
1	5-18-20	REVISED PER CITY COMMENTS	
2	7-8-2020	ADD SEPTIC LOCATION AND WIDEN EX. DRIVE	
3	8-8-2020	MINOR COMMENTS FROM COUNTY	

SCALE: 1" = 50'  
 DATE: 04-14-20  
 JOB # 20526  
 C - 1.0

**Central Planning Area  
Existing Zoning**



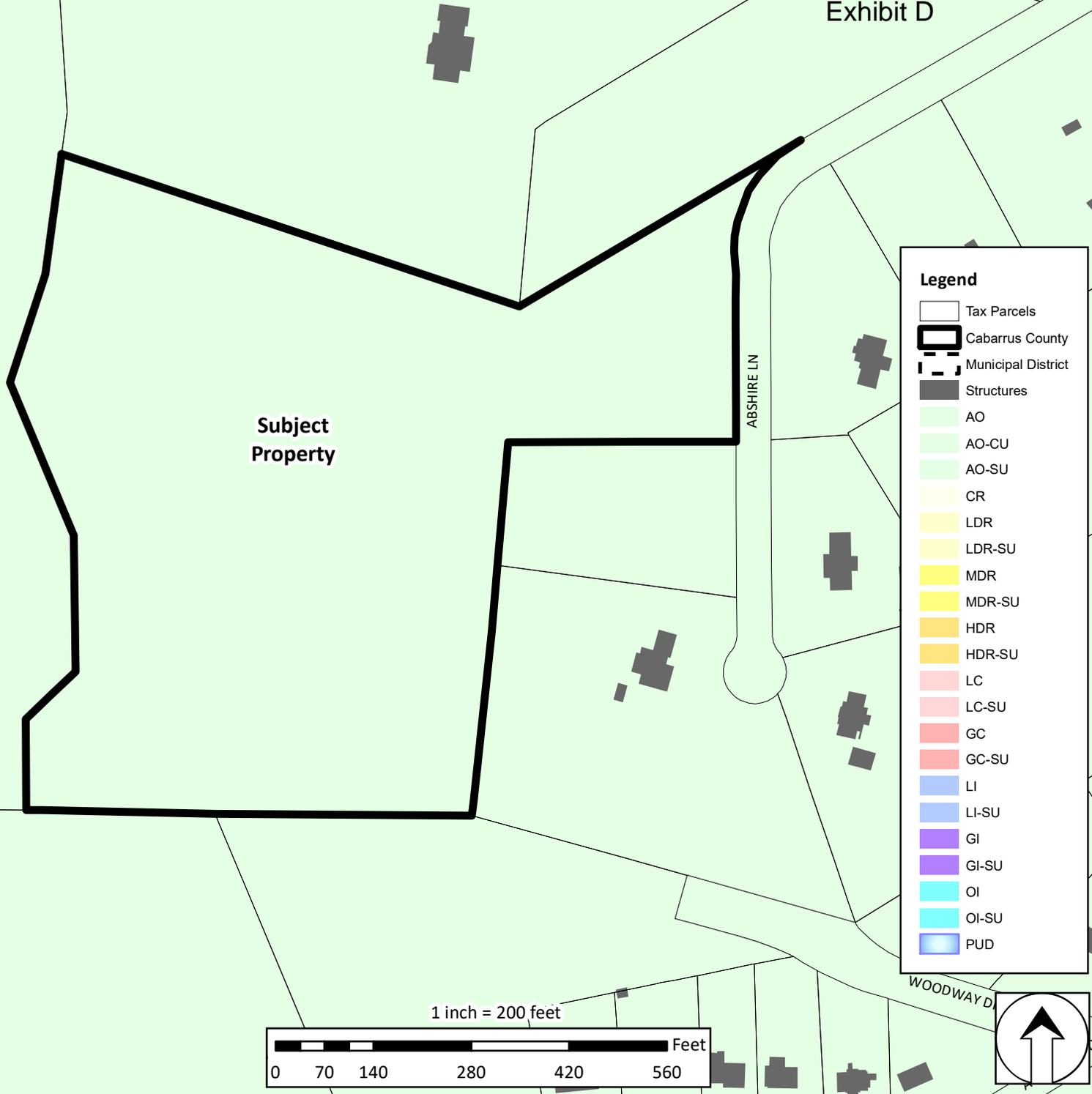
Applicant: Werner Barkhuizen  
 Owner: Intellectus Sigma LLC  
 Case: CUSE2020-00001  
 Address: 4011 Abshire Lane  
 Purpose: Construction of a Helipad  
 PINs: 5640-86-5402



Cabarrus County shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. These data cannot be construed to be a legal document. Primary sources from which these data were compiled must be consulted for verification of information contained within the data.

Map Prepared by Cabarrus County Planning & Development - August 2020

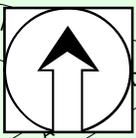
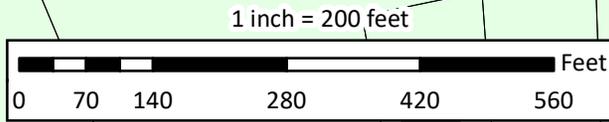
Exhibit D



**Subject  
Property**

**Legend**

- Tax Parcels
- Cabarrus County
- Municipal District
- Structures
- AO
- AO-CU
- AO-SU
- CR
- LDR
- LDR-SU
- MDR
- MDR-SU
- HDR
- HDR-SU
- LC
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- GC
- GC-SU
- LI
- LI-SU
- GI
- GI-SU
- OI
- OI-SU
- PUD

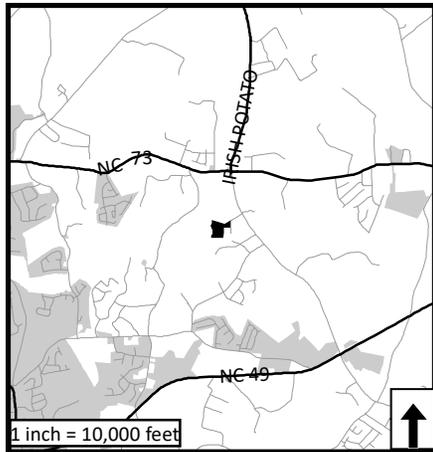


# Central Planning Area Aerial Map



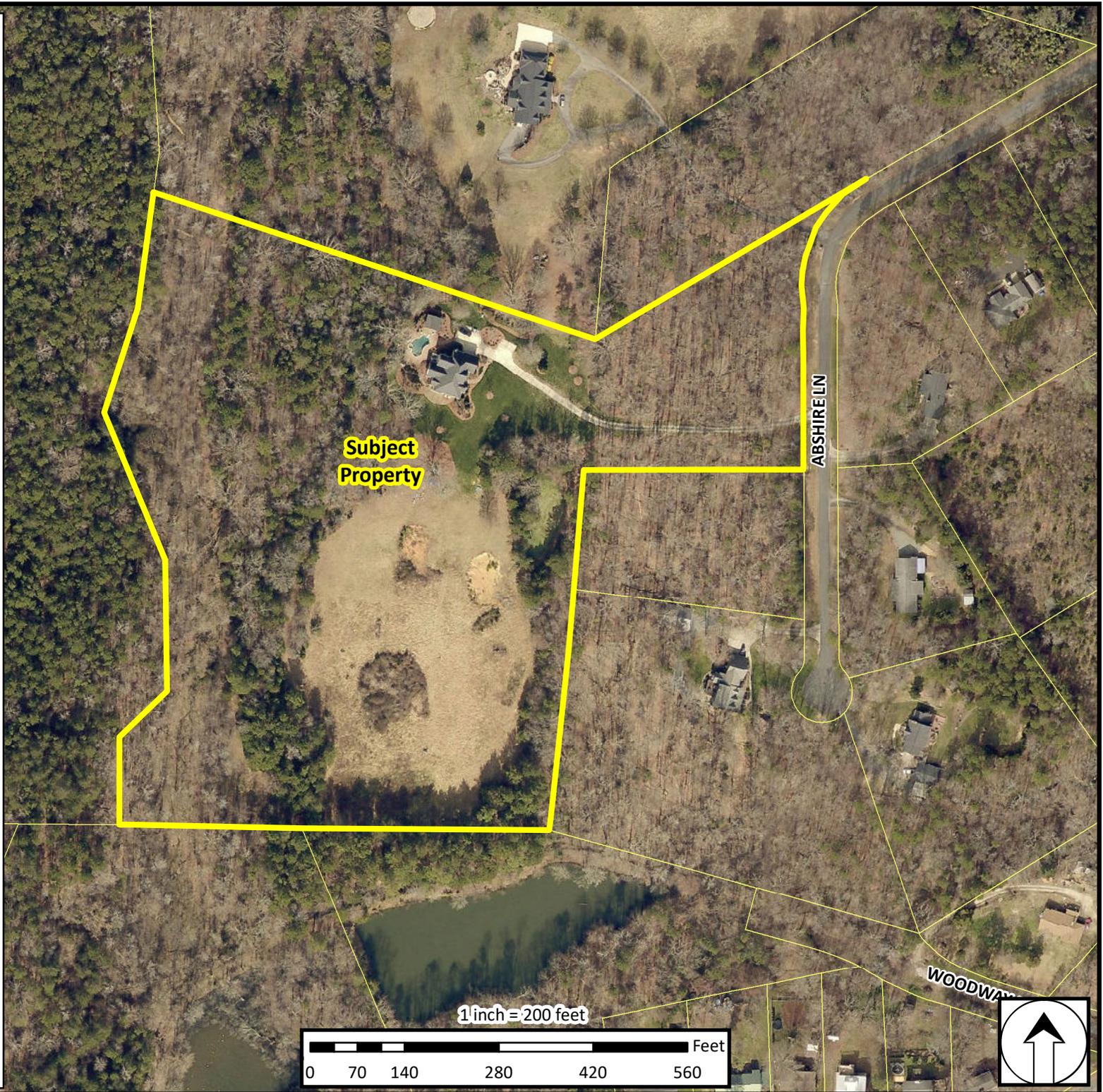
Applicant: Werner Barkhuizen  
Owner: Intellectus Sigma LLC  
Case: CUSE2020-00001  
Address: 4011 Abshire Lane  
Purpose: Construction of a Helipad  
PINs: 5640-86-5402

- Subject Property
- Municipal District
- Tax Parcels



Cabarrus County shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. These data cannot be construed to be a legal document. Primary sources from which these data were compiled must be consulted for verification of information contained within the data.

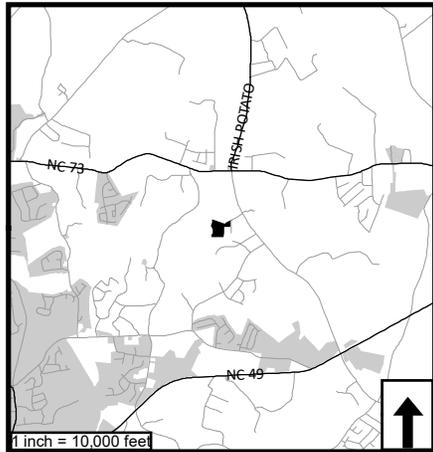
Map Prepared by Cabarrus County Planning & Development - August 2020



Central Planning Area  
Future Land Use



Applicant: Werner Barkhuizen  
 Owner: Intellectus Sigma LLC  
 Case: CUSE2020-00001  
 Address: 4011 Abshire Lane  
 Purpose: Construction of a Helipad  
 PINs: 5640-86-5402

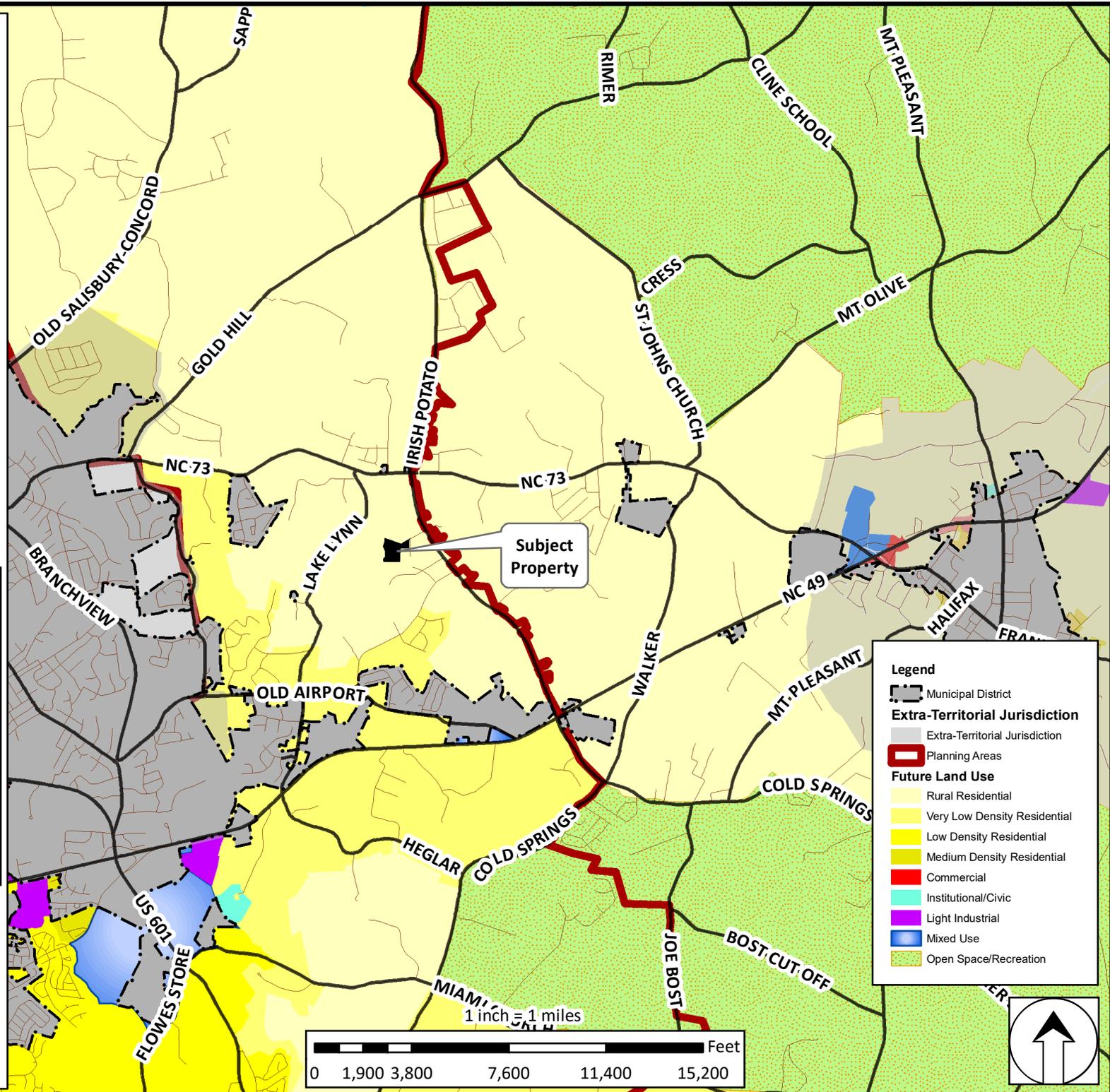


1 inch = 10,000 feet



Cabarrus County shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. These data cannot be construed to be a legal document. Primary sources from which these data were compiled must be consulted for verification of information contained within the data.

Map Prepared by Cabarrus County Planning & Development - August 2019



**Legend**

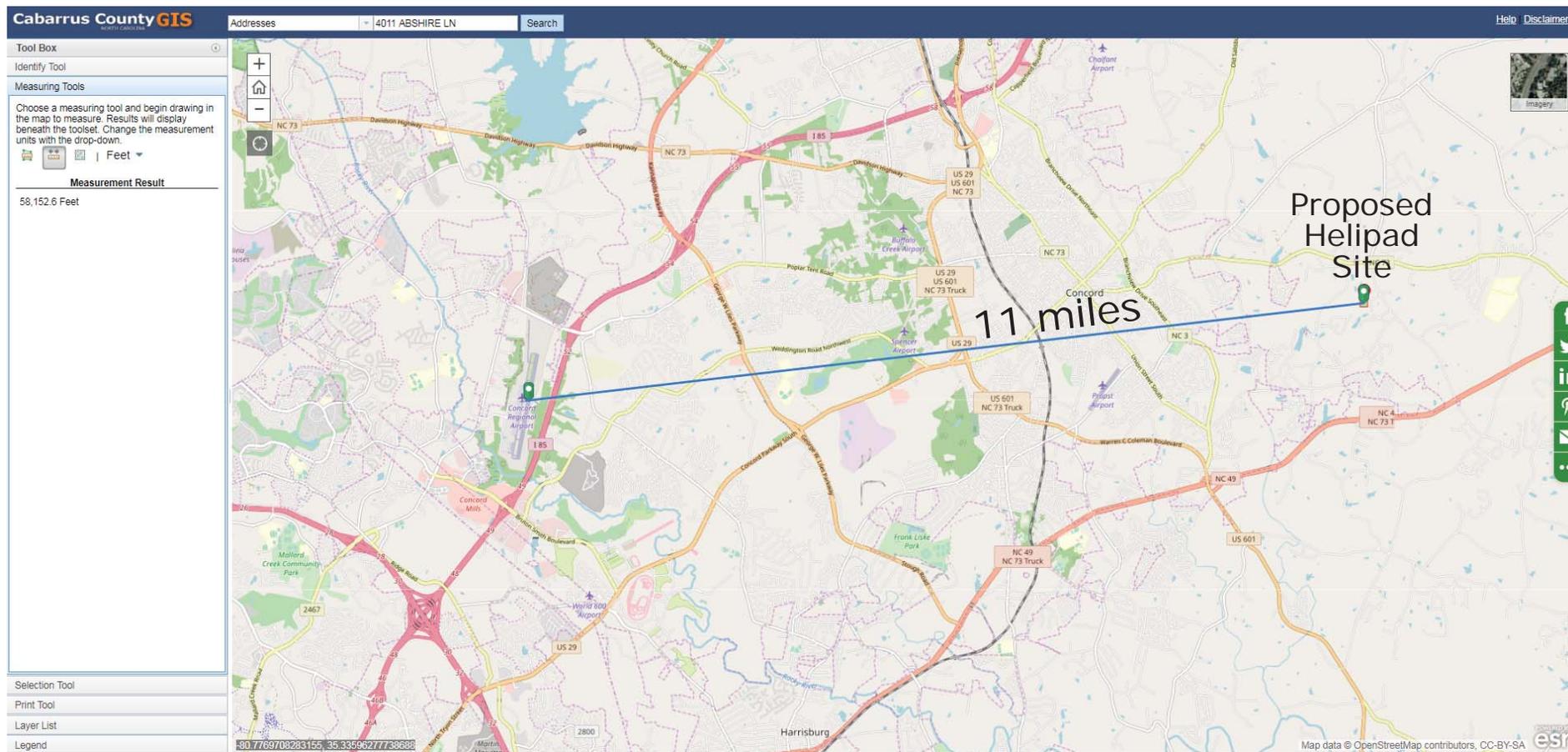
- Municipal District
- Extra-Territorial Jurisdiction**
- Extra-Territorial Jurisdiction
- Planning Areas
- Future Land Use**
- Rural Residential
- Very Low Density Residential
- Low Density Residential
- Medium Density Residential
- Commercial
- Institutional/Civic
- Light Industrial
- Mixed Use
- Open Space/Recreation

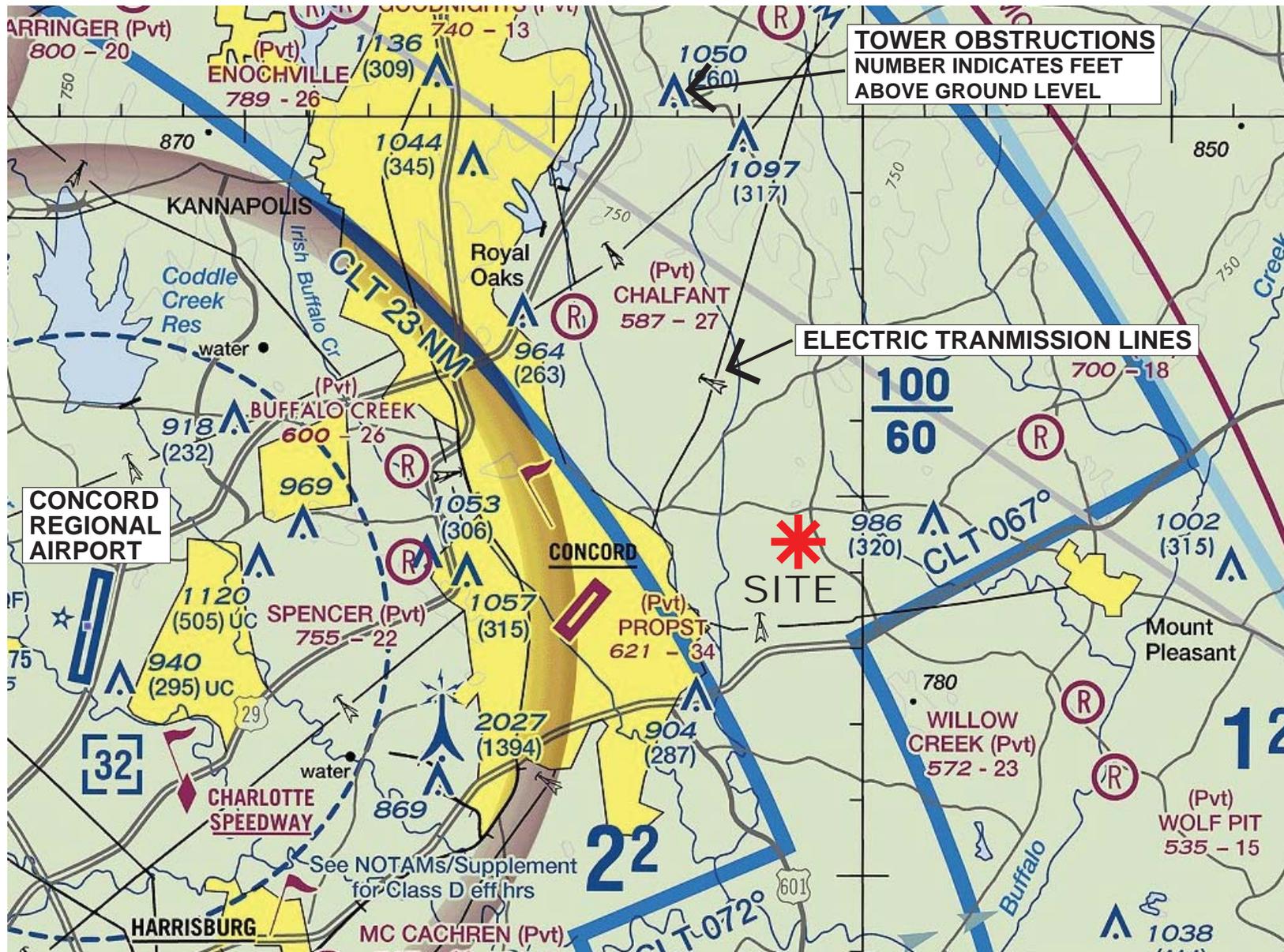


1 inch = 1 miles



# Distance From Concord-Padgett Regional Airport





**TOWER OBSTRUCTIONS**  
 NUMBER INDICATES FEET  
 ABOVE GROUND LEVEL

**ELECTRIC TRANSMISSION LINES**

**CONCORD REGIONAL AIRPORT**

**SITE**

**JEFF YOUNG, PLA**  
 LANDSCAPE ARCHITECTURE  
 COMMUNITY PLANNING

Date: August 5, 2019

**PROPOSED HELIPAD**  
 Werner Barkhuizen, Ph.D.  
 4011 Abshire Lane  
 Concord, NC 28025

**HELIPAD  
 LOCATION  
 MAP**



<p><b>OBSTRUCTIONS</b></p> <ul style="list-style-type: none"> <li> 1000 ft and higher AGL</li> <li> Above 200 ft &amp; below 1000 ft AGL (above 299 ft AGL in urban area)</li> <li> Obstruction with high-intensity lights; may operate part-time</li> <li> Wind Turbine</li> <li> Group Obstruction</li> <li> Under construction or reported; position and elevation unverified</li> </ul>	<p><b>AIRPORTS</b></p> <ul style="list-style-type: none"> <li> Other than hard-surfaced runways</li> <li> Hard-surfaced runways 1500 ft. to 8000 ft. in length</li> <li> Hard-surfaced runways greater than 8069 ft. or some multiple runways less than 8069 ft.</li> <li> Open dot within hard-surfaced runway configuration indicates approximate VOR, VOR-DME, DME or VORTAC location.</li> </ul> <p>All recognizable hard-surfaced runways, including those closed, are shown for visual identification. Airports may be public or private.</p>	<p><b>ADDITIONAL AIRPORT INFORMATION</b></p> <ul style="list-style-type: none"> <li> Private "(Pvt)" - Non-public use having emergency or landmark value</li> <li> Military - Other than hard-surfaced; all military airports are identified by abbreviations AFB, NAS, AAF, etc.</li> <li> Helipoint Selected</li> <li> Unverified</li> <li> Abandoned - paved having landmark value, 3000 ft. or greater</li> <li> Ultralight Flight Park Selected</li> <li> Seaplane Base</li> </ul>
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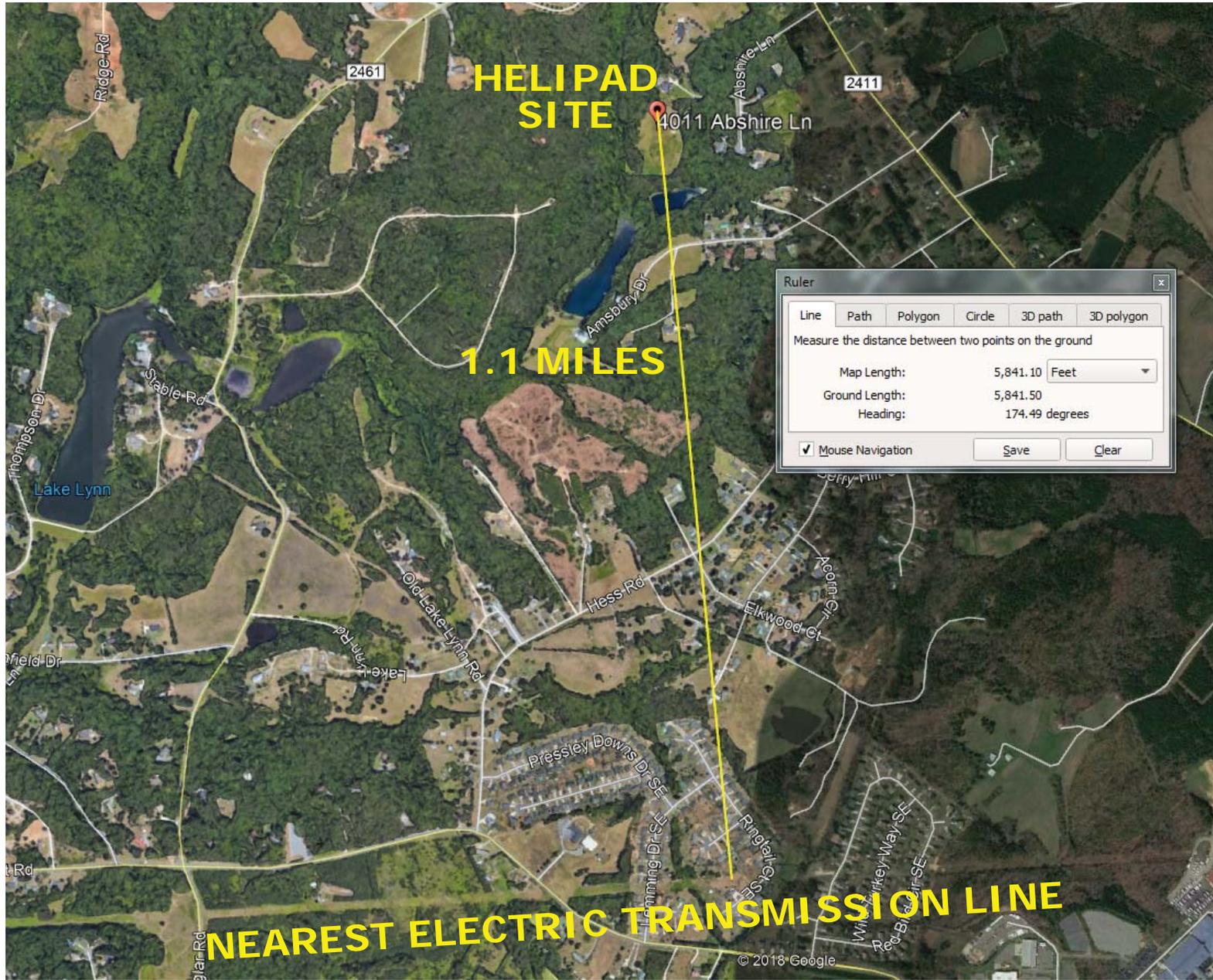
Source: FAA Charlotte Sectional Aeronautical Chart

JEFF YOUNG, PLA  
 LANDSCAPE ARCHITECTURE  
 COMMUNITY PLANNING

Date: August 6, 2020

PROPOSED HELIPAD  
 Werner Barkhuizen, Ph.D.  
 4011 Abshire Lane  
 Concord, NC 28025

HELIPAD  
 LOCATION  
 MAP 2

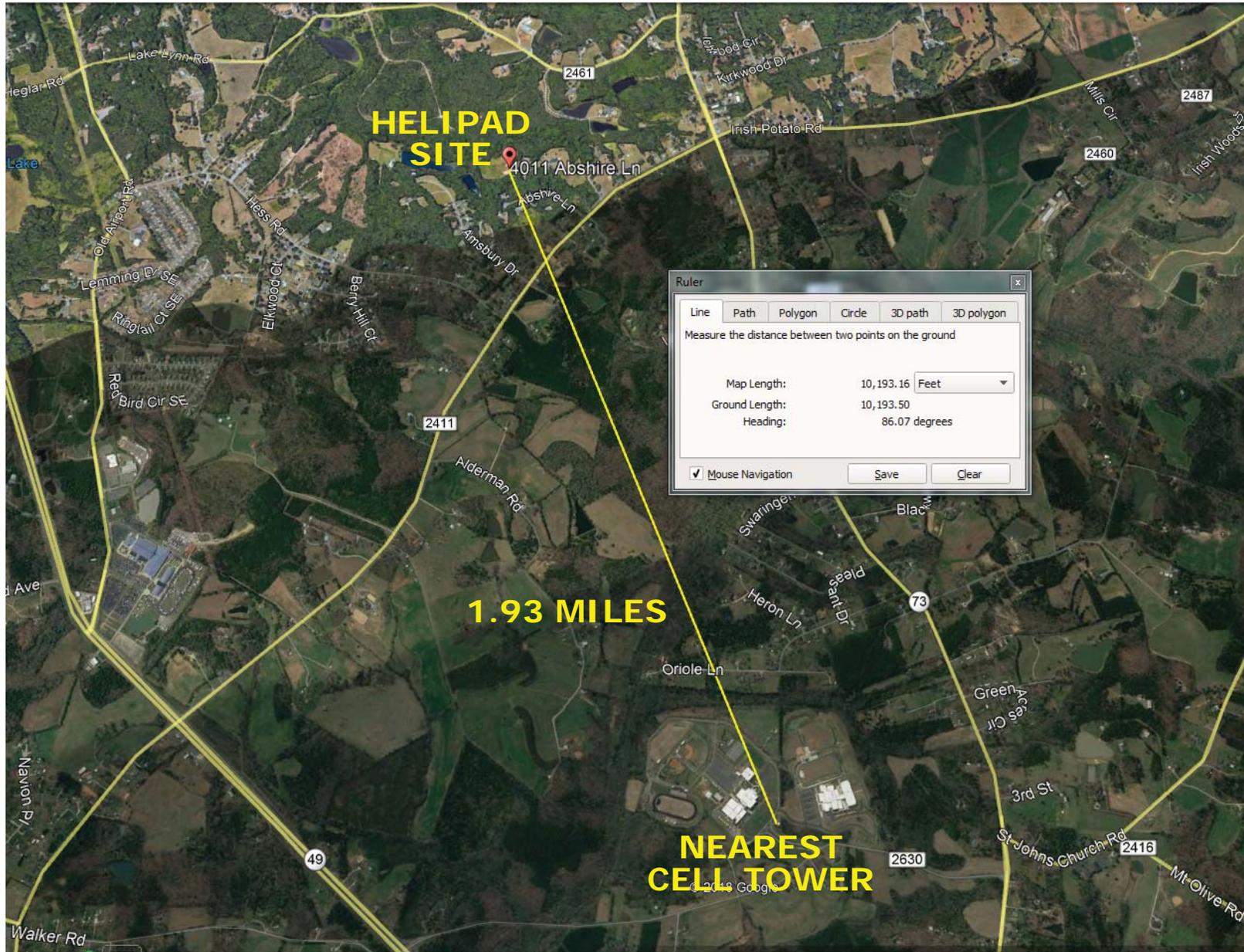


**JEFF YOUNG, PLA**  
 LANDSCAPE ARCHITECTURE  
 COMMUNITY PLANNING

Date: August 5, 2019

**PROPOSED HELIPAD**  
 Werner Barkhuizen, Ph.D.  
 4011 Abshire Lane  
 Concord, NC 28025

**NEAREST POWER  
 TRANSMISSION  
 LINE**



**JEFF YOUNG, PLA**  
 LANDSCAPE ARCHITECTURE  
 COMMUNITY PLANNING

Date: August 19, 2019

**PROPOSED HELIPAD**  
 Werner Barkhuizen, Ph.D.  
 4011 Abshire Lane  
 Concord, NC 28025

**NEAREST CELL TOWER**

**Subject:** FW: Werner Barkhuizen - Helipad

**From:** Dirk Vanderleest <[vanderleestd@ConcordNC.gov](mailto:vanderleestd@ConcordNC.gov)>

**Subject: RE: Werner Barkhuizen - Helipad**

**Date:** August 6, 2019 at 9:18:54 AM EDT

**To:** Jennifer Parsley <[jennifer.parsley@allentate.com](mailto:jennifer.parsley@allentate.com)>

To whom it may concern:

Subject: 4011 Abshire Lane Concord, NC 28027

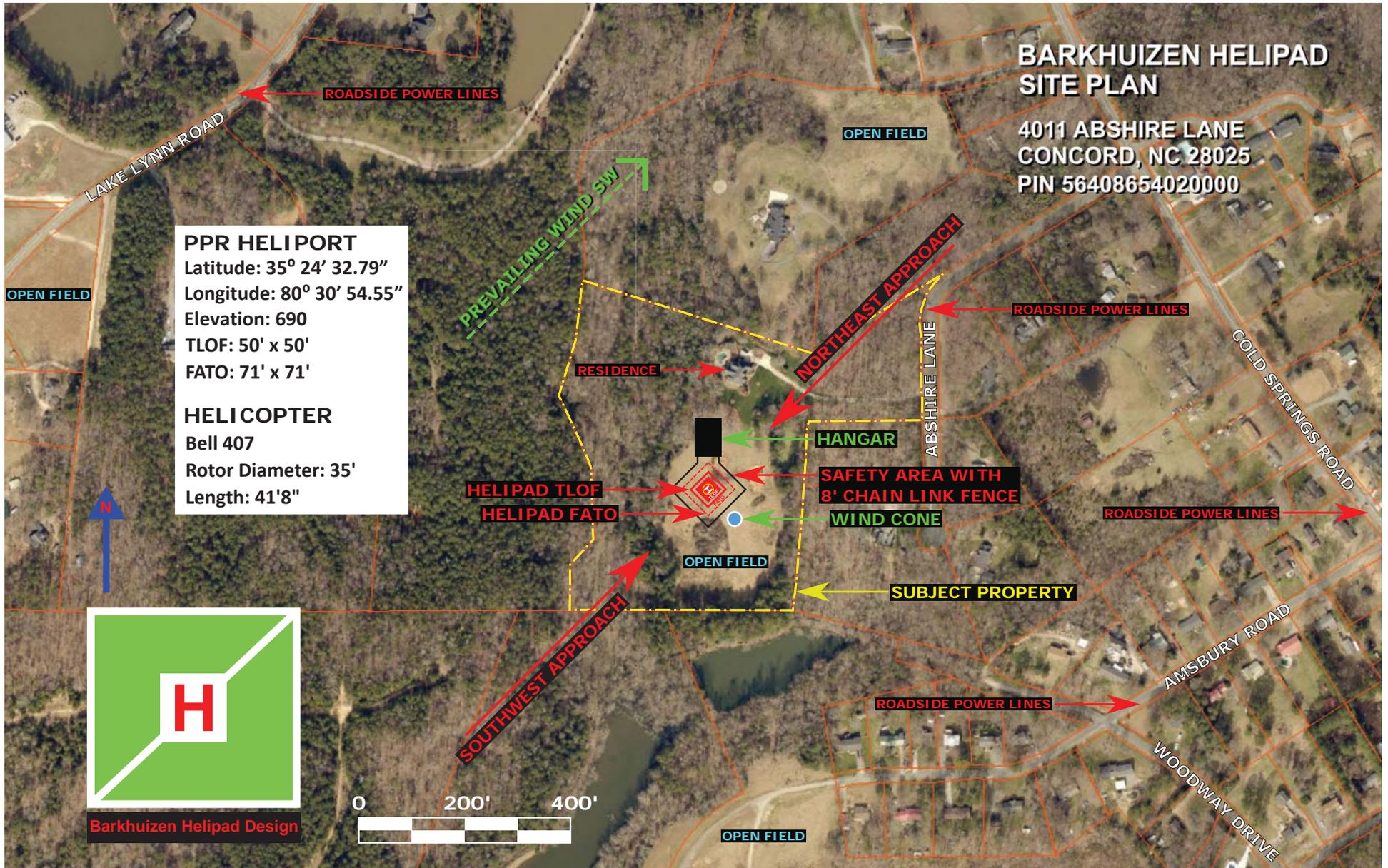
Date: 8-6-19

In accordance with FAA planning documents and review of the Concord-Padgett Regional Airport Master Plan the location of the proposed helipad/hangar does not appear an issue. The location of the parcel of land is approximately 11.0 miles from the Airport and is not in Airport Conical surface for planning purposes.

Dirk B. Vanderleest, C.M.  
Aviation Director  
Concord-Padgett Regional Airport  
9000 Aviation Blvd. NW  
Concord NC, 28027  
704-920-5912 office  
601-238-6837 cell



P.S. Suggest that you may contact NC DOT-Aviation regarding Helipads, I have a point of contact Todd Myers that may assist, if you have not done so. Please let me know if I can be of assistance.



**BARKHUIZEN HELIPAD  
APPROACH/DEPARTURE**

4011 ABSHIRE LANE  
CONCORD, NC 28025  
PIN 56408654020000

NC HWY 73 E

500 FEET ALTITUDE  
500 FEET WIDE

**APPROACH / DEPARTURE SURFACE**

4,000'

LAKE LYNN ROAD

**BARKHUIZEN HELIPAD FATO**

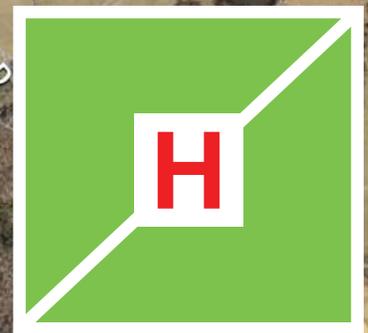
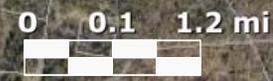
**150' RADIUS FROM FATO 500 FEET ALTITUDE**

4,000'

HESS ROAD  
COLD SPRINGS ROAD

**APPROACH / DEPARTURE SURFACE**

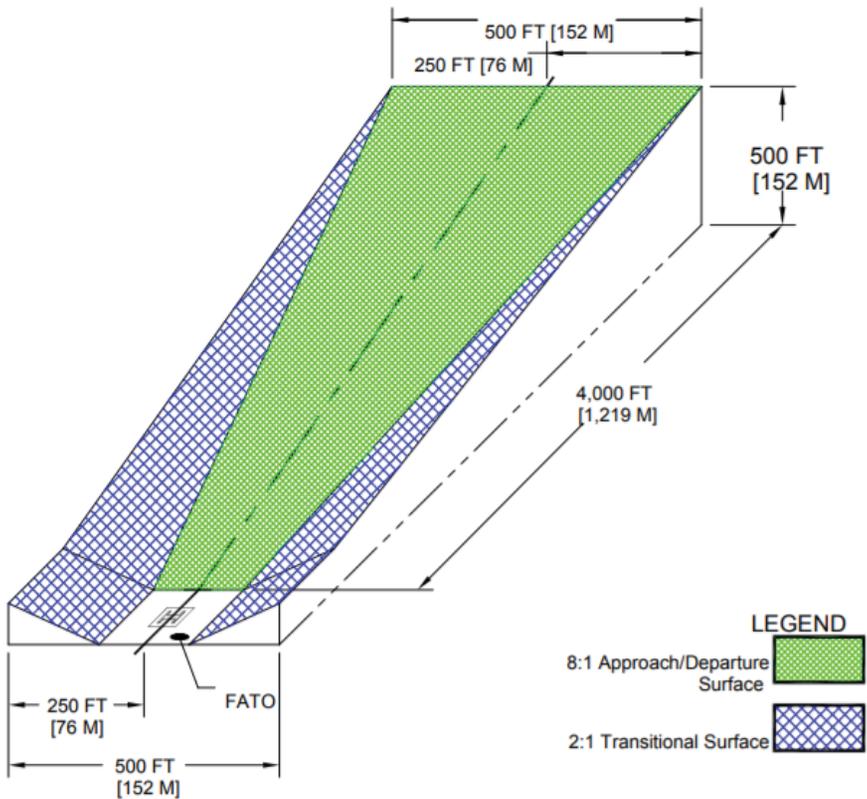
500 FEET WIDE  
500 FEET ALTITUDE



**Barkhuizen Helipad Design**

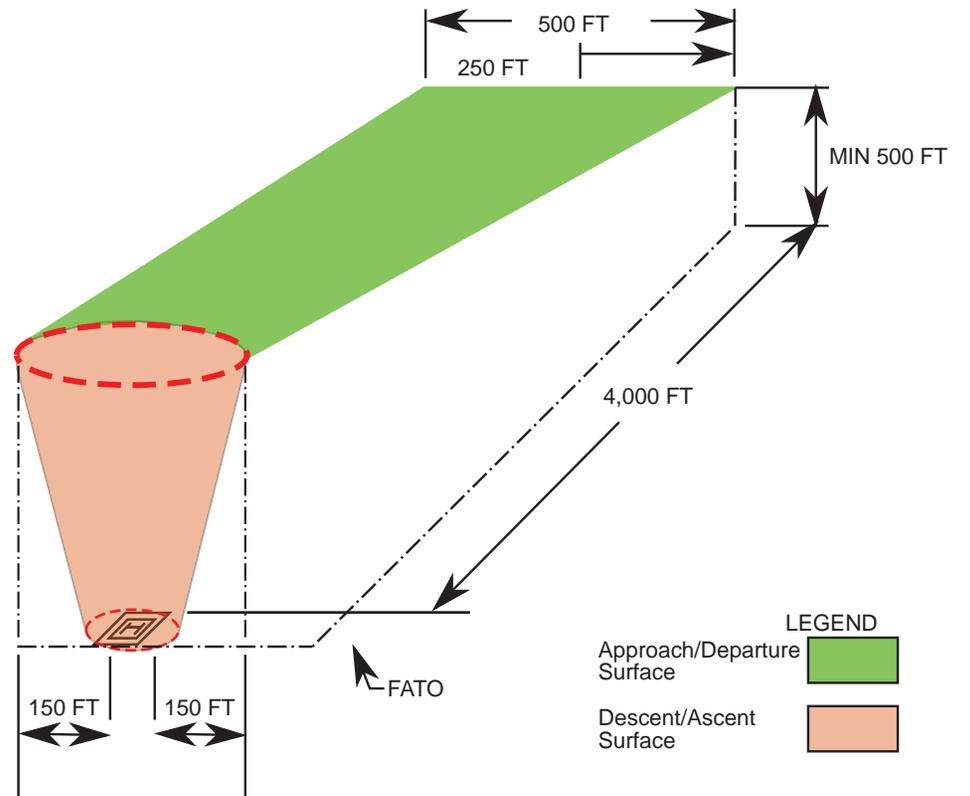
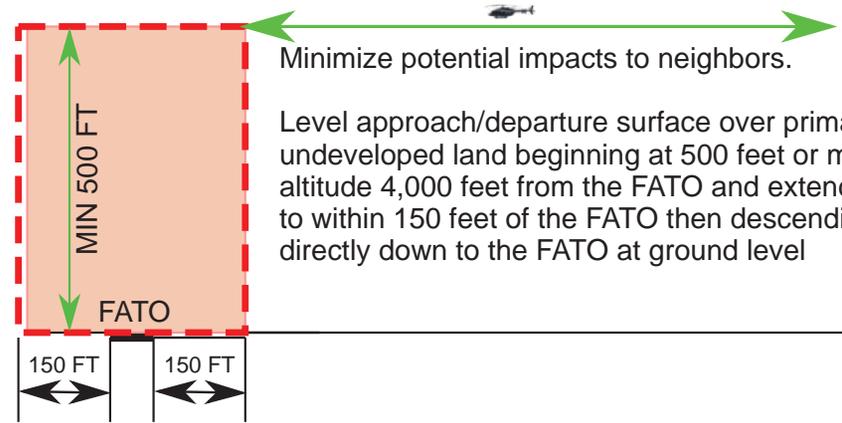
## FAA Helipad Approach/Departure

8:1 sloped approach/departure surface beginning at 500 feet altitude 4,000 feet from the FATO and extending directly to the FATO at ground level



Source: FAA Advisory Circular AC No: 150/5390-2C

## Barkhuizen Helipad Approach and Departure





# Advisory Circular

Subject: Heliport Design

Date: 4/24/2012

AC No: 150/5390-2C

Initiated by: AAS-100

Change:

## EXCERPTS

**rr. Touchdown and liftoff area (TLOF).** A load-bearing, generally paved area, normally centered in the FATO, on which the helicopter lands and/or takes off.

**ff. Prior permission required (PPR) heliport.** A heliport developed for exclusive use of the owner and persons authorized by the owner and about which the owner and operator ensure all authorized pilots are thoroughly knowledgeable. These features include but are not limited to: approach/departure path characteristics, preferred heading, facility limitations, lighting, obstacles in the area, and size and weight capacity of the facility.

**h. Final approach and takeoff area (FATO).** A defined area over which the pilot completes the final phase of the approach to a hover or a landing and from which the pilot initiates takeoff. The FATO elevation is the lowest elevation of the edge of the TLOF. See Figure 7-3.

**Table 2-1. Minimum VFR Safety Area Width as a Function of General Aviation and PPR Heliport Markings**

General aviation heliports	$\frac{1}{3}$ RD but not less than 20 ft (6 m)**	$\frac{1}{3}$ RD but not less than 30 ft (9 m)**	$\frac{1}{2}$ D but not less than 20 ft (6 m)	$\frac{1}{2}$ D but not less than 30 ft (9 m)
PPR heliports	$\frac{1}{3}$ RD but not less than 10 ft (3 m) **	$\frac{1}{3}$ RD but not less than 20 ft (6 m)**	$\frac{1}{2}$ D but not less than 20 ft (6 m)	$\frac{1}{2}$ D but not less than 30 ft (9 m)
TLOF perimeter marked	Yes	Yes	No	No
FATO perimeter marked	Yes	Yes	Yes	Yes
Standard "H" marking	Yes	No	Yes	No

D: Overall length of the design helicopter  
RD: Rotor diameter of the design helicopter  
\*\* Also applies when the FATO is not marked. Do not mark the FATO if (a) the FATO (or part of the FATO) is a non-load bearing surface and/or (b) the TLOF is elevated above the level of a surrounding load-bearing area.

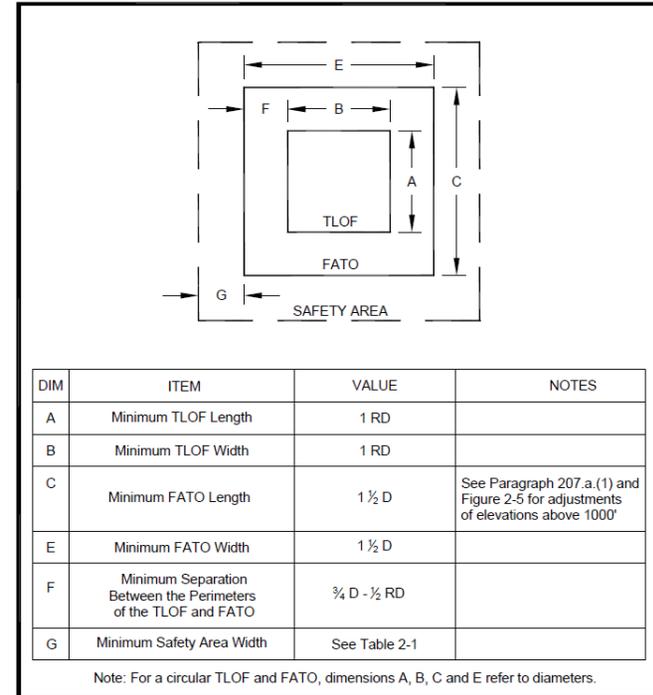


Figure 2-2. TLOF/FATO Safety Area Relationships and Minimum Dimensions: General Aviation

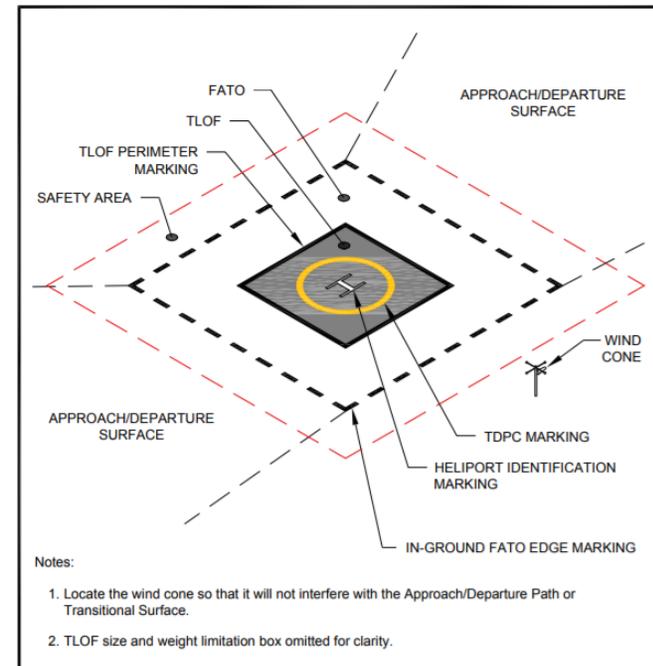
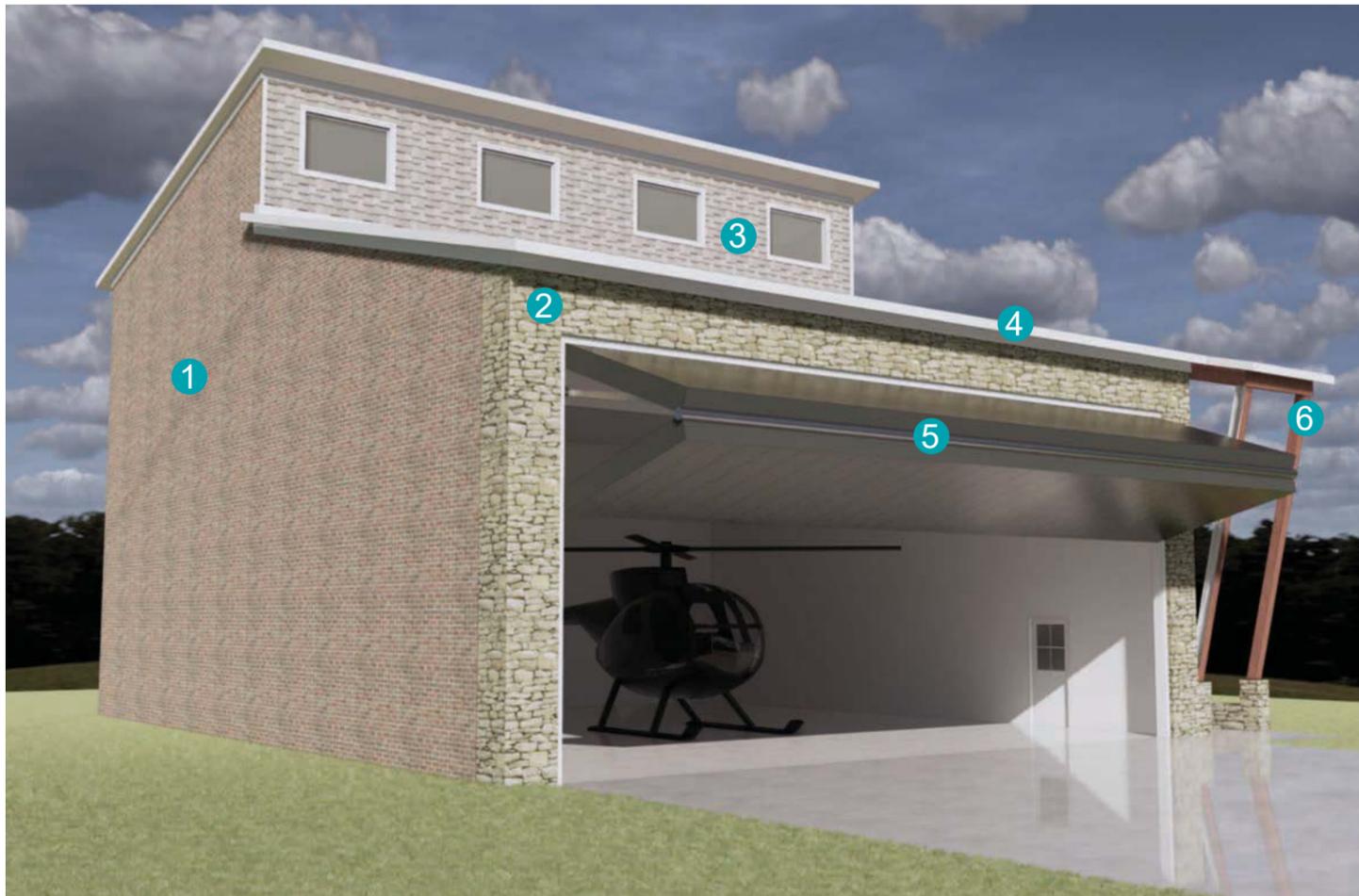


Figure 2-1. Essential Features of a Heliport: General Aviation

## materials

- 1 Brick to match veneer on house.
- 2 Stone to match veneer on house.
- 3 Hardie-board shakes to match veneer on house.
- 4 Architectural shingles to match existing. Slope = 3:12.
- 5 Bi-fold hangar door (steel).
- 6 Pressure treated 8x8 wood posts with stone bases.

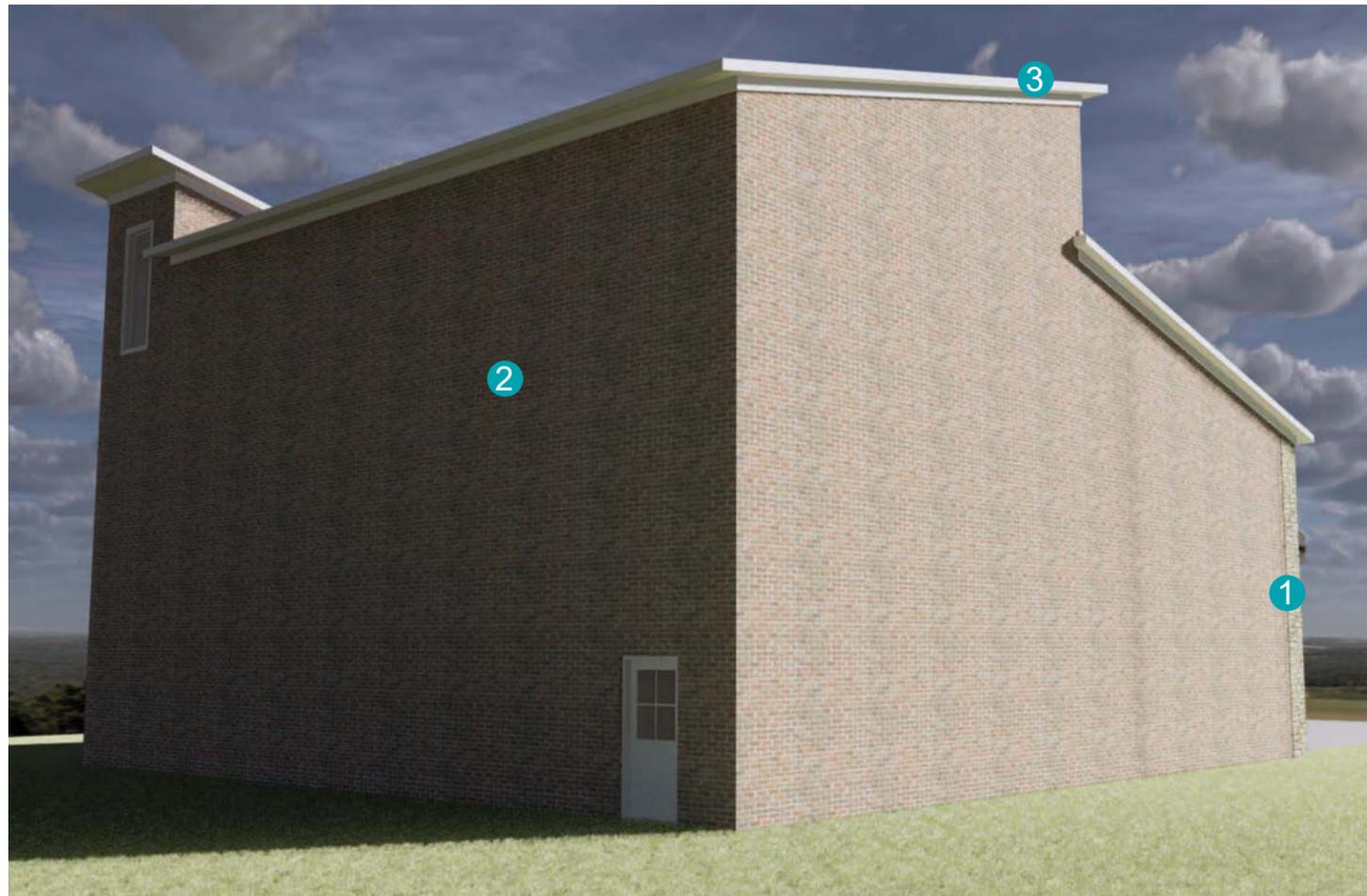
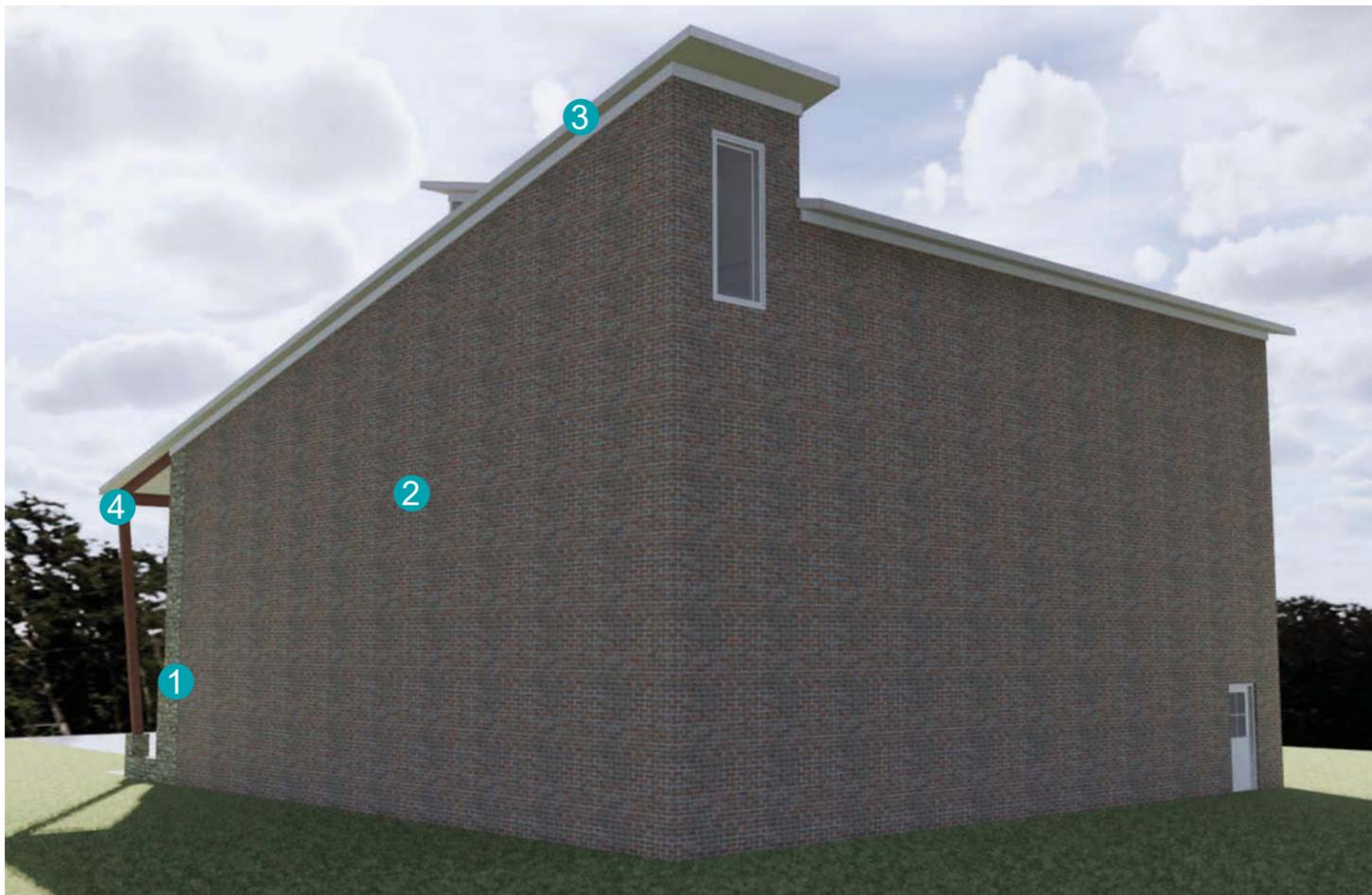


Helicopter Hangar for :

**Werner Barkhuizen**

4011 Abshire Ln., Concord, NC, 28025

**Carlos J. Moore**  
ARCHITECT, P.A.



## *materials*

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Helicopter Hangar for :

**Werner Barkhuizen**

4011 Abshire Ln., Concord, NC, 28025

**Carlos J. Moore**  
ARCHITECT, P.A.

**Federal Aviation Administration**

2600 Thousand Oaks Blvd

Suite 2250

Memphis, TN 38118

October 23, 2019

TO:

Werner Barkhuizen, Ph.D.

6801 Highgrove Place

Concord, NC 28027

werner@drwrnr.com

CC:

Werner Barkhuizen, Ph.D.

6801 Highgrove Place

Concord, NC 28027

werner@drwrnr.com

**NOTICE OF HELIPORT AIRSPACE ANALYSIS DETERMINATION  
ESTABLISH PRIVATE USE HELIPORT  
\*\*CONDITIONAL NO OBJECTION\*\***

The Federal Aviation Administration (FAA) has conducted an aeronautical study under the provisions of Title 14 of the Code of Federal Regulations, Part 157, concerning:

RE: *(See attached Table 1 for referenced case(s))*

Table 1 - Letter Referenced Case(s)

ASN	Prior ASN	Heliport Name	Description	Location	Latitude (NAD83)	Longitude (NAD83)	Heliport Elevation (feet)
2019-ASO-6369-NRA		WB Heliport	LAP ASN # 2019-ESA-92-LAP	Concord, NC	35-24-24.00N	80-30-54.00W	690

We have completed an airspace analysis to establish the subject private use heliport. As studied, the location is approximately 4 nautical miles E of Concord, NC.

Our aeronautical study has determined that the private use heliport will not adversely affect the safe and efficient use of airspace by aircraft provided the following conditions are met and maintained. Reference FAA Advisory Circular (AC) 150/5390-2, Heliport Design (Current version).

**Airports: No Objection with Provision:** It is recommended that the heliport meet the standards of FAA Advisory Circular 150/5390-2C, Heliport Design, including the Touchdown and Liftoff Area (TLOF), Final Approach and Takeoff Area (FATO), Safety Area, and 8:1 approach/departure surfaces.

**Air Traffic Obstruction Evaluation Group: No Objection with Provision:** Recommend all ingress/egress routes have at the very minimum a clear 8:1 visual approach slope and any Flight Standard's provisions must be satisfactorily addressed prior to issuing a determination.

This determination does not mean FAA approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of the navigable airspace by aircraft and with respect to the safety of persons and property on the ground. In making the determination, the FAA has considered matters such as the effect the proposal would have on existing or planned traffic patterns of neighboring airports, the effects it would have on the existing airspace structure and projected programs of the

FAA, the effects it would have on the safety of persons and property on the ground, and the effects that existing or proposed manmade objects (on file with the FAA) and known natural objects within the affected area would have on the heliport proposal.

The FAA cannot prevent the construction of structures near a heliport. The heliport environment can only be protected through such means as local zoning ordinances or acquisitions of property in fee title or aviation easements, letters of agreement, or other means. This determination in no way preempts or waives any ordinances, laws, or regulations of any government body or agency.

Please complete, sign, date, and return the enclosed Airport Master Record 5010 Form. Instructions for completing the form can be found online at <https://www.faa.gov> in AC 150/5200-35A, "Submitting the Airport Master Record in Order to Activate a New Airport". This action will ensure your heliport is activated.

In order to avoid placing any unfair restrictions on users of the navigable airspace, this determination is valid until 04/23/2021. Should the airport not be established and the Airport Master Record 5010-5 Form not returned by 04/23/2021, an extension of our determination should be requested in writing by 04/08/2021. Should you not elect to establish the airport, please notify the FAA in writing by 04/08/2021.

Be advised, in accordance with 14 CFR Part 157, any construction, alteration to, or abandonment of the subject heliport requires notice to the FAA for aeronautical review. Notice for these actions can be given using FAA Form 7480-1, "Notice for Construction, Alteration, and Deactivation of Airports", and returned to my attention.

If you have any questions concerning this determination or completion of the Airport Master Record form, please contact me at [cori.hudlet@faa.gov](mailto:cori.hudlet@faa.gov) or at (901) 322-8189.

Sincerely,

Cori Hudlet

ADO

**Signature Control No: 418936051-420740363**

Attachment: Airport Master Record 5010 Form



## NOTICE FOR CONSTRUCTION, ALTERATION AND DEACTIVATION OF AIRPORTS

<b>A. Airport Owner</b> <input checked="" type="checkbox"/> Check if this is also the Property Owner 1. Name and Address <input type="checkbox"/> Check if this is the Airport's Physical Address Werner Barkhuizen, Ph.D 6801 Highgrove Place Concord, NC 28027  2. Phone (704) 920-8061 3. Email werner@drwmrb.com		<b>B. Airport Manager</b> (Complete if different than the Airport Owner) 1. Name and Address <input type="checkbox"/> Check if this is the Airport's Physical Address Werner Barkhuizen, Ph.D 6801 Highgrove Place Concord, NC 28027  2. Phone (704) 920-8061 3. Email werner@drwmrb.com		
<b>C. Purpose of Notification</b> (Answer all questions that apply)		<b>D. Name, Location, Use and Type of Landing Area</b>		
1. Construct or Establish an:	<input type="checkbox"/> Airport <input type="checkbox"/> Ultralight Flightpark <input type="checkbox"/> Balloonport <input checked="" type="checkbox"/> Heliport <input type="checkbox"/> Seaplane Base <input type="checkbox"/> Other	1. Name of Landing Area WB Heliport	2. Loc ID (for existing)	
2. Construct, Alter or Realign a:	<input type="checkbox"/> Runway <input checked="" type="checkbox"/> Helipad(s) <input type="checkbox"/> Other <input type="checkbox"/> Taxiway (Public Use Airports only)	3. Associated City and State Concord, North Carolina	4. Distance from City 4 (nm)	
3. Change Status From/To:	<input type="checkbox"/> VFR to IFR <input type="checkbox"/> IFR to VFR <input type="checkbox"/> Private Use to Public Use <input type="checkbox"/> Public Use to Other	5. County (Physical Location) Cabarrus	6. Direction from City East	
4. Change Traffic Pattern:	<input type="checkbox"/> Direction _____ <input type="checkbox"/> Altitude _____ <input type="checkbox"/> Other (Describe Below)	7. Latitude 35° 24' 24"	8. Longitude 80° 30' 54" 9. Elevation 690	
5. Deactivate:	<input type="checkbox"/> Airport <input type="checkbox"/> RWY _____ <input type="checkbox"/> TWY _____	10. Current Use:	<input checked="" type="checkbox"/> Private <input type="checkbox"/> Public <input type="checkbox"/> Private Use of Public Lands	
6. Description: New helipad for private use of light single engine, or twin engine helicopters at 4011 Abshire Lane, Concord, NC 28025		11. Ownership:	<input checked="" type="checkbox"/> Private <input type="checkbox"/> Public <input type="checkbox"/> Military (Branch) _____	
		12. Airport Type:	<input type="checkbox"/> Airport <input type="checkbox"/> Ultralight Flightpark <input type="checkbox"/> Balloonport <input checked="" type="checkbox"/> Heliport <input type="checkbox"/> Seaplane Base <input type="checkbox"/> Other	
<b>E. Landing Area Data</b> (List any Proposed, New or Unregistered Runways, Helipads etc.)				
1. Airport, Seaplane Base or Ultralight Flightpark (use second page if needed)		2. Heliport, Balloonport or other Landing Area (use second page if needed)		
RWY ID	/	/	Helipad ID	H1
Lat. & Long.	Show on attachment(s)	Show on attachment(s)	Lat. & Long.	Show on attachment(s) Show on attachment(s)
Surface Type			Surface Type	Concrete
Length (feet)			TLOF Dimensions	50' x 50'
Width (feet)			FATO Dimensions	71' x 71'
Lighting (if any)			Lighting (if any)	None
Right Traffic (Y/N)	/	/	Ingress/Egress (Degrees)	2
Elevation (AMSL)	Show on attachment(s)	Show on attachment(s)	Elevation (AMSL)	Show on attachment(s) Show on attachment(s)
VFR or IFR	/	/	Elevated Height (AGL)	
<b>F. Operational Data</b> (Indicate if the number provided is Actual or Estimated)				
	1. Number of Based Aircraft		2. Average Number of Monthly Landings	
	Present or Estimated	Estimated in 5 Years	Present or Estimated	Estimated in 5 Years
Single Engine				
Multi Engine				
Jet				
Helicopter	1	1	12	12
Glider				
Military				
Ultralight				
3. What is the Most Demanding Aircraft that operates or will operate at the Airport? (Provide approach speed, rotor diameter, etc. if known) Bell 407, approach speed 0-15 knots, rotor diameter 35', length 41' 8"				
4. Are IFR Procedures for the Airport Anticipated? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No if Yes, Within _____ Years				
<b>G. CERTIFICATION:</b> I hereby certify that all of the above statements made by me are true and complete to the best of my knowledge.				
1. Name, title of person filing this notice (type or print) Werner Barkhuizen, Ph.D.		2. Signature (in ink): 		
		3. Date 9/2/2019	4. Phone (704) 920-8061	5. Email werner@drwmrb.com

# AIRPORT MASTER RECORD

>1 ASSOC. CITY: Concord	4. STATE: North Carolina	LOC ID:	FAA SITE NR:
>2 AIRPORT NAME: WB Heliport		5 COUNTY: Cabarrus, NC	
3 CBD TO AIRPORT (NM): 4E	6 REGION/ADO: MEM	7 SECT AERO CHT: Charlotte	

**GENERAL**

**SERVICES**

**BASED AIRCRAFT**

10 OWNERSHIP: Private  
 11 OWNER: Werner Barkhuizen, Ph.D.  
 12 ADDRESS: 6801 Highgrove Place  
                   Concord, NC 28027  
  
 13 PHONE NR: 704.920.8061  
 14 MANAGER: Werner Barkhuizen, Ph.D.  
 15 ADDRESS: 6801 Highgrove Place  
                   Concord, NC 28027

>70 FUEL: None

90 SINGLE ENG:  
 91 MULTI ENG:  
 92 JET:  
     TOTAL  
  
 93 HELICOPTERS: 1  
 94 GLIDERS:  
 95 MILITARY:  
 96 ULTRA-LIGHT:

16 PHONE NR: 704.920.8061  
 17 ATTENDANCE SCHEDULE:  

<b>MONTHS</b>	<b>DAYS</b>	<b>HOURS</b>
ALL	ALL	ALL

**FACILITIES**

>80 ARPT BCN:  
 >81 ARPT LGT SKED:  
 >82 UNICOM:  
 83 WIND INDICATOR: Yes  
 84 SEGMENTED CIRCLE:  
 85 CONTROL TWR:  
 86 FSS:  
 87 FSS ON ARPT:  
 88 FSS PHONE NR:  
 89 TOLL FREE NR:

18 AIRPORT USE: Private  
 19 ARPT LAT: 35°24'23.79"N  
 20 ARPT LON: 80°30'54.55"W  
 21 ARPT ELEV: 690  
 22 ACREAGE: 14.5  
 >23 RIGHT TRAFFIC:  
 24 NON-COMM LANDING:

**RUNWAY DATA**

>30 RUNWAY IDENT:	H1
>31 LENGTH:	50
>32 WIDTH:	50
33 SURF TYPE-COND:	CONC

**LIGHTING/APCH AIDS**

>40 EDGE INTENSITY:  
 >42 RWY MARK TYPE-COND:

**OBSTRUCTION DATA**

50 PART 77 CATEGORY:	/	/	/	/	/
51 DISPLACED THLD:	/	/	/	/	/
52 CTLG OBSTN:	/	/	/	/	/
53 OBSTN MARKED/LGTD:	/	/	/	/	/
54 HGT ABOVE RWY END:	/	/	/	/	/
55 DIST FROM RWY END:	/	/	/	/	/

>> ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY>>

>110 REMARKS:



9/2/2019

111 OWNER/MANAGER SIGNATURE

113 DATE:



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

November 20, 2019

Werner Barkhuizen, Ph.D.  
6801 Highgrove Place  
Concord NC 28027

Dr. Barkhuizen,

I received the Federal Aviation Administration aeronautical study for your proposed heliport. Attached is your executed permit for state licensing of your heliport in Cabarrus County. This completes your application.

Regards,

DocuSigned by:  
  
503552E3DEB8446E

Robert Barrier, PE  
State Transportation Asset Manager

cc w/attachments:      Brett Canipe, PE      Division Engineer  
                                 Jimmy Capps              Division of Aviation

# Exhibit I

## ADJACENT PROPERTY OWNERS

	<b>NAME</b>	<b>ADDRESS</b>	<b>PIN</b>
<b>1</b>	ROBERT GLENN FAGGART JR	525 LAKE LYNN ROAD CONCORD, NC 28025	56408705310000
<b>2</b>	DAVID F RHODES	4025 ABSHIRE LANE CONCORD, NC 28025	56408761420000
<b>3</b>	DAVID F RHODES	4025 ABSHIRE LANE CONCORD, NC 28025	56409619170000
<b>4</b>	WILLIAM D HOWELL	4012 ABSHIRE LANE CONCORD, NC 28025	56409626550000
<b>5</b>	KEITH THOMAS JOYNER	4018 ABSHIRE LANE CONCORD, NC 28025	56409647400000
<b>6</b>	VINCENT E NASH	4006 ABSHIRE LANE CONCORD, NC 28025	56409623510000
<b>7</b>	JOEL E STEEN	111 MAYFIELD COURT CONCORD, NC 28027	56408693610000
<b>8</b>	TONY ALLEN MILLER	4001 ABSHIRE LANE CONCORD, NC 28025	56408599970000
<b>9</b>	JOSEPH PETTIS	3620 AMSBURY ROAD CONCORD, NC 28025	56408489030000
<b>10</b>	JEFFREY KARL MULLIS	8713 WINDMERE CROSSING LANE CHARLOTTE, NC 28226	56407488170000



**Cabarrus County Government – Planning and Development Department**

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August 17, 2020

Dear Property Owner:

A Conditional Use Permit Application has been filed in our office for property adjacent to yours. The properties and specifics of the rezoning are listed below. The Cabarrus County Board of Adjustment will consider this petition on Wednesday, September 9 at 7:00 PM at the Cabarrus Arena and Events Center in the Cabarrus Room located at 4751 NC Highway 49, Concord, North Carolina 28025. A Public Hearing will be conducted and public input will be allowed during that time. If you have any comments about the rezoning, I encourage you to attend this meeting.

<b>Petitioner</b>	<b>Intellectus Sigman, LLC</b>
<b>Petition Number</b>	<b>CUSE2020-00001</b>
<b>Property Location</b>	<b>4011 Abshire Lane</b>
<b>Parcel ID Number</b>	<b>5640-86-5402</b>
<b>Existing Zoning</b>	<b>Agricultural/Open Space (AO)</b>
<b>Conditional Use Request</b>	<b>Helipad</b>

If you have any questions regarding this petition, or the hearing process, please contact me at Cabarrus County Planning and Development at 704.920.2149.

Sincerely,

Boyd V. Stanley, AICP  
Senior Planner  
Cabarrus County Planning and Development



**Cabarrus County Government – Planning and Development Department**

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August 17, 2020

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Sincerely,

*Boyd V. Stanley*

Boyd V. Stanley, AICP  
Senior Planner  
Cabarrus County Planning and Development

PLANNING STAFF REPORT  
 CABARRUS COUNTY PLANNING AND ZONING COMMISSION  
 09/09/2020

Staff Use Only:  
 Approved: \_\_\_\_\_  
 Denied: \_\_\_\_\_  
 Tabled \_\_\_\_\_

**Conditional Use Permit: CUSE2020-00002**

**Applicant Information:** Diamond Communications, LLC  
 820 Morris Turnpike, Suite 104  
 Short Hills, NJ 07078

**Owner Information:** Nathaniel James McManus, Jr.  
 12020 McManus Road  
 Midland, NC 28107

**PIN#:** 5554-89-1609

**Area in Acres:** +/- 35.35 ac

**Purpose of Request:** This request is to construct a 199 foot tall (195 feet plus a 4 foot lightning rod) Wireless Telecommunications Tower (WTC) on the subject property. The property is currently zoned Low Density Residential (LDR) district. WTC towers are permitted in the LDR district with the issuance of a Conditional Use Permit.

**Site Description:** The subject property is located on McManus Road. Town of Midland municipal limits bound the property to the north, south and west. Currently, several non-residential structures occupy a portion of the western side of the subject property near McManus Road. The subject property is within the Present Use Value program (bona fide farm). The applicant is proposing a 20-foot wide gravel access drive that extends approximately 835' from McManus Road to the leased area which is 10,000 square feet in size. The compound area, within the leased area, is proposed to be 2500 square feet in size. A small portion of the rear (eastern side) of the subject property is located within the flood plain of Rocky River. Rocky River and identified wetlands are subject to the Waterbody Buffer Zone requirements of Chapter 4.

**Current Land Uses:** The current land use of the subject property is single family residential.

**Adjacent Land Uses:** The subject property is surrounded by residential and agricultural uses and vacant properties.

**Permitted Uses:** Any use permitted within the Low Density Residential (LDR) district would be permitted on the subject property.

Existing Zoning: LDR (Low Density Residential)

Surrounding Zoning: North: Midland AG (Agriculture) and Midland C 24/27 (NC 24/27 Commercial)  
East: Midland AG (Agricultural/Open Space)  
South: LDR (Low Density Residential) & Midland AG (Agriculture)  
West: Midland AG (Agriculture)

Signs Posted: 08/17/2020

Newspaper Notification: 08/26/2020

Newspaper Notification 2: 009/02/2020

Notification Letters: 08/17/2020

#### Exhibits

- A. Staff Report
- B. Application
- C. Site Plan
- D. Project Narrative and Statement of Compliance
- E. Staff Maps
- F. FirstNet Information
- G. Surrounding Property Owner information
- H. Elevation Certificate
- I. Lease
- J. Search Ring
- K. Search Letter
- L. Tower Inventory
- M. Coverage Analysis
- N. Photos of Site
- O. Statement of FCC Compliance
- P. Letter of Intent and Comment to Accommodate Collocation
- Q. Determination of No Air Hazard
- R. Structural Report
- S. Removal Bond
- T. Correspondence with State Agencies
- U. NCDOT Driveway Permit
- V. Property Impact Study
- W. Soil & Water Conservation District comments

## Agency Review Comments

### **EMS Review: Approved**

*No comments. (Per Justin Brines, EMS Assistant Director).*

### **Erosion Review: Approved**

*As long as this project remains under an acre then a formal erosion control plan will not be required. As a reminder the Financially Responsible party of the project is required to maintain sediment control measures sufficient to prevent sediment from leaving the site regardless even if the site is less than an acre. (Chris Graybeal, Assistant Regional Engineer)*

### **Fire Review: Approved**

*Approved as shown on revisions received on 08/20/2020. Site plan must include a statement stating that the access road is able to support the imposed load of 75000 pounds in all weather conditions. (Matthew Hopkins, Assistant Fire Marshal)*

### **Health Review: Approved**

*Since no wastewater will be generated with this proposal, then approval is given. (Chrystal Swinger, Director of Environmental Health)*

### **NCDOT Review: Approved**

*A driveway permit for this one has already been approved. (Jeff Burlison, Assistant District Engineer)*

### **Sheriff Review: Approved**

*No Comments. (Ray Gilleland, Lieutenant)*

### **Soil-Water Conservation Review: Approved**

*Our only concern with this property's conditional use is that it will take some prime farmland out of possible agricultural use. See attached soil survey which shows that most of the property is prime and/or farmland of state importance.*

*"Soil surveys can be used for general farm, local, and wider area planning. Onsite investigation is needed in some cases, such as soil quality assessments and certain conservation and engineering applications."-Web Soil Survey operated by the USDA Natural Resource Conservation Service. (Per Tammi Remsburg, Resource Conservation Coordinator)*

### **Zoning Review: Approved**

*Phillip Collins: See Staff Report*

## History / Other Information

1. The applicant provided documentation compliant with Section 8-3 of the Cabarrus County Zoning Ordinance, petitioning for a Conditional Use.

2. The applicant submitted a complete application including a "Project Narrative and Statement of Compliance" sheet along with a site plan.
3. The subject property is approximately 35.35 acres in size. The lease area is approximately 10,000 square feet in size.
4. Currently, several non-residential structures occupy a portion of the western side of the subject property near McManus Road.
5. The applicant is proposing to construct a Wireless Telecommunications Tower facility on the subject property.
6. The applicant is proposing a connection to McManus Road and has provided the NCDOT driveway permit as required.
7. The FAA has issued a Determination of No Hazard to Air Navigation for this site that expires on January 3, 2021, unless otherwise stated in the Determination. At the time of the review the applicant was intending for the tower to be a height of 205 feet and the FAA placed a condition on the approval of the tower that it be lighted to meet the FAA specifications. Since that time, the applicant reduced the height of the tower to 195 (with a 4 foot lighting rod). The FAA does not require towers less than 200 feet in height to be lighted. Therefore, this tower will not need to be lighted.

#### **Conditions of Approval**

Should the Board of Adjustment grant approval of the Conditional Use Permit, Staff requests the following conditions become part of the approval and case record:

1. Site plan review and approval is required subsequent to Board of Adjustment approval in order to ensure compliance with all applicable development requirements and conditions. (Zoning)
2. The Granting Order, stating restrictions and applicable conditions of approval shall be recorded with the deed for the property and prior to zoning permitting. (Zoning)
3. The applicant shall procure any and all applicable federal, state, and local permits prior to zoning permitting. (Zoning)
4. Any proposed future expansion of property, as well as modifications or changes to approved site plan, must receive Board of Adjustment approval in the form of an amendment to the Conditional Use Permit. (Zoning)
5. The applicant shall provide copies of all state, local, and federal permits for the permanent project file prior to zoning permitting. (Zoning)

6. Applicant shall comply with all applicable terms of NCDOT Driveway Permit C-1846. (NCDOT/Zoning)
7. Prior to zoning permitting, the applicant shall have the Determination of No Hazard letter from the FAA updated to address the current proposed tower height. A copy of the updated letter shall be provided for the project file. (Zoning)
8. The applicant shall file the 7460-2 form with the FAA if the project is abandoned or within five days after construction reaches its greatest height. A copy of said filing shall be provided to Planning for the project file. (FAA)
9. The applicant shall increase the amount of the bond submitted to accommodate the 1.25 times the amount of the estimate as required by Chapter 8, Number 36, Section 11 of the Cabarrus County Development Ordinance. The bond submitted was for \$75,000.00. The correct amount for the bond is \$93,750.00. An updated bond shall be submitted prior to zoning permitting. (Zoning)
10. Site plan must include a statement stating that the access road is able to support the imposed load of 75,000 pounds in all weather conditions. (Fire Marshal)



## CONDITIONAL USE PERMIT APPLICATION

### STAFF USE ONLY:

Application/Accela#: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

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

Amount Paid: \_\_\_\_\_

### INSTRUCTIONS/PROCEDURES:

1. Schedule a pre-application meeting with Staff to discuss the procedures and requirements for a Conditional Use Permit request.

Date of Pre-Application Meeting: July 8, 2019 Staff Facilitator(s): Phil Collins

2. Submit a complete application to the Planning Division. All applications must include the following:
  - Cabarrus County Land Records printout of all adjacent property owners. This includes properties located across the right-of-way and all on-site easement holders. The list must include owner name, address, and Parcel Identification Number.
  - A recent survey or legal description of the property.
  - 15 folded copies of the proposed site plan.
  - Any additional documents essential for the application to be considered complete. (Determined at pre-application meeting)
3. Submit cash, check, or money order made payable to Cabarrus County.
 

Fees: Conditional Use Permit \$650.00 +\$15.00 *per acre*  
(Plus cost of advertising and engineering fees if applicable)  
(if a 3<sup>rd</sup> submittal is required, an additional review fee will be assessed)

The deadline for submittal is always the same day as the Planning and Zoning Commission Meeting which is the second Tuesday of the month. Applications must be submitted before 2:00 PM that day for consideration on the next available agenda.

**Incomplete applications will be returned to the applicant and will not be processed.**

### PROCESS SUMMARY:

1. Hold a pre-application meeting with Staff to discuss your Conditional Use Permit request and the Conditional Use Permit process.
2. Submit a complete application with the appropriate fees to the Cabarrus County Planning Division.

Staff and appropriate agents will review your complete application and site plan and comments will be forwarded to you. You will need to address the comments in writing, revise the site plan accordingly and resubmit a site plan showing that all comments are addressed and errors corrected.

3. Once advised that the site plan is correct and ready to be presented to the Board of Adjustment, you will need to submit 18 folded copies of the plan.
4. When the copies of the plan are received, Staff will begin to prepare a staff report, schedule a public meeting date and notify adjacent property owners of the public meeting/public hearing date. A sign advertising the public hearing will also be placed on the property being considered for the Conditional Use Permit.

**Meeting Information:** Meetings are held the second Tuesday of each month at 6:30 PM in the Cabarrus County Governmental Center located in downtown Concord at 65 Church Street, SE.

**Conditional Use Permit:** Conditional Use Permits are considered by the Board of Adjustment during a quasi-judicial hearing. This means that anyone wishing to speak regarding the application must be sworn in. The vote requirement for the Conditional Use Permit to pass is a simple majority. Additional conditions may be added as part of the Conditional Use Permit approval process.

**Questions:** Any questions related to the Conditional Use Permit process may be directed to the Planning Division at 704-920-2141, between 8 AM and 5 PM, Monday through Friday.

**TO THE BOARD OF ADJUSTMENT:**

**I HEREBY PETITION THE BOARD OF ADJUSTMENT TO GRANT THE ZONING ADMINISTRATOR THE AUTHORITY TO ISSUE A CONDITIONAL USE PERMIT FOR THE USE OF THE PROPERTY AS DESCRIBED BELOW.**

**APPLICANT**

Diamond Communications LLC

NAME

820 Morris Turnpike, Suite 104

ADDRESS

Short Hills, NJ 07078

CITY, STATE, ZIP CODE

610-585-6853

PHONE NUMBER

FAX NUMBER

twaniewski@diamondcomm.com

E-MAIL ADDRESS

**PROPERTY OWNER**

Nathaniel James McManus, Jr.

NAME

12020 McManus Road

ADDRESS

Midland, NC 28107

CITY, STATE, ZIP CODE

980-622-9770

PHONE NUMBER

FAX NUMBER

thanm@me.com

E-MAIL ADDRESS

**PARCEL INFORMATION:**

Existing Use of Property

Proposed Use of Property

Existing Zoning

Property Location

Property Acreage

Parcel Number (PIN)

Residence / Agriculture

Wireless Telecommunications Tower and Facility

Low Density Residential

11979 McManus Road, Midland, NC

35.35 acres

5554-89-1609-0000

**LAND USE OF ADJACENT PROPERTIES:**

**NORTH** PIN 5555808680 - Residence

PIN 5554898999 - Vacant

Page 2 of 5

PIN 5555704385 - Vacant

**SOUTH** PIN 5554791175 - Residence

PIN 5554797919 - Vacant

PIN 5554880443 - Agriculture

Updated: 01/01/2020

EAST PIN 5554997551 - Vacant

WEST PIN 5555702167 - Residence

McManus Road Right-of-Way

**GENERAL REQUIREMENTS:**

The Zoning Ordinance imposes the following general requirements on the use requested by the applicant. Under each requirement, the applicant should explain, with reference to the attached plans (when applicable) how the proposed use satisfies these requirements.

1. The Board must find that the uses(s) as proposed "are not detrimental to the public health, safety or general welfare."

\_\_\_\_\_  
Please refer to Applicant's Project Narrative included in the application binder.

2. The Board must find that the use(s) as proposed "are appropriately located with respect to transportation facilities, water supply, fire and police protection, waste disposal, etc."

\_\_\_\_\_  
Please refer to Applicant's Project Narrative included in the application binder.

3. The Board must find that the use(s) as proposed "will not violate neighborhood character nor adversely affect surrounding land uses."

\_\_\_\_\_  
Please refer to Applicant's Project Narrative included in the application binder.

4. The Board must find that the use(s) as proposed "will comply with the general plans for the physical development of the County or Town, as embodied in the Zoning Ordinance or in the area development plans that have been adopted."

\_\_\_\_\_  
Please refer to Applicant's Project Narrative included in the application binder.

**SPECIFIC REQUIREMENTS:**

The Zoning Ordinance also imposes SPECIFIC REQUIREMENTS on the use(s) requested by the applicant. The applicant should be prepared to demonstrate that, if the land is used in a manner consistent with the plans, specifications, and other information presented to the Board, the proposed use(s) will comply with specific requirements concerning the following:

Nature of use (type, number of units, and/or area):

\_\_\_\_\_  
The nature of the use will be a wireless telecommunications tower and facility.

Accessory uses (if any):

\_\_\_\_\_  
Please refer to Applicant's Project Narrative included in the application binder.

**SETBACK PROVISIONS:** Please refer to Sheet 2 of 3 of the Survey and Sheet C-2.4 included in the construction

Principle Use: drawings where all setbacks are shown, from the proposed tower as well as from the exterior of the fenced compound. All setbacks will be met and exceeded.

Front: \_\_\_\_\_ Side yard Single: \_\_\_\_\_ Side yard Total: \_\_\_\_\_ Rear: \_\_\_\_\_

Accessory Use:

Front: \_\_\_\_\_ Side yard Single: \_\_\_\_\_ Side yard Total: \_\_\_\_\_ Rear: \_\_\_\_\_

Height provisions: \_\_\_\_\_ Principle Use: \_\_\_\_\_ Accessory Use: \_\_\_\_\_

Off street parking and loading provisions: (include calculations)

Off street parking will not be necessary for this use. There will be an area where a service vehicle can park in the turnaround area at the front gate of the compound. Please refer to Sheet C-2.3 of the construction drawings.

Sign provisions: (include sketch drawing with dimensions)

Please refer to Sheet C-12 of the construction drawings for the sign provisions for this compound.

Provisions for screening landscaping and buffering: (show on site plan)

See Sheet C-2.3 and the Applicant's Project Narrative for landscaping details. The use of the natural surrounding mature vegetation on three sides of the property will be utilized as well as additional landscaping around the compound.

Provisions for vehicular circulation and access to streets: (provide NCDOT permit and/or TIA)

Per the NC DOT, a TIA will not be necessary for this project. See Tab 24 of the application binder.

Please refer to Tab 25 of the application binder for the NC DOT Street and Driveway Access Permit.

Adequate and safe design for grades, paved curbs and gutters, drainage systems, and treatment or turf to handle storm waters, prevent erosion, subdue dust:

Please refer to the Grading and Erosion Control Plan, Sheet C-2.4 of the construction drawings.

An adequate amount and safe location of play areas for children and other recreational uses according to the concentration of residential property:

This will not be applicable to this project.

Compliance with applicable overlay zones: (see Chapter 4 of Zoning Ordinance)

There is no overlay zone for this area.

Compliance with the Flood Damage Prevention Ordinance: (see County Code Chapter 38)

The proposed site will be in compliance with same. Please refer to the Water Body Buffer Zones as shown on Survey Sheet 1 of 3 of the construction drawings.

Other requirements may be requested by the applicant or specified by the Board for protection of the public health, safety, welfare, and convenience:

Acknowledged. Please also refer to the Applicant's Project Narrative which provides greater detail to compliance with the Cabarrus County Development Ordinance.

**PREDEFINED STANDARDS:**

**Each individual Conditional Use listed in the Zoning Ordinance may have specific standards imposed. Refer to Chapter 8, the Conditional Use section of the Zoning Ordinance for these requirements. Each standard should be addressed in the site plan submitted along with this application.**

**CERTIFICATION:**

I hereby confirm that the information contained herein and herewith is true and correct and that this application shall not be scheduled for official consideration until all of the required contents have been submitted to the Planning and Development Department.

Signature of Applicant  Date: 4/10/20  
Tom Waniewski, Sr. Vice President, Diamond Communications LLC

Signature of Owner \_\_\_\_\_ Date: \_\_\_\_\_  
Nathaniel James McManus, Jr.

Signature of Agent \_\_\_\_\_ Date: \_\_\_\_\_  
Karen M. Kemerait, Fox Rothschild LLP

Signature of Applicant \_\_\_\_\_ Date: \_\_\_\_\_

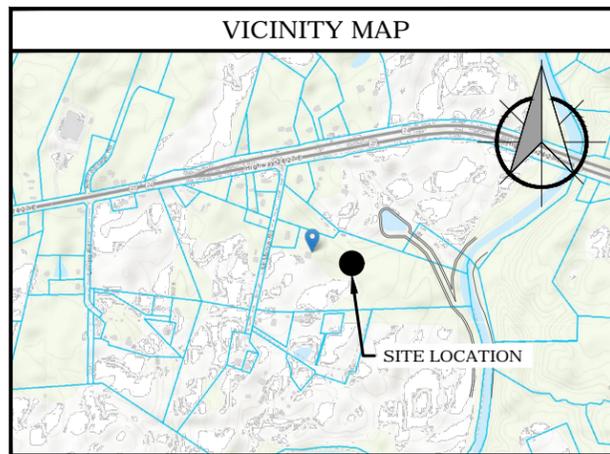
Tom Waniewski, Sr. Vice President, Diamond Communications LLC

Signature of Owner Nathaniel James McManus, Jr. Date: 6/10/2020

Nathaniel James McManus, Jr.

Signature of Agent Karen M. Kemerait Date: 7/10/2020

Karen M. Kemerait, Fox Rothschild LLP



SCALE: 1:2000

DIRECTIONS

FROM AT&T OFFICE: 2002 PISGAH CHURCH ROAD, SUITE 300, GREENSBORO, NC 27455  
 START OUT GOING SOUTHEAST ON PISGAH CHURCH RD TOWARD LAWNDALE DR. TURN LEFT ONTO LAWNDALE DR. USE ANY LANE TO TURN SLIGHTLY LEFT ONTO BATTLEGROUND AVE. CONTINUE ONTO W SMITH ST. TURN RIGHT ONTO N SPRING ST. USE THE LEFT 2 LANES TO TURN SLIGHTLY ONTO FREEMAN MILL RD. CONTINUE ONTO US HWY 220 S. TAKE EXIT 79 FOR I-85 BUS TOWARD CHARLOTTE/HIGH POINT. MERGE ONTO I-85BL S. KEEP LEFT TO CONTINUE ON I-85 S. TAKE EXIT 60 FOR DALE EARNHARDT BLVD TOWARD COPPERFIELD BLVD. USE THE LEFT 2 LANES TO TURN LEFT ONTO DALE EARNHARDT BLVD. CONTINUE ONTO COPPERFIELD BLVD NE. TURN LEFT ONTO NC-3 S/BANCHVIEW DR NE. USE ANY LANE TO TURN SLIGHTLY LEFT ONTO US-601 S. TURN LEFT ONTO NC-24 E/NC-27 E. TURN RIGHT ONTO MCMANUS RD. TOWER WILL BE ON YOUR LEFT.

# NSB - RAWLAND CONSTRUCTION DRAWINGS



FA #: 12829624      SITE ID: 074-4106

SITE NAME:  
**MCMANUS**

DIAMOND SITE NUMBER:

**NC042**

SITE ADDRESS:  
**11979 MCMANUS RD  
MIDLAND, NC 28107  
(CABARRUS COUNTY)**



SCALE: N.T.S



SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
10/30/19	REVISED	6	SRF
12/09/19	REVISED	7	SRF
04/13/20	REVISED	8	SRF
04/24/20	REVISED	9	SRF
08/17/20	COUNTY COMMENTS	10	MKW

DRAWN BY: SRN  
 CHECKED BY: HGS  
 APPVD BY: MCS  
 DEWBERRY PROJECT NO: 50107722

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PREPARED FOR:

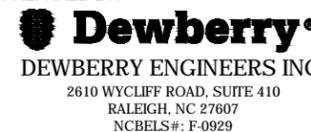


PREPARED FOR:



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:



SITE ID:  
074-4106

SITE NAME:  
MCMANUS

SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
TITLE SHEET

SHEET NUMBER  
T-1

SHEET INDEX			
SHEET	DESCRIPTION	REV.	REV. DATE
T-1	TITLE SHEET	10	08/17/20
AB-1	APPENDIX B	10	08/17/20
GN-1	GENERAL NOTES	10	08/17/20
GN-2	EROSION CONTROL NOTES	10	08/17/20
GN-3	TRAFFIC CONTROL NOTES	10	08/17/20
1 OF 3	SITE SURVEY BY OTHERS □	F	08/14/20
2 OF 3	SITE SURVEY BY OTHERS □	F	08/14/20
3 OF 3	SITE SURVEY BY OTHERS □	F	08/14/20
C-0	EXISTING CONDITIONS	10	08/17/20
C-1	OVERALL SITE PLAN/DEVELOPMENT PLAN	10	08/17/20
C-1.1	ENLARGED SITE PLAN/LANDSCAPE PLAN	10	08/17/20
C-2.1	GRADING & EROSION CONTROL PLAN	10	08/17/20
C-2.2	GRADING & EROSION CONTROL PLAN	10	08/17/20
C-3	ANTENNA LAYOUT & TOWER ELEVATION	10	08/17/20
C-4	EQUIPMENT DETAILS	10	08/17/20
C-5	CABINET DETAILS	10	08/17/20
C-5A	CABINET MOUNTING DETAILS	10	08/17/20
C-5B	CONCRETE AND FOUNDATION NOTES	10	08/17/20
C-6	CIVIL DETAILS	10	08/17/20
C-7	CIVIL DETAILS	10	08/17/20
C-8	CIVIL DETAILS	10	08/17/20
C-9	CIVIL DETAILS	10	08/17/20
C-10	CIVIL DETAILS	10	08/17/20
C-11	SITE SIGNAGE	10	08/17/20
E-1	SERVICE ROUTING PLAN AND DETAILS	10	08/17/20
E-2	ELECTRICAL NOTES	10	08/17/20
E-3	SINGLE LINE DIAGRAM	10	08/17/20
E-4	PANEL SCHEDULE	10	08/17/20
G-1	GROUNDING PLAN DETAILS	10	08/17/20
G-2	GROUNDING DETAILS	10	08/17/20
G-3	GROUNDING DETAILS	10	08/17/20
G-4	GROUNDING DETAILS	10	08/17/20
G-5	GROUNDING NOTES	10	08/17/20

GENERAL NOTES



THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, THEREFORE HANDICAP ACCESS IS NOT REQUIRED. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE, NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED. NO WORK SHALL COMMENCE WITHOUT THE APPROVED TOWER/ANTENNA MOUNT STRUCTURAL ANALYSIS REPORT SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA UNDER SEPARATE COVER.

CODE COMPLIANCE

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

- 2018 NORTH CAROLINA BUILDING CODE
- ANSII/TIA/EIA-222-G
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES
- FAA COMPLIANCE
- FCC COMPLIANCE
- 2017 NEC CODE COMPLIANCE
- 2015 INTERNATIONAL RESIDENTIAL CODE
- 2015 INTERNATIONAL FIRE CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2018 NC EXISTING BUILDING CODE BASED ON 2015 IEBC
- 2015 RESIDENTIAL CODES

SITE SUMMARY

SCOPE TYPE:	NSB - RAWLAND
OCCUPANCY TYPE:	TELECOMMUNICATIONS
STRUCTURE HEIGHT:	195'
STRUCTURE TYPE:	MONOPOLE
LATITUDE:	35° 15' 05.636" N (35.251566°)
LONGITUDE:	80° 28' 50.282" W (-80.480634°)
LIMITS OF DISTURBANCE:	31,155 SF (0.71 ACRES) □
JURISDICTION:	CABARRUS COUNTY
COUNTY:	CABARRUS
PARCEL ID:	5554-89-1609-0000

PROJECT DIRECTORY

PROPERTY OWNER:	NATHANIEL J. MCMANUS JR. 11979 MCMANUS ROAD MIDLAND, NC 28107
APPLICANT/TOWER OWNER:	DIAMOND COMMUNICATIONS, LLC 30 CHATHAM ROAD, UNIT 606 SHORT HILLS, NJ 07078 SCOTT VON REIN PHONE: :973-544-6834
PROJECT MANAGER:	DIAMOND COMMUNICATIONS, LLC 30 CHATHAM ROAD, UNIT 606 SHORT HILLS, NJ 07078 SCOTT VON REIN PHONE: :973-544-6834
SITE DESIGN:	DEWBERRY ENGINEERS INC. 2835 BRANDYWINE ROAD, SUITE 100 ATLANTA, GA 30341 CONTACT: MATTHEW SELKIRK, P.E. PHONE: :804-205-3361

**2018 APPENDIX B  
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS  
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)**  
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: **NC042/MCMANUS**  
Address: **11979 MCMANUS ROAD, MIDLAND, NC** Zip Code **28107**  
Owner/Authorized Agent: **DIAMOND COMMUNICATIONS** Phone # ( 973 ) 544 - 6834 E-Mail SVn@rain: diamondcom.com  
Owned By: LLC  City/County  Private  State   
Code Enforcement Jurisdiction:  City  County **CABARRUS**  State

**CONTACT:**

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural					
Civil	DEWBERRY ENGINEERS INC.	MATTHEW C. SELKIRK, PE	050147	(804) 205-3361	MSELKIRK@DEWBERRY.COM
Electrical					
Fire Alarm					
Plumbing					
Mechanical					
Sprinkler-Standpipe					
Structural					
Retaining Walls >5' High					
Other					

(\*Other\* should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

**2018 NC BUILDING CODE:**  New Building  Addition  Renovation  
 1<sup>st</sup> Time Interior Completion  
 Shell/Cor - Contact the local inspection jurisdiction for possible additional procedures and requirements  
 Phased Construction - Shell/Cor - Contact the local inspection jurisdiction for possible additional procedures and requirements

**2018 NC EXISTING BUILDING CODE:** EXISTING:  Prescriptive  Repair  Chapter 14  
Alteration:  Level I  Level II  Level III  
 Historic Property  Change of Use

**CONSTRUCTED:** (date) \_\_\_\_\_ **CURRENT OCCUPANCY(S)** (Ch. 3): \_\_\_\_\_  
**RENOVATED:** (date) \_\_\_\_\_ **PROPOSED OCCUPANCY(S)** (Ch. 3): \_\_\_\_\_

**OCCUPANCY CATEGORY** (Table 1004.5): Current:  I  II  III  IV  
Proposed:  I  II  III  IV

**BASIC BUILDING DATA**  
Construction Type:  I-A  II-A  III-A  IV  V-A  
(check all that apply)  I-B  II-B  III-B

Sprinklers:  No  Partial  Yes  NFPA 13  NFPA 13R  NFPA 13D

Standpipes:  No  Yes Class  I  II  III  Wet  Dry

Fire District:  No  Yes **Flood Hazard Area:**  No  Yes

Special Inspections Required:  No  Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

**2018 NC Administrative Code and Policies**

**Gross Building Area Table**

FLOOR	EXISTING (SQ FT)	New (SQ FT)	SUB-TOTAL
2 <sup>nd</sup> Floor			
2 <sup>nd</sup> Floor			
Mezzanine			
1 <sup>st</sup> Floor			
Basement			
TOTAL			

**ALLOWABLE AREA**

Primary Occupancy Classification(s):  Select one  Select one  Select one  Select one  Select one

Assembly  A-1  A-2  A-3  A-4  A-5  
Business   
Educational   
Factory  F-1 Moderate  F-2 Low  
Hazardous  H-1 Detonate  H-2 De/Inflam  H-3 Combust  H-4 Health  H-5 HPM  
Institutional  I-1 Condition  I 1 2  
I-2 Condition  I 1 2  
I-3 Condition  I 1 2 3 4 5  
I-4  
Mercantile   
Residential  R-1  R-2  R-3  R-4  
Storage  S-1 Moderate  S-2 Low  High-piled  
 Parking Garage  Open  Enclosed  Repair Garage  
Utility and Miscellaneous

Accessory Occupancy Classification(s): \_\_\_\_\_  
Incidental Uses (Table 509): \_\_\_\_\_  
Special Uses (Chapter 4 - List Code Sections): \_\_\_\_\_  
Special Provisions: (Chapter 5 - List Code Sections): \_\_\_\_\_  
Mixed Occupancy:  No  Yes Separation: \_\_\_\_\_ Hr. Exception: \_\_\_\_\_  
 Non-Separated Use (508.3) - The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, as determined, shall apply to the entire building.  
 Separated Use (508.4) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.  
$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$
  
$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} + \dots \leq 1.00$$

**2018 NC Administrative Code and Policies**

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 AREA	(C) AREA FOR FRONTAGE INCREASE <sup>1,2</sup>	(D) ALLOWABLE AREA PER STORY OR UNLIMITED <sup>3</sup>

<sup>1</sup> Frontage area increases from Section 506.2 as computed hereinafter:  
a. Perimeter which fronts a public way or open space has a width = \_\_\_\_\_ (F)  
b. Total Building Perimeter = \_\_\_\_\_ (P)  
c. Ratio (F/P) = \_\_\_\_\_ (R/P)  
d. W = Minimum width of driveway = \_\_\_\_\_ (W)  
e. Percent of frontage increase =  $100(F/P) - 100(W/P) =$  \_\_\_\_\_ (%)  
<sup>2</sup> Unlimited area applicable under conditions of Section 507.  
<sup>3</sup> Maximum Building Area = number of stories in building x D (Maximum 3 stories) (506.2).  
<sup>4</sup> The maximum area of a building shall be limited to the area of the lot on which it is located, except as otherwise provided in Table 406.5.4. The maximum area of air traffic control towers maximum area shall be as provided in Table 406.5.4.  
<sup>5</sup> Frontage increase is based on perimeter of building.

**ALLOWABLE HEIGHT**

DESCRIPTION	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)			
Building Height in Stories (Table 504.4)			

<sup>1</sup> Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

**FIRE PROTECTION REQUIREMENTS**

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING (H/O)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, masts						
Roofing Walls						
Exterior						
North						
East						
West						
South						
Interior						
Neighboring Walls and Partitions						
Exterior walls						
North						
East						
West						
South						
Interior walls and partitions						
Floor Construction including supporting members and joists						
Floor Ceiling Assembly						
Columns Supporting Floors						
Roof Construction, including supporting beams and joists						
Roof Ceiling Assembly						
Columns Supporting Roof						
Shaft Enclosures - Exit						
Shaft Enclosures - Other						
Gender Separation						
Occupancy Fire Barrier Separation						
Party/Fire Wall Separation						
Smoke Barrier Separation						
Smoke Partition						
Tenant Dwelling Unit						
Staircase Unit Separation						
Incidental Use Separation						

\* Indicate section number permitting reduction

**PERCENTAGE OF WALL OPENING CALCULATIONS**

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)

**LIFE SAFETY SYSTEM REQUIREMENTS**

Emergency Lighting:  No  Yes  
Exit Signs:  No  Yes  
Fire Alarm:  No  Yes  
Smoke Detection Systems:  No  Yes  Partial  
Panic Hardware:  No  Yes

**LIFE SAFETY PLAN REQUIREMENTS**

Life Safety Plan Sheet #:

- Fire and/or smoke alarm locations (Chapter 9)
- Assumed and actual locations (not on site plan)
- Exterior wall opening protection (assumed property lines (705.8))
- Occupancy Use for each story as shown on the area calculation (Table 1004.1.2)
- Occupant loads for each story
- Exit access travel distances (1010.1.1)
- Common path of travel distances (1006.2.1 & 1006.3.2(1))
- Dead end lengths (1020.4)
- Clear exit widths for each exit door
- Maximum calculated occupant load capacity for each exit door as accommodate based on egress width (1005.3)
- Actual occupant load for each exit door
- A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
- Location of doors with panic hardware (1010.1.10)
- Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
- Location of doors with electromagnetic egress locks (1010.1.9.9)
- Location of doors equipped with hold-open devices
- Location of emergency escape windows (1030)
- The square footage of each fire area (202)
- The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
- Note any code exceptions or table notes that may have been utilized regarding the items above

**ACCESSIBLE DWELLING UNITS (SECTION 1107)**

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

**ACCESSIBLE PARKING (SECTION 1106)**

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	PROVIDED	REGULAR SPACES ACCESSIBLE	SPACES WITH # ACCESSIBLE	TOTAL # ACCESSIBLE PROVIDED
TOTAL					

**AMBIENT LIGHT REQUIREMENTS (SECTION 1101)**

USE	WATER	MALE	FEMALE	AVATOBLES	SHOWERS	DRINKING FOUNTAINS		
SPACE	EXIST'G	NEW	REQ'D	MALE	FEMALE	UNSEX	REGULAR	ACCESSIBLE

**SPECIAL APPROVALS**

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)

**ENERGY SUMMARY**

**ENERGY REQUIREMENTS:**  
The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code:  No  Yes (The remainder of this section is not applicable)

Exempt Building:  No  Yes (Provide code or statutory reference): \_\_\_\_\_

Climate Zone:  3A  4A  5A

Method of Compliance: Energy Code  Performance  Prescriptive  
ASHRAE 90.1  Performance  Prescriptive  
(If "Other" specify source here)

**THERMAL ENVELOPE (Prescriptive method only)**

**Roofing Assembly (each assembly)**  
Description of assembly: \_\_\_\_\_  
U-Value of total assembly: \_\_\_\_\_  
R-Value of insulation: \_\_\_\_\_  
Skylights in each assembly: \_\_\_\_\_  
U-Value of skylight: \_\_\_\_\_  
total square foot of skylights in each assembly: \_\_\_\_\_

**Exterior Walls (each assembly)**  
Description of assembly: \_\_\_\_\_  
U-Value of total assembly: \_\_\_\_\_  
R-Value of insulation: \_\_\_\_\_  
Openings (doors, windows, etc.) in each assembly: \_\_\_\_\_  
U-Value of opening: \_\_\_\_\_  
Solar heat gain coefficient: \_\_\_\_\_  
projection factor: \_\_\_\_\_  
Door R-Value: \_\_\_\_\_

**Walls below grade (each assembly)**  
Description of assembly: \_\_\_\_\_  
U-Value of total assembly: \_\_\_\_\_  
R-Value of insulation: \_\_\_\_\_

**Floors over unconditioned space (each assembly)**  
Description of assembly: \_\_\_\_\_  
U-Value of total assembly: \_\_\_\_\_  
R-Value of insulation: \_\_\_\_\_

**Floors slab on grade**  
Description of assembly: \_\_\_\_\_  
U-Value of total assembly: \_\_\_\_\_  
R-Value of insulation: \_\_\_\_\_  
Horizontal/vertical requirement: \_\_\_\_\_  
slab heated: \_\_\_\_\_

**2018 NC Administrative Code and Policies**

**2018 APPENDIX B  
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS  
STRUCTURAL DESIGN  
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)**

**DESIGN LOADS:**

Importance Factors: Snow (Is) 1.0  
Seismic (Is) 1.0

Live Loads: Roof N/A psf  
Accessible N/A psf  
Floor N/A psf

Ground Snow Load: 15 psf

Wind Load: Basic Wind Speed 89.1 mph (ASCE-7)  
Exposure Category C

**SEISMIC DESIGN CATEGORY:**  A  B  C  D

Provide the following Seismic Design Parameters:  
Risk Category (Table 1004.5)  I  II  III  IV  
Spectral Response Acceleration S<sub>s</sub> %g \_\_\_\_\_  
S<sub>1</sub> %g \_\_\_\_\_

Site Classification (ASCE 7)  A  B  C  D  E  F  
Data Source:  Field Test  Presumptive  Historical Data

Basic structural system  Bearing Wall  Dual w/Special Moment Frame  
 Building Frame  Dual w/Intermediate R/C or Special Steel  
 Moment Frame  Inverted Pendulum

Analysis Procedure:  Simplified  Equivalent Lateral Force  Dynamic

Architectural, Mechanical, Components anchored?  Yes  No

LATERAL DESIGN CONTROL: Earthquake  Wind

SOIL BEARING CAPACITIES:  
Field Test (provide copy of test report) \_\_\_\_\_ psf  
Presumptive Bearing capacity \_\_\_\_\_ psf  
File size, type, and capacity \_\_\_\_\_

**2018 APPENDIX B  
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS  
MECHANICAL DESIGN  
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)**

**MECHANICAL SUMMARY**

**MECHANICAL SYSTEMS, SERVICE SYSTEMS EQUIPMENT**

**Thermal Zone**  
winter dry bulb: \_\_\_\_\_  
summer dry bulb: \_\_\_\_\_

**Interior design conditions**  
winter dry bulb: \_\_\_\_\_  
summer dry bulb: \_\_\_\_\_  
relative humidity: \_\_\_\_\_

**Building loads**

**Building cooling loads**

**Mechanical Spacing Controlling System**  
Unitary  
description of unit: \_\_\_\_\_  
heating efficiency: \_\_\_\_\_  
cooling efficiency: \_\_\_\_\_  
size category of unit: \_\_\_\_\_  
Boiler  
Size category. If oversized, state reason: \_\_\_\_\_  
Chiller  
Size category. If oversized, state reason: \_\_\_\_\_

**List equipment efficiencies:** \_\_\_\_\_

**2018 APPENDIX B  
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS  
ELECTRICAL DESIGN  
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)**

**ELECTRICAL SUMMARY**

**ELECTRICAL SYSTEM AND EQUIPMENT**

Method of Compliance: Energy Code  Performance  Prescriptive  
ASHRAE 90.1  Performance  Prescriptive

**Lighting schedule (each assembly type)**  
lamp type required in fixture \_\_\_\_\_  
number of lamps in fixture \_\_\_\_\_  
ballast type in fixture \_\_\_\_\_  
number of ballasts in fixture \_\_\_\_\_  
total wattage in fixture \_\_\_\_\_  
total interior space area (entire building or space by space) \_\_\_\_\_  
total exterior wall area (specify) \_\_\_\_\_

**Additional Efficiency Package Options**  
(When using the 2018 NCCES, as required for ASHRAE 90.1)  
 C406.2 More Efficient Lighting Equipment Performance  
 C406.3 Reduced Lighting Power Density  
 C406.4 Enhanced Digital Lighting Controls  
 C406.5 On-Site Renewable Energy  
 C406.6 Dedicated Outdoor Air System  
 C406.7 Reduced Energy Use in Service Water Heating



**SUBMITTALS**

DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
10/30/19	REVISED	6	SRF
12/09/19	REVISED	7	SRF
04/13/20	REVISED	8	SRF
04/24/20	REVISED	9	SRF
08/17/20	COUNTY COMMENTS	10	MKW

DRAWN BY: SRN  
CHECKED BY: HGS  
APPVD BY: MCS  
DEWBERRY PROJECT NO: 50107722

THE INFORMATION CONTAINED IN THESE DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED THE WHOLE OR ANY PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF DIAMOND COMMUNICATIONS IS PROHIBITED.



PREPARED BY:  
**Dewberry®**  
DEWBERRY ENGINEERS INC.  
2610 WYCLIFF ROAD, SUITE 410  
RALEIGH, NC 27607  
NCBELS #: F-0929

SITE ID:  
074-4106

SITE NAME:  
MCMANUS

SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
APPENDIX B

SHEET NUMBER  
AB-1

GENERAL NOTES:

1. ALL REFERENCES MADE TO OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED AT&T OR IT'S DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF NORTH CAROLINA.
3. THE STRUCTURE SHALL BE DESIGNED IN ACCORDANCE WITH ANSI/TIA-222-G-2-2009. THIS CONFORMS TO THE REQUIREMENTS OF THE NORTH CAROLINA BUILDING CODE, 2018 EDITION.
4. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE NORTH CAROLINA BUILDING CODE, 2018 EDITION.
5. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
6. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERSEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
7. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND IT'S COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
8. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATION. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.
9. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR INSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK. RENTAL CHARGES, SAFETY, PROTECTION AND MAINTENANCE OF RENTED EQUIPMENT SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
11. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE AT&T PROJECT MANAGER.
12. BILL OF MATERIALS AND PART NUMBERS LISTED ON CONSTRUCTION DRAWINGS ARE INTENDED TO AID CONTRACTOR/OWNER. CONTRACTOR/OWNER SHALL VERIFY PARTS AND QUANTITIES WITH MANUFACTURER PRIOR TO BIDDING AND/OR ORDERING MATERIALS.
13. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
14. 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL STATE, COUNTY OR CITY ENGINEER.
15. THE CONTRACTOR SHALL REWORK DRY, SCARIFY, ETC. ALL MATERIAL NOT SUITABLE FOR SUBGRADE IN ITS PRESENT STATE. AFTER REWORKING, IF THE MATERIAL REMAINS UNSUITABLE, THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE WITH APPROVED MATERIAL. ALL SUBGRADES SHALL BE PROOFROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PAVING. ANY SOFT MATERIAL SHALL BE REWORKED OR REPLACED.
16. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL PIPES, DITCHES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURE IN OPERABLE CONDITION.
17. THE OWNER SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.
18. ANY BUILDINGS ON THIS SITE ARE INTENDED TO SHELTER EQUIPMENT WHICH WILL ONLY BE PERIODICALLY MAINTAINED AND ARE NOT INTENDED FOR HUMAN OCCUPANCY.
19. TEMPORARY FACILITIES FOR PROTECTION OF TOOLS AND EQUIPMENT SHALL CONFORM TO LOCAL REGULATIONS AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
20. THE CONTRACTOR AND ITS SUBCONTRACTORS SHALL CARRY LIABILITY INSURANCE IN THE AMOUNTS AND FORM IN ACCORDANCE WITH AT&T SPECIFICATIONS. CERTIFICATES DEMONSTRATING PROOF OF COVERAGE SHALL BE PROVIDED TO AT&T PRIOR TO THE START OF THE WORK ON THE PROJECT.
21. THE CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITY SERVICES TO VERIFY LOCATIONS OF EXISTING UTILITIES AND REQUIREMENTS FOR NEW UTILITY CONNECTIONS PRIOR TO EXCAVATING.
22. THE CONTRACTOR SHALL MAINTAIN THE JOB CLEAR OF TRASH AND DEBRIS. ALL WASTE MATERIALS SHALL BE REMOVED FROM THE SITE PRIOR TO SUBSTANTIAL COMPLETION AND PRIOR TO FINAL ACCEPTANCE. THE CONTRACTOR SHALL FURNISH ONE 55 GALLON BARREL, AND TRASH BAGS, AND SHALL REMOVE TRASH, DEBRIS, ETC., ON A DAILY BASIS.
23. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL CONDITIONS PRIOR TO SUBMITTING HIS PROPOSAL. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN ON THESE DRAWINGS WITH THOSE AT THE SITE. ANY VARIATION WHICH REQUIRES PHYSICAL CHANGE SHALL BE BROUGHT TO THE ATTENTION OF THE AT&T PROJECT ENGINEER FOR FACILITIES/CONSTRUCTION.
24. THE CONTRACTOR SHALL GUARANTEE THE WORK PERFORMED ON THE PROJECT BY THE CONTRACTOR AND ANY OR ALL OF THE SUBCONTRACTORS WHO PERFORMED WORK FOR THE CONTRACTOR ON THIS PROJECT. THE GUARANTEE SHALL BE FOR A FULL YEAR FOLLOWING ISSUANCE OF THE FINAL PAYMENT OF RETAINAGE. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.



SUBMITTALS

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DRAWN BY: SRN  
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 DEWBERRY PROJECT NO: 50107722

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PREPARED FOR:

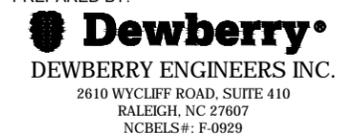


PREPARED FOR:



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:



SITE ID:  
074-4106

SITE NAME:  
MCMANUS

SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
GENERAL NOTES

SHEET NUMBER  
GN-1

EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

THIS PROJECT INCLUDES THE INSTALLATION OF A NEW 195' MONOPOLE. IN ADDITION TO THE NEW MONOPOLE, A NEW WALK IN CABINET, GENERATOR AND METER BANK WILL BE INSTALLED IN A NEW FENCED COMPOUND. THE COMPOUND WILL BE ACCESSIBLE BY A PROPOSED GRAVEL DRIVE.

STORMWATER RUNOFF CONSIDERATIONS

THE PARCEL ON WHICH THE PROJECT IS LOCATED IS 35.35 ACRES. THE LIMITS OF DISTURBANCE WILL BE 0.71 ACRES, OF WHICH, 0.50 ACRES WILL BE NEW IMPERVIOUS AREA (0.0141% OF PARCEL AREA). THE EXISTING DRAINAGE PATTERN WILL REMAIN UNCHANGED AND THE PROPOSED IMPROVEMENTS WILL BE CONSTRUCTED USING EXISTING GRADES WHERE POSSIBLE.

EXISTING SITE CONDITIONS

THE SITE INCLUDES AN OPEN FIELD.

SOILS

SEE THIS SHEET. SOILS LOCATED ON SITE ARE AS FOLLOWS:

- BaB - BADIN CHANNERY SILT LOAM, 2: TO 8: SLOPES
- TbB2 - TARRUS SILTY CLAY LOAM, 2: TO 8: SLOPES

ADJACENT PROPERTY

THE PROPOSED IMPROVEMENTS ARE LOCATED IN AN AGRICULTURAL AREA BOUND BY PARCELS ZONED AGRICULTURAL TO THE NORTH, EAST, AND WEST, AND LDR AND AGRICULTURAL TO THE SOUTH.

CRITICAL AREAS

THERE ARE NO CRITICAL AREAS ONSITE. THE PLAN HAS BEEN DEVELOPED TO MINIMIZE LAND DISTURBANCE. WHERE GRADING IS NECESSARY, ADEQUATE PRECAUTIONS SHALL BE TAKEN TO MINIMIZE EROSION AND TO CONTAIN SILT THROUGH PROPER EROSION AND SEDIMENT CONTROL PRACTICES.

MANAGEMENT STRATEGIES

- CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
- PERMANENT SEEDING WILL BEGIN IMMEDIATELY FOLLOWING GRADING OPERATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
- AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY E&S CONTROLS WILL BE CLEANED UP AND REMOVED IMMEDIATELY.

EROSION AND SEDIMENT CONTROL MEASURES

THE INTENT OF THIS EROSION AND SEDIMENT CONTROL PLAN IS TO GUIDE THE CONTRACTOR IN IMPLEMENTING ACCEPTABLE MEASURES, INFRASTRUCTURE, AND MAINTENANCE PROGRAMS THAT WILL MINIMIZE THE AMOUNT OF EROSION AND RESULTING SEDIMENT THAT WILL TAKE PLACE DURING THE CONSTRUCTION OF THIS PROJECT. ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES

CONSTRUCTION ENTRANCE/EXIT (NCESCPDM STD. & SPEC. 6.06):

A CONSTRUCTION ENTRANCE IS A GRAVELED AREA OR PAD LOCATED AT POINT WHERE VEHICLES ENTER AND LEAVE A CONSTRUCTION SITE. CONSTRUCTION ENTRANCE PROVIDE A BUFFER AREA WHERE VEHICLES CAN DROP THEIR MUD AND SEDIMENT TO AVOID TRANSPORTING IT ONTO PUBLIC ROADS, TO CONTROL EROSION FROM SURFACE RUNOFF, AND TO HELP CONTROL DUST.

SILT FENCE (NCESCPDM STD. & SPEC. 6.02):

A TEMPORARY SEDIMENT BARRIER CONSISTING OF A FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED. SILT FENCE IS INSTALLED TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS DURING CONSTRUCTION IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE SITE AND TO DECREASE THE VELOCITY OF SHEET FLOWS AND LOW-TO-MODERATE CHANNEL FLOWS.

TEMPORARY AND PERMANENT STABILIZATION

TEMPORARY AND PERMANENT SEEDING (STD. & SPEC. 6.10, 6.11):

TEMPORARY SEEDING SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS AND LESS THAN ONE YEAR. THIS INCLUDES, BUT IS NOT LIMITED TO, STOCKPILES. AREAS TO BE PERMANENTLY SEEDED ARE TO USE A CERTIFIED SEED. ALL SEEDED AREAS ARE TO BE STRAW MULCHED AT THE RATE OF TWO TONS PER ACRE.

MULCHING (STD. & SPEC. 6.14):

APPLICATION OF PLANT RESIDUES OR OTHER SUITABLE MATERIALS TO THE SOIL SURFACE. MULCHING PREVENTS EROSION BY PROTECTING THE SOIL SURFACE FROM RAINDROP IMPACT AND REDUCING THE VELOCITY OF OVERLAND FLOW. MULCHING FOSTERS THE GROWTH OF VEGETATION BY INCREASING AVAILABLE MOISTURE AND PROVIDING INSULATION AGAINST EXTREME HEAT AND COLD. FOR USE IN AREAS WHICH HAVE BEEN PERMANENTLY SEEDED, MULCHING SHOULD OCCUR IMMEDIATELY FOLLOWING SEEDING. AREAS THAT CANNOT BE SEEDED BECAUSE OF THE SEASON SHOULD BE MULCHED WITH AN ORGANIC MULCH.

SOIL STOCKPILES AND BORROW AREAS

NO STOCKPILES AND/OR BORROW AREAS ARE ANTICIPATED ON THE SITE. IF STOCKPILES AND/OR BORROW AREAS ARE NEEDED, THE CONTRACTOR SHALL IMPLEMENT THE REQUIRED EROSION CONTROL DEVICES PER THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL AND OBTAIN REQUIRED PERMITS.

EROSION AND SEDIMENT CONTROL MAINTENANCE

IN GENERAL, ALL THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED WEEKLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT TO ENSURE THEY ARE IN WORKING ORDER. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:

- SILT FENCE: SEDIMENT DEPOSITS SHALL BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. FABRIC SHALL BE REPLACED IF IT HAS DECOMPOSED OR BECOME INEFFECTIVE.
- SEEDING: THE SEEDED AREAS SHALL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEED AS NEEDED.
- MULCHING: INSPECT ALL MULCHES PERIODICALLY, AND AFTER RAINSTORMS TO CHECK FOR RILL EROSION, DISLOCATION OR FAILURE. WHERE EROSION IS OBSERVED, APPLY ADDITIONAL MULCH. IF WASHOUT OCCURS, REPAIR THE SLOPE GRADE, RESEED, AND REINSTALL MULCH. CONTINUE INSPECTIONS UNTIL VEGETATION IS FIRMLY ESTABLISHED.

EROSION & SEDIMENT CONTROL NOTES

- NO MORE THAN 200 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME. AT THE END OF EACH WORK DAY, ALL EXCAVATION SHALL BE FILLED OR PLATTED.
- EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. CONTRACTOR SHALL PROVIDE APPROPRIATE PROTECTION TO CONTROL SEDIMENT WASHING INTO THE TRENCH.
- WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A DISPOSAL AREA.
- ALL EROSION CONTROL DEVICES SHALL BE IN PLACE AND FUNCTIONAL AT ALL TIMES AND IF REMOVED FOR CONSTRUCTION PROGRESS, SHALL BE REPLACED BY THE CLOSE OF EACH WORKDAY.
- FINAL REMOVAL OF EROSION CONTROL DEVICES SHALL NOT OCCUR UNTIL THE OWNER OR HIS DESIGNATED AGENT DEEMS THE SITE STABILIZED.
- SOD IS TO BE IN ACCORDANCE WITH THE SODDING SCHEDULE PROVIDED IN THE LATEST EDITION OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SATISFYING ANY AND ALL EROSION CONTROL AND STORMWATER MANAGEMENT (SWM) REQUIREMENTS FOR ANY LAND DISTURBING ACTIVITIES, INCLUDING BUT NOT LIMITED TO ON-SITE OR OFF-SITE BORROW, ON-SITE OR OFF-SITE STOCKPILING OR DISPOSAL OF WASTE MATERIALS. BEFORE UNDERTAKING ANY LAND EROSION CONTROL AND STORMWATER MANAGEMENT, THE CONTRACTOR SHALL CONTACT THE COUNTY ENVIRONMENTAL ENGINEERING DEPARTMENT TO DETERMINE WHAT EC AND SWM MEASURES ARE NECESSARY. ALL EC AND SWM MEASURES MUST BE APPROVED BY THE COUNTY INSPECTOR AND THE OWNER BEFORE IMPLEMENTATION. THE CONTRACTOR SHALL COMPLETELY SATISFY ALL REQUIREMENTS OF THE COUNTY ENVIRONMENTAL ENGINEERING DEPARTMENT BEFORE CONTINUING WITH THE CONCERNED ACTIVITY. THE TEMPORARY EROSION AND SEDIMENT CONTROL ITEMS SHOWN ON THE E&S CONTROL PLANS ARE INTENDED TO PROVIDE A GENERAL PLAN FOR CONTROLLING EROSION AND SILTATION WITHIN THE PROJECT LIMITS.

SEQUENCE OF CONSTRUCTION

- A PRECONSTRUCTION MEETING SHALL BE SCHEDULED BY THE CONTRACTOR WITH AN INSPECTOR FROM THE COUNTY AT LEAST 48 HOURS PRIOR TO ANY VEGETATION OR LAND DISTURBANCE ACTIVITIES.
- CONSTRUCTION SHALL BE SEQUENCED SUCH THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
- THE CONTRACTOR IS TO INSTALL THE EROSION AND SEDIMENT CONTROL MEASURES.
- LAND DISTURBANCE OUTSIDE THE PRELIMINARY LIMITS OF DISTURBANCE MAY NOT OCCUR UNTIL THE INITIAL ESC MEASURES INSTALLATION HAS BEEN APPROVED BY THE ENVIRONMENTAL INSPECTOR.
- PHASE I:
  - INSTALL EROSION AND SEDIMENT CONTROL DEVICES.
  - INSTALL PROPOSED UTILITIES.
  - TEMPORARY SEED AND MULCH DISTURBED AREAS.
- PHASE II:
  - PERMANENTLY SEED TO STABILIZE SITE
- UPON APPROVAL BY THE LOCAL JURISDICTION, THE CONTRACTOR IS TO REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES ONCE ALL AREAS ARE STABILIZED.

PLANT PROTECTION

- TREES AND VEGETATION ADJACENT TO THE ACTUAL WORK AREA OR BORROW AREA ARE TO BE PROTECTED WITH TEMPORARY CONSTRUCTION SAFETY FENCE TO PRESERVE EXISTING ITEMS INDICATED TO REMAIN AND TO PREVENT DAMAGE TO PROPERTY PER NCESCPDM STD. & SPEC. 6.05.
- UNDERGROUND UTILITIES SHALL BE LOCATED SO THAT CONSTRUCTION WILL NOT DAMAGE OR DESTROY THE PLANTS TO REMAIN. UTILITY TRENCHING SHALL NOT BE LOCATED CLOSER THAN 1'-0" FOR EACH 1" IN DIAMETER UP TO A MAXIMUM OF 20'-0" FOR TREES TO REMAIN. DAMAGED TREES AND PLANTS SHALL BE RESTORED TO THE SATISFACTION OF THE OWNER.
- THE PARKING OF VEHICLES AND STORAGE OF ANY CONSTRUCTION EQUIPMENT OR MATERIALS SHALL NOT OCCUR UNDER THE DRIP LINE OF TREES TO BE PROTECTED.

GENERAL NOTES

- THE INFORMATION AND DATA SHOWN OR INDICATED WITH RESPECT TO EXISTING UNDERGROUND FACILITIES AT OR CONTIGUOUS TO THE SITE IS BASED ON INFORMATION AND DATA FURNISHED TO THE ENGINEER BY THE OWNER. THE OWNER AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY SUCH INFORMATION OR DATA. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA, FOR LOCATING ALL UNDERGROUND FACILITIES SHOWN OR INDICATED PRIOR TO CONSTRUCTION, FOR COORDINATION OF THE WORK WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES DURING CONSTRUCTION, FOR THE SAFETY AND PROTECTION THEREOF RESULTING FROM THE WORK, ALL OF WHICH WILL BE AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL CONTACT "MISS UTILITY" OF VIRGINIA AT 1-800-552-7001 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
- WHEN WORKING ADJACENT TO EXISTING STRUCTURES, POLES, ETC., CONTRACTOR SHALL USE WHATEVER METHODS THAT ARE NECESSARY TO PROTECT STRUCTURES FROM DAMAGE. CONTRACTOR SHALL HAND EXCAVATE WITHIN 5' OF ALL BUILDINGS, WALLS AND STRUCTURES. REPLACEMENT OF DAMAGED STRUCTURES SHALL BE AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL IMMEDIATELY REPORT ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND CONTRACT DOCUMENTS TO THE ENGINEER.
- THE LOCATION OF ALL EXISTING UTILITIES ACROSS THE LINES OF THE PROPOSED WORK ARE NOT NECESSARILY SHOWN ON THE PLANS, AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY PRIOR TO CONSTRUCTION.
- ALL MATERIALS AND CONSTRUCTION SHALL COMPLY WITH THE CONSTRUCTION DOCUMENTS.
- DATUM FOR ALL ELEVATIONS IS BASED ON NAVD 88 PER COMMERCIAL SITE DESIGN SURVEY.
- CERTIFICATION THAT 95% COMPACTION IS OBTAINED SHALL BE PROVIDED FOR ALL FILL AREAS, INCLUDING UNDER UTILITIES AND APPURTENANCES. THE CERTIFICATION SHALL STATE THE EXACT AREA THAT THE CERTIFICATION APPLIES TO. COMPACTION SHALL BE ACHIEVED IN ACCORDANCE WITH ASTM-D698, STANDARD PROCTOR DENSITY FOR COMPACTION.
- ANY ALTERATIONS AND CONNECTIONS TO ANY UTILITY MUST BE COORDINATED WITH THE OWNER.
- CONTRACTOR WORK DAYS AND HOURS SHALL BE MONDAY THROUGH FRIDAY 7 AM TO 6 PM. ANY DEVIATION FROM THIS SCHEDULE SHALL BE APPROVED BY THE OWNER. SHUTDOWNS WILL BE PERFORMED AT NIGHT AND WEEKENDS WITH 10 DAYS WRITTEN NOTICE AND WRITTEN APPROVAL OF THE COUNTY UTILITIES DEPARTMENT.
- TOPOGRAPHIC SURVEY, COORDINATES, AND ELEVATIONS PROVIDED BY AMERICAN NATIONAL.
- CONTRACTOR SHALL VERIFY DEPTHS OF ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION SIGNS.
- THE CONTRACTOR SHALL VERIFY ELEVATIONS OF ALL POINTS OF CONNECTION OF PROPOSED WORK TO EXISTING STORM DRAIN PRIOR TO CONSTRUCTION.

GENERAL EROSION AND SEDIMENT CONTROL & SEQUENCE OF CONSTRUCTION NOTES

- NO LAND DISTURBING ACTIVITIES SHALL TAKE PLACE OUTSIDE OF PROJECT LIMITS.
- NO DEMOLITION, CONSTRUCTION, OR LAND DISTURBANCE ACTIVITIES SHALL BEGIN UNTIL ALL APPLICABLE EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED IN LOCATIONS AS SHOWN ON THE CONTRACT DRAWINGS. IF CLEARING IS REQUIRED FOR INSTALLATION OF A GIVEN MEASURE, ALL OTHER MEASURES SHALL BE INSTALLED FIRST. THE NECESSARY LAND DISTURBANCE ACTIVITIES REQUIRED FOR INSTALLATION OF THE GIVEN MEASURE MAY THEN PROCEED.
- UTILITIES SHOWN IN APPROXIMATE MANNER ONLY. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO DEMOLITION, CONSTRUCTION OR LAND DISTURBANCE ACTIVITIES BEGIN.
- INSTALL CONSTRUCTION ENTRANCES, TREE PROTECTION FENCE, SILT FENCE, GRAVEL SILT FENCE OUTLETS, AND INLET PROTECTION IN LOCATIONS SHOWN ON PLANS. CONTRACTOR SHALL COORDINATE LOCATION OF CONSTRUCTION ENTRANCES WITH CONTRACTING OFFICER.
- BEGIN CONSTRUCTION. INSTALL TEMPORARY DITCH CROSSING AND WATTLES IN THE AREAS WHERE NEEDED DURING CONSTRUCTION.
- PROVIDE TEMPORARY SEEDING TO ALL DENUDED AREAS AFTER CLEARING OPERATIONS WITHIN 7 CALENDAR DAYS. PROVIDE PERMANENT GROUND COVER WITHIN THE SHORTER OF 15 WORKING DAYS OR 60 CALENDAR DAYS OF ESTABLISHING FINAL GRADES.
- TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE HAS BEEN STABILIZED.
- THE CONTRACTOR SHALL CONDUCT PROJECT INSPECTIONS OF EROSION CONTROL MEASURES AND STORMWATER OUTFALLS WEEKLY AND AFTER EVERY RAIN EVENT 1/2" OR GREATER. ALL CONTROL DEVICES SHALL BE MAINTAINED AS SPECIFIED BY THE CONTRACT DOCUMENTS. A RAIN GAUGE SHALL BE INSTALLED AT THE PROJECT SITE TO FACILITATE RAINFALL MONITORING. THE CONTRACTOR SHALL MAINTAIN THESE RECORDS AT THE ON-SITE OFFICE FOR AUDIT BY CONTRACTING OFFICER. INSPECTIONS ARE REQUIRED UNTIL PROJECT STABILIZATION IS EVIDENT BY 95% VEGETATIVE GROWTH FOR AREAS PROVIDED SEEDING, AT SUCH TIME THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES. ADDITIONALLY, CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING 'SELF-INSPECTIONS' INDICATING DATE DEVICES ARE INSTALLED AND STABILIZATION MEASURES ARE INITIATED. THE 'SELF-INSPECTION' REPORTS SHALL BE MAINTAINED AND SUBMITTED TO MCAS CHERRY POINT ENVIRONMENTAL AFFAIRS DEPARTMENT LEAD ONCE STABILIZATION OF PROJECT HAS BEEN ACCOMPLISHED AND TEMPORARY MEASURES HAVE BEEN REMOVED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF SEDIMENT ON-SITE. IF THE APPROVED EROSION AND SEDIMENTATION CONTROL MEASURES PROVE INSUFFICIENT, THE CONTRACTOR MUST TAKE THOSE ADDITIONAL STEPS NECESSARY TO STOP SEDIMENT FROM LEAVING THE SITE.
- ANY BORROW MATERIAL BROUGHT ONTO THIS SITE SHALL BE FROM A LEGALLY OPERATED MINE OR OTHER APPROVED SOURCE. A SINGLE USE BORROW SITE OR AN AREA TO WASTE MATERIAL IS ONLY PERMISSIBLE IF IT IS OPERATED UNDER THE TOTAL CONTROL OF THE FINANCIALLY RESPONSIBLE PERSON OR FIRM WHO IS DEVELOPING THIS SITE AND HAS BEEN SEPARATELY PERMITTED AND INCORPORATED AS PART OF THIS PLAN MEETING ALL THE REQUIREMENTS OF NC GENERAL STATUTE 74-49.7 f.
- THE CONTRACTOR SHALL COORDINATE LOCATION OF TEMPORARY STOCKPILE AREAS WITH THE CONTRACTING OFFICER. IMPACT OF TEMPORARY STORAGE OF EXCAVATED SOILS SHALL BE MINIMIZED. EXCAVATED SOILS SHALL NOT BE STORED WITHOUT PERMISSION OF THE CONTRACTING OFFICER. STOCKPILE AREAS SHALL BE DELINEATED WITH SILT FENCE AND PROVIDED TEMPORARY SEED.
- PURSUANT TO NC GENERAL STATUTE 113A-64.1 a: THE CONTRACTOR SHALL CONDUCT 'SELF-INSPECTIONS' OF EROSION CONTROL DEVICES AT COMPLETION OF EACH CONSTRUCTION PHASE AND DOCUMENT SUCH INSPECTIONS AS OUTLINED IN 5A NCAC 04B .0131.
- CONTRACTOR SHALL MAINTAIN COMPLIANCE WITH ALL PERMITS AND PLANS. ANY CHANGES SHALL BE APPROVED BY THE STATE PRIOR TO EXECUTION. A COPY OF ALL PERMITS SHALL BE MAINTAINED BY THE CONTRACTOR ON-SITE AT ALL TIMES.

SOIL MAP



SUBMITTALS			
DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
10/30/19	REVISED	6	SRF
12/09/19	REVISED	7	SRF
04/13/20	REVISED	8	SRF
04/24/20	REVISED	9	SRF
08/17/20	COUNTY COMMENTS	10	MKW

DRAWN BY:	SRN
CHECKED BY:	HGS
APPVD BY:	MCS
DEWBERRY PROJECT NO:	50107722

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PREPARED FOR:

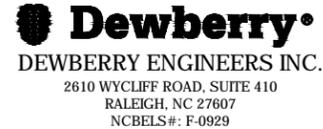


PREPARED FOR:



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:



SITE ID:  
074-4106

SITE NAME:  
MCMANUS

SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
EROSION CONTROL NOTES

SHEET NUMBER  
GN-2

**GENERAL NOTES**

- GENERAL WORK HOURS ARE FROM 9:30 A.M. TO 3:00 P.M. UNLESS OTHERWISE NOTED IN THESE PLANS AND/OR APPROVED BY NCDOT AND LOCAL AUTHORITY TO HAVE EXTENDED OR OVERNIGHT WORK HOURS.
- THE TRAFFIC CONTROL DEVICES AND SAFETY MEASURES SHALL BE IN CONFORMANCE WITH THE FOLLOWING AND ALL REVISIONS THERETO:
  - THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES - REV 1, 2011.
  - NCDOT MAINTENANCE / UTILITY TRAFFIC CONTROL GUIDELINES - LATEST REVISION
  - NCDOT 2018 ROADWAY STANDARD DRAWINGS
- TEMPORARY LANE CLOSURES, OTHER THAN NOTED IN THESE PLANS, WILL NOT BE PERMITTED UNLESS OTHERWISE APPROVED IN WRITING BY THE LOCAL JURISDICTION AND/OR NCDOT.
- ALL SIGNS AND ANY OTHER DEVICES USED IN CONSTRUCTION ZONES SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL BE KEPT CLEAN AND PROPERLY ALIGNED AT ALL TIMES.
- ALL TRAFFIC CONTROL DEVICES AND SIGNS NECESSARY FOR THE MAINTENANCE OF TRAFFIC SHALL BE FURNISHED, INSTALLED, AND MAINTAINED BY THE CONTRACTOR, AND REMOVED BY THE CONTRACTOR UPON COMPLETION OF THE PROJECT.
- ALL CONSTRUCTION SIGNS THAT GOVERN TRAFFIC FLOW THROUGH THE WORK ZONE SHALL BE COVERED OR REMOVED AND STORED AWAY FROM TRAFFIC WHEN NOT IN USE. PERMANENT SIGNS SHALL BE UNCOVERED OR REPLACED UPON COMPLETION OF CONSTRUCTION.
- MEASURES SHALL BE TAKEN TO ENSURE ADEQUATE SIGHT DISTANCES DURING CONSTRUCTION OPERATIONS. TRAFFIC CONTROL DEVICES, SIGNS, CONSTRUCTION EQUIPMENT, MATERIAL STORAGE, OR ANY OTHER OBSTACLES WILL NOT BE ALLOWED TO INTERFERE WITH SIGHT DISTANCES AT INTERSECTIONS OR ENTRANCES FOR THIS PROJECT.
- ADVANCE SIGNING, CONCRETE TRAFFIC BARRIER SERVICE, AND ANY OTHER TRAFFIC CONTROL DEVICES SHALL BE INSTALLED PRIOR TO BEGINNING EACH STAGE OF CONSTRUCTION AND SHALL BE REMOVED AS NECESSARY BEFORE PROCEEDING TO THE NEXT STAGE.
- ACCESS MUST BE MAINTAINED AT ALL TIMES TO ALL ADJACENT PROPERTIES AFFECTED BY CONSTRUCTION, UNLESS OTHERWISE STATED IN THIS PLAN.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADEQUATELY PROTECT ALL EXISTING PAVING, DRAINAGE STRUCTURES, AND PLANTED AREAS. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ALL DAMAGED PAVING, DRAINAGE STRUCTURES, AND PLANTED AREAS PRIOR TO CLOSEOUT OF PROJECT.
- THIS DRAWING IS FOR A TYPICAL SITUATION AND SHOULD BE ADAPTED TO THE ACTUAL FIELD CONDITIONS THAT MAY EXIST. DUE TO UNFORESEEN FIELD SITUATIONS IT MAY BE IMPOSSIBLE TO ADAPT THE PRESCRIBED DRAWING OF STANDARD EXACTLY AS SHOWN TO THE ACTUAL FIELD SITUATION. THE CONTRACTOR, AT THE DIRECTION OF NCDOT OR LOCAL JURISDICTION SHALL MOVE, SUPPLEMENT, CHANGE, OR REMOVE THE TRAFFIC CONTROL DEVICES ASSOCIATED WITH THIS TYPICAL DRAWING TO ENSURE THAT MOTORISTS AND PEDESTRIANS CAN PASS THROUGH THE CONSTRUCTION AREA IN A SAFE AND EFFICIENT MANNER.
- THE CONTRACTOR SHALL MARK ALL HAZARDS WITHIN THE LIMITS OF THE PROJECT WITH WELL MAINTAINED SIGNS, BARRICADES, WARNING AND CHANNELIZING DEVICES. THEY SHALL BE MOVED, SUPPLEMENTED, CHANGED, OR REMOVED AS REQUIRED DURING THE PROCESS OF CONSTRUCTION AS APPROVED BY NCDOT OR LOCAL JURISDICTION.
- SIGN REFLECTIVITY SHALL BE IN ACCORDANCE WITH NCDOT STANDARDS, IF NIGHTTIME CLOSURES ARE NECESSARY, SIGNS SHALL INCLUDE APPROVED WARNING LIGHTS.
- THE CONTRACTOR SHALL BE REQUIRED TO REPLACE ANY NECESSARY EXISTING PAVEMENT MARKINGS THAT HAVE BEEN OBLITERATED BY CONSTRUCTION PROCEDURES AT THE END OF EACH DAY'S OPERATION.
- CONTRACTOR SHALL BE NCDOT CERTIFIED FOR WORK ZONE AREAS FOR SETUP AND MONITORING.
- ALL FLAGGERS SHALL BE STATE CERTIFIED AND HAVE THEIR CERTIFICATION CARD IN THEIR POSSESSION WHEN PERFORMING FLAGGING DUTIES.
- WHERE THE MAINTENANCE OF TRAFFIC PLANS CALL FOR LANE CLOSURES AND LANE WIDTH REDUCTIONS, TEMPORARY LANES SHALL BE MAINTAINED PER NCDOT REQUIREMENTS IN ALL LOCATIONS FROM THE BOTTOM OF BARREL OUTSIDE TO THE EDGE OF THE TRAVEL LANE.

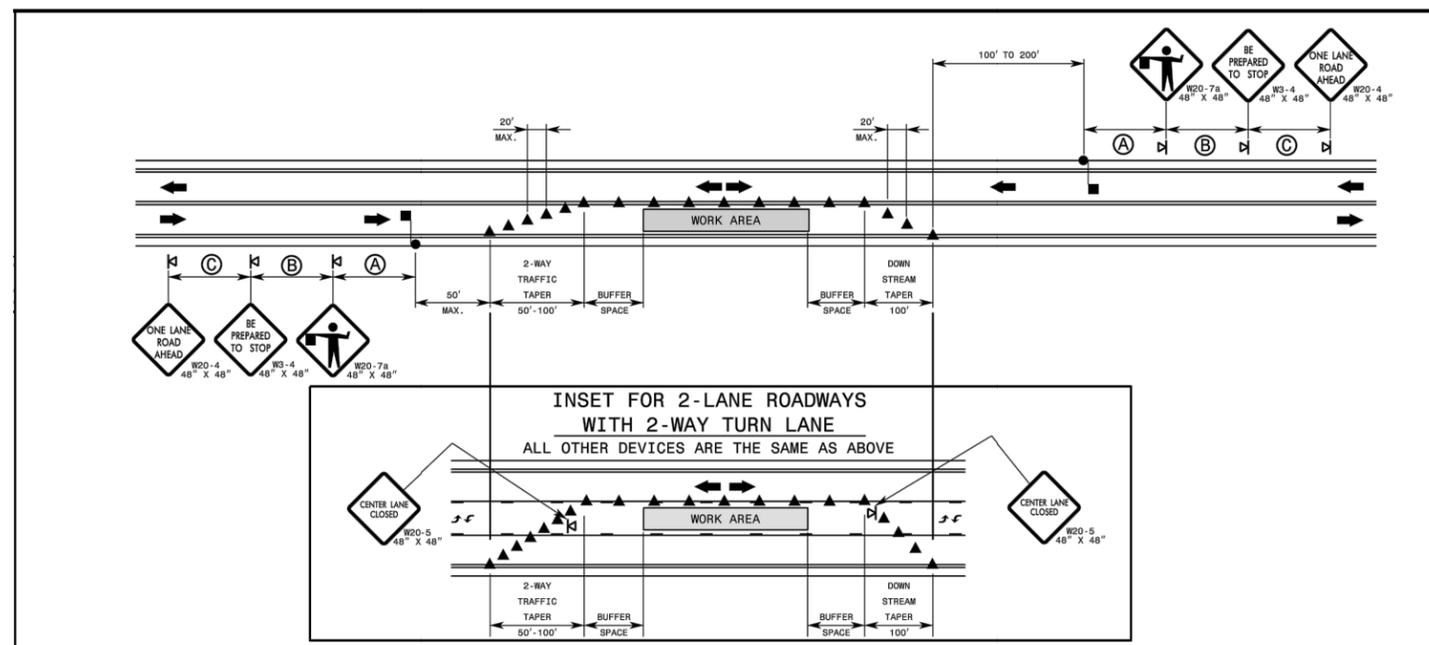
**NOTES**

- CONTRACTOR TO UTILIZE A TEMPORARY FLAGGING OPERATION PER FIGURE 1101.02 OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL SECTION WHEN CLOSING THE EASTBOUND LANE ALONG MCMANUS ROAD DURING TIE-IN OF THE ENTRANCE ROAD.

**SEQUENCE OF CONSTRUCTION**

- IMPLEMENT TRAFFIC CONTROL PLAN AND INSTALL THE PERIMETER EROSION AND SEDIMENT CONTROLS.
- BEGIN BACKFILL OPERATIONS AND BRING THE PROPOSED ENTRANCE UP TO GRADE. PLACE GRAVEL SURFACE AND TIE INTO MCMANUS ROAD.
- RESTORE PAVEMENT AND/OR OTHER ITEMS.

**TTC - 1101.02 - NOTES & FIGURE**



**GENERAL NOTES FOR FLAGGING OPERATIONS**

- REFER TO RSD. 1101.11, SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- PLACE CONES THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO RSD. 1101.11, SHEET 2).
- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
- DRUMS OR SKINNY DRUMS MAY BE USED IN LIEU OF CONES. REFER TO RSD. 1180.01 FOR SKINNY DRUM REQUIREMENTS.
- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7a) PLACED APPROXIMATELY 250 FT. IN ADVANCE OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND USE LAW ENFORCEMENT.
- REFER TO THE CURRENT MUTCD FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
- DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

- IF VEHICLE QUEUES WILL REACH WITHIN 15' OF EITHER SIDE OF ACTIVE RAILROAD TRACKS, PROVIDE A UNIFORMED LAW ENFORCEMENT OFFICER OR FLAGGER TO PREVENT VEHICLES FROM STOPPING WITHIN THE GRADE CROSSING. PROVIDE OFFICER OR FLAGGER EVEN IF AUTOMATIC WARNING MEASURES ALREADY EXIST.

**GENERAL NOTES FOR PILOT CAR OPERATIONS**

- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.
- IF ROADWAY WIDTH IS LESS THAN 22 FEET (EOP TO EOP) CONES MAY NOT BE REQUIRED ALONG WORK AREA, AND AT THE DISCRETION OF THE ENGINEER, CONES MAY BE OMITTED ALONG THE WORK AREA IF USING A PILOT CAR.
- CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS.
- MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A CONSPICUOUS POSITION ON THE REAR OF THE PILOT VEHICLE.
- DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE, MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
- ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE LIMITS ABOUT METHODS OF SAFE EGRESS AND INGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

**LEGEND**

- FLAGGER
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

1-18  
 STATE OF NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.  
 ROADWAY STANDARD DRAWING FOR  
**TEMPORARY LANE CLOSURES**  
 2-LANE, 2-WAY ROADWAY - 1 LANE CLOSED  
 SHEET 1 OF 14  
**1101.02**

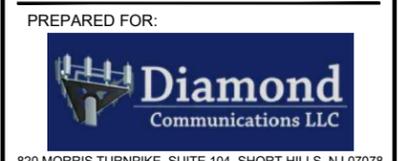


**SUBMITTALS**

DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
10/30/19	REVISED	6	SRF
12/09/19	REVISED	7	SRF
04/13/20	REVISED	8	SRF
04/24/20	REVISED	9	SRF
08/17/20	COUNTY COMMENTS	10	MKW

DRAWN BY: SRN  
 CHECKED BY: HGS  
 APPVD BY: MCS  
 DEWBERRY PROJECT NO: 50107722

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820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:  
**Dewberry**  
 DEWBERRY ENGINEERS INC.  
 2610 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCBELS#: F-0929

SITE ID:  
 074-4106

SITE NAME:  
 MCMANUS

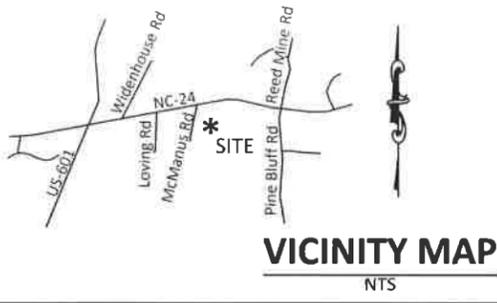
SITE ADDRESS:  
 11979 MCMANUS RD  
 MIDLAND, NC 28107

FA LOCATION:  
 12829624

SITE NUMBER:  
 N/A

SHEET TITLE  
**TRAFFIC CONTROL NOTES**

SHEET NUMBER  
 GN-3



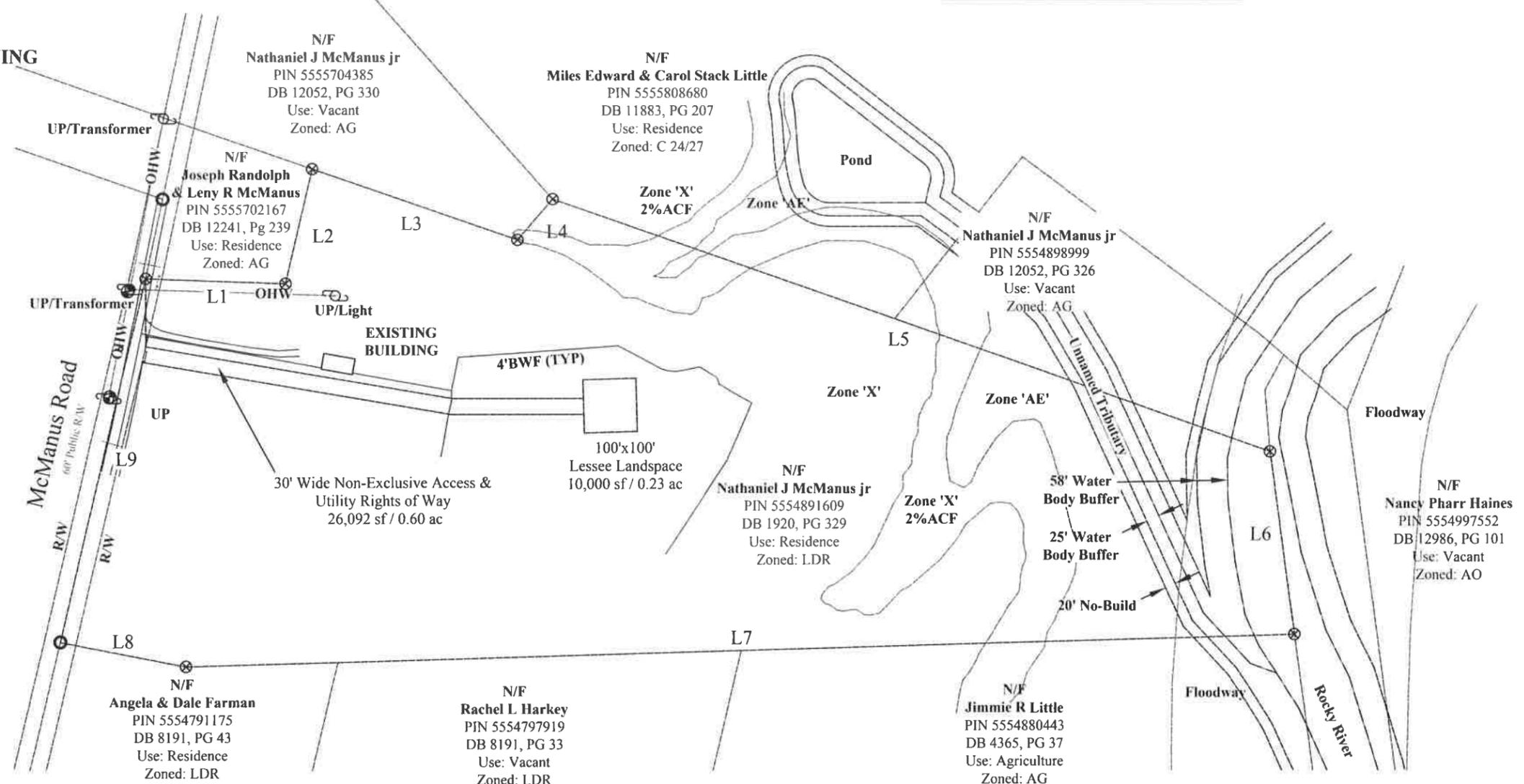
### GENERAL NOTES

1. THIS SURVEY WAS PREPARED BY BATEMAN CIVIL SURVEY CO., UNDER THE SUPERVISION OF JEFFREY W. BAKER, PLS.
2. THIS PLAN HAS BEEN PREPARED FOR LAYOUT AND PERMITTING PURPOSES ONLY.
3. THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES SHOWN WERE TAKEN FROM EXISTING FIELD EVIDENCE, EXISTING DEEDS AND PLATS OF PUBLIC RECORD, AND INFORMATION SUPPLIED TO THE SURVEYOR BY THE CLIENT
4. VERTICAL DATUM IS (NAVD88) , THE LATITUDE, LONGITUDE AND STATE PLANE COORDINATES, IF SHOWN, ARE GIVEN IN NORTH AMERICAN DATUM OF 1983 (NAD83).
5. FIELD EQUIPMENT USED: TRIMBLE TOTAL STATION, TRIMBLE VRS.
6. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES AND ALL BEARINGS ARE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM UNLESS OTHERWISE SHOWN.
7. PROPERTY OWNER: NATHANIEL J McMANUS jr  
12020 McMANUS ROAD, MIDLAND, NC, 28107
8. THIS MAP IS NOT A CERTIFIED SURVEY AND HAS NOT BEEN REVIEWED BY A LOCAL GOVERNMENT AGENCY FOR COMPLIANCE WITH ANY APPLICABLE LAND DEVELOPMENT REGULATIONS.
9. ALL EQUIPMENT AND IMPROVEMENTS ARE LOCATED WITHIN THE LEASE AREA.
10. THE PROPERTY LIES IN ZONE "X" & "AE", PER NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP 3710555500K , DATED: NOVEMBER 16, 2018 & MAP 3710555400K, DATED: NOVEMBER 16, 2018 .
11. PROPERTY INFORMATION DERIVED FROM CABARRUS COUNTY GIS.

Line Table		
Line #	Length	Direction
L1	264.22	S88°00'42"E
L2	223.18	N13°08'33"E
L3	411.18	S70°52'37"E
L4	102.00	N40°52'23"E
L5	1440.00	S70°37'37"E
L6	346.00	S07°37'37"E
L7	2098.00	S88°22'23"W
L8	242.40	N79°07'37"W
L9	702.50	N13°13'47"E

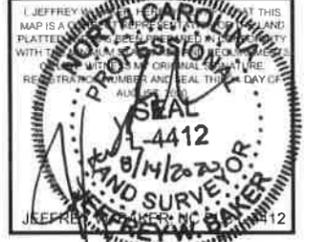


- #### LEGEND
- EXIST. UTILITY POLE
  - EXIST. TELE PED
  - NAIL FOUND
  - IRON PIPE FOUND
  - COMPUTED POINT
  - CONCRETE MONUMENT
  - BARBED WIRE FENCE
  - REINFORCED CONCRETE PIPE
  - FIRE HYDRANT
  - WATER VALVE
  - WATER METER
  - OVERHEAD WIRE
  - POINT OF BEGINNING
  - RIGHT OF WAY



**Bateman Civil Survey Co, PC**  
2524 Reliance Ave. Apex, NC 27539  
Phone: 919.577.1080 Fax: 919.577.1081  
NCBLS FIRM # C-2378

DRAWN BY: JCH  
CHECKED BY: JWB  
DRAWING DATE: 12/10/2018



REVISIONS	DATE	DESCRIPTION
a.	1/18/2019	show lease area cover sheet
b.	1/28/2019	Issue Final
c.	2/04/2019	Add C/L Tower Info
d.	4/13/2020	Base Setbacks from Lease Area
e.	4/14/2020	Add Buffers & Flood Plain
f.	4/27/2020	Re Add Setbacks from C/L Tower
g.	8/14/2020	Re Size Rocky River Buffer

074-4106 McManus  
11979 McManus Road  
Midland  
NC, 28107  
Cabarrus County

DATE OF SURVEY: 12/07/2018
BCSC JOB # 180576
SHEET TITLE: SURVEY
SHEET NUMBER 1 OF 3

POC  
 Northing = 550020.97  
 Easting = 1557106.87

N/F  
**Joseph Randolph & Lenny R McManus**  
 PIN 5555702167  
 DB 12241, Pg 239  
 Use: Residence  
 Zoned: AG

N/F  
**Nathaniel J McManus jr**  
 PIN 5555704385  
 DB 12052, PG 330  
 Use: Vacant  
 Zoned: AG

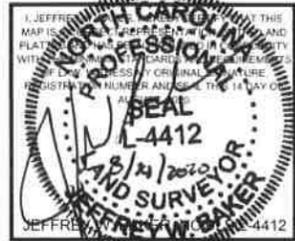
N/F  
**Miles Edward & Carol Stack Little**  
 PIN 5555808680  
 DB 11883, PG 207  
 Use: Residence  
 Zoned: C 24/27

N/F  
**Nathaniel J McManus jr**  
 PIN 5554891609  
 DB 1920, PG 329  
 Use: Residence  
 Zoned: LDR

POB  
 100'x100'  
 Lessee Landspace  
 10,000 sf / 0.23 ac  
 Northing = 549794.91  
 Easting = 1557935.11

30' Wide Non-Exclusive Access &  
 Utility Rights of Way  
 25,191 sf / 0.58 ac  
 Northing = 549892.64  
 Easting = 1557107.52

DRAWN BY: JCH  
 CHECKED BY: JWB  
 DRAWING DATE: 12/10/2018



REVISIONS	DATE	DESCRIPTION
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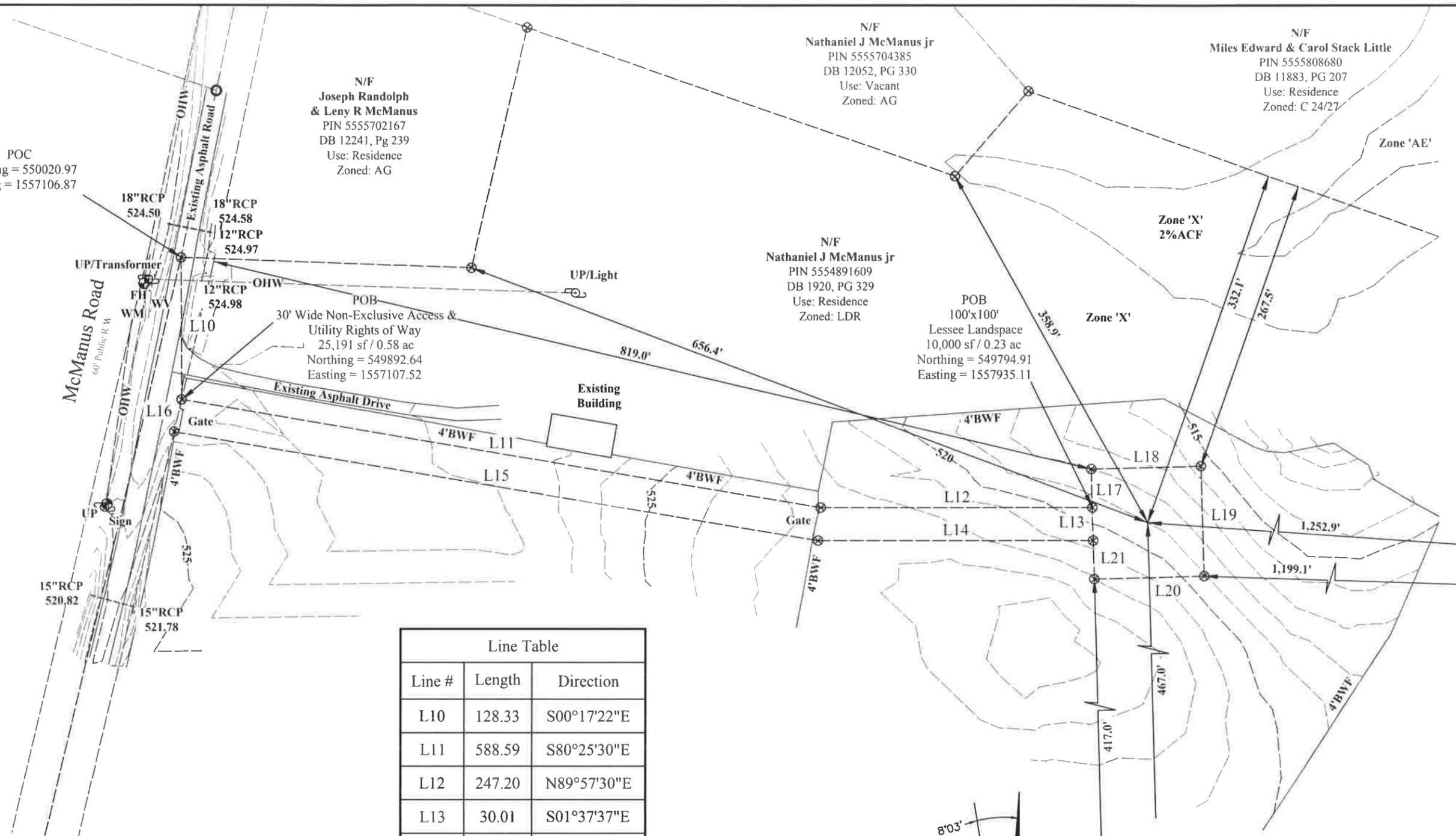
074-4106 McManus  
 11979 McManus Road  
 Midland  
 NC., 28107  
 Cabarrus County

DATE OF SURVEY: 12/07/2018

BCSC JOB # 180576

SHEET TITLE: SURVEY

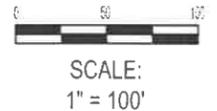
SHEET NUMBER 2 OF 3



Line Table		
Line #	Length	Direction
L10	128.33	S00°17'22"E
L11	588.59	S80°25'30"E
L12	247.20	N89°57'30"E
L13	30.01	S01°37'37"E
L14	250.55	S89°57'30"W
L15	593.03	N80°25'30"W
L16	30.06	N13°13'47"E
L17	34.99	N01°37'37"W
L18	100.00	N88°22'23"E
L19	100.00	S01°37'37"E
L20	100.00	S88°22'23"W
L21	34.99	N01°37'37"W

**PROPOSED CENTER OF TOWER**

LATITUDE N 35° 15' 05.636" (NAD83)  
 LONGITUDE W -80° 28' 50.282" (NAD83)  
 GROUND ELEVATION 519.0' (NAVD88)



**LEGEND**

- ⊕ EXIST. UTILITY POLE
- ⊙ EXIST. TELE PED
- NAIL FOUND
- ⊗ IRON PIPE FOUND
- ⊗ COMPUTED POINT
- ⊠ CONCRETE MONUMENT
- BWF BARBWIRE FENCE
- RCP REINFORCED CONCRETE PIPE
- FH FIRE HYDRANT
- WV WATER VALVE
- WM WATER METER
- OHW OVERHEAD WIRE
- POB POINT OF BEGINNING
- R/W RIGHT OF WAY

**30' WIDE NON-EXCLUSIVE ACCESS & UTILITY RIGHTS OF WAY DESCRIPTION**

All that certain parcel of land, situated in Midland, Cabarrus County, North Carolina, being on the lands of Nathaniel J McManus jr as described in Deed Book 1920 at Page 329, Cabarrus County Records, and being more particularly described as follows:

Commencing at a Point on the Eastern Right of Way of McManus Road and being the South Western property corner of Joseph Randolph & Leny R McManus (DB 12241, PG 239) , and the North Western property corner of Nathaniel J McManus jr (DB 1920, PG 329) Cabarrus County Records, having State Plane Coordinates N:550020.97, E:1557106.87, thence S00°17'22"E, 128.33' to a point, said point being the Point of Beginning of the 30' Wide Non-Exclusive Access & Utility Rights of Way having State Plane Coordinates N:549892.64, E:1557107.52; thence S80°25'30"E, 588.59' to a point; thence N89°57'30"E, 247.20' to a point; thence S01°37'37"E, 30.01' to a point; thence S89°57'30"W, 250.55' to a point; thence N80°25'30"W, 593.03' to a point; thence N13°13'47"E, 30.06' to a point; said point being the Point of Beginning of the 30' Wide Non-Exclusive Access & Utility Rights of Way. Said 30' Wide Non-Exclusive Access & Utility Rights of Way contains 25,191 square feet, more or less.

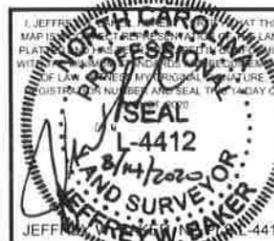
**100'x100' LESSEE LAND SPACE DESCRIPTION**

All that certain parcel of land, situated in Midland, Cabarrus County, North Carolina, being on the lands of Nathaniel J McManus jr as described in Deed Book 1920 at Page 329, Cabarrus County Records, and being more particularly described as follows:

Commencing at a Point on the Eastern Right of Way of McManus Road and being the South Western property corner of Joseph Randolph & Leny R McManus (DB 12241, PG 239) , and the North Western property corner of Nathaniel J McManus jr (DB 1920, PG 329) Cabarrus County Records, having State Plane Coordinates N:550020.97, E:1557106.87, thence S00°17'22"E, 128.33' to a point; thence S80°25'30"E, 588.59' to a point; thence N89°57'30"E, 247.20' to a point; said point being the Point of Beginning of the 100'x100' Lessee Land Space having State Plane Coordinates N:549794.91, E:1557935.11, thence N01°37'37"W, 34.99' to a point; thence N88°22'23"E, 100.00' to a point; thence S01°37'37"E, 100.00' to a point; thence S88°22'23"W, 100.00' to a point; thence N01°37'37"W, 34.99' to a point; thence N01°37'33"W, 30.01' to a point; said point being the Point of Beginning of the 100'x100' Lessee Land Space. Said 100'x100' Lessee Land Space contains 10,000 square feet, more or less.



DRAWN BY: JCH  
CHECKED BY: JWB  
DRAWING DATE: 12/10/2018



REVISIONS	DATE	DESCRIPTION
a.	1/18/2019	show lease area cover sheet
b.	1/28/2019	Issue Final
c.	2/04/2019	Add C/L Tower Info
d.	4/13/2020	Base Setbacks from Lease Area
e.	4/14/2020	Add Buffers & Flood Plain
f.	4/27/2020	Re Add Setbacks from C/L Tower
B.	8/14/2020	Re Size Rocky River Buffer

074-4106 McManus  
11979 McManus Road  
Midland  
NC, 28107  
Cabarrus County

DATE OF SURVEY: 12/07/2018

BCSC JOB # 180576

SHEET TITLE: SURVEY

SHEET NUMBER 3 OF 3



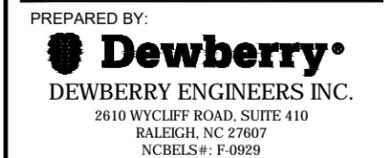
SUBMITTALS			
DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
10/30/19	REVISED	6	SRF
12/09/19	REVISED	7	SRF
04/13/20	REVISED	8	SRF
04/24/20	REVISED	9	SRF
08/17/20	COUNTY COMMENTS	10	MKW

DRAWN BY: SRN  
 CHECKED BY: HGS  
 APPVD BY: MCS  
 DEWBERRY PROJECT NO: 50107722

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820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078



SITE ID:  
074-4106

SITE NAME:  
MCMANUS

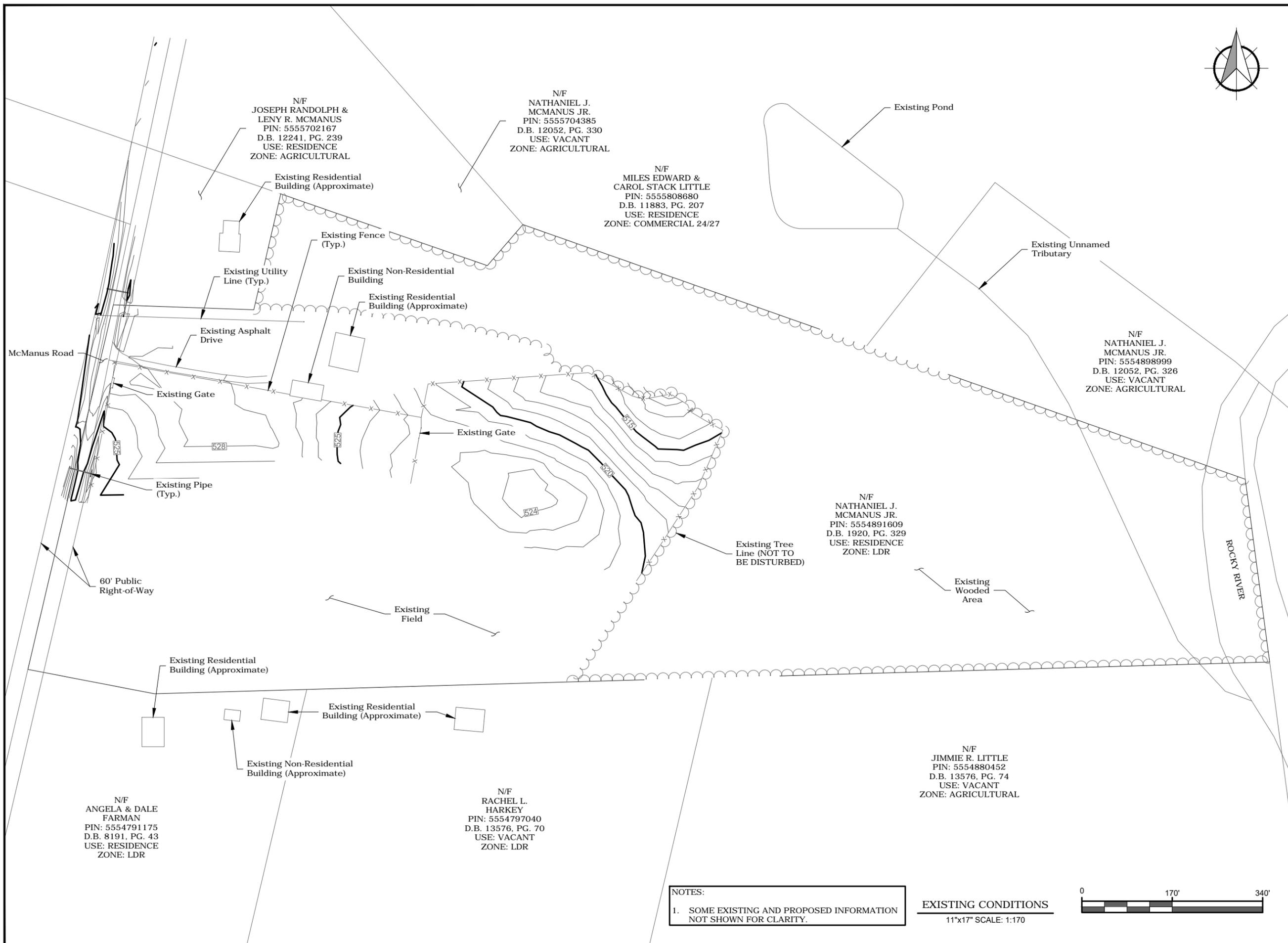
SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
EXISTING CONDITIONS

SHEET NUMBER  
C-0



NOTES:  
1. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.

EXISTING CONDITIONS  
11"x17" SCALE: 1:170



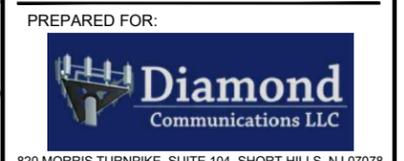
LIMITS OF DISTURBANCE:	0.71 ACRES
EXISTING IMPERVIOUS AREA:	0.00 ACRES
PROPOSED IMPERVIOUS AREA:	
STRUCTURAL:	0.00 ACRES
NON-STRUCTURAL:	0.50 ACRES
TOTAL IMPERVIOUS AREA:	0.50 ACRES (0.0141% OF PARCEL AREA)



SUBMITTALS			
DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
10/30/19	REVISED	6	SRF
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04/24/20	REVISED	9	SRF
08/17/20	COUNTY COMMENTS	10	MKW

DRAWN BY: SRN  
 CHECKED BY: HGS  
 APPVD BY: MCS  
 DEWBERRY PROJECT NO: 50107722

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PREPARED BY:  
**Dewberry**  
 DEWBERRY ENGINEERS INC.  
 2610 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCBELS#: F-0929

SITE ID:  
 074-4106

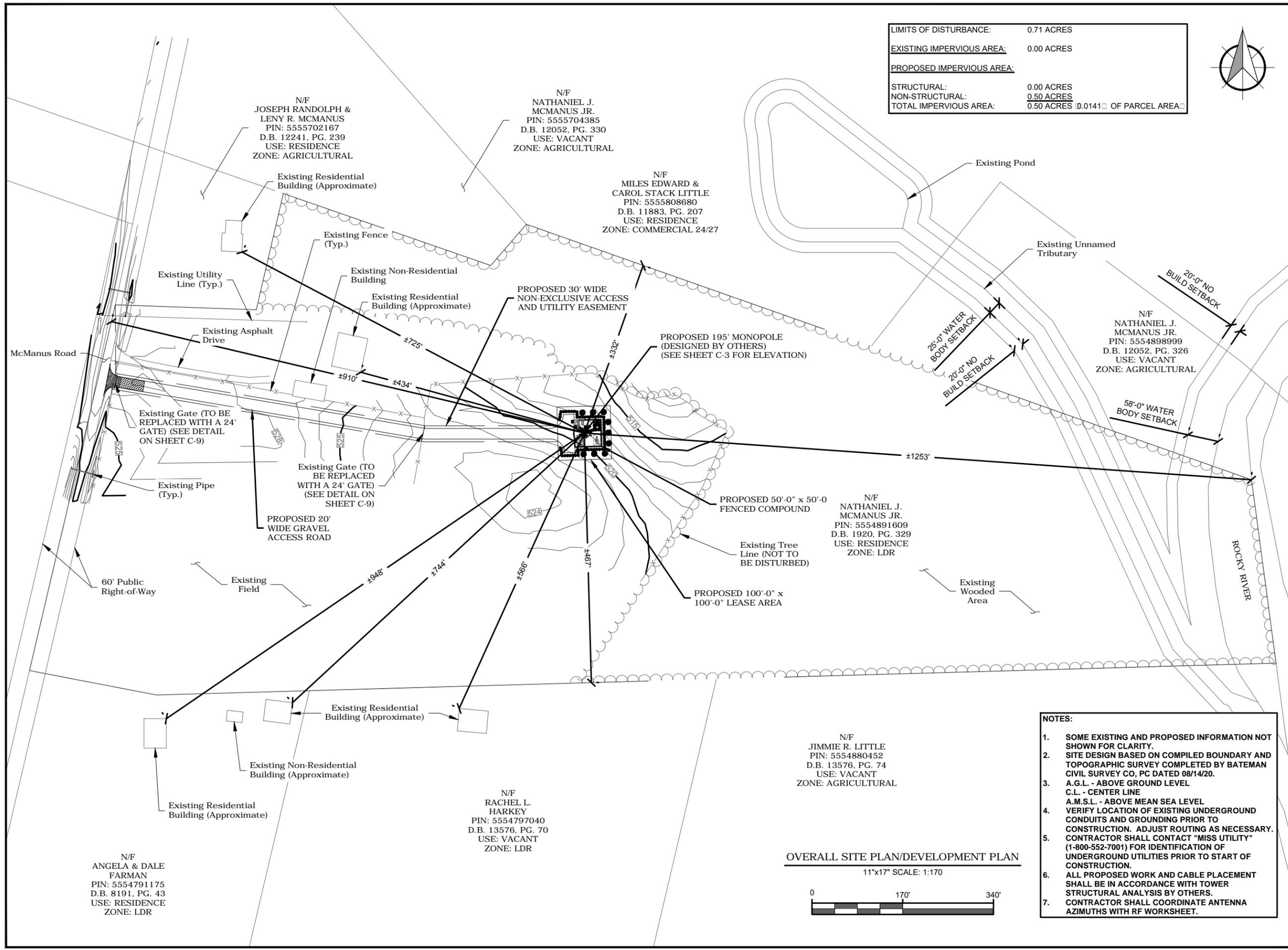
SITE NAME:  
 MCMANUS

SITE ADDRESS:  
 11979 MCMANUS RD  
 MIDLAND, NC 28107

FA LOCATION:  
 12829624

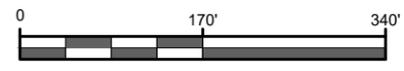
SITE NUMBER:  
 N/A

SHEET TITLE  
 OVERALL SITE PLAN/  
 DEVELOPMENT PLAN  
 SHEET NUMBER  
 C-1



N/F  
 JIMMIE R. LITTLE  
 PIN: 5554880452  
 D.B. 13576, PG. 74  
 USE: VACANT  
 ZONE: AGRICULTURAL

OVERALL SITE PLAN/DEVELOPMENT PLAN  
 11"x17" SCALE: 1:170



- NOTES:
- SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
  - SITE DESIGN BASED ON COMPILED BOUNDARY AND TOPOGRAPHIC SURVEY COMPLETED BY BATEMAN CIVIL SURVEY CO, PC DATED 08/14/20.
  - A.G.L. - ABOVE GROUND LEVEL  
C.L. - CENTER LINE  
A.M.S.L. - ABOVE MEAN SEA LEVEL
  - VERIFY LOCATION OF EXISTING UNDERGROUND CONDUITS AND GROUNDING PRIOR TO CONSTRUCTION. ADJUST ROUTING AS NECESSARY.
  - CONTRACTOR SHALL CONTACT "MISS UTILITY" (1-800-552-7001) FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
  - ALL PROPOSED WORK AND CABLE PLACEMENT SHALL BE IN ACCORDANCE WITH TOWER STRUCTURAL ANALYSIS BY OTHERS.
  - CONTRACTOR SHALL COORDINATE ANTENNA AZIMUTHS WITH RF WORKSHEET.

N/F  
 ANGELA & DALE  
 FARMAN  
 PIN: 5554791175  
 D.B. 8191, PG. 43  
 USE: RESIDENCE  
 ZONE: LDR

N/F  
 RACHEL L.  
 HARKEY  
 PIN: 5554797040  
 D.B. 13576, PG. 70  
 USE: VACANT  
 ZONE: LDR





SUBMITTALS			
DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
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04/13/20	REVISED	8	SRF
04/24/20	REVISED	9	SRF
08/17/20	COUNTY COMMENTS	10	MKW

DRAWN BY: SRN  
 CHECKED BY: HGS  
 APPVD BY: MCS  
 DEWBERRY PROJECT NO: 50107722

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PREPARED FOR:

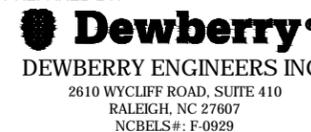


PREPARED FOR:



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:



SITE ID:  
 074-4106

SITE NAME:  
 MCMANUS

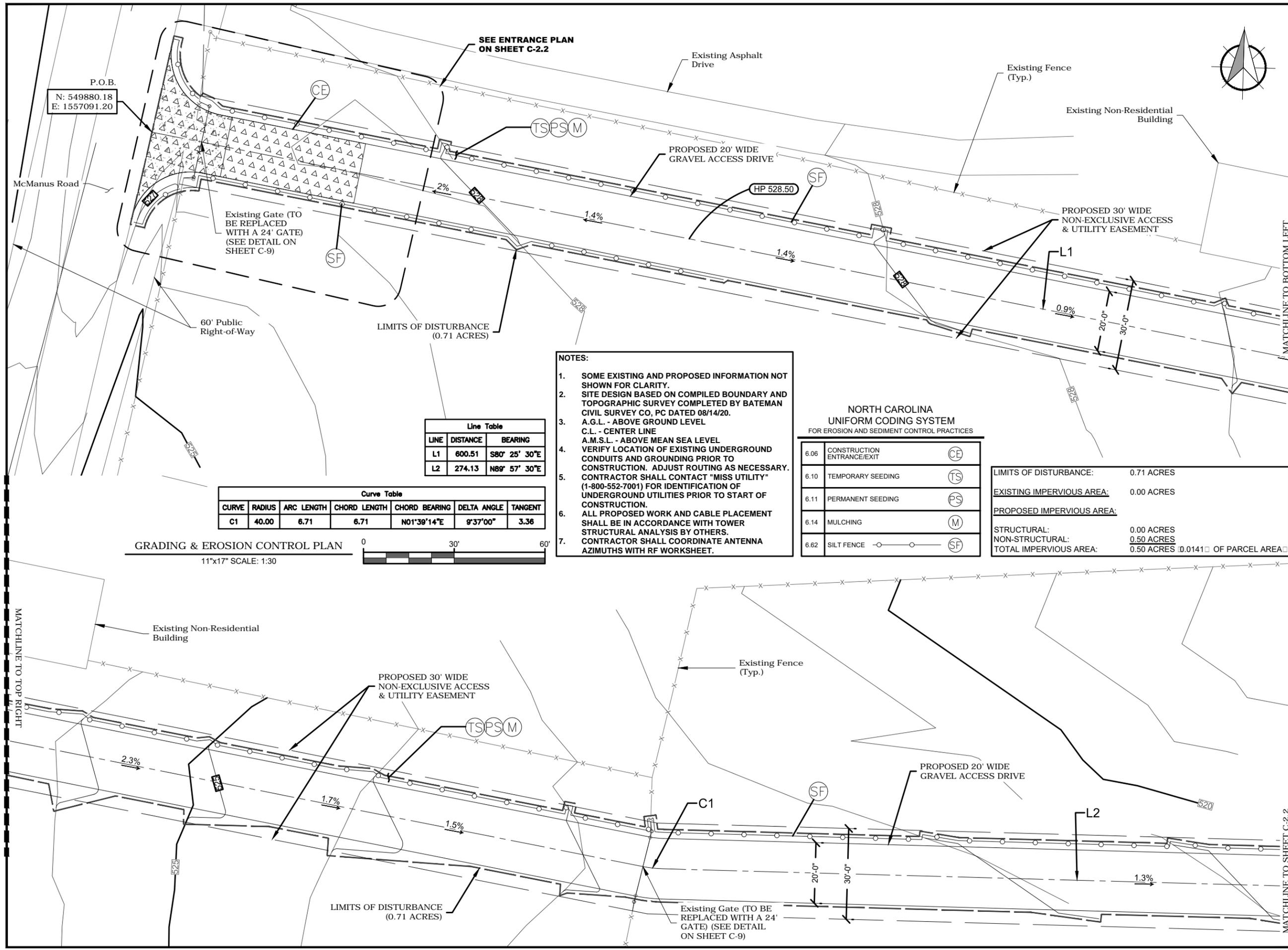
SITE ADDRESS:  
 11979 MCMANUS RD  
 MIDLAND, NC 28107

FA LOCATION:  
 12829624

SITE NUMBER:  
 N/A

SHEET TITLE  
 GRADING AND EROSION  
 CONTROL PLAN

SHEET NUMBER  
 C-2.1



- NOTES:**
- SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
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C.L. - CENTER LINE  
A.M.S.L. - ABOVE MEAN SEA LEVEL
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  - ALL PROPOSED WORK AND CABLE PLACEMENT SHALL BE IN ACCORDANCE WITH TOWER STRUCTURAL ANALYSIS BY OTHERS. CONTRACTOR SHALL COORDINATE ANTENNA AZIMUTHS WITH RF WORKSHEET.

**NORTH CAROLINA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES**

6.06	CONSTRUCTION ENTRANCE/EXIT	CE
6.10	TEMPORARY SEEDING	TS
6.11	PERMANENT SEEDING	PS
6.14	MULCHING	M
6.62	SILT FENCE	SF

LIMITS OF DISTURBANCE:	0.71 ACRES
EXISTING IMPERVIOUS AREA:	0.00 ACRES
PROPOSED IMPERVIOUS AREA:	
STRUCTURAL:	0.00 ACRES
NON-STRUCTURAL:	0.50 ACRES
TOTAL IMPERVIOUS AREA:	0.50 ACRES (0.0141% OF PARCEL AREA)

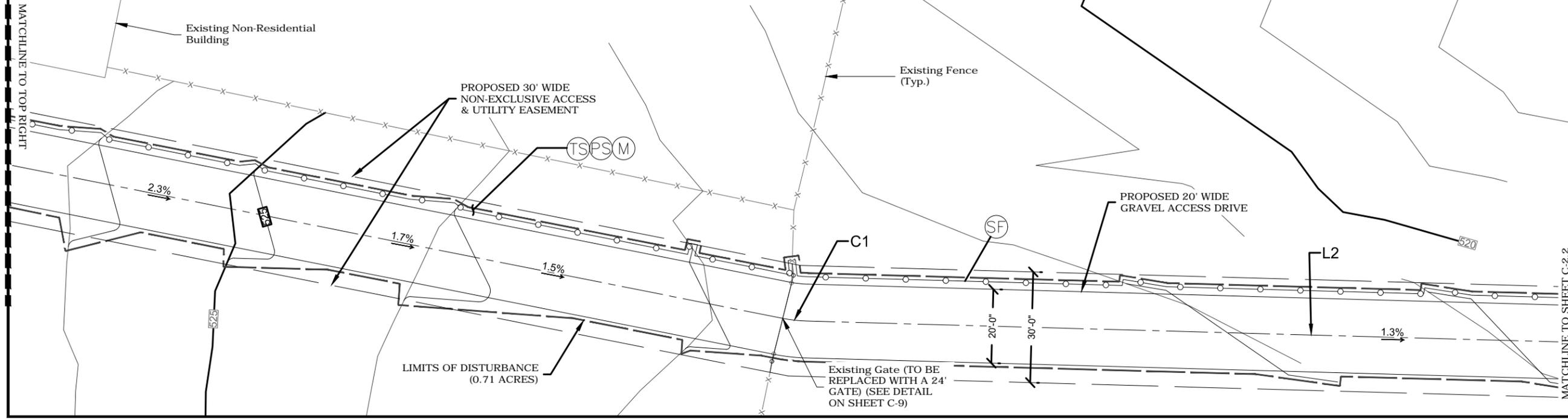
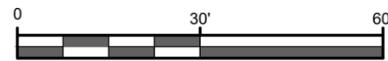
**Line Table**

LINE	DISTANCE	BEARING
L1	600.51	S80° 25' 30"E
L2	274.13	N89° 57' 30"E

**Curve Table**

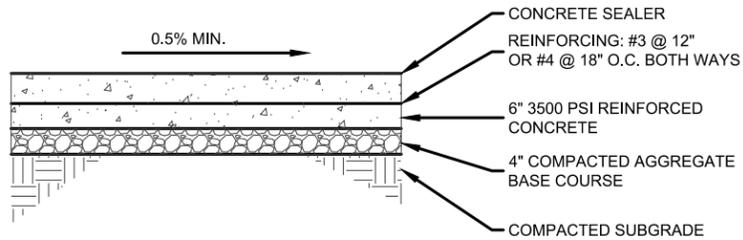
CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
C1	40.00	6.71	6.71	N01°39'14"E	9°37'00"	3.36

GRADING & EROSION CONTROL PLAN  
 11"x17" SCALE: 1:30



LIMITS OF DISTURBANCE:	0.71 ACRES
EXISTING IMPERVIOUS AREA:	0.00 ACRES
PROPOSED IMPERVIOUS AREA:	
STRUCTURAL:	0.00 ACRES
NON-STRUCTURAL:	0.50 ACRES
TOTAL IMPERVIOUS AREA:	0.50 ACRES 0.0141% OF PARCEL AREA

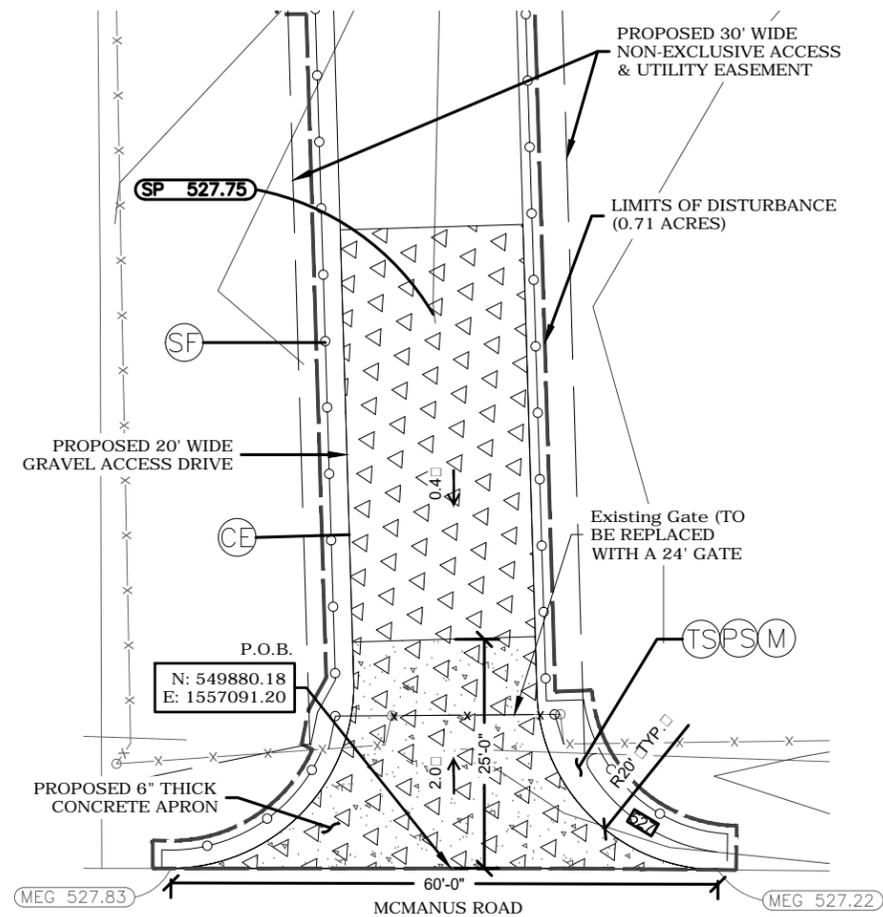
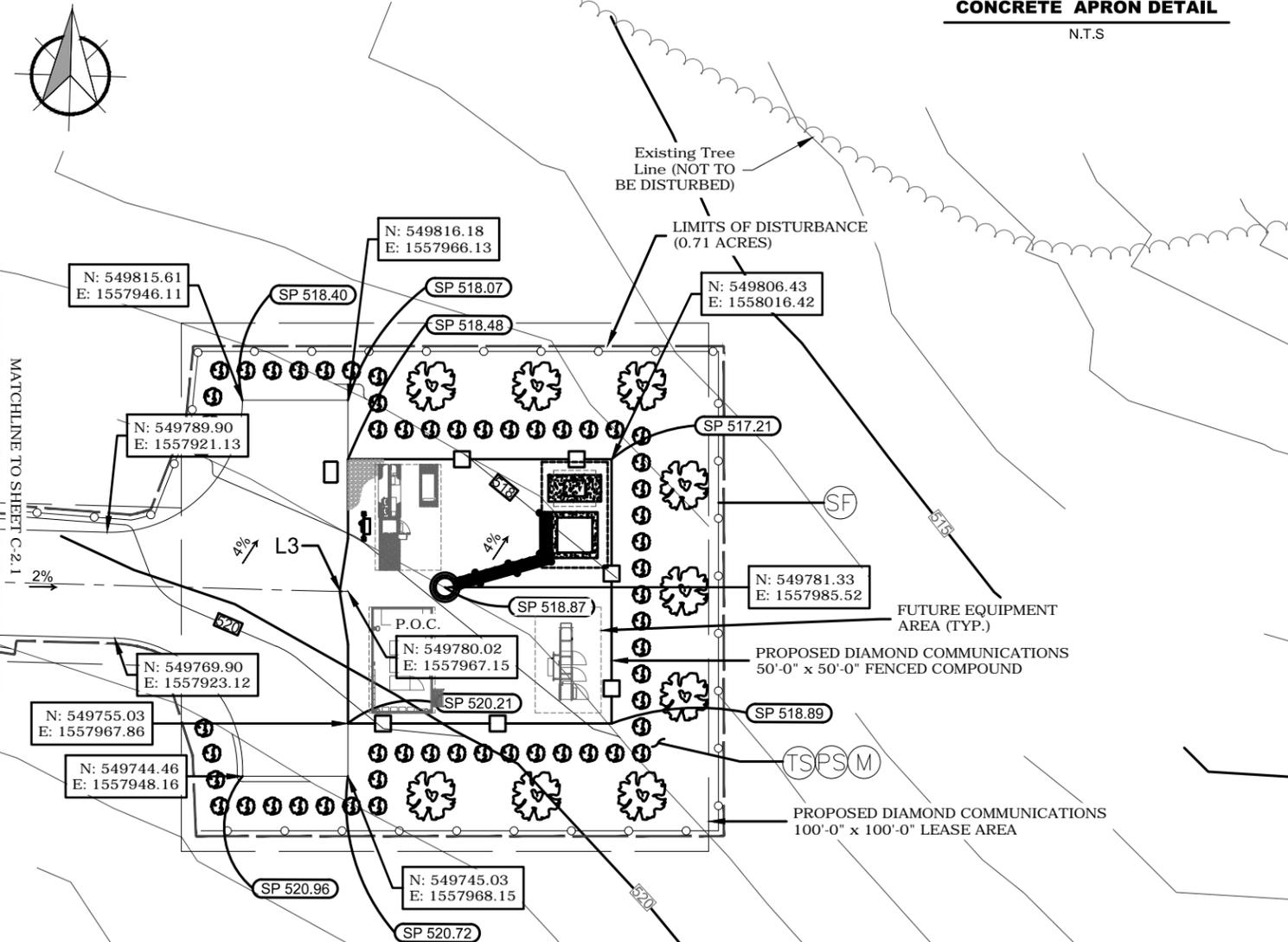
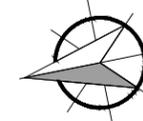
Line Table			
L2	274.13	N89° 57' 30"E	
L3	3.00	N88° 22' 23"E	



**CONCRETE APRON DETAIL**  
N.T.S

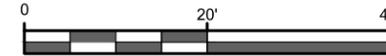
**NOTE: CONCRETE APRON SHALL SLOPE 2% MIN AWAY FROM RIGHT-OF-WAY TOWARD TIE IN POINT TO GRAVEL ACCESS ROAD.**

**NOTE: CONTRACTOR RESPONSIBLE FOR COORDINATING LANE CLOSURE FOR ROAD ENTRANCE CONSTRUCTION WITH NCDOT AND/OR LOCAL JURISDICTION. SEE SHEET GN-3 FOR CLOSURE RECOMMENDATION. CONTRACTOR RESPONSIBLE FOR SUBMITTING MAINTENANCE OF TRAFFIC PLAN FOR APPROVAL.**



**ENTRANCE PLAN**

11"x17" SCALE: 1:20



**NORTH CAROLINA  
UNIFORM CODING SYSTEM  
FOR EROSION AND SEDIMENT CONTROL PRACTICES**

6.06	CONSTRUCTION ENTRANCE/EXIT	CE
6.10	TEMPORARY SEEDING	TS
6.11	PERMANENT SEEDING	PS
6.14	MULCHING	M
6.62	SILT FENCE	SF

**GRADING & EROSION CONTROL PLAN**

11"x17" SCALE: 1:30



**NOTES:**

- SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
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- A.G.L. - ABOVE GROUND LEVEL  
C.L. - CENTER LINE  
A.M.S.L. - ABOVE MEAN SEA LEVEL
- VERIFY LOCATION OF EXISTING UNDERGROUND CONDUITS AND GROUNDING PRIOR TO CONSTRUCTION. ADJUST ROUTING AS NECESSARY.
- CONTRACTOR SHALL CONTACT "MISS UTILITY" (1-800-552-7001) FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
- ALL PROPOSED WORK AND CABLE PLACEMENT SHALL BE IN ACCORDANCE WITH TOWER STRUCTURAL ANALYSIS BY OTHERS.
- CONTRACTOR SHALL COORDINATE ANTENNA AZIMUTHS WITH RF WORKSHEET.



**SUBMITTALS**

DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
10/30/19	REVISED	6	SRF
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04/13/20	REVISED	8	SRF
04/24/20	REVISED	9	SRF
08/17/20	COUNTY COMMENTS	10	MKW

DRAWN BY: SRN  
CHECKED BY: HGS  
APPVD BY: MCS  
DEWBERRY PROJECT NO: 50107722

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PREPARED FOR:



PREPARED FOR:



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:

**Dewberry**  
DEWBERRY ENGINEERS INC.  
2610 WYCLIFF ROAD, SUITE 410  
RALEIGH, NC 27607  
NCBELS#: F-0929

SITE ID:  
074-4106

SITE NAME:  
MCMANUS

SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
GRADING AND EROSION  
CONTROL PLAN

SHEET NUMBER  
C-2.2

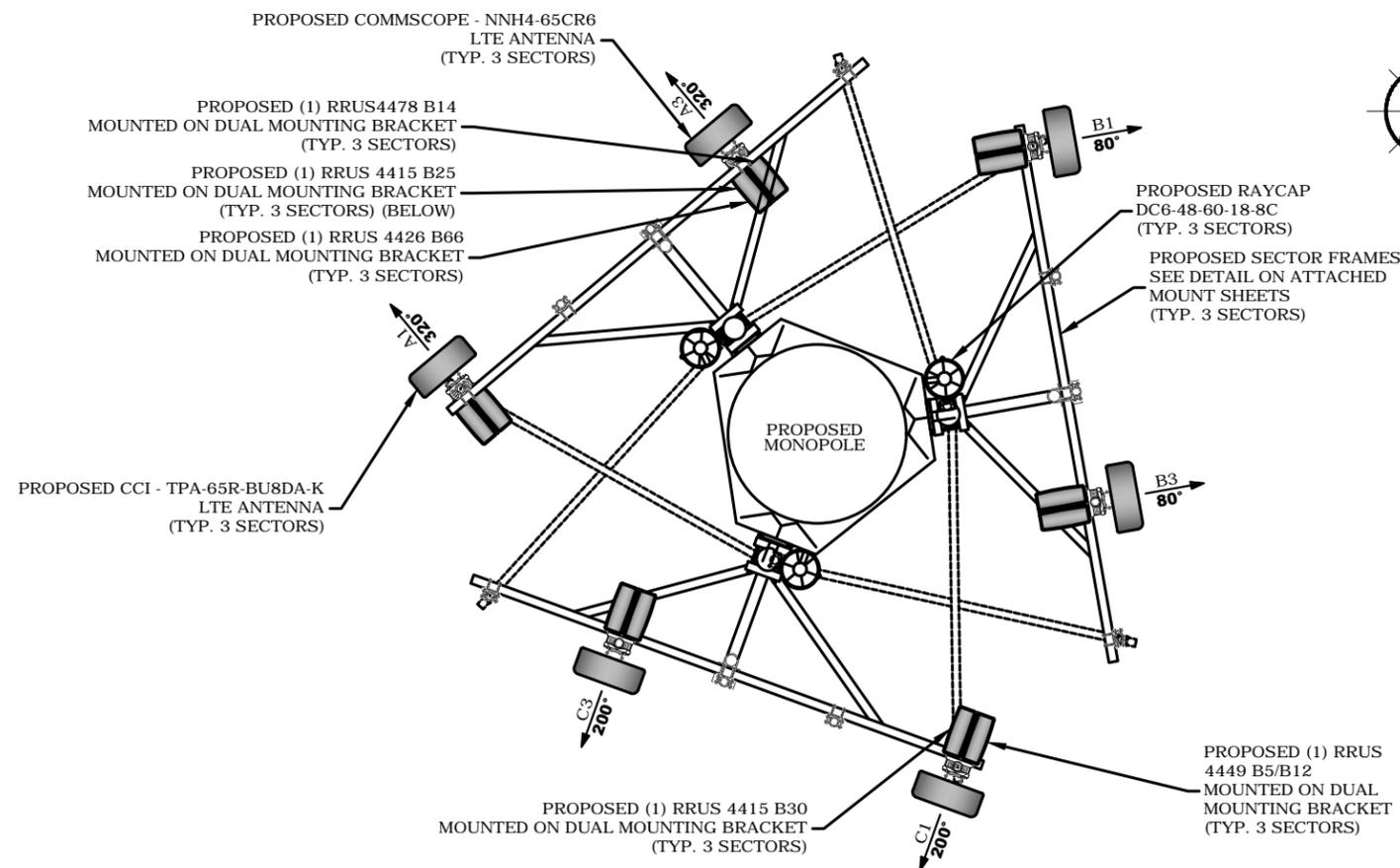
**FINAL RF EQUIPMENT SCHEDULE**

SECTOR POSITION	FREQUENCY BAND	ANTENNA MAKE/MODEL	RAD CENTER	AZIMUTH	E. TILT	M. TILT	(QTY.) RADIO	(QTY.) TMA	(QTY.) SURGE PROTECTION	(QTY.) CABLES	CABLE LENGTH
A1	LTE 700/WCS	CCI - TPA-65R-BU8DA-K (P)	189'-0"	320°	-7.°	0°	(1) RRUS 4449 B5/B12 (P) (1) RRUS 4415 B30 (P)	-	(1) DC9-48-60-24-8C-EV (P)	(1) FIBER TRUNK (P) (2) DC TRUNKS (P) IN 2" INNERDUCT	260'-0"
A2	-	-	-	-	-	-	-	-	-	-	-
A3	-	-	-	-	-	-	-	-	-	-	-
A4	LTE 700 FN/AWS/1900	COMMSCOPE - NNH4-65C-R6 (P)	189'-0"	320°	-7.°	0°	(1) RRUS 4478 B14 (P) (1) RRUS 4415 B25 (P) (1) RRUS 4426 B66 (P)	-	-	-	-
B1	LTE 700/WCS	CCI - TPA-65R-BU8DA-K (P)	189'-0"	80°	-7.°	0°	(1) RRUS 4449 B5/B12 (P) (1) RRUS 4415 B30 (P)	-	(1) DC9-48-60-24-8C-EV (P)	(1) FIBER TRUNK (P) (2) DC TRUNKS (P) IN 2" INNERDUCT	260'
B2	-	-	-	-	-	-	-	-	-	-	-
B3	-	-	-	-	-	-	-	-	-	-	-
B4	LTE 700 FN/AWS/1900	COMMSCOPE - NNH4-65C-R6 (P)	189'	80°	-7.°	0°	(1) RRUS 4478 B14 (P) (1) RRUS 4415 B25 (P) (1) RRUS 4426 B66 (P)	-	-	-	-
C1	LTE 700/WCS	CCI - TPA-65R-BU8DA-K (P)	189'-0"	200°	-7.°	0°	(1) RRUS 4449 B5/B12 (P) (1) RRUS 4415 B30 (P)	-	-	(2) DC TRUNKS (P) IN 2" INNERDUCT	260'
C2	-	-	-	-	-	-	-	-	-	-	-
C3	-	-	-	-	-	-	-	-	-	-	-
C4	LTE 700 FN/AWS/1900	COMMSCOPE - NNH4-65C-R6 (P)	189'	200°	-7.°	0°	(1) RRUS 4478 B14 (P) (1) RRUS 4415 B25 (P) (1) RRUS 4426 B66 (P)	-	-	-	-
<b>TOTALS</b>		<b>(6) ANTENNAS</b>					<b>(15) RRU'S</b>	<b>(0) TMA</b>	<b>(2) SPD</b>	<b>(8) CABLES</b>	

(P) = PROPOSED

• ALL RRU MOUNTING BRACKETS TO BE SUPPLIED BY AT&T

• MAINTAIN 3'-0" MIN. SEPARATION BETWEEN FIRSTNET AND LTE 700 ANTENNAS



**FINAL ANTENNA LAYOUT**  
11"x17" SCALE: 1" = 4'

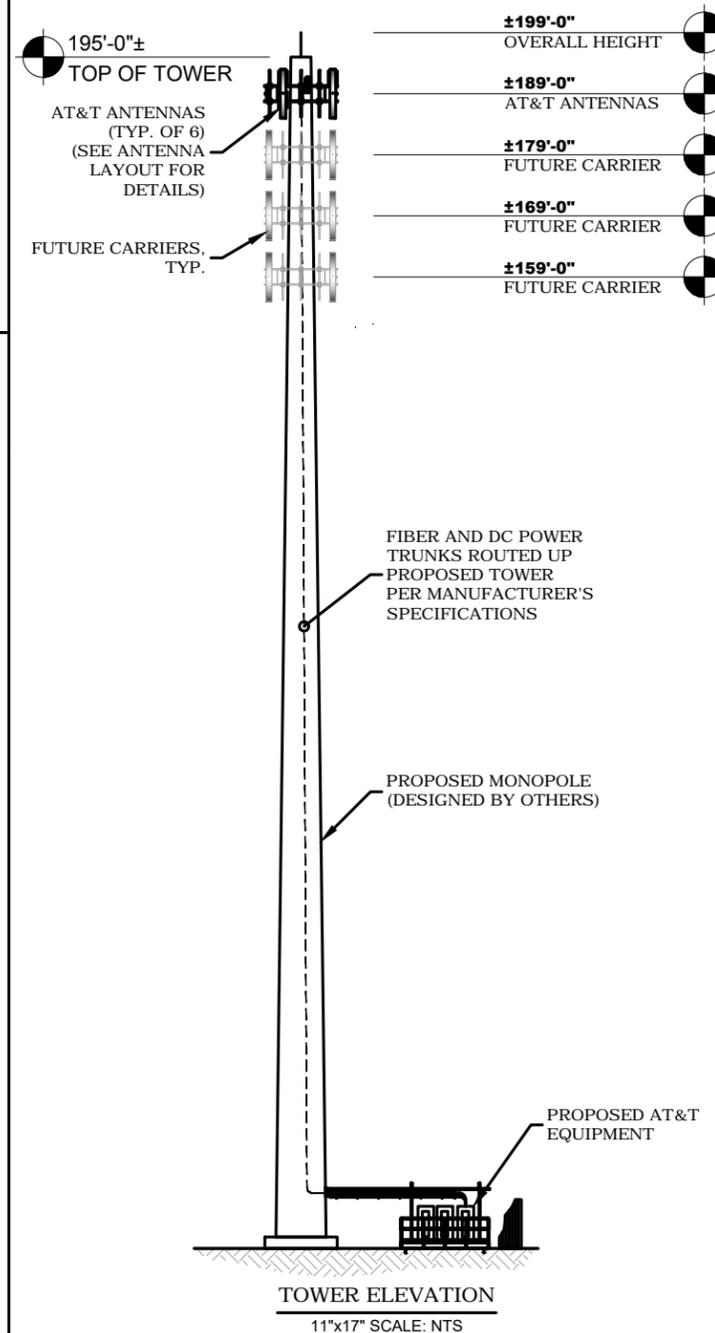
- NOTES:**
- THE REQUIRED FAA LIGHTING MUST NOT BE BLOCKED IN ANY WAY BY THE ANTENNAS. THE REQUIRED 360° LIGHTING VISIBILITY MUST BE MAINTAINED.
  - ALL ANTENNAS, CABLES AND MOUNTS SHALL BE INSTALLED IN ACCORDANCE WITH THE TOWER ENGINEER'S RECOMMENDATIONS IN A MANNER CONSISTENT WITH THE STRUCTURAL ANALYSIS REPORT.
  - ALL ANTENNA INFORMATION BASED ON MOST RECENT VERSION OF THIS SITE'S RFDS.

**SCOPING NOTES - TOWER**

- INSTALL 3 TPA-65R-BU8DA-K ANTENNAS
- INSTALL 3 NNH4-65C-R6 ANTENNAS
- INSTALL 3 NEW RRUS 4449 B5/B12
- INSTALL 3 NEW RRUS 4415 B30
- INSTALL 3 NEW RRUS 4478 B14
- INSTALL 3 NEW RRUS 4415 B25
- INSTALL 3 NEW RRUS 4426 B66
- INSTALL 6 NEW B2B DUAL RRU MOUNTING BRACKETS
- INSTALL 2 NEW RAYCAP DC9-48-60-24-8C-EV
- INSTALL 2 NEW FIBER TRUNKS
- INSTALL 6 NEW DC POWER TRUNKS
- INSTALL 3 T1672KT12 SECTOR FRAMES
- INSTALL 2 P1090KT10 ANTENNA MOUNT PIPES

**INNERDUCT NOTES**

- INSTALL 3 2" INNERDUCTS UP TOWER W/ 1 FIBER & 2 DC POWER INSIDE EACH



**SUBMITTALS**

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04/24/20	REVISED	9	SRF
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DRAWN BY: SRN  
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PREPARED FOR:

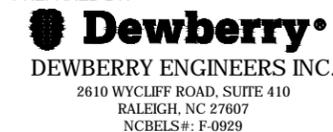


PREPARED FOR:



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:



SITE ID:  
074-4106

SITE NAME:  
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11979 MCMANUS RD  
MIDLAND, NC 28107

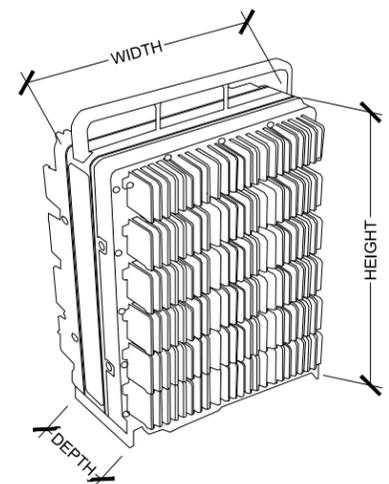
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12829624

SITE NUMBER:  
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SHEET TITLE  
ANTENNA LAYOUT &  
TOWER ELEVATION

SHEET NUMBER  
C-3

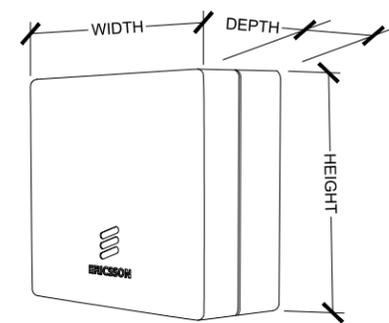
- ERICSSON RRUS 4449 B5/B12**
- DIMENSIONS (H x W x D): 17.9" x 13.2" x 9.4" (INCLUDES SUNSHIELD)
  - WEIGHT: 71.0 LBS
  - B5 TX = 869-894 MHZ, B12 TX = 729-746 MHZ
  - B5 RX = 824-849 MHZ, B12 RX = 699-716 MHZ
  - CPRI 2 PORTS X 2.5/4.9/9.8/10.1 GBPS.



**NOTE:**  
RRUS CAN ONLY BE PAINTED ON SOLAR SHIELD.

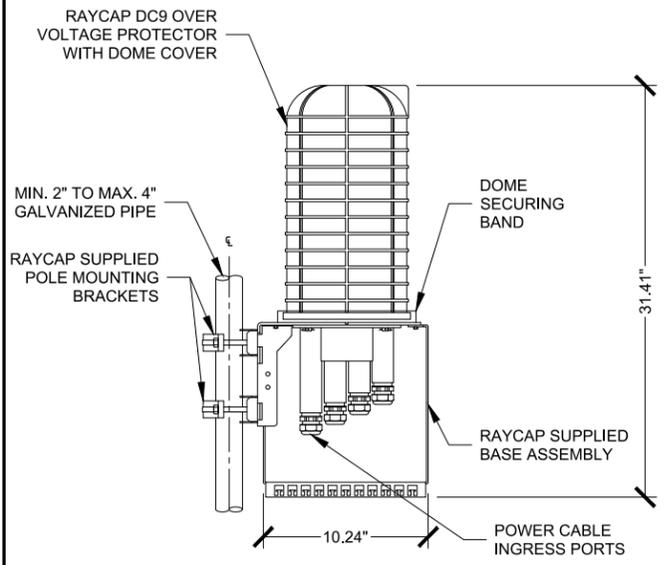
**ERICSSON RRUS 4449 B5/B12 DETAIL**  
SCALE: N.T.S.

- ERICSSON RRUS 4478 B14**
- DIMENSIONS (H x W x D): 15" x 13.2" x 7.3" (INCLUDES SUNSHIELD)
  - WEIGHT: 59.4 LBS
  - TX = 758-768 MHZ
  - RX = 788-798 MHZ
  - CPRI 2 PORTS X 2.5/4.9/9.8/10.1 GBPS.



**NOTE:**  
RRUS CAN ONLY BE PAINTED ON SOLAR SHIELD.

**ERICSSON RRUS 4478 B14 DETAIL**  
SCALE: N.T.S.



**NOTES:**  
RAYCAP VIA AT&T SUPPLIES THE DC9 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

**RAYCAP DC9-48-60-24-8C-EV OVP ASSEMBLY**  
SCALE: N.T.S.



**SUBMITTALS**

DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
10/30/19	REVISED	6	SRF
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04/24/20	REVISED	9	SRF
08/17/20	COUNTY COMMENTS	10	MKW

DRAWN BY: SRN  
CHECKED BY: HGS  
APPVD BY: MCS  
DEWBERRY PROJECT NO: 50107722

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820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078  
PREPARED BY:  
**Dewberry**  
DEWBERRY ENGINEERS INC.  
2610 WYCLIFF ROAD, SUITE 410  
RALEIGH, NC 27607  
NCBELS#: F-0929

SITE ID:  
074-4106

SITE NAME:  
MCMANUS

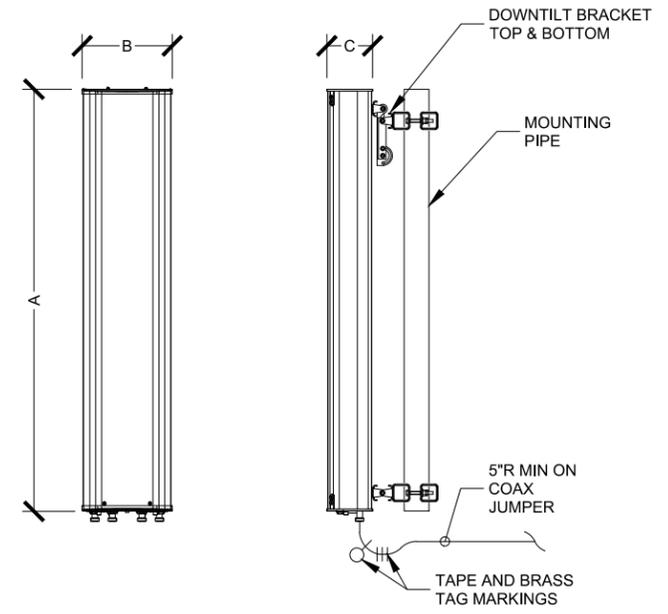
SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
EQUIPMENT DETAILS

SHEET NUMBER  
C-4

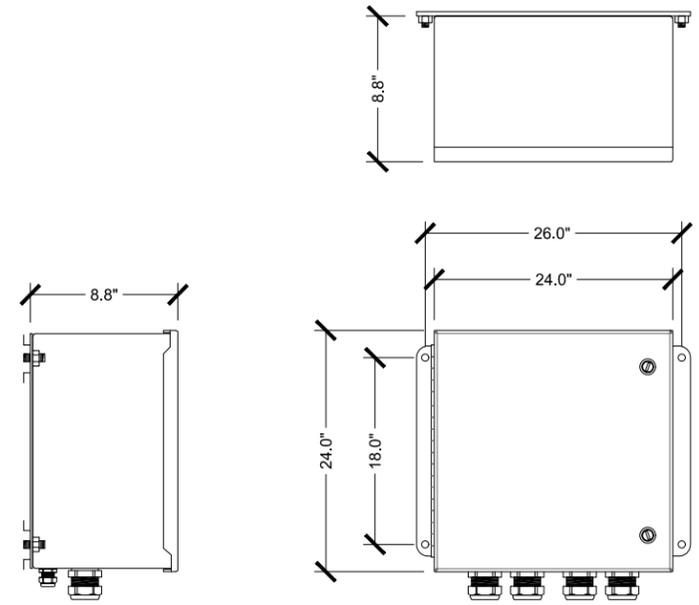


**NEW ANTENNA SPECIFICATIONS**

ANTENNA MODEL	LENGTH (A)	WIDTH (B)	DEPTH (C)	WEIGHT
CCI TPA-65R-BU8DA-K	96.0"	21.0"	7.8"	87.5 LBS
COMMSCOPE NNH4-65C-R6	96.0"	19.6"	7.8"	102.1 LBS

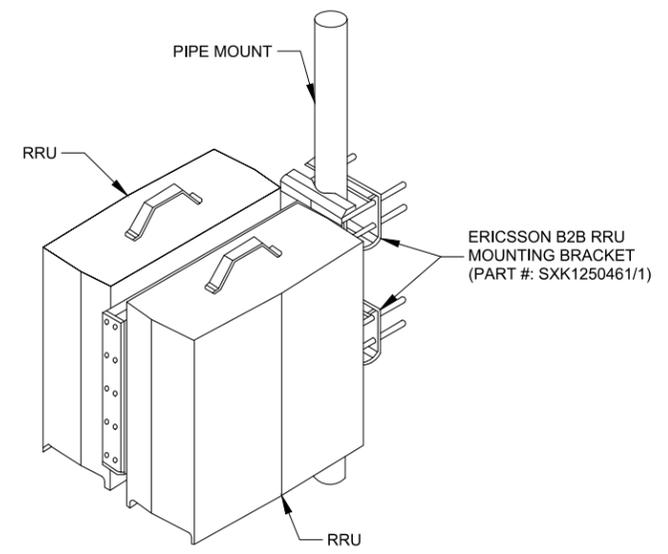
**NEW ANTENNA SPECIFICATIONS**  
SCALE: N.T.S.

- RAYCAP - DC12-48-60-0-25E-SS**
- DIMENSIONS (H x W x D): 24.0" x 24.0" x 8.8"
  - WEIGHT: 56.3 LBS
  - (12) CIRCUITS PROTECTED
  - NORMAL MODE: -48V TO RETURN
  - COMMON MODE: RETURN TO GROUND

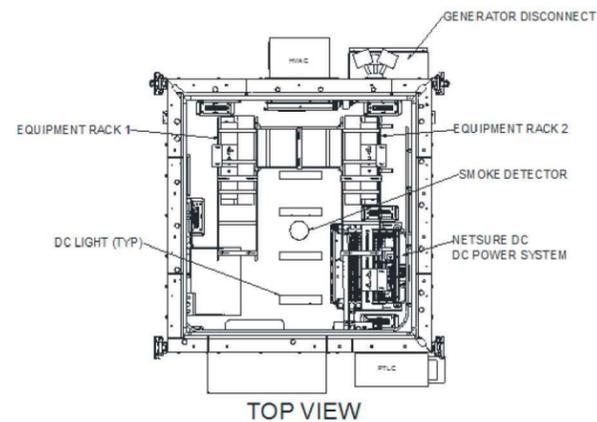


**RAYCAP - DC12-48-60-0-25E-SS**  
SCALE: N.T.S.

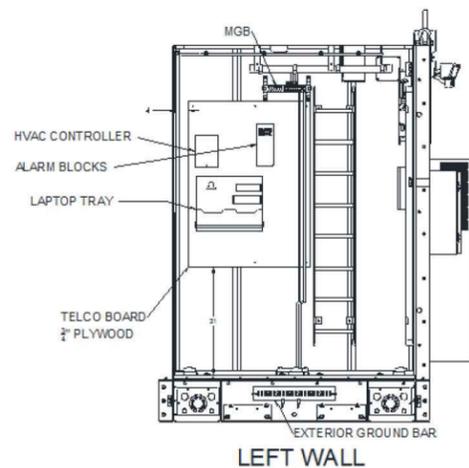
- AT&T SUPPLIED ERICSSON SXK1250461/1 B2B RRU MOUNTING BRACKET**



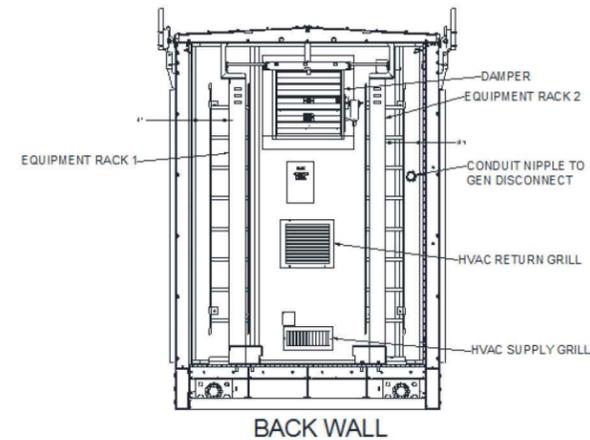
**DUAL B2B RRU MOUNTING BRACKET**  
SCALE: N.T.S.



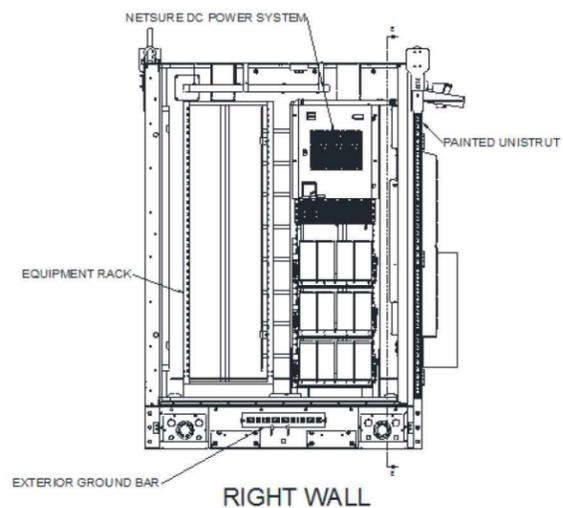
TOP VIEW



LEFT WALL



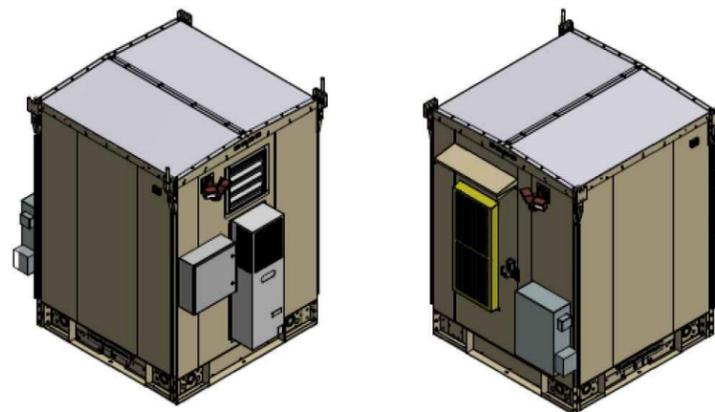
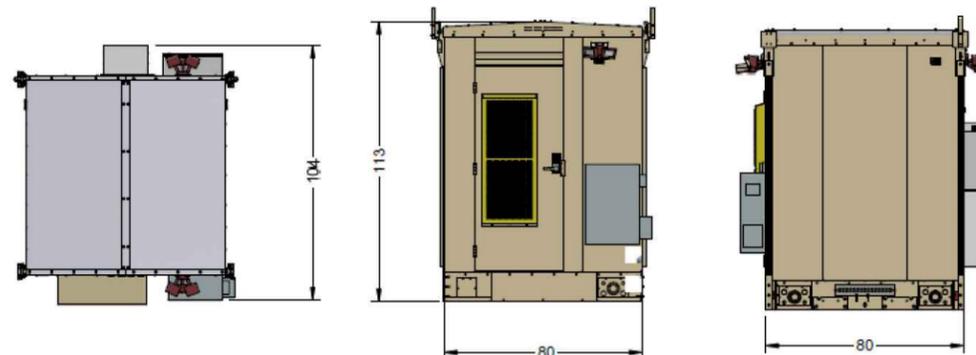
BACK WALL



RIGHT WALL

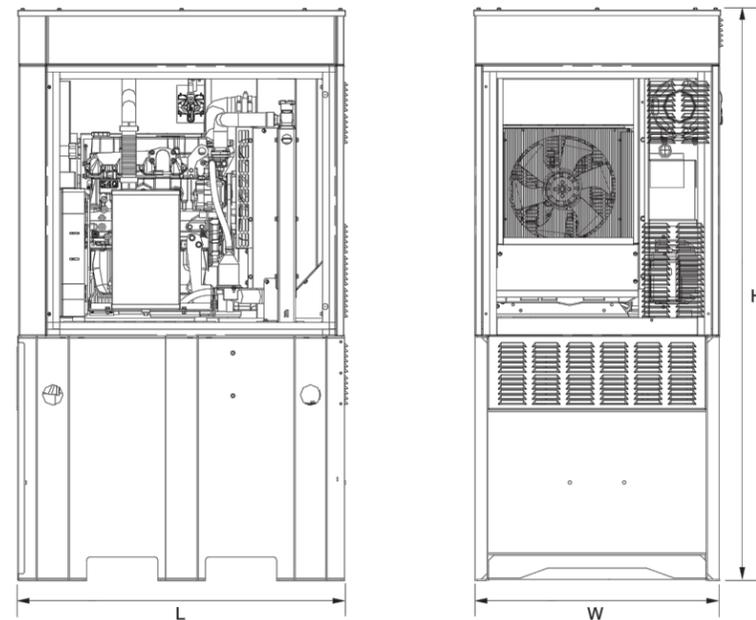
**EQUIPMENT SPECIFICATIONS**

- EXTERNAL DIMENSIONS (H x W x D): 9.5' x 6.6' x 6.6'
- INTERNAL DIMENSIONS (H x W x D): 96" x 70.5" x 70.5"
- WEIGHT: 5500 LBS



**VERTIV SMARTMOD WALK-IN-CABINET**

SCALE: N.T.S.



**GENERATOR NOTES:**

- 20 kW INDUSTRIAL DIESEL GENERATOR BY GENERAC
- MODEL: G007098-0 (STEEL)
- POWER RATING: 120/240V AC @ 1.0 PF - 20kW - 83A
- DIMENSIONS (L x W x H): 48" x 36" x 90"

**TANK NOTES:**

- FUEL TYPE: ULTRA LOW SULFUR DIESEL #2
- FUEL CONSUMPTION: 1.90 GAL/HR
- DRY WEIGHT: 2400 LBS

**GENERATOR DETAIL**

SCALE: N.T.S.



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PREPARED FOR:



PREPARED FOR:



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:

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 DEWBERRY ENGINEERS INC.  
 2610 WYCLIFF ROAD, SUITE 410  
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 NCBELS#: F-0929

SITE ID:  
074-4106

SITE NAME:  
MCMANUS

SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
CABINET DETAILS

SHEET NUMBER  
C-5



SUBMITTALS			
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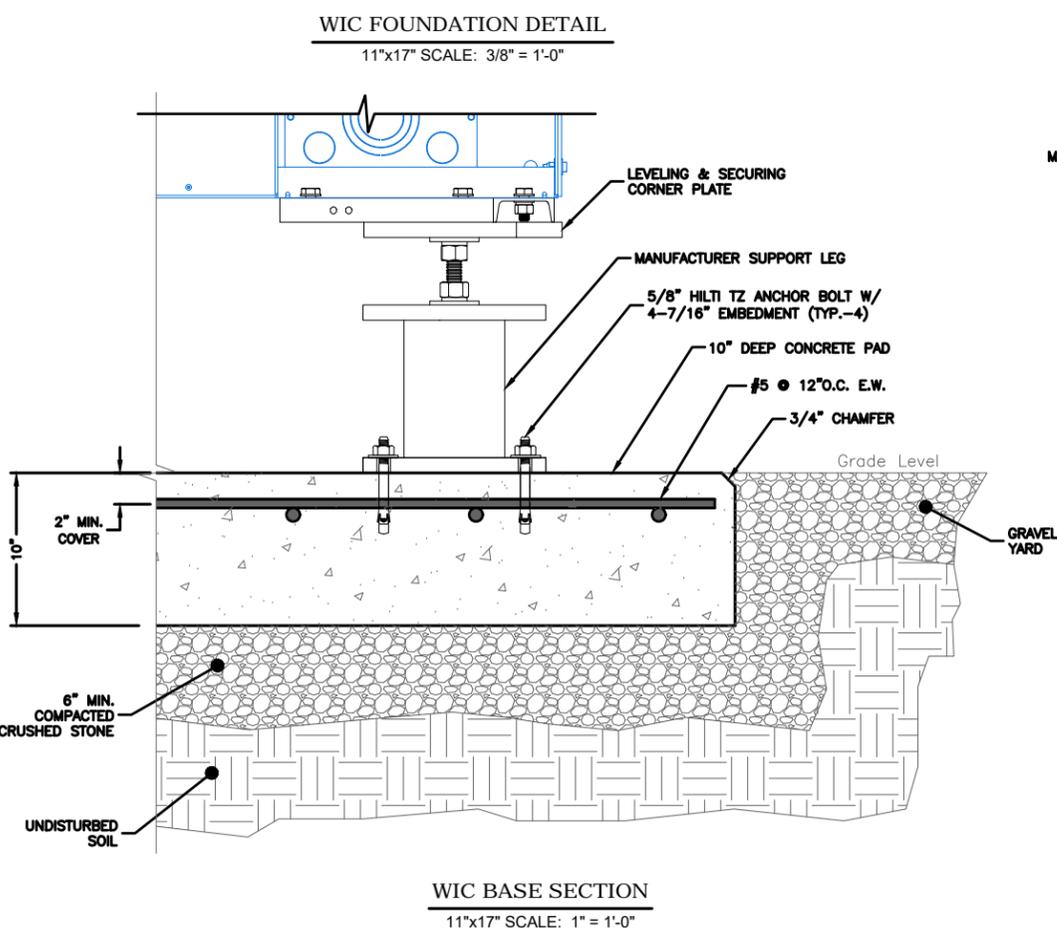
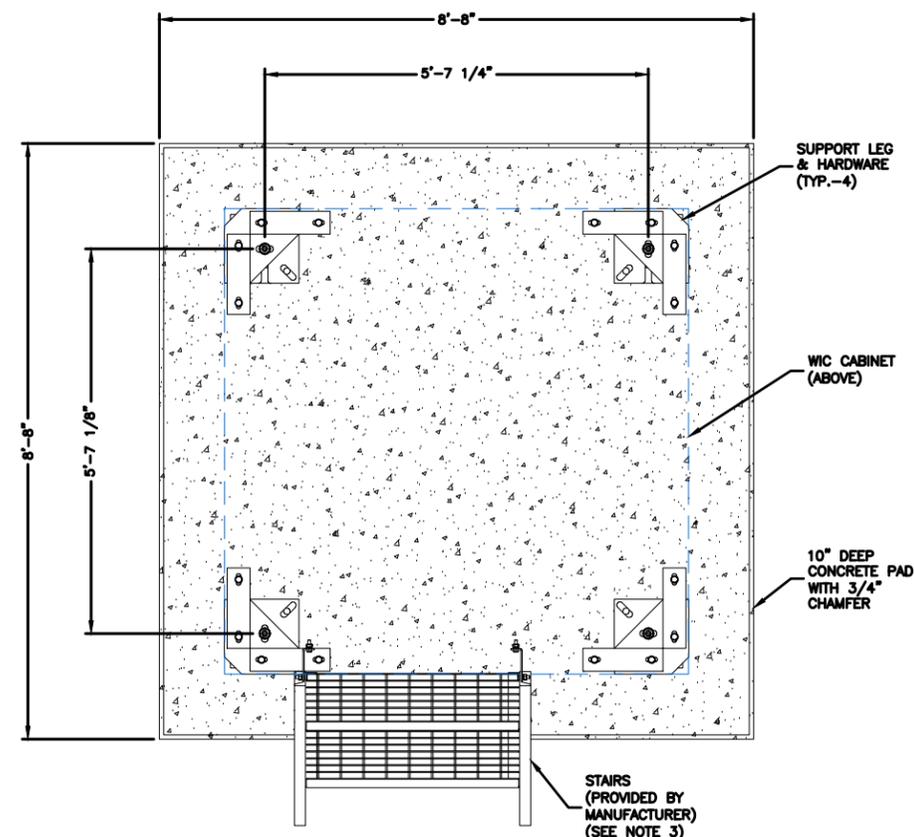
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FA LOCATION:  
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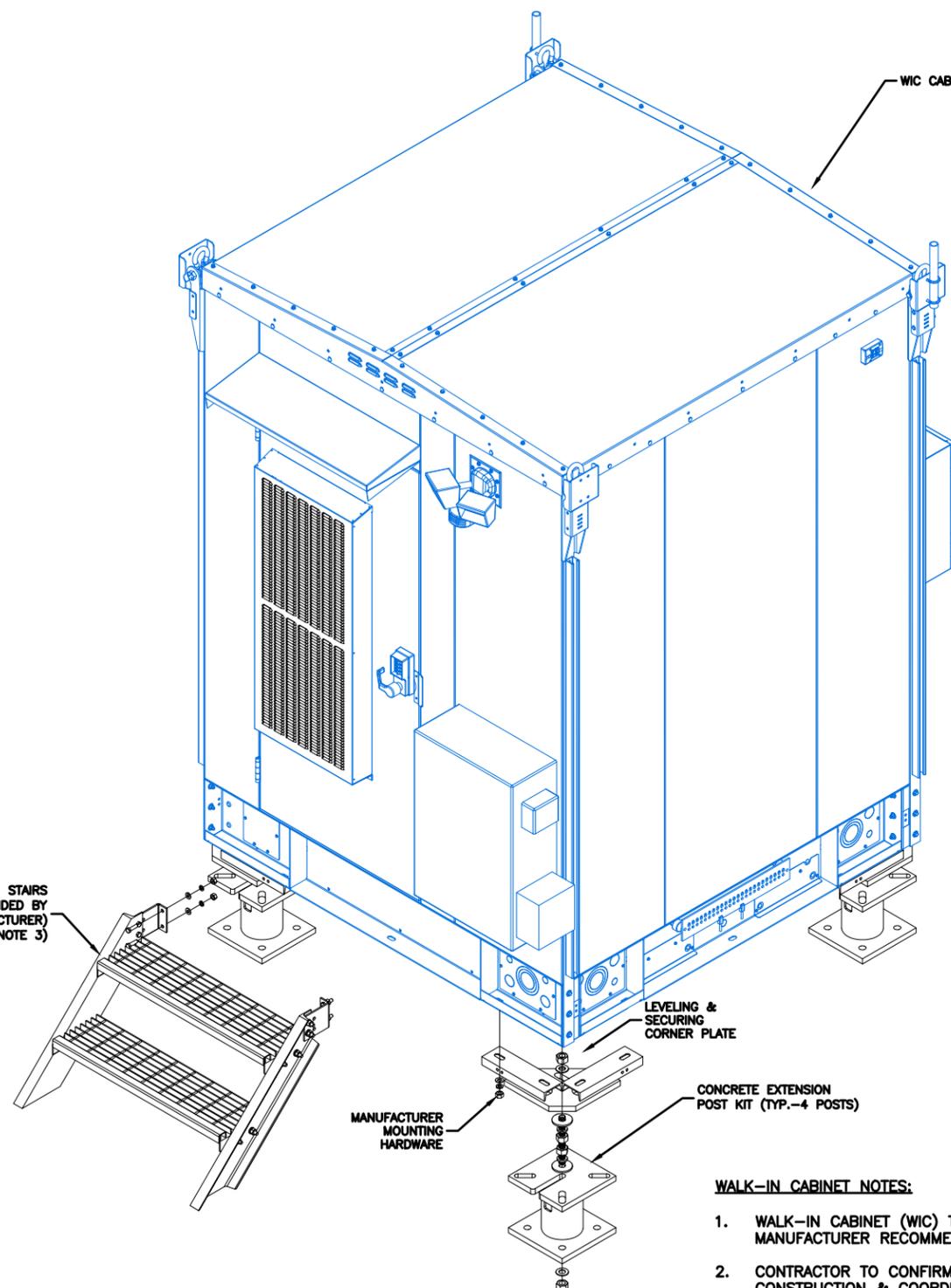
SITE NUMBER:  
N/A

SHEET TITLE  
CABINET MOUNTING  
DETAILS

SHEET NUMBER  
C-5A



STAIRS  
(PROVIDED BY  
MANUFACTURER)  
(SEE NOTE 3)



WIC ISOMETRIC  
11"x17" SCALE: N.T.S.

**WALK-IN CABINET NOTES:**

1. WALK-IN CABINET (WIC) TO BE INSTALLED ACCORDING TO MANUFACTURER RECOMMENDATIONS & SPECIFICATIONS.
2. CONTRACTOR TO CONFIRM PARTS & HARDWARE PRIOR TO CONSTRUCTION & COORDINATE WITH AT&T CM.
3. FOUNDATION TO BE FLUSH WITH EXISTING GRADE. CONTRACTOR SHALL MAINTAIN A MAXIMUM 18" CLEARANCE FROM GRADE TO BOTTOM OF WIC TO ACCOMMODATE STAIRS. VERIFY IN FIELD PRIOR TO POST INSTALLATION.
4. COORDINATE POWER & TELCO CONDUIT STUBUP PLACEMENT WITH ELECTRICAL TRADES. SEE E-1 FOR ADDITIONAL INFORMATION.
5. PROVIDE WORKING HVAC AND ELECTRICAL WORKING SPACE CLEARANCES PER MANUFACTURER RECOMMENDATIONS & CODE REQUIREMENTS.
6. WIC DIMENSIONS: 6'-8"W X 6'-8"L X 9'-6" TALL (NO BASE)  
WIC WEIGHT: 5500 LBS (EMPTY) 7500 LBS (FULLY INTEGRATED)
7. CONTRACTOR TO PROVIDE AND INSTALL SPECIFIED CONCRETE ANCHORS.

**CONCRETE AND REINFORCING STEEL NOTES:**

- DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF ALL APPLICABLE CODES INCLUDING: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", AND ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
- MIX DESIGN SHALL BE APPROVED BY OWNER'S REPRESENTATIVE AND SUBMITTED TO ENGINEER PRIOR TO PLACING CONCRETE.
- CONCRETE SHALL BE NORMAL WEIGHT, 6% AIR ENTRAINED WITH A MAXIMUM 4" SLUMP AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED.
- THE FOLLOWING MATERIALS SHALL BE USED:  
 PORTLAND CEMENT: ASTM C-150, TYPE 1 OR 2  
 REINFORCEMENT: ASTM A-185, PLAIN STEEL WELDED WIRE FABRIC  
 REINFORCEMENT BARS: ASTM A615, GRADE 60, DEFORMED  
 NORMAL WEIGHT AGGREGATE: ASTM C-33  
 WATER: DRINKABLE  
 ADMIXTURES: NON-CHLORIDE CONTAINING
- MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:  
 a. CONCRETE CAST AGAINST EARTH: 3"  
 b. ALL OTHER CONCRETE: 2"
- A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH ACI 301 SECTION 4.2.4, UNLESS NOTED OTHERWISE.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE.
- ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN ACI 301.
- DO NOT WELD OR TACK WELD REINFORCING STEEL.
- ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
- REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
- DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
- DO NOT ALLOW CONCRETE OR SUBBASE TO FREEZE DURING CONCRETE CURING AND SETTING PERIOD, OR FOR A MINIMUM OF 3 DAYS AFTER PLACEMENT.
- FOR COLD-WEATHER AND HOT-WEATHER CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS, MINIMUM.
- CONCRETE SHALL BE RUBBED TO A ROUGH GROUT FINISH. PADS SHALL BE SEALED BY STEEL TROWEL.
- UNLESS OTHERWISE NOTED:  
 a. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60.  
 b. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
- SPLICING OF REINFORCEMENT IS PERMITTED ONLY AT LOCATIONS SHOWN IN THE CONTRACT DRAWINGS OR AS ACCEPTED BY THE ENGINEER, UNLESS OTHERWISE SHOWN OR NOTED REINFORCING STEEL SHALL BE SPLICED TO DEVELOP ITS FULL TENSILE CAPACITY CLASS A IN ACCORDANCE WITH ACI 318.
- REINFORCING BAR DEVELOPMENT LENGTHS, AS COMPUTED IN ACCORDANCE WITH ACI 318, FORM THE BASIS FOR BAR EMBEDMENT LENGTHS AND BAR SPLICED LENGTHS SHOWN IN THE DRAWINGS. APPLY APPROPRIATE MODIFICATION FACTORS FOR TOP STEEL, BAR SPACING, COVER AND THE LIKE.
- DETAILING OF REINFORCING STEEL SHALL CONFORM TO "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" ACI 315.
- ALL SLAB CONSTRUCTION SHALL BE CAST MONOLITHICALLY WITHOUT HORIZONTAL CONSTRUCTION JOINTS, UNLESS SHOWN IN THE CONTRACT DRAWINGS.
- LOCATION OF ALL CONSTRUCTION JOINTS ARE SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, CONFORMANCE WITH ACI 318, AND ACCEPTANCE OF THE ENGINEER. DRAWINGS SHOWING LOCATION OF DETAILS OF THE PROPOSED CONSTRUCTION JOINTS SHALL BE SUBMITTED WITH REINFORCING STEEL PLACEMENT DRAWINGS
- SPLICED EDGES, AT ALL SPLICED EDGES, SHALL BE SUCH THAT THE OVERLAP MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET IS NOT LESS THAN THE SPACING OF THE CROSS WIRE PLUS 2 INCHES, NOR LESS THAN 8".
- BAR SUPPORTS SHALL BE ALL GALVANIZED METAL WITH PLASTIC TIPS.
- ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE TO PREVENT DISPLACEMENT BY CONSTRUCTION TRAFFIC OR CONCRETE. TIE WIRE SHALL BE 16 GAUGE CONFORMING TO ASTM A82.
- SLAB ON GROUND  
 a. COMPACT STRUCTURAL FILL TO 95% DENSITY AND THEN PLACE 6" COMPACTED GRAVEL BENEATH SLAB.  
 b. PROVIDE VAPOR BARRIER BENEATH SLAB ON GROUND.

**EXISTING CONDITIONS:**

- THE EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS IS PROVIDED FOR REFERENCE ONLY. EXISTING CONSTRUCTION, DIMENSIONS, LOCATIONS, ELEVATIONS, ETC. SHALL BE VERIFIED IN THE FIELD PRIOR TO REMOVAL OR MODIFICATION OF ANY EXISTING STRUCTURAL MEMBER AND/OR SHOP DRAWING PREPARATION, FABRICATION, AND CONSTRUCTION OF NEW WORK.
- SHOULD EXISTING CONDITIONS DIFFER FROM THAT SHOWN ON THE CONTRACT DOCUMENTS, NOTIFY THE DESIGN PROFESSIONAL PRIOR TO CONTINUATION OF WORK.
- EXISTING STRUCTURAL MEMBERS SHALL NOT BE CUT OR MODIFIED UNLESS SPECIFICALLY SHOWN HEREIN OR UNLESS APPROVED IN WRITING BY THE DESIGN PROFESSIONAL.
- THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING STRUCTURE AND ADJACENT STRUCTURES FROM DAMAGE DURING EXCAVATION, DEMOLITION, AND CONSTRUCTION OF NEW WORK.
- EXISTING STRUCTURAL DOCUMENTS ARE NOT AVAILABLE FROM THE OWNER. VERIFY IN FIELD EXISTING CONDITIONS, STRUCTURAL MEMBER SIZES, AND LOCATIONS.

**REBAR SPLICE AND HOOK SCHEDULE**

REBAR SPLICE AND HOOK DIMENSIONS IN REINF. CONCRETE F <sub>c</sub> = 3,000 PSI				
ASTM BAR SIZE	LD	CLASS B LAP	TOP BAR LAP	LDH
3	12"	13"	17"	8 1/2"
4	14"	18"	23"	11"
5	17"	22"	28"	14"
6	20"	26"	34"	16 1/2"
7	29"	38"	49"	19 1/2"
8	33"	43"	56"	22"

REBAR SPLICE AND HOOK DIMENSIONS IN REINF. CONCRETE F <sub>c</sub> = 4,000 PSI				
ASTM BAR SIZE	LD	CLASS B LAP	TOP BAR LAP	LDH
3	12"	12"	16"	7 1/2"
4	12"	15"	20"	9 1/2"
5	15"	19"	24"	12"
6	18"	23"	29"	14 1/2"
7	25"	33"	43"	17"
8	29"	37"	49"	19"

LD - STANDARD DEVELOPMENT LENGTH OF BAR  
 LDH - STANDARD DEVELOPMENT LENGTH OF HOOK  
 F<sub>c</sub> - SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE  
 db - BAR DIAMETER PER ASTM

**NOTES:**  
 TOP BAR - DEFINED AS A BAR LOCATED SUCH THAT 12 IN. OR MORE OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE SPLICE.  
 MINIMUM OUTSIDE RADIUS OF BEND, R, SHALL BE 4db.

**FOUNDATION NOTES:**

- BEAR NEW FOUNDATION ON EXISTING SOIL. REMOVE ANY LOOSE FILL AND ORGANIC MATERIAL. PROOF COMPACT PREPARED FOOTING BOTTOM WITH MINIMUM OF 4 PASSES OF A VIBRATORY PLATE COMPACTOR. REMOVE ANY LOOSE OR SOFT AREAS AND REPLACE WITH STRUCTURAL FILL.
- STRUCTURAL FILL MATERIAL BENEATH SLABS-ON-GRADE SHALL CONSIST OF WELL-GRADED GRANULAR SOIL WITH LESS THAN 15% NON-PLASTIC FINES AND A MAXIMUM PARTICLE SIZE OF 4-INCHES. FILL SHOULD BE PLACED IN MAXIMUM LIFT HEIGHTS OF 8-INCHES LOOSE AND COMPACTED TO 95% OF ITS MAXIMUM DRY DENSITY AT ±2% OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE STANDARD PROCTOR TEST.
- FOUNDATION SHALL BE LOCATED ON SOIL WITH A MINIMUM BEARING CAPACITY OF 2000 PSF (e.g., UNITED SOIL CLASSIFICATION SYSTEM ASTM DESIGNATION D-2487) GROUP SYMBOLS: GW, GP, GM, GC, SW, SP, SM, SC. ENGINEER SHALL BE NOTIFIED IF SOIL BEARING CAPACITY IS LESS THAN 2000 PSF.

**MEANS AND METHODS:**

- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING MEANS AND METHODS FOR THE CONSTRUCTION OF THE PROJECT.
- THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER FOR MEANS AND METHODS OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO SCAFFOLDING, SHORING, UNDERPINNING, TEMPORARY BRACING, HOISTING, AND STORING OF MATERIALS OR EQUIPMENT ON THE EXISTING STRUCTURE, ETC.
- THE CONTRACTOR SHALL INSPECT, ASSESS, AND VERIFY THE EXISTING CONDITIONS AND EXTENT OF WORK PRIOR TO COMMENCING DEMOLITION OR CONSTRUCTION OF NEW WORK.
- THE CONTRACTOR SHALL PROVIDE NECESSARY EQUIPMENT AND OTHER PERTINENT MATERIAL, INCLUDING BUT NOT LIMITED TO LADDERS, LIFTS AND OTHER CONSTRUCTION EQUIPMENT FOR THE COMPLETION OF THE WORK INDICATED ON THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL PROVIDE SAFETY AND FALL PROTECTION IN ACCORDANCE WITH OSHA REGULATIONS AND SITE SAFETY GUIDELINES.

**EXCAVATION AND BACKFILL:**

- PERFORM SITE PREPARATION AND EXCAVATION WORK IN STRICT ACCORDANCE WITH OSHA REGULATIONS AND SITE STANDARDS AND GUIDELINES.
- THE CONTRACTOR SHALL ENGAGE THE SERVICES OF AN UNDERGROUND UTILITY LOCATOR COMPANY TO SURVEY THE AREAS AND IDENTIFY LOCATIONS OF UNDERGROUND UTILITIES PRIOR TO EXCAVATION. THE UTILITY LOCATOR COMPANY SHALL UTILIZE APPROPRIATE METHODS SUCH AS GROUND PENETRATING RADAR AND ELECTRO-MAGNETIC SCANNING.
- HAND EXCAVATE AREAS WHERE CONGESTED UNDERGROUND UTILITIES ARE INDICATED ON SITE UNDERGROUND UTILITY DRAWINGS, SHOWN ON THE CONTRACT DRAWINGS, AND/OR INDICATED BY THE UTILITY LOCATOR COMPANY.
- THE CONTRACTOR SHALL REMOVE AND REPLACE MATERIAL THAT FAILS TO MEET COMPACTION TESTING.

**EPOXY GROUTED DOWELS AND ANCHORS:**

- EPOXY GROUTED DOWELS AND ANCHORS SHALL BE HILTI HIT-HY 200 EPOXY ADHESIVE AS MANUFACTURED BY HILTI, INC. OR APPROVED EQUAL.
- EPOXY GROUTED DOWELS AND ANCHORS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- THE INSTALLING CONTRACTOR SHALL BE TRAINED IN THE USE OF THE EPOXY GROUT MATERIAL FOR THE SPECIFIC APPLICATION.



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**PREPARED FOR:**

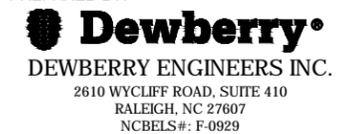


**PREPARED BY:**



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

**PREPARED BY:**



SITE ID:  
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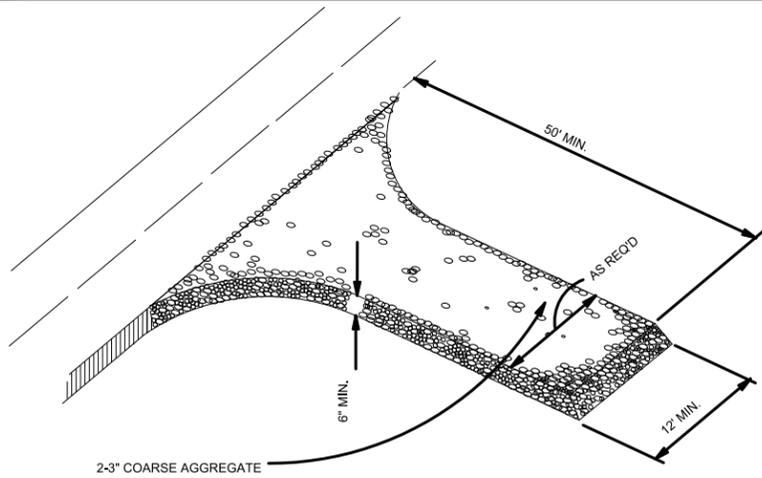
SITE ADDRESS:  
11979 MCMANUS RD  
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FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
CONCRETE AND  
FOUNDATION NOTES

SHEET NUMBER  
C-5B



**NOTE:**

- GRAVEL PAD IS REQUIRED TO PROVIDE BUFFER AREA WHERE VEHICLES CAN DROP THEIR MUD AND SEDIMENT TO AVOID TRANSPORTING IT ONTO PAVED STREETS, TO CONTROL EROSION FROM SURFACE RUNOFF, AND TO HELP CONTROL DUST.

**MAINTENANCE:**

- INSPECT TEMPORARY ENTRANCE/EXIT PAD ONCE PER WEEK AND AFTER EVERY RAINFALL.
- REPLACE GRAVEL PAD WHEN AGGREGATE IS CLOGGED WITH SEDIMENT AND/OR WHEN SEDIMENT IS BEING TRACKED ON ROADWAY.
- IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

**TYPICAL CONSTRUCTION ENTRANCE DETAIL (TEMPORARY)**

SCALE: NTS

SPECIES	% OF MIXTURE	RATE
BAHIA GRASS	25%	25 LBS/ACRE (FLAT AREAS)
COMMON BERMUDA GRASS	25%	
ANNUAL RYE GRASS	20%	35-40 LBS/ACRE (DITCHES & SLOPES)
WHITE PROSO MILLET	15%	
CRIMSON CLOVER	15%	
-	-	-

**SEEDBED PREPARATION:**

- REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM. FILL ANY EXISTING RILLS AND GULLIES.
- IMMEDIATELY PRIOR TO SPREADING TOPSOIL, CORRECT PH OF THE SUBSOIL WITH LIME PER RECOMMENDATION OF SOILS TEST OR AT A RATE OF 2 TONS/ACRE OF GROUND AGRICULTURAL LIME. LOOSEN THE SUBGRADE OF THE SITE TO RECEIVE THE TOPSOIL BY DISKING OR SCARIFYING TO A DEPTH OF AT LEAST 2" TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.
- UNIFORMLY SPREAD TOPSOIL TO A DEPTH OF 6" MIN. MAINTAIN GRADES SHOWN ON CONSTRUCTION PLANS.
- APPLY AGRICULTURAL LIME (IF NECESSARY) AND FERTILIZER (8-24-24 OR EQUIVALENT AT A RATE OF 750 LBS/ACRE) TO TOPSOIL UNIFORMLY AND MIX WITH SOIL.
- CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM REASONABLY UNIFORM SEEDBED IS PREPARED 6 TO 8 INCHES DEEP AND LEAVE SMOOTH SEEDBED.
- SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
- MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RE-SEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES. COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING AND MULCH.

**SOIL AMENDMENTS**

FOLLOW RECOMMENDATIONS OF SOIL TEST OR APPLY 2,000 LB/AC GROUND AGRICULTURAL LIMESTONE AND 750 LB/AC 8-24-24 FERTILIZER.

**MULCH**

APPLY 5,000 LB/AC STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NESTING, OR A MULCH ANCHORING TOOL. A DISC WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCHING ANCHORING TOOL.

**MAINTENANCE**

RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

**PERMANENT SEEDING SPECIFICATION**

SCALE: NTS

**TS TYPICAL SEEDING SCHEDULE IN MOUNTAIN BELOW 2,500 FT (TEMPORARY)**

- LIME, SEED AND FERTILIZER SHALL BE APPLIED WITH NECESSARY EQUIPMENT TO GIVE UNIFORM DISTRIBUTION OF THESE MATERIALS. THE KINDS OF MATERIALS TO BE APPLIED PER ACRE:

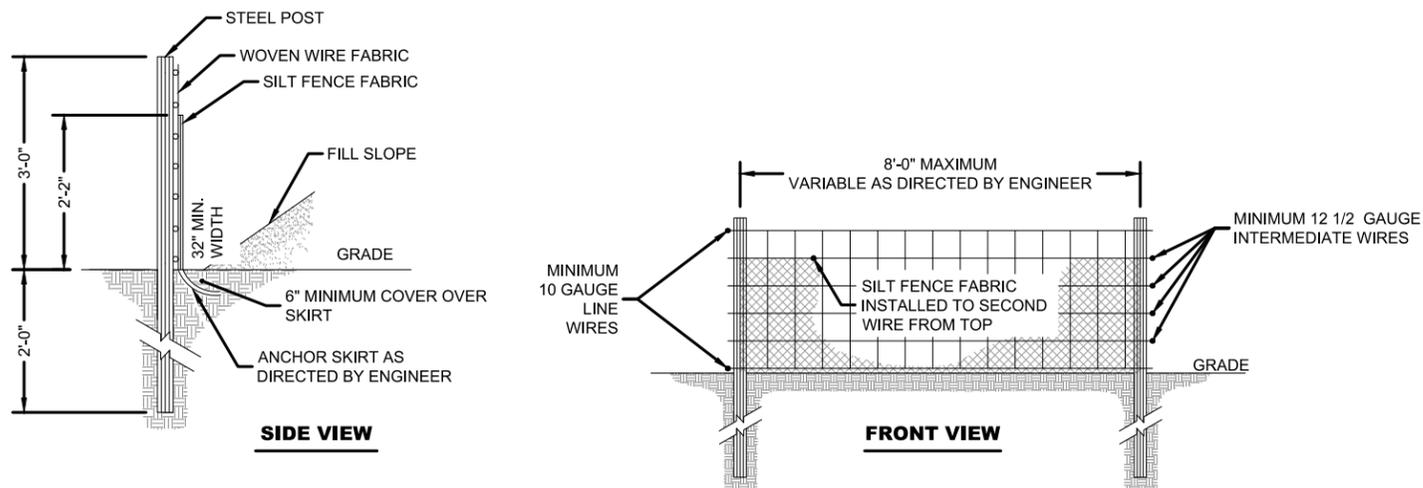
DATE	TYPE	PLANTING RATE	FERTILIZER 10-10-10 BLEND**	LIMESTONE	STRAW MULCH
FEB. 1 - MAY 1	RYE (GRAIN) KOREAN LESPEDEZA *	120 LBS./ACRE 50 LBS./ACRE	750 LBS./ACRE	2000 LBS./ACRE	4000 LBS./ACRE
MAY 15 - AUG. 15	GERMAN MILLET	40 LBS./ACRE	750 LBS./ACRE	2000 LBS./ACRE	4000 LBS./ACRE
AUG. 15 - DEC. 15	RYE (GRAIN)	120 LBS./ACRE	1000 LBS./ACRE	2000 LBS./ACRE	4000 LBS./ACRE

- \* OMIT KOBE LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.
- \*\* QUANTITY OF FERTILIZER AND LIME SHALL BE CONFIRMED BY SOILS TEST.

- SEEDED AREA SHALL BE CULTIPACK TO FIRM SEEDBED AND COVER SEED.
- GRAIN STRAW SHALL BE APPLIED OVER SEEDED AREAS AS A MULCH WITHIN 24 HOURS OF THE INITIAL SEEDING OPERATION. NO BARE GROUND SHALL BE VISIBLE WHEN RIDING BY A MULCHED AREA IF PROPER APPLICATION IS ACHIEVED. THICK CLUMPS OF STRAW ARE NOT PERMISSIBLE AS A UNIFORM COVERAGE IS EXPECTED.
- MULCHED AREA SHALL BE TACKED WITH LIQUID ASPHALT AT A RATE OF 0.10 GALLON PER SQUARE YARD (10 GAL/1000 SQ. FT.). HYDRAULIC TACKING MATERIAL SHALL BE USED IN HIGH QUALITY WATER ZONES AND CRITICAL HABITAT AREAS.
- DITCH TREATMENT SHALL BE USED IN AREAS WHERE STEEP GRADES COULD CAUSE DITCH EROSION. USE OF EXCELSIOR MATTING OR FIBERGLASS/SYNTHETIC ROVING IS ACCEPTABLE. DITCH TREATMENT SHALL BE INSTALLED BEFORE MULCHING OPERATION.
- PROVIDE TEMPORARY SEEDING AFTER CLEARING AND GRUBBING OPERATION IF THE AREA IS TO REMAIN UNDISTURBED FOR MORE THAN 15 WORKING DAYS OR 60 CALENDAR DAYS, WHICHEVER IS LESS. SLOPES SHALL BE SEEDED WITHIN 21 CALENDAR DAYS.

**NOTES:**

- USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.



**TEMPORARY SILT FENCE DETAIL**

SCALE: NTS



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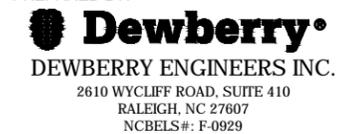


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820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:



SITE ID:  
074-4106

SITE NAME:  
MCMANUS

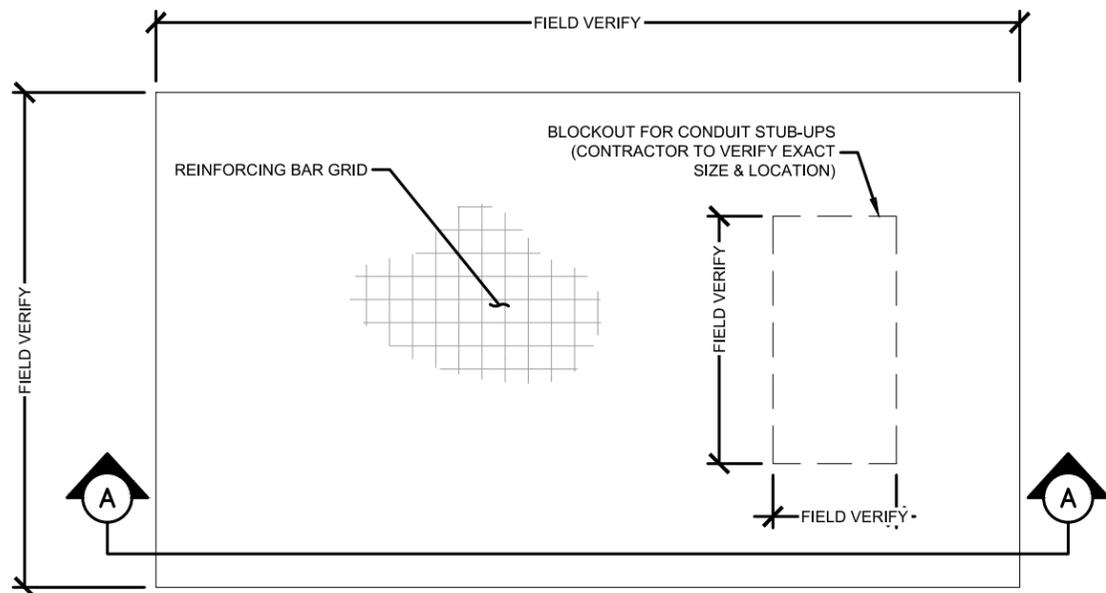
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MIDLAND, NC 28107

FA LOCATION:  
12829624

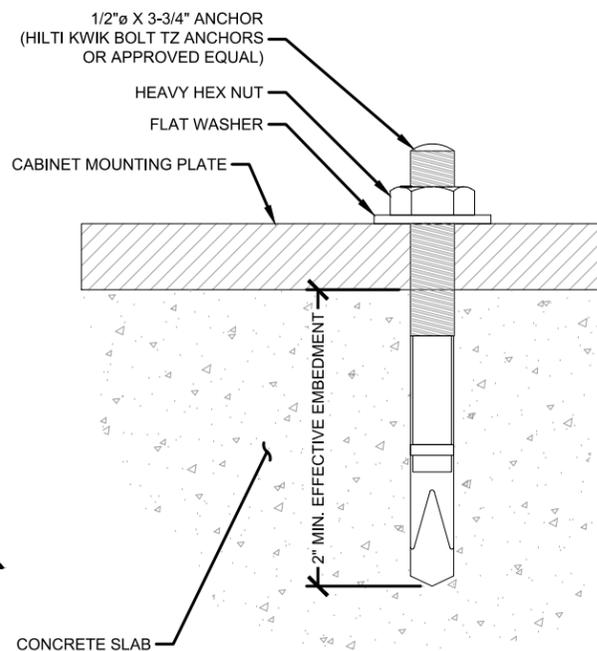
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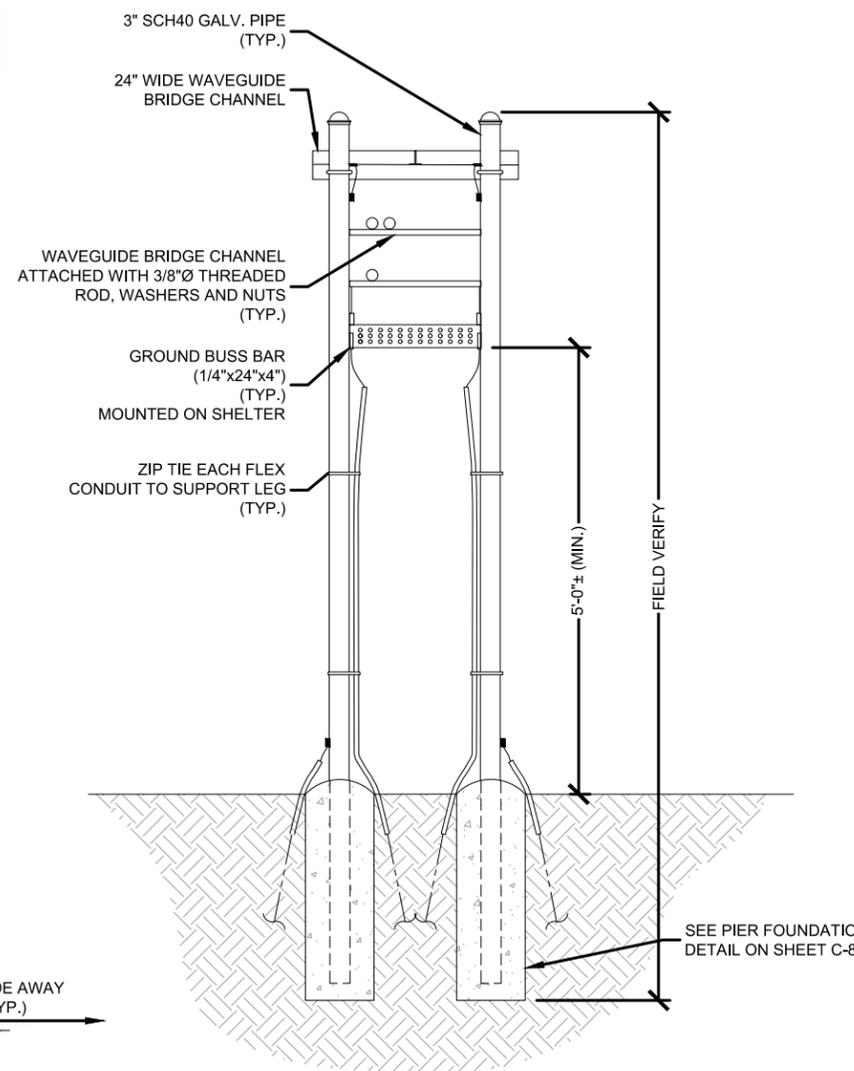
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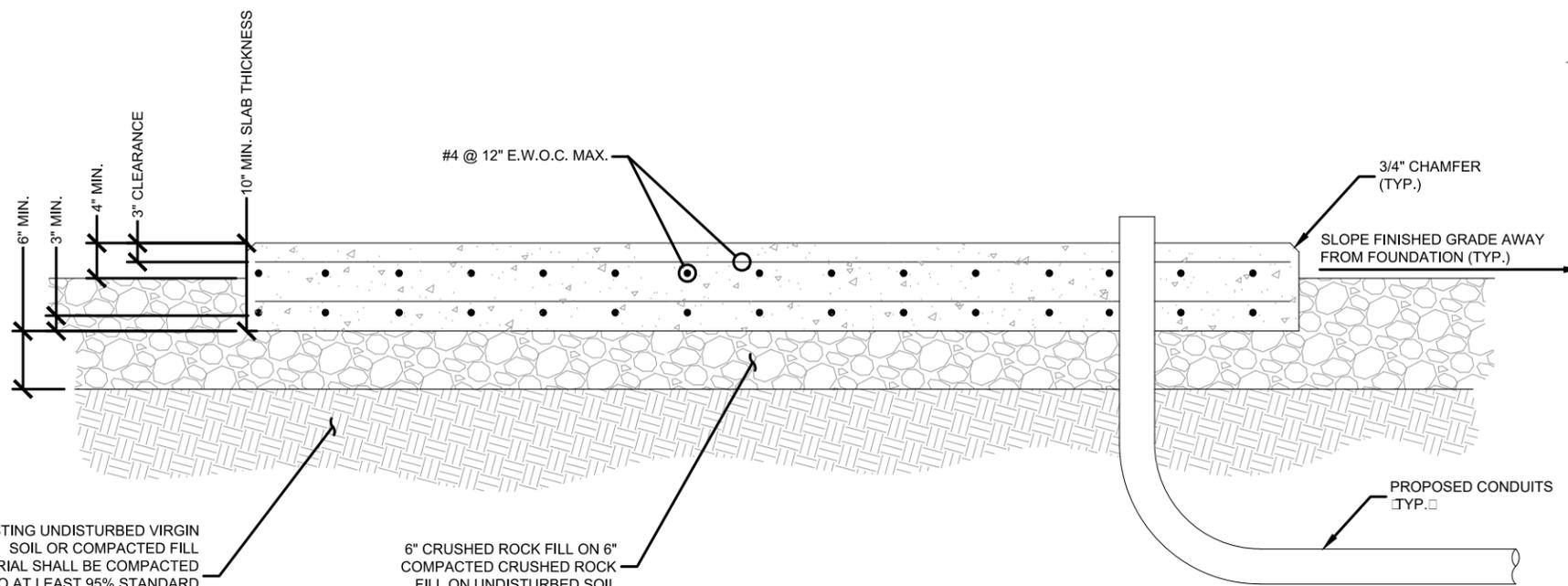
**EQUIPMENT PAD PLAN**  
SCALE: N.T.S.



**ANCHORAGE DETAIL**  
SCALE: N.T.S.



**ICE BRIDGE DETAIL**  
SCALE: N.T.S.



**SECTION A-A**  
SCALE: N.T.S.

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CIVIL DETAILS

SHEET NUMBER  
C-7

**NOTES:**

REMOVE ALL TOPSOIL, ORGANIC MATERIAL, AND WET OR POOR SOILS ALONG ACCESS DRIVE.

CONTRACTOR TO REVIEW SITE CONDITIONS AND CONSULT GEOTECHNICAL REPORT FOR ANTICIPATED DEPTH OF SOILS THAT WILL REQUIRE REMOVAL IF POOR SOILS ARE ENCOUNTERED AT A DEPTH OF MORE THAN 12", CONTACT CONSTRUCTION MANAGER FOR GUIDANCE.

SUBGRADE TO BE COMPACTED TO 95% STANDARD PROCTOR AND VERIFIED BY PROOF-ROLL OR GEOTECHNICAL RECOMMENDATIONS.

CONSULT GRADING PLAN OR SITE PLAN FOR FINAL SITE GRADES.

**RESTORATION:**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR GRAVEL ACCESS DRIVE REPAIR AND RESTORATION FOLLOWING CONSTRUCTION COMPLETION. ANY DISTRIBUTED OR DAMAGED AREAS SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION UPON COMPLETION OF WORK.

**GRAVEL DRIVE REQUIREMENTS:**

THICKNESS OF GRAVEL DRIVE BASE COURSE TO BE DETERMINED BASED ON THE PROPOSED SOIL BEARING CAPACITY (PER UFC DESIGN RECOMMENDATIONS):

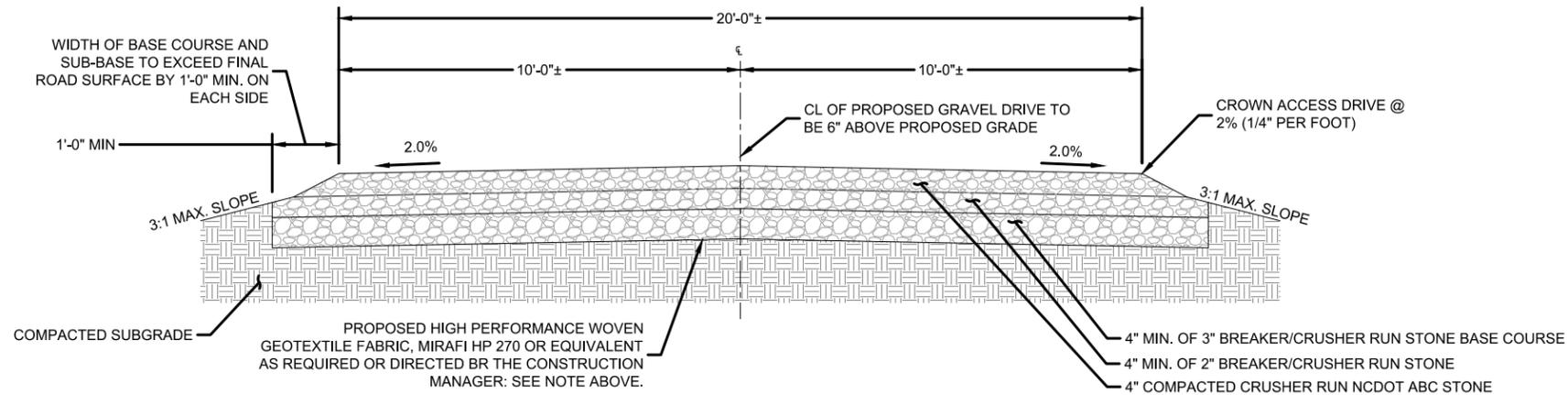
BEARING CAPACITY	REQ'D AGGREGATE THICKNESS
1000 PSF	*16" MIN.
1500 PSF	12" MIN.
2000 PSF	8" MIN. (SEE DETAIL)

\*A HIGH PERFORMANCE, WOVEN GEOTEXTILE FABRIC MAY BE USED TO REPLACE 6" OF AGGREGATE (MIRAFI HP 270 OR EQUIVALENT)

IF POOR OR WET SOILS ARE PRESENT BELOW BASE COURSE, CONTRACTOR TO INSTALL 6" MIN. WELL-GRADED GRAVEL/SAND SUB-BASE TO FACILITATE ADEQUATE DRAINAGE AND STABILITY.

FOR ACCESS DRIVE SLOPES GREATER THAN 10%, CONTRACTOR TO USE MIRAFI HP 270 OR EQUIVALENT GEOTEXTILE FABRIC.

CONSULT GEOTECHNICAL REPORT FOR ANTICIPATED SOIL CONDITIONS.



**GRAVEL DRIVE CROSS SECTION**

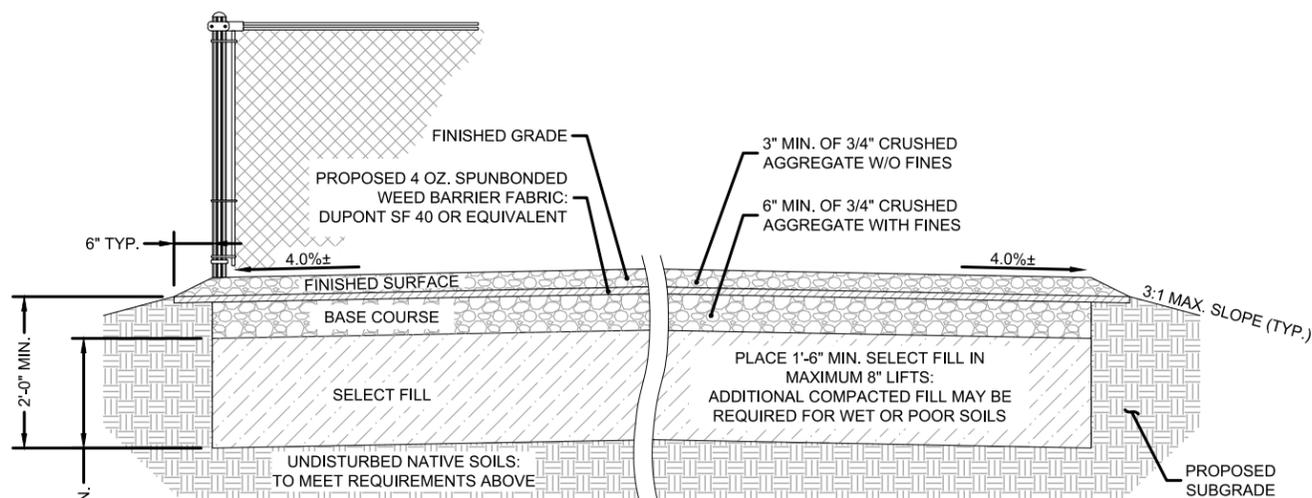
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REMOVE ALL TOPSOIL, ORGANIC MATERIAL, AND WET OR POOR SOILS ALONG ACCESS DRIVE. CONTRACTOR TO REVIEW SITE CONDITIONS AND CONSULT GEOTECHNICAL REPORT FOR ANTICIPATED DEPTH OF SOILS THAT WILL REQUIRE REMOVAL IF POOR SOILS ARE ENCOUNTERED AT A DEPTH OF MORE THAN 2'-0", CONTACT CONSTRUCTION MANAGER FOR GUIDANCE.

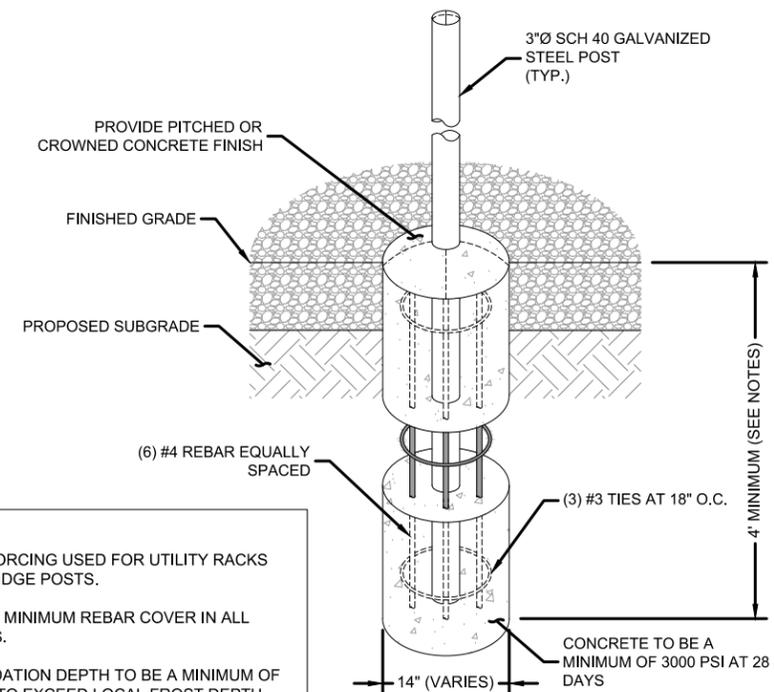
FINAL TOWER FOUNDATION DESIGN RECOMMENDATIONS TO SUPERCEDE GRADING PLAN OR SITE PLAN ELEVATIONS.

IF THE GEOTECHNICAL REPORT PERMITS, USE ONSITE SOILS FOR SELECT FILL PROVIDED IT IS AVAILABLE AND FREE OF DELETERIOUS MATERIALS AND ORGANICS.



**COMPOUND CROSS SECTION**

SCALE: NTS



**NOTES:**

1. PIER REINFORCING USED FOR UTILITY RACKS AND ICE BRIDGE POSTS.
2. MAINTAIN 3" MINIMUM REBAR COVER IN ALL DIRECTIONS.
3. PIER FOUNDATION DEPTH TO BE A MINIMUM OF 48"; DEPTH TO EXCEED LOCAL FROST DEPTH.

**PIER FOUNDATION DETAIL**

SCALE: NTS



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**PREPARED FOR:**



**PREPARED FOR:**



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

**PREPARED BY:**

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 DEWBERRY ENGINEERS INC.  
 2610 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCBELS#: F-0929

SITE ID:  
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SITE NAME:  
MCMANUS

SITE ADDRESS:  
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FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
CIVIL DETAILS

SHEET NUMBER  
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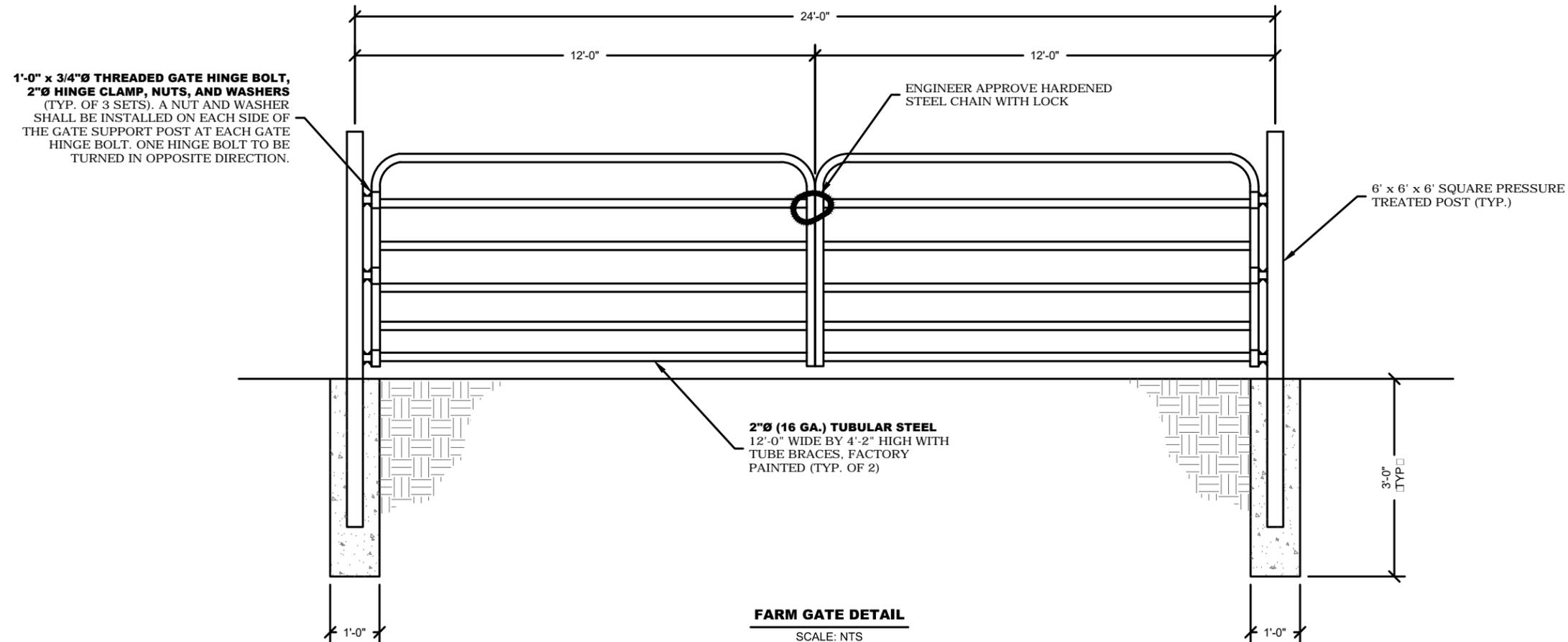
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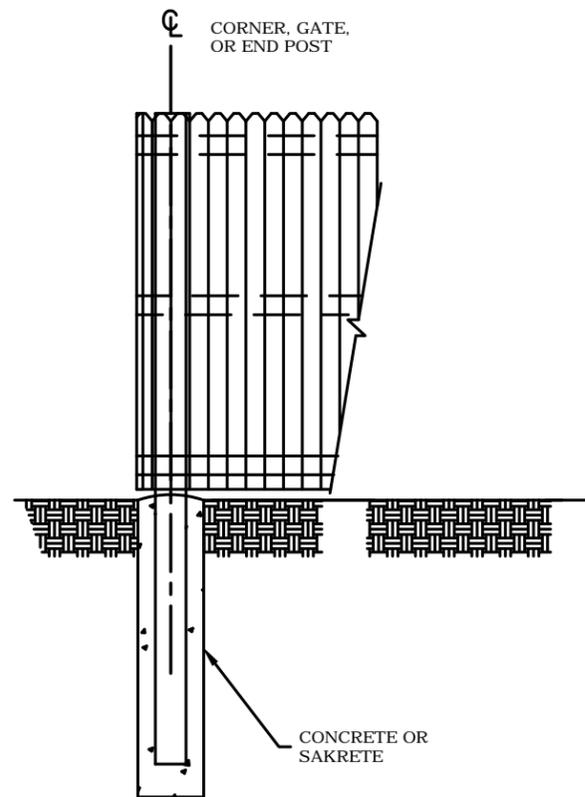
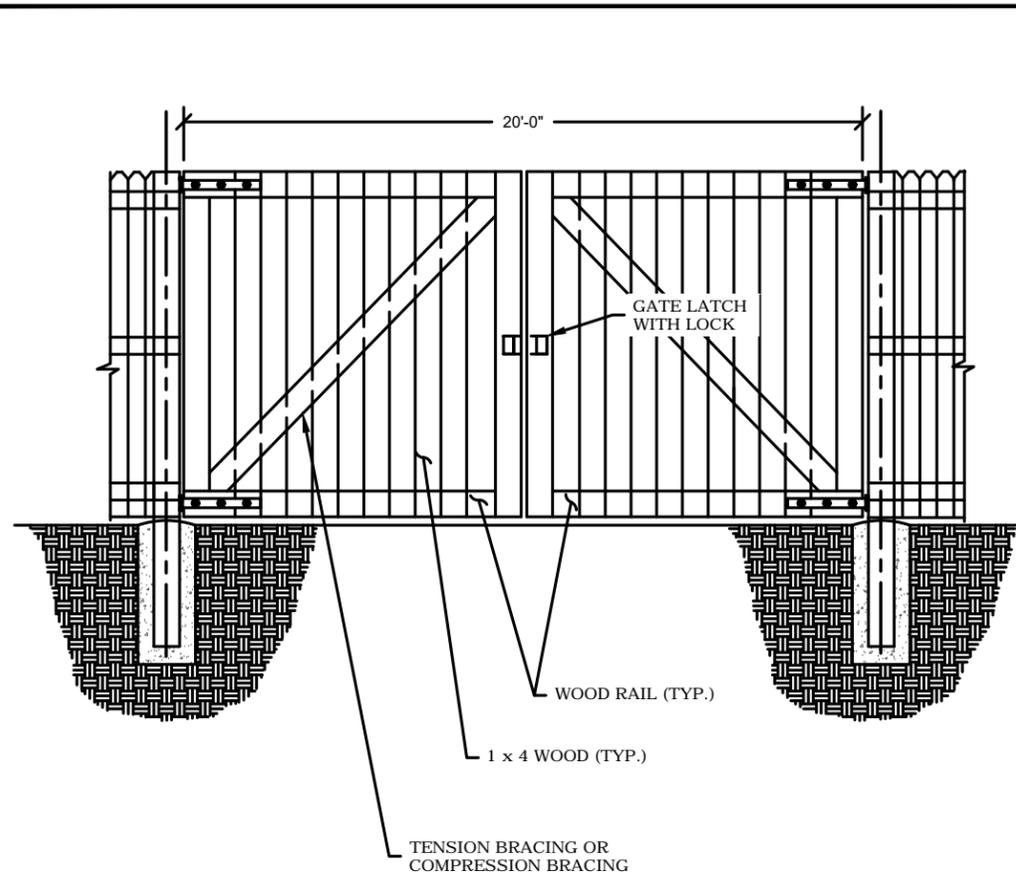
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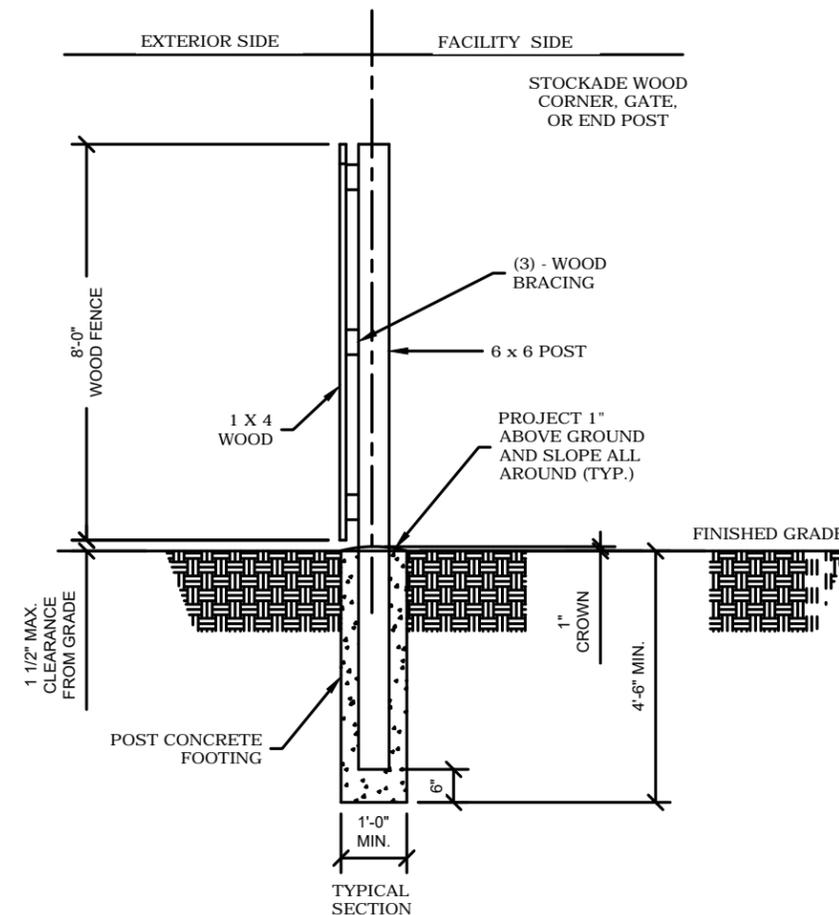
SHEET NUMBER  
C-9



**NOTE:**  
 CONCRETE CAN BE FIELD MIXED SAKRETE AND POURED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.



WOOD FENCE DETAIL  
SCALE: NTS



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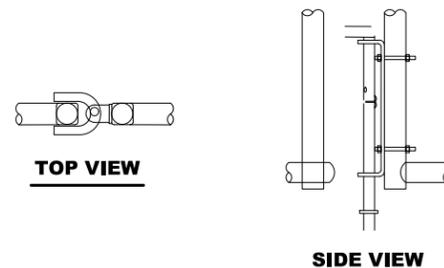
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SHEET TITLE  
CIVIL DETAILS

SHEET NUMBER  
C-10

NOTES:

- ALL FENCING TO BE INSTALLED PER ASTM F-567. ALL SWING GATES TO BE INSTALLED PER ASTM F-900.
- BARBED WIRE PERMIT REQUIRED SHALL BE COMPLETED IF LOCAL ORDINANCE REQUIRES.
- POST & GATE PIPE SIZES ARE INDUSTRY STANDARDS. ALL PIPE TO BE GALVANIZED (HOT DIP, ASTM A120 GRADE "A" STEEL). ALL GATE FRAMES SHALL BE WELDED. ALL WELDINGS SHALL BE COATED WITH (3) COATS OF GOLD GALV. (OR EQUAL). ALL OPEN POSTS SHALL HAVE END-CAPS.
- ALL SIGNS MUST BE MOUNTED ON INSIDE OF FENCE FABRIC USING GALVANIZED HOG-RING WIRE.
- MUSHROOM ANCHOR AND PLUNGER REQUIRED FOR GATE. GENERAL CONTRACTOR RESPONSIBLE FOR GATE LOCK.



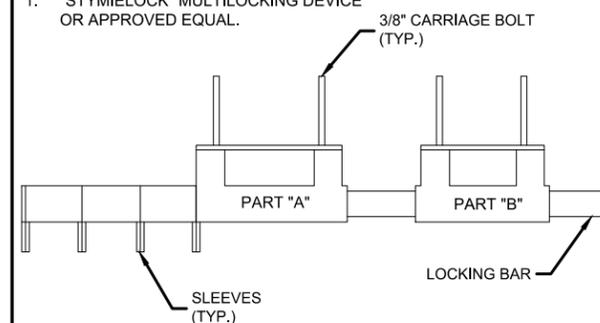
DROP ROD ASSEMBLY DETAIL  
SCALE: NTS

MULTILOCK INSTALLATION:

- DRILL 3/8" HOLES IN THE GATE LEAF USING THE GATE DIMENSIONS PROVIDED.
- SLIDE THE CARRIAGE BOLTS IN THE SLOTS ON THE BACK OF PART "B" AND PUSH THE BOLTS THROUGH THE HOLES DRILLED IN THE GATE FIGURE. PUT THE NUT AND THE LOCKNUT ON AND TIGHTEN AND CUT THE EXCESS BOLT OFF. DO THE SAME WITH PART "A".
- ADD THE NUMBER OF SLEEVES NEEDED FOR THE NUMBER OF LOCKS AND SLIDE THE LOCKING BAR INTO PLACE THROUGH BOTH PART "A" AND PART "B". NOW INSTALL THE LOCKS.
- IF THE GATE HAS NO CENTER BAR IN THE GATE LEAF YOU MAY NEED TO MOUNT THE STYMILOCK VERTICALLY USING THE SAME DIMENSIONS GIVEN ON THE GATE FACE.
- VERTICAL APPLICATION MAY ALSO BE USED ON SLIDING GATES WITH MULTIPLE LOCKS.

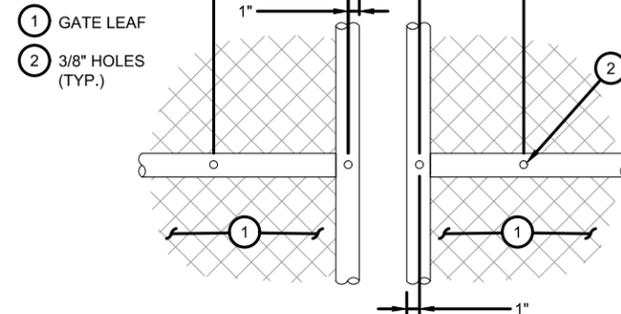
GATE LOCK ASSEMBLY:

- "STYMILOCK" MULTILocking DEVICE OR APPROVED EQUAL.

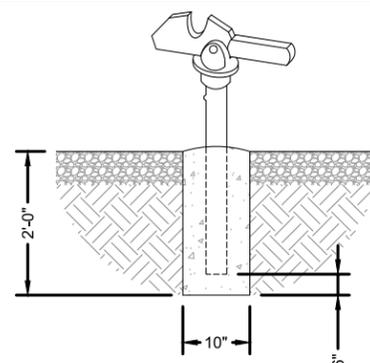


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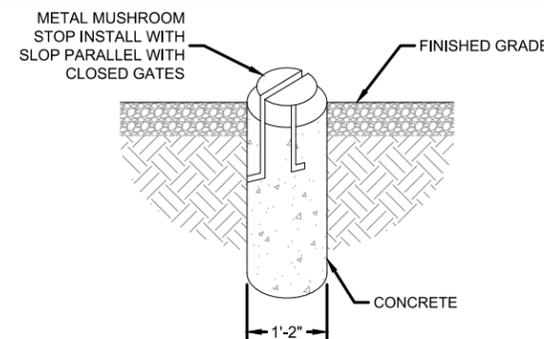
CALLOUTS:



GATE FACE - ACCOMODATING MULTI-TENANT LOCK  
SCALE: NTS



GATE KEEPER DETAIL  
SCALE: NTS



MUSHROOM STOP DETAIL  
SCALE: NTS



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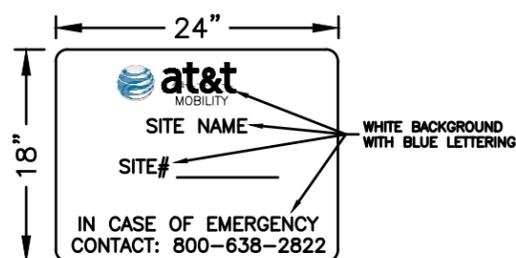
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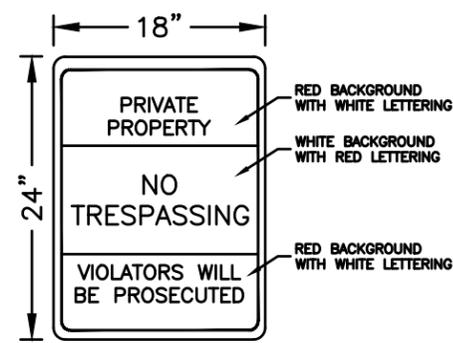
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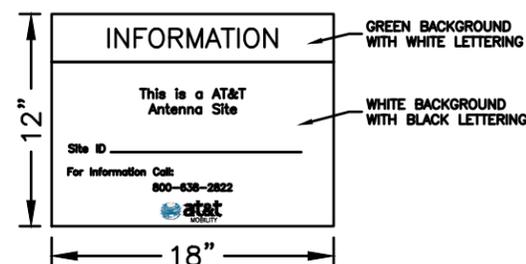
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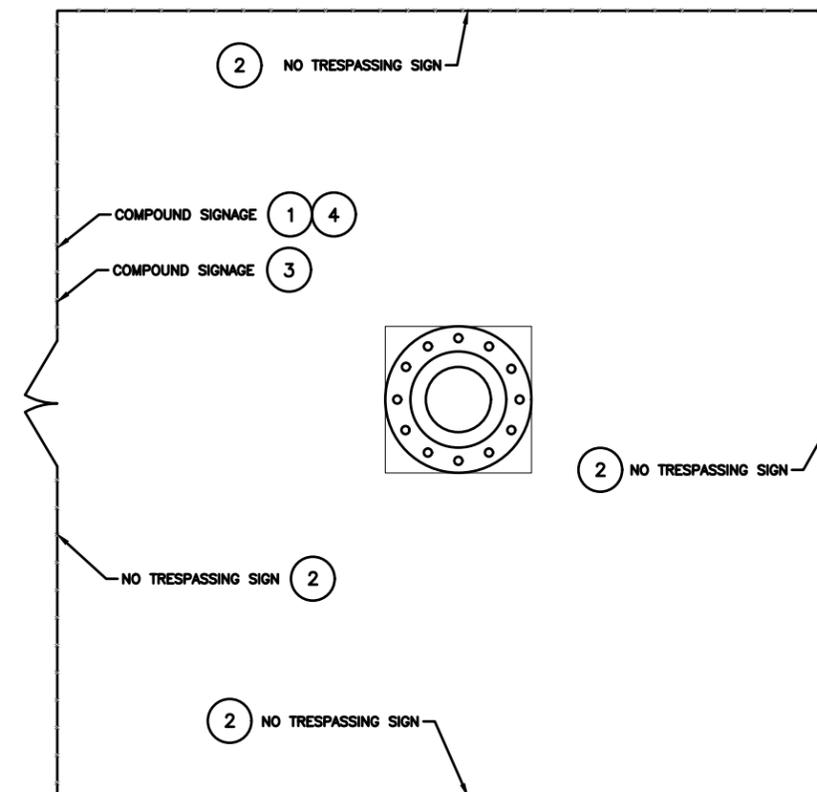
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INFORMATION SIGN 3



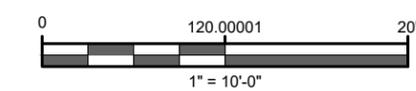
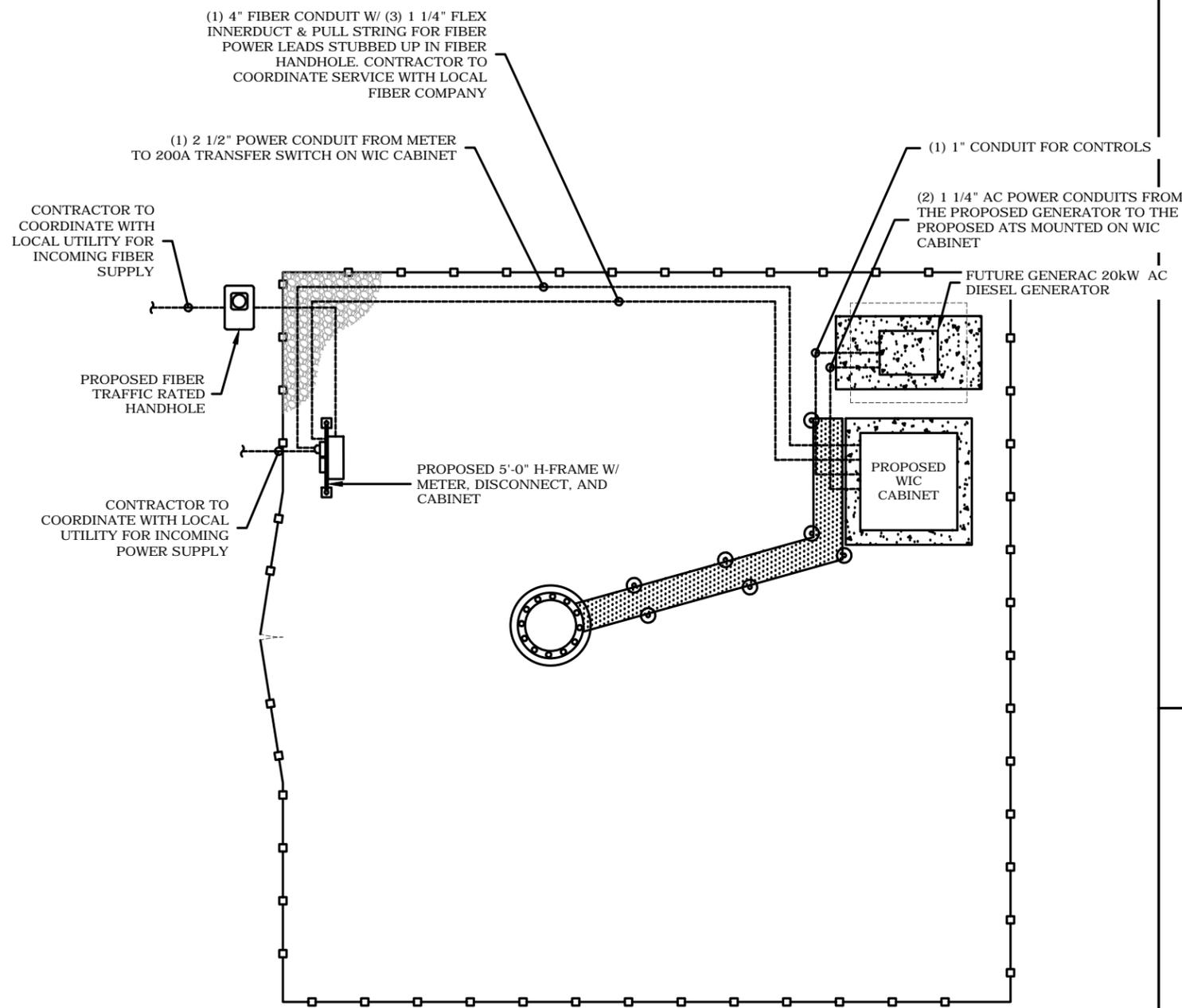
FCC REGISTRATION SIGN 4



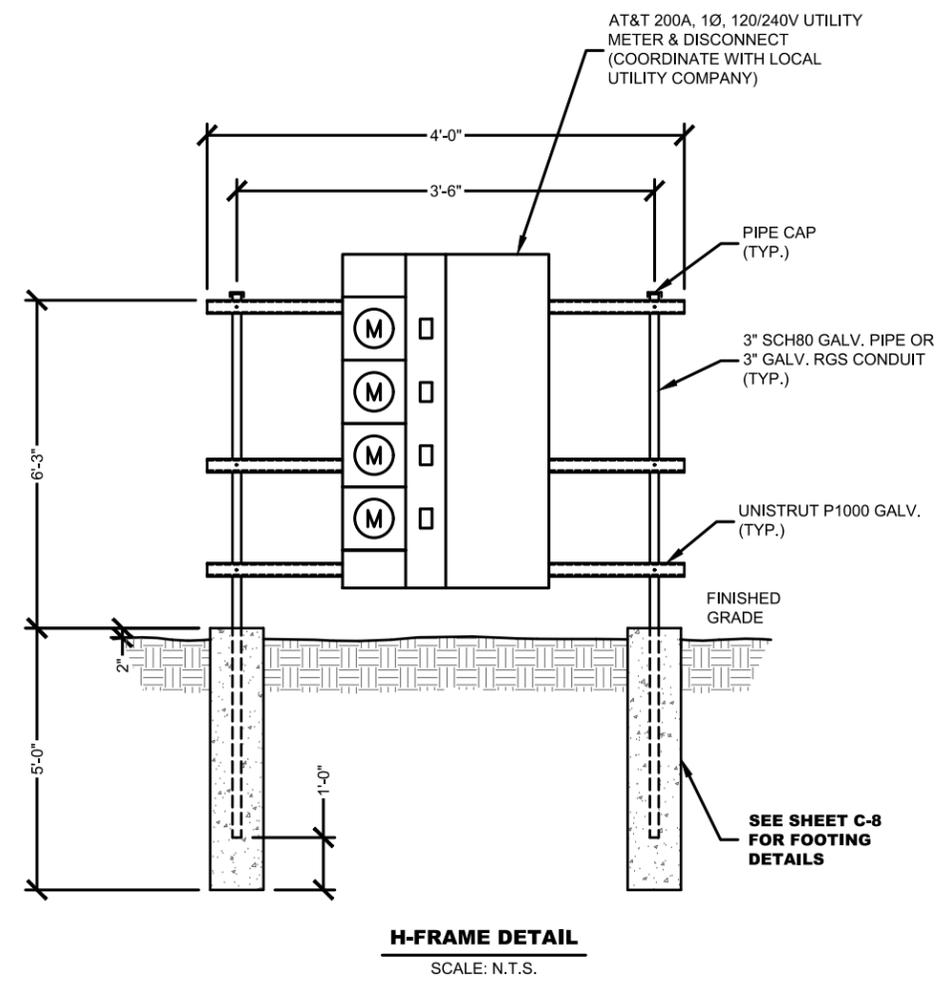
NOTES:

1. A AT&T SITE ID SIGN SHALL BE MOUNTED ON THE DOOR OF THE SHELTER. TWO-SIDED TAPE SHALL BE UTILIZED AT EACH CORNER ON THE BACKSIDE OF THE SIGN.
2. SIGNS SHALL BE MOUNTED TO THE TOWER, GATE, AND FENCE USING 9 GAUGE ALUMINUM WIRE OR BRACKETS WHERE NECESSARY. BRACKETS SHALL BE OF SIMILAR MATERIAL AS THE STRUCTURE TO AVOID CORROSION.
3. SIGNS SHALL BE FABRICATED FROM CORROSION RESISTANT MATERIALS AND PAINTED WITH LONG LASTING UV RESISTANCE COATINGS.
4. EXACT SIGN PLACEMENT SHALL BE AS DIRECTED BY THE CONSTRUCTION MANAGER.

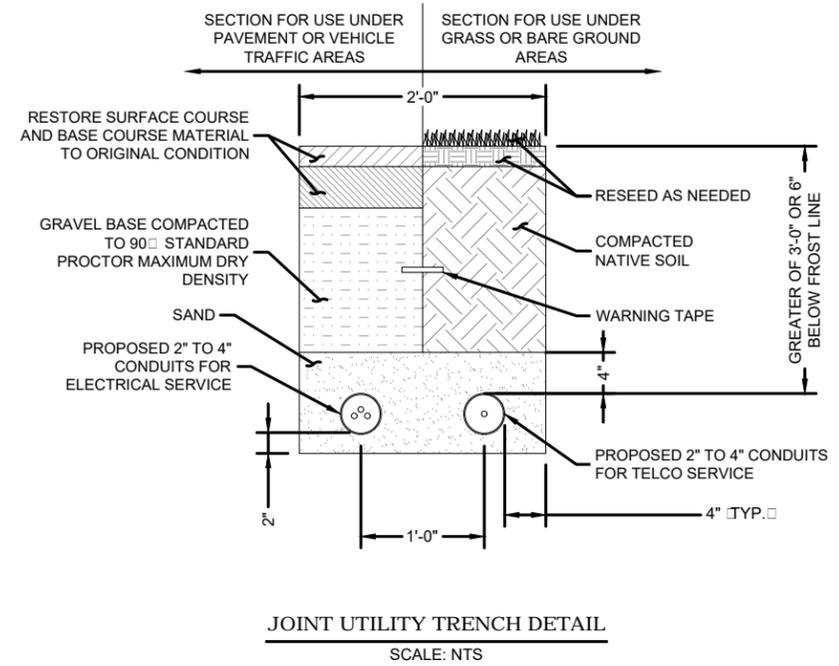
SIGNAGE LOCATION PLAN 5



**SERVICE ROUTING PLAN**  
11"x17" SCALE: 1" = 10'-0"



**H-FRAME DETAIL**  
SCALE: N.T.S.



**JOINT UTILITY TRENCH DETAIL**  
SCALE: N.T.S.



SUBMITTALS			
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08/17/20	COUNTY COMMENTS	10	MKW

DRAWN BY: SRN  
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 NCBELS#: F-0929

SITE ID:  
074-4106

SITE NAME:  
MCMANUS

SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
SERVICE ROUTING PLAN  
AND DETAILS

SHEET NUMBER  
E-1

**ELECTRICAL NOTES:**

**SCOPE:**

1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

**CODES:**

1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND CODES. THESE INCLUDE BUT ARE NOT LIMITED TO THE LATEST ADOPTED EDITIONS OF:
  - A. THE NATIONAL ELECTRICAL SAFETY CODE
  - B. THE NATIONAL ELECTRIC CODE - NFPA-70
  - C. REGULATIONS OF THE SERVING UTILITY COMPANY
  - D. LOCAL AND STATE AMENDMENTS
  - E. THE INTERNATIONAL ELECTRIC CODE - IEC WHERE APPLICABLE

2. PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR.

3. AFTER COMPLETION AND FINAL INSPECTION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF COMPLETION AND APPROVAL.

**TESTING:**

1. UPON COMPLETION OF THE INSTALLATION, OPERATE AND ADJUST THE EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. THE TESTING SHALL BE DONE BY QUALIFIED PERSONNEL.

**GUARANTEE:**

1. IN ADDITION TO THE GUARANTEE OF THE EQUIPMENT BY THE MANUFACTURER, EACH PIECE OF EQUIPMENT SPECIFIED HEREIN SHALL ALSO BE GUARANTEED FOR DEFECTS OF MATERIAL OR WORKMANSHIP OCCURRING DURING A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE OF THE WORK BY THE OWNER AND WITHOUT EXPENSE TO THE OWNER.
2. THE WARRANTEE CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER.

**UTILITY CO-ORDINATION:**

1. CONTRACTOR SHALL COORDINATE WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH THE SERVICE REQUIREMENTS OF EACH UTILITY COMPANY.

**EXAMINATION OF SITE:**

1. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS AFFECTING THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS SECTION WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING THE WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM OR SYSTEMS.

**CUTTING, PATCHING AND EXCAVATION:**

1. COORDINATION OF SLEEVES, CHASES, ETC., BETWEEN SUBCONTRACTORS WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS.
2. NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE ELECTRICAL WORK SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING.
3. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS, ETC., WITH APPROVED METHOD AS LISTED BY UL.

**RACEWAYS / CONDUITS GENERAL:**

1. CONDUITS SHALL BE INSTALLED IN LISTED RACEWAYS. CONDUIT SHALL BE RIGID STEEL, EMT, SCH40 PVC, OR SCH80PVC AS INDICATED ON THE DRAWINGS. THE RACEWAY SYSTEM SHALL BE COMPLETE COMPLETE BEFORE INSTALLING CONDUITS.
2. EXTERIOR RACEWAYS AND GROUNDING SLEEVES SHALL BE SEALED AT POINTS OF ENTRANCE AND EXIT. THE RACEWAY SYSTEM SHALL BE BONDED PER NEC.

**EXTERIOR CONDUIT:**

1. EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS. SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL.
2. WHERE INSTALLED ON EXTERIOR STRUCTURES OR EXPOSED TO DAMAGE, THE CONDUIT SHALL BE RIGID STEEL.
3. UNDERGROUND CONDUITS SHALL BE RIGID STEEL, SCH40 PVC, OR SCH80 PVC AS INDICATED ON THE DRAWINGS.
4. BURIAL DEPTH OF CONDUITS SHALL BE AS REQUIRED BY CODE FOR EACH SPECIFIC CONDUIT TYPE AND APPLICATION, BUT SHALL NOT BE LESS THAN THE FROST DEPTH AT THE SITE.
5. CONDUIT ROUTES ARE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY ROUTES BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND/OR BUILDING OWNER.

**INTERIOR CONDUIT:**

1. CONCEALED CONDUIT IN WALLS OR INTERIOR SPACES ABOVE GRADE MAY BE EMT.
2. CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSHING FOR ALL CONDUIT TERMINATIONS. CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS.
3. PROVIDE SUPPORTS FOR CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. CONDUITS SHALL BE SIZED AS REQUIRED BY NEC.

**EQUIPMENT:**

1. DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
2. EQUIPMENT SHORT CIRCUIT RATING SELECTION IS BASED ON INFINITE BUS CALCULATION YIELDING MAXIMUM SHORT CIRCUIT VALUES AT EACH BUS. ELECTRICAL PANEL AND BREAKER RATINGS SHALL BE THE NEXT STANDARD RATING SIZE EXCEEDING THE VALUES IN THE FAULT CURRENT SUMMARY TABLE. ELECTRICAL CONTRACTOR SHALL VERIFY ACTUAL UTILITY PROVIDED SHORT CIRCUIT DATA AT ONSET OF PROJECT AND COORDINATE WITH ENGINEER IF ANY VALUES CAN BE LOWERED.
3. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY.

**CONDUCTORS:**

1. FURNISH AND INSTALL CONDUCTORS SPECIFIED IN THE DRAWINGS. CONDUCTORS SHALL BE COPPER AND SHALL HAVE TYPE THWN (MIN) (75° C) INSULATION, RATED FOR 600 VOLTS.
2. THE USE OF ALUMINUM CONDUCTORS SHALL BE LIMITED TO THE SERVICE FEEDERS INSTALLED BY THE UTILITY.
3. CONDUCTORS SHALL BE PROVIDED AND INSTALLED AS FOLLOWS:
  - A. MINIMUM WIRE SIZE SHALL BE #12 AWG.
  - B. CONDUCTORS SIZE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS SIZED #10 AND #12 MAY BE SOLID OR STRANDED.
  - C. CONNECTION FOR #10 AWG #12 AWG SHALL BE BY TWISTING TIGHT AND INSTALLING INSULATED PRESSURE OR WIRE NUT CONNECTIONS.
  - D. CONNECTION FOR #8 AWG AND LARGER SHALL BE BY USE OF STEEL CRIMP-ON SLEEVES WITH NYLON INSULATOR.
3. CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC STANDARDS.

**UL COMPLIANCE:**

1. ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR APPROVED BY A THIRD PARTY TESTING AGENCY ACCREDITED BY THE NCBCC (NORTH CAROLINA BUILDING CODE COUNCIL) TO LABEL ELECTRICAL AND MECHANICAL EQUIPMENT.

**GROUNDING:**

1. ELECTRICAL NEUTRALS, RACEWAYS AND NON-CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250. THIS SHALL INCLUDE NEUTRAL CONDUCTORS, CONDUITS, SUPPORTS, CABINETS, BOXES, GROUND BUSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED AT A SINGLE POINT.
2. PROVIDE GROUND CONDUCTOR IN RACEWAYS PER NEC.
3. PROVIDE BONDING AND GROUND TO MEET NFPA 780 - "LIGHTNING PROTECTION" AS A MINIMUM.
4. PROVIDE GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS, AS REQUIRED BY THE NATIONAL ELECTRIC CODE, RADIO EQUIPMENT MANUFACTURERS, AND MOTOROLA R56 AS APPLICABLE

<b>ABBREVIATIONS AND LEGEND</b>			
A	-	AMPERE	PNLBD - PANELBOARD
AFG	-	ABOVE FINISHED GRADE	PVC - RIGID NON-METALLIC CONDUIT
ATS	-	AUTOMATIC TRANSFER SWITCH	RGS - RIGID GALVANIZED STEEL CONDUIT
AWG	-	AMERICAN WIRE GAUGE	SW - SWITCH
BCW	-	BARE COPPER WIRE	TGB - TOWER GROUND BAR
BFG	-	BELOW FINISHED GRADE	UL - UNDERWRITERS LABORATORIES
BKR	-	BREAKER	V - VOLTAGE
C	-	CONDUIT	W - WATTS
CKT	-	CIRCUIT	XFMR - TRANSFORMER
DISC	-	DISCONNECT	XMTR - TRANSMITTER
EGR	-	EXTERNAL GROUND RING	
EMT	-	ELECTRIC METALLIC TUBING	
FSC	-	FLEXIBLE STEEL CONDUIT	
GEN	-	GENERATOR	
GPS	-	GLOBAL POSITIONING SYSTEM	
GRD	-	GROUND	
IGB	-	ISOLATED GROUND BAR	
IGR	-	INTERIOR GROUND RING (HALO)	
KW	-	KILOWATTS	
NEC	-	NATIONAL ELECTRIC CODE	
PCS	-	PERSONAL COMMUNICATION SYSTEM	
PH	-	PHASE	
PNL	-	PANEL	

	UNDERGROUND ELECTRICAL CONDUIT
	UNDERGROUND FIBER CONDUIT
	KILOWATT-HOUR METER
	UNDERGROUND BONDING AND GROUNDING CONDUCTOR.
	GROUND ROD
	COMPRESSION TYPE CONNECTIONS
	EXOTHERMIC TYPE CONNECTIONS
	GROUND ROD WITH INSPECTION WELL



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**PREPARED FOR:**



**PREPARED FOR:**



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

**PREPARED BY:**



**SITE ID:**  
074-4106

**SITE NAME:**  
MCMANUS

**SITE ADDRESS:**  
11979 MCMANUS RD  
MIDLAND, NC 28107

**FA LOCATION:**  
12829624

**SITE NUMBER:**  
N/A

**SHEET TITLE**  
**ELECTRICAL NOTES**

**SHEET NUMBER**  
**E-2**



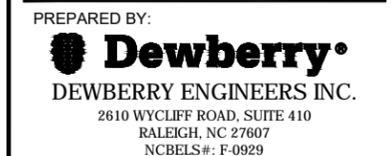
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FA LOCATION:  
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N/A

SHEET TITLE  
SINGLE LINE DIAGRAM

SHEET NUMBER  
E-3

**GENERAL NOTES:**

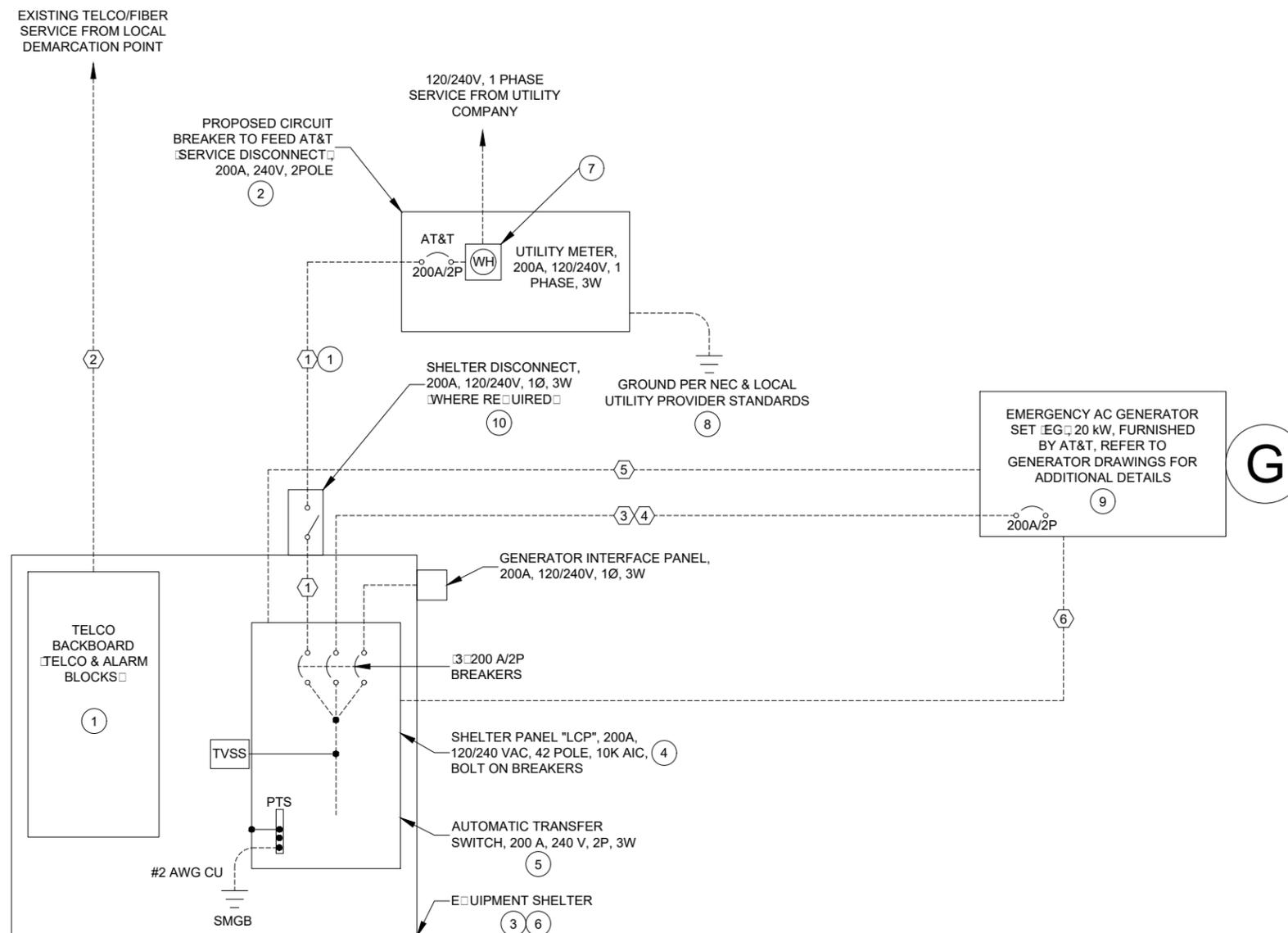
- CONTRACTOR SHALL COORDINATE INCOMING SERVICES WITH LOCAL UTILITIES PRIOR TO TRENCHING.
- ALL CONDUCTORS SHALL BE COPPER, 75° C RATED (MIN.), AND CONDUCTOR INSULATION SHALL BE THWN OR THHN.
- ALL TERMINATIONS SHALL BE LISTED AND IDENTIFIED FOR USE WITH 75° C RATED CONDUCTORS OPERATING AT 75°C.
- GROUND FAULT PROTECTION REQUIRED FOR UTILITY RECEPTACLES.
- SERVICE NEUTRAL SHALL BE GROUNDED AT ONE LOCATION ONLY.
- WHITE/NEUTRAL, GREEN/GROUND SHALL BE MAINTAINED THROUGHOUT THE SITE ELECTRICAL SYSTEM TAPE WILL NOT BE ACCEPTABLE.
- EQUIPMENT LOCATED OUTSIDE OR EXPOSED TO MOISTURE SHALL BE NEMA 3R RATED.
- CONTRACTOR SHALL USE RIGID METAL CONDUIT (RMC) OR INTERMEDIATE METAL CONDUIT (IMC) WHERE POWER CONDUITS ARE EXPOSED, OTHERWISE ALL CONDUITS SHALL BE SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED.
- ALL NEWLY INSTALLED EQUIPMENT SHALL BE RATED AT 10K AIC MINIMUM. HIGHER RATINGS SHALL BE REQUIRED WHERE AVAILABLE FAULT CURRENT EXCEEDS THIS VALUE. EXACT FAULT CURRENT AVAILABLE SHALL BE COORDINATED WITH LOCAL UTILITY BASED ON EXACT CONDITIONS (TRANSFORMER SIZE, PERCENT IMPEDANCE, LENGTH OF CONDUCTORS, ETC.)

**SINGLE LINE DIAGRAM NOTES:**

- ELECTRICAL SERVICE SHALL BE 120/240V, 1Ø, 3W, 200A.
- PROVIDE SERVICE ENTRANCE RATED CIRCUIT BREAKER TYPE DISCONNECT SWITCH.
- INSTALL A 200 AMP METER BASE AS DIRECTED BY THE UTILITY COMPANY.

**NOTES BY SYMBOL:**

- CONTRACTOR SHALL FURNISH AND INSTALL POWER CONDUCTORS FROM METER CENTER TO SHELTER. METER WILL BE FURNISHED AND INSTALLED BY LOCAL UTILITY COMPANY.
- CONTRACTOR SHALL PROVIDE AND INSTALL CIRCUIT BREAKER IN METER CENTER TO FEED AT&T SHELTER. CIRCUIT BREAKER SHALL BE 200A, 240V, 2 POLE, TYP AND AIC RATING SHALL MATCH EXISTING.
- EQUIPMENT SHELTER SHALL BE FURNISHED BY CARRIER AND SHALL BE INSTALLED BY CONTRACTOR. ALL ITEMS SHOWN WITHIN SHELTER ARE PROVIDED WITH THE SHELTER AND ARE SHOWN FOR REFERENCE ONLY. UNLESS OTHERWISE NOTED PROVIDE THE CONNECTIONS INDICATED. OBTAIN SHELTER DRAWINGS FOR CIRCUIT CONNECTIONS, BREAKERS AND CONDUCTOR SIZES AND ADDITIONAL INFORMATION.
- CONTRACTOR SHALL PROVIDE ALL CIRCUIT BREAKERS REQUIRED TO FEED AT&T EQUIPMENT. CONTRACTOR SHALL LABEL ALL CIRCUIT BREAKERS WITH RESPECT TO WHAT THEY FEED.
- EQUIPMENT SHELTER IS EQUIPPED WITH TRANSFER SWITCH FOR GENERATOR CONNECTIONS. REFER TO SHELTER DRAWINGS FOR DETAILS. BREAKERS ARE INTERLOCKED TO ALLOW ONLY 1 BREAKER CLOSED AT ANY GIVEN TIME.
- THE CONTRACTOR SHALL REFER TO SHELTER DRAWINGS AND SPECIFICATIONS FOR CONTROL AND ALARM WIRING. INTERIOR ALARMS ARE PRE-WIRED.
- CONTRACTOR SHALL PROVIDE AND INSTALL NAMEPLATE ON METER TO INDICATE "AT&T". NAMEPLATES SHALL BE PHENOLIC, WHITE LETTERS ON BLACK BACKGROUND.
- CONTRACTOR SHALL BOND NEUTRAL TO GROUND AT ONE LOCATION ONLY PER NEC 250 AND LOCAL CODE REQUIREMENTS.
- DO NOT BOND GENERATOR NEUTRAL TO GROUND OR GENERATOR FRAME. GENERATOR NEUTRAL IS BONDED TO SERVICE ENTRANCE NEUTRAL BOND VIA SOLIDLY GROUNDED ATS (OPEN TRANSITION, FLOATING NEUTRAL AT GENERATOR). PROVIDE SIGNAGE AT SHELTER PANEL LCP AS MANDATED BY NEC 702.7.B.
- SHELTER DISCONNECT IS FURNISHED WITH SHELTER. ON SITES WHERE SERVICE IS OBTAINED FROM AN EXISTING SOURCE (METER CENTER) OR SERVICE DISCONNECT IS LOCATED ON EQUIPMENT RACK, SHELTER DISCONNECT MAY BE OMITTED.



**CABLE AND CONDUIT SCHEDULE**

MARK	CONDUIT			WIRES EACH CONDUIT			EQUIPMENT			FROM	TO	RESPONSIBILITY	REMARKS
	QTY.	SIZE	TYPE	QTY.	SIZE	GROUND SIZE	VOLTS	AMPS	SUB. CAT.				
①	1	2-1/2"	PVC	3	#3/0	#4	240	200	AC POWER	SVC DISC	SHELTER PNL	CONTRACTOR	POWER TO SHELTER, SEE NOTE 8
②	1	4"	PVC	WITH ③ 1-1/4" ORANGE INNERDUCTS - ① 25 PR CAT 5e SHIELDED - 3#12 FOR DC POWER FOR FIBER					TELCO	HAND HOLE	SHELTER	CONTRACTOR	25 PAIR AND 24 VDC POWER FOR FIBER
③	1	1-1/4"	PVC	2	#3/0	#4	240	200	AC POWER	GEN DISC	SHELTER ATS	CONTRACTOR	GENERATOR POWER TO SHELTER, NOTE 8
④	1	1-1/4"	PVC	1	#3/0	#4	240	200	AC POWER	GEN DISC	SHELTER ATS	CONTRACTOR	GENERATOR POWER TO SHELTER, NOTE 8
⑤	1	1"		⑦ #14 AND BELDEN						CNTL PNL	SHELTER ATS	CONTRACTOR	GENERATOR ALARM/CONTROL
⑥	1	1-1/4"		4	#12	#12	120	② 20	AC POWER	CNTL PNL	SHELTER PNL	CONTRACTOR	② 20A, 120V CIRCUITS GENERATOR BATTERY CHARGER AND HEATER

**FAULT CURRENT SUMMARY TABLE**

FAULT LOCATION	AVAILABLE FAULT CURRENT (AMPS RMS SYMMETRICAL)			REMARKS
	SCA L-L	SCA L-N		
TRANSFORMER SECONDARY	13,021	19,533		ASSUMING INFINITE AVAILABLE ON PRIMARY
METER CENTER	10,935	12,420		IMPEDANCE - 40' INCOMING SERVICE CONDUCTORS
SHELTER MAIN CIRCUIT BREAKER	8,021	6,805		IMPEDANCE - 50' FEEDER CONDUCTORS, MC TO SHELTER
AUTOMATIC TRANSFER SWITCH	8,021	6,805		ATS SHALL HAVE A SHORT CIRCUIT RATING OF 10,000 AIC OR GREATER

**PANEL SCHEDULE**

11"x17" SCALE: NTS



**NOTES:**

- PANEL SCHEDULE BELOW IS APPROXIMATE. PANEL AND LOADS ARE PRE-WIRED BY WIC MANUFACTURER. CONTRACTOR IS NOT RESPONSIBLE FOR WIRING AND CONNECTIONS PRE-INSTALLED BY MANUFACTURER.
- SERVICE BOND IS TO BE MADE BY DEVICES (STRAPS, SCREWS, ETC.) SUPPLIED BY EQUIPMENT MANUFACTURER. IF NO SUCH DEVICE IS SUPPLIED, BOND IS TO BE MADE IN ACCORDANCE WITH NEC ARTICLE 250.
- CONDUCTOR OVERCURRENT PROTECTION DEVICES ARE SELECTED IN ACCORDANCE WITH NEC ARTICLE 240-4(B).
- CONDUCTOR SIZING IS SELECTED FROM NEC ARTICLE 310-16.
- ALL LUGS THAT HOLD MORE THAN ONE WIRE SHALL BE LISTED FOR MULTI-BARREL CONNECTIONS.
- ALL CONDUCTORS SHALL BE INSULATED THHN WIRE.

PANEL SCHEDULE														
LOAD SERVED	VOLT AMPERES (WATTS)		WIRE	BREAKER		CKT#	PHASE	CKT#	BREAKER		WIRE	VOLT AMPERES (WATTS)		LOAD SERVED
	L1	L2		P	TRIP				TRIP	P		L1	L2	
RECTIFIER #1	2000		10	2	30	1	A	2	20	1	12	180		EXT. GFCI OUTLETS
		2000				3	B	4	30	2	10		2000	RECTIFIER #2
RECTIFIER #3	2000		10	2	30	5	A	6				2000		
		2000				7	B	8	30	2	10		2000	RECTIFIER #4
RECTIFIER #5	2000		10	2	30	9	A	10				2000		
		2000				11	B	12						FUTURE RECTIFIERS
FUTURE RECTIFIERS						13	A	14						
						15	B	16						
						17	A	18						
						19	B	20						
						21	A	22						
						23	B	24						
1 TON AC UNIT	3504		12	2	20	25	A	26						
		3504				27	B	28	20	1	12		70	EXT. FLOOD LIGHTS
APPLIANCE OUTLETS	480		12	1	20	29		30						
<b>VOLT AMPS</b>	<b>9984</b>	<b>9504</b>										<b>6180</b>	<b>6070</b>	<b>VOLT AMPS</b>
<b>L1 VOLT AMPERES</b>						<b>16644</b>	<b>13574</b>	<b>L2 VOLT AMPERES</b>						
						<b>31738</b>	<b>TOTAL VOLT AMPERES</b>							
						<b>132.20</b>	<b>TOTAL AMPS</b>							
						<b>165.3</b>	<b>AMPS x +25%</b>							
						<b>181.8</b>	<b>x +10% FOR MAIN</b>							

**WIC PANEL SCHEDULE**

11"x17" SCALE: NTS

**SUBMITTALS**

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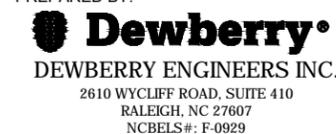


PREPARED FOR:



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:



SITE ID:  
074-4106

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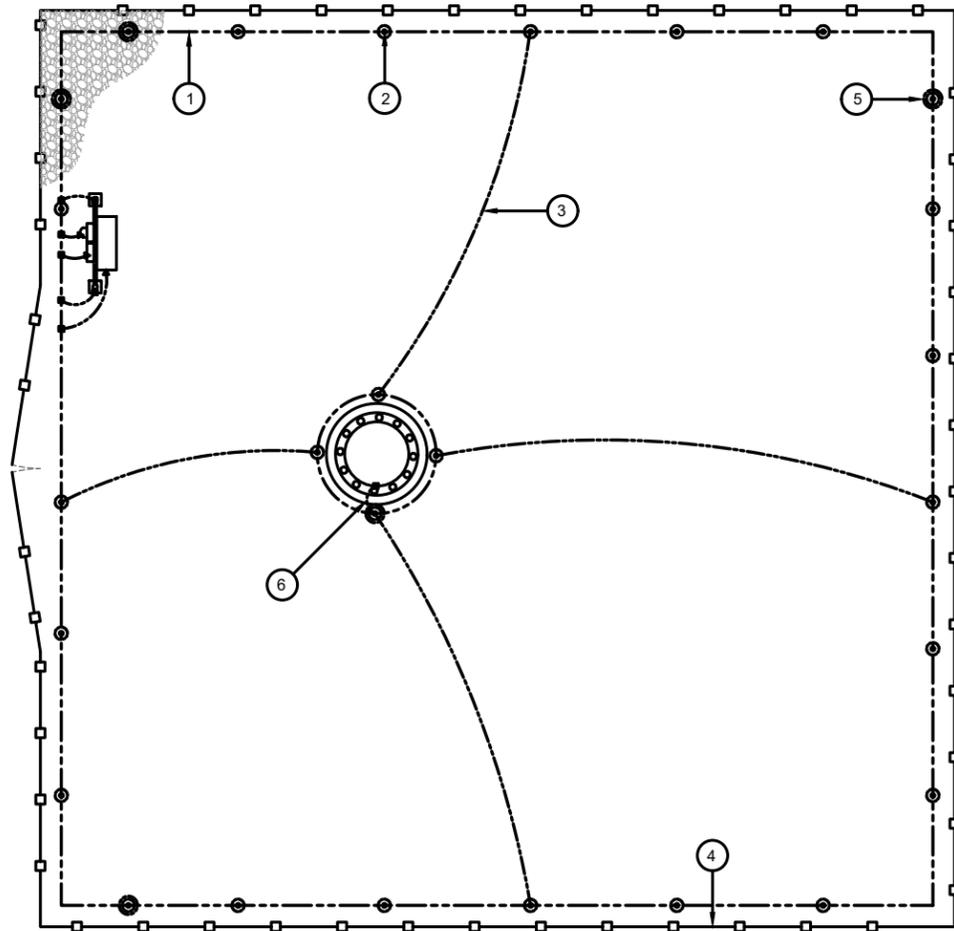
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SHEET TITLE  
PANEL SCHEDULE

SHEET NUMBER  
E-4

CALLOUTS:

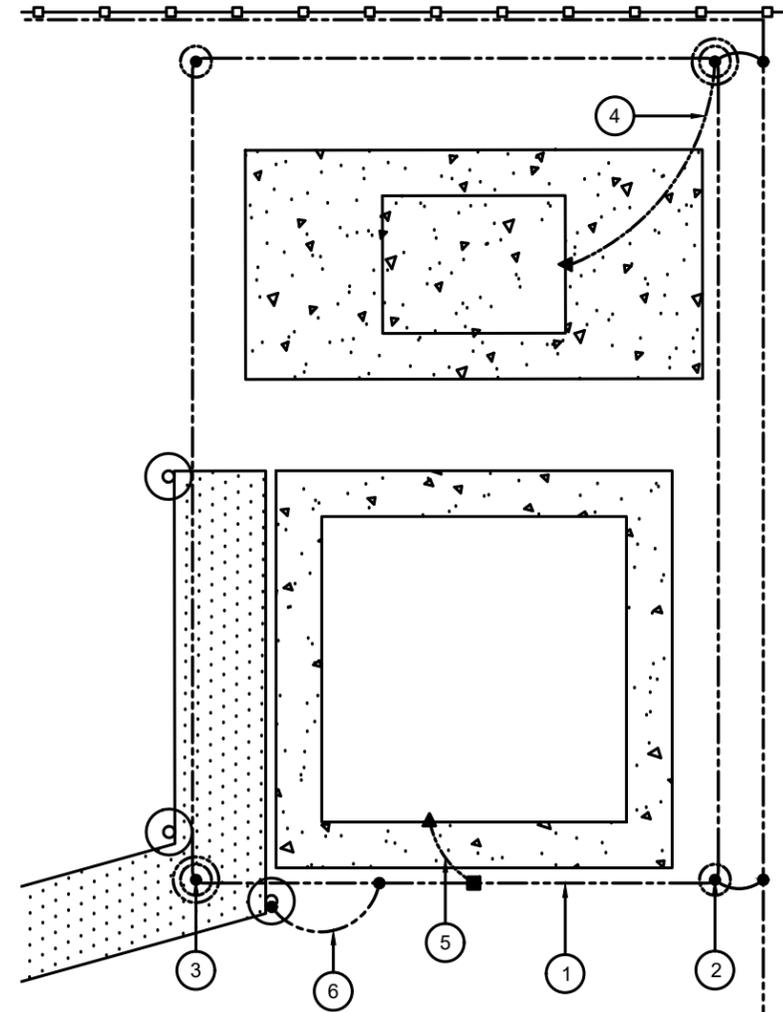
- ① #2 SOLID BARE TINNED COPPER CONDUCTOR 42" BELOW GRADE OR 6" BELOW FROST LINE, WHICH EVER IS GREATER (TYP.) MINIMUM 24" BENDING RADIUS
- ② 5/8"x10' COPPER CLAD GROUND ROD (MAX. 8' APART)
- ③ BOND PROPOSED TOWER GROUND RING TO PROPOSED COMPOUND GROUND RING WITH #2 SOLID BARE TINNED COPPER CONDUCTOR IN (4) LOCATIONS
- ④ PERIPHERAL GROUND RING SHOULD BE INSTALLED 1'-2" INSIDE FENCE LINE, THE TOWER GROUND RING SHOULD BE INSTALLED A MINIMUM OF 2' OFF ANY STRUCTURE
- ⑤ 5/8"Ø 10' LONG COPPER CLAD GROUND ROD WITH INSPECTION WELL, TOP OF GROUND ROD MAX 24" BURY (MIN. (4) PER COMPOUND)
- ⑥ BOND TOWER TO TOWER GROUND RING WITH #2 SOLID BARE TINNED COPPER CONDUCTOR IN (1) LOCATION



COMPOUND GROUNDING DETAIL  
SCALE: NTS

CALLOUTS:

- ① #2 SOLID BARE TINNED COPPER CONDUCTOR 30" BELOW GRADE OR 6" BELOW FROST LINE, WHICH EVER IS GREATER (TYP.) MINIMUM 24" BENDING RADIUS
- ② 5/8"x10' COPPER CLAD GROUND ROD (MAX. 8' APART)
- ③ 5/8"Ø 10' LONG COPPER CLAD GROUND ROD WITH INSPECTION WELL, TOP OF GROUND ROD MAX 24" BURY (MIN. (4) PER COMPOUND)
- ④ #2 AWG GENERATOR BOND BURIED 30" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS GREATER (TYP.) MINIMUM 24" BENDING RADIUS
- ⑤ #2 AWG CABINET BOND BURIED 30" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS GREATER (TYP.) MINIMUM 24" BENDING RADIUS
- ⑥ #2 AWG ICE BRIDGE BOND BURIED 30" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS GREATER (TYP.) MINIMUM 24" BENDING RADIUS



EQUIPMENT GROUNDING DETAIL  
SCALE: NTS



SUBMITTALS

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DRAWN BY: SRN  
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 DEWBERRY PROJECT NO: 50107722

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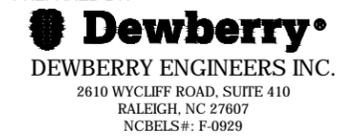


PREPARED FOR:



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:



SITE ID:  
074-4106

SITE NAME:  
MCMANUS

SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

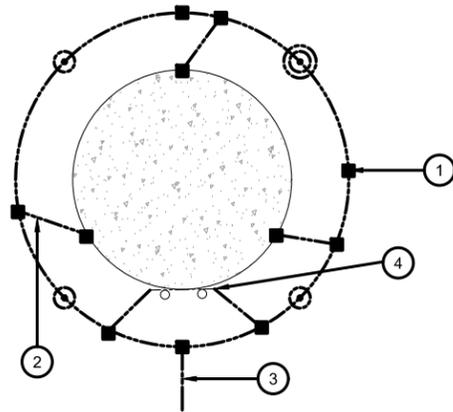
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SHEET TITLE  
GROUNDING PLAN  
DETAILS

SHEET NUMBER  
G-1

**CALLOUTS:**

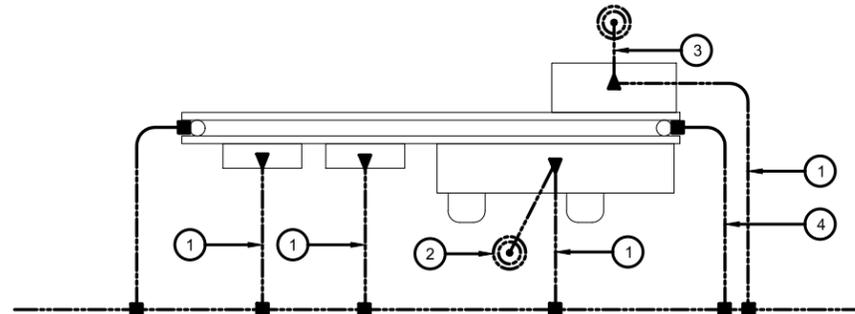
- ① #2 SOLID BARE TINNED COPPER CONDUCTOR 42" BELOW GRADE OR 6" BELOW FROST LINE, WHICH EVER IS GREATER (TYP.) MINIMUM 24" BENDING RADIUS
- ② BOND TOWER TO TOWER GROUND RING WITH #2 SOLID BARE TINNED COPPER CONDUCTOR IN (3) LOCATIONS
- ③ BOND PROPOSED TOWER GROUND RING TO PROPOSED COMPOUND GROUND RING WITH #2 SOLID BARE TINNED COPPER CONDUCTOR IN (2) LOCATIONS
- ④ TOWER GROUND BAR



**TOWER GROUNDING DETAIL**  
SCALE: NTS

**CALLOUTS:**

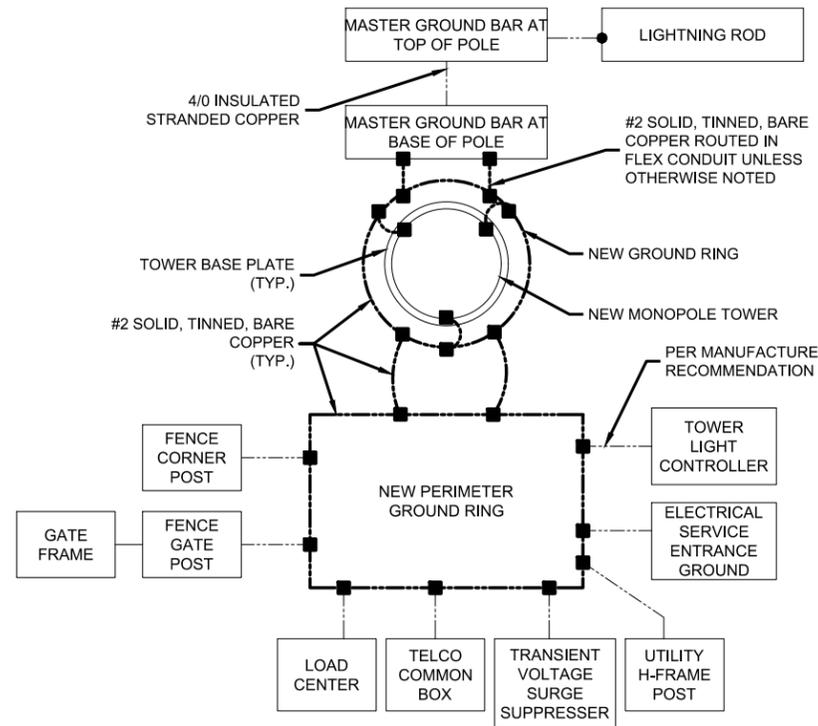
- ① PROVIDE AN EXTERNAL #2 TINNED COATED GROUND LEAD FROM GROUND RING TO ALL METAL CABINETS ON UTILITY BACKBOARD (TELCO, ELECTRIC, BREAKER PANELS, METER RACKS, JUNCTION BOXES, ETC.) SLEEVED IN CONDUIT FROM JUST BELOW GRADE TO SAND CABINETS USING BURNDY TYPE 2 LONG BARREL LUGS WITH NO-OK OR COPPER SHIELD
- ② BOND THE #6 GREEN INSULATED CONDUCTOR FROM METER PANEL AND DISCONNECT TO SEPARATE GROUND
- ③ BOND THE #6 GREEN INSULATED CONDUCTOR FROM TELCO BOX AND DISCONNECT TO SEPARATE GROUND
- ④ BOND THE #2 SOLID BARE TINNED COPPER LEADS FROM H-FRAME & CADWELD TO COMPOUND GROUND RING



**H-FRAME GROUNDING DETAIL**  
SCALE: NTS

**LEGEND**

	#2 SOLID BARE TINNED COPPER CONDUCTOR
	MECHANICAL CONNECTION (BURNDY OR EQUIVALENT)
	EXOTHERMIC CONNECTION (CADWELD OR EQUIVALENT)
	INSPECTION WELL
	5/8" DIA. X 10'-0" LONG, STEEL CLAD W/ A PURE COPPER JACKET (10' MAX SEPARATION)



**SINGLE LINE DIAGRAM**  
SCALE: NTS



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820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:

**Dewberry**  
 DEWBERRY ENGINEERS INC.  
 2610 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCBELS#: F-0929

SITE ID:  
074-4106

SITE NAME:  
MCMANUS

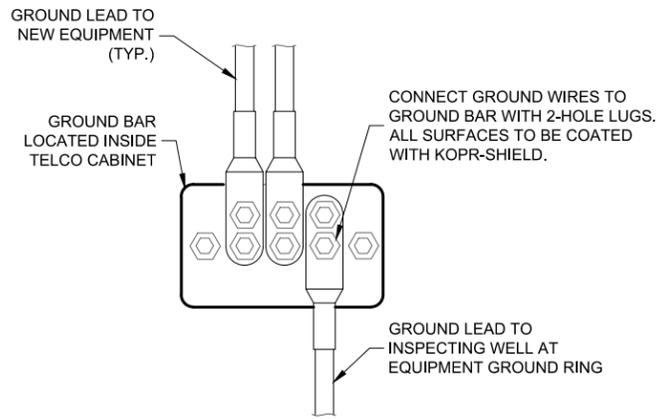
SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

SITE NUMBER:  
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SHEET TITLE  
GROUNDING DETAILS

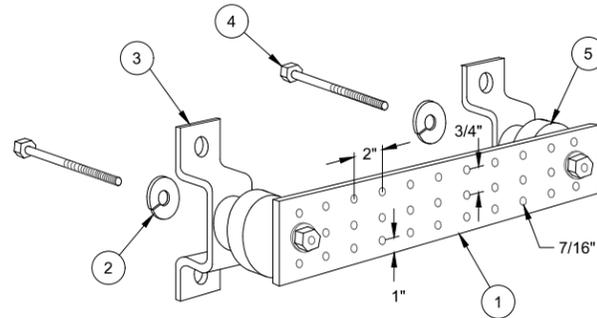
SHEET NUMBER  
G-2



**GROUND BAR IN TELCO CABINET**

SCALE: N.T.S.

- 1 TINNED COPPER GROUND PLATE. 1/4" x 4" x 20", NEWTON INSTRUMENT CO. CAT. NO. B-6142. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
- 2 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT NO. 3015-8.
- 3 WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056.
- 4 5/8"-11 x1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1
- 5 INSULATOR, NEWTON INSTRUMENT CO. (CAT.# 3061-4)

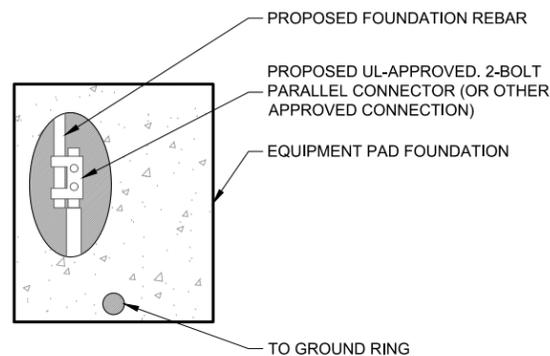


**GROUND BAR DETAIL**

SCALE: N.T.S.

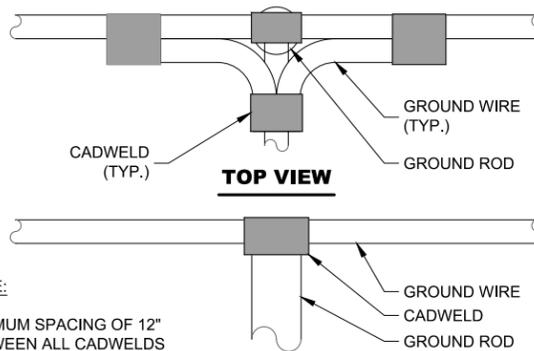
**NOTES:**

1. CONNECTION SHALL BE COVERED BY NO LESS THAN 2" OF CONCRETE.
2. ATTEMPT TO MAKE CONNECTION TO A 6'-0" RUN OF REBAR OR GREATER.
3. APPLY HEAT SHRINK OR ELECTRICAL TAPE AROUND THE CONDUCTOR TO AVOID CORROSION.



**EQUIPMENT PAD GROUNDING**

SCALE: N.T.S.

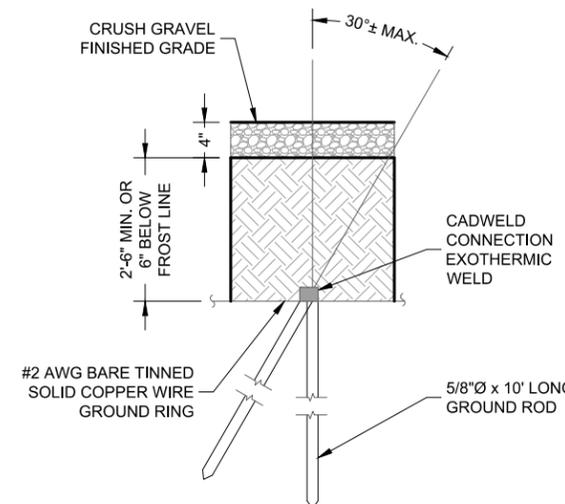


**NOTE:**

MINIMUM SPACING OF 12" BETWEEN ALL CADWELDS

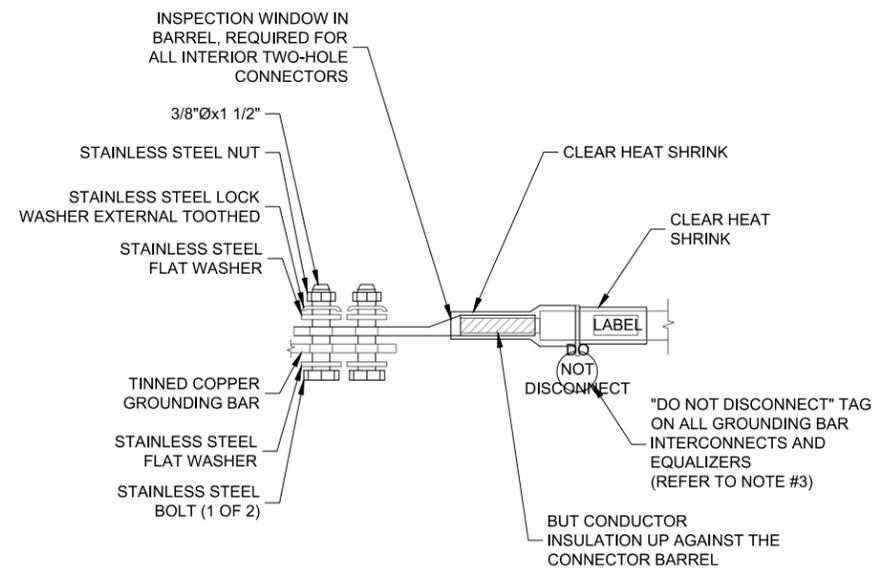
**CADWELD GROUNDING DETAIL**

SCALE: N.T.S.



**GROUND ROD DETAIL**

SCALE: N.T.S.



**NOTES:**

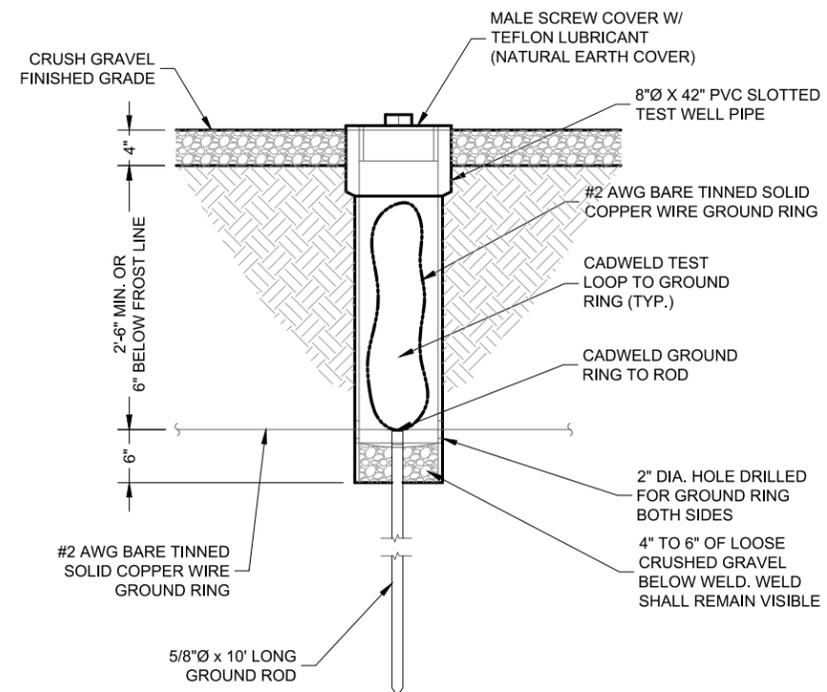
1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING SPLIT WASHER. COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
3. PROVIDE "DO NOT DISCONNECT" TAG AS REQUIRED.

**INTERIOR & EXTERIOR TWO HOLE GROUND LUG DETAIL**

SCALE: N.T.S.

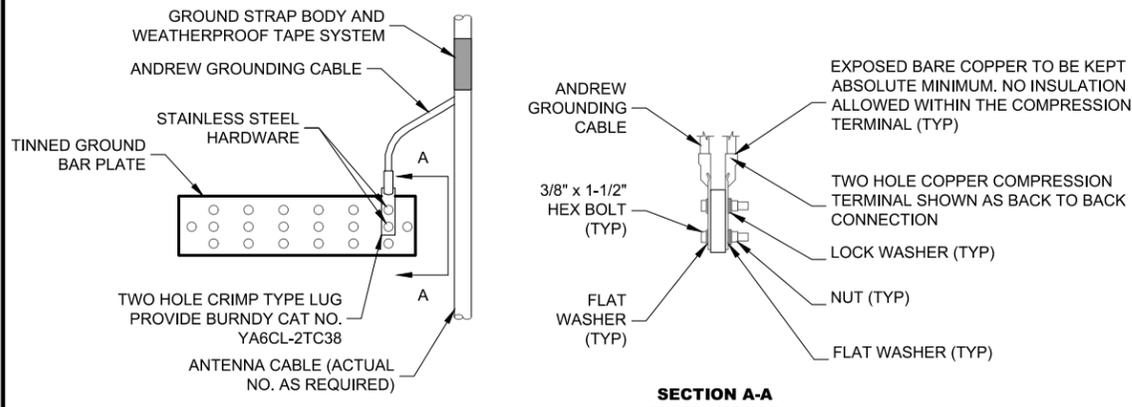
**NOTES:**

ONE TEST WELL SHALL BE PROVIDED BETWEEN THE TOWER GROUND LOOP AND THE EQUIPMENT GROUND LOOP



**GROUND ROD TEST WELL DETAIL**

SCALE: N.T.S.



**NOTES:**

1. ANTENNA CABLE GROUNDING AT ANTENNA SHALL BE SIMILAR AS APPLICABLE. TYPICAL FOR ALL BONDING CONDUCTOR CONNECTIONS TO GROUND BAR PLATE.
2. DOUBLING "UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED. OXIDE-INHIBITING JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
3. PROVIDE ANDREW 36" GROUNDING CABLE REQUIRING FIELD ATTACHABLE CRIMP ON LUG. DO NOT USE THE LUGS PROVIDED WITH THE GROUNDING KIT. PROVIDE TWO HOLE LUGS AS SHOWN IN ANTENNA CABLE GROUNDING AND GROUND BR PLATE CONNECTIONS DETAILS. AT ANTENNA, PROVIDE CRIMP TYPE "C" TAP FOR CONNECTION TO GROUND CONDUCTOR. GROUNDING CABLE SHALL BE FIELD CUT TO SHORTEST LENGTH POSSIBLE.

**ANTENNA CABLE & GROUND BAR CONNECTIONS**

SCALE: N.T.S.



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820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:



SITE ID:  
074-4106

SITE NAME:  
MCMANUS

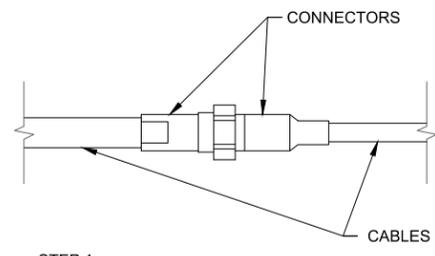
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FA LOCATION:  
12829624

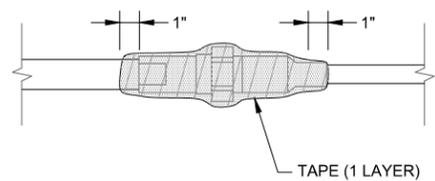
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SHEET TITLE  
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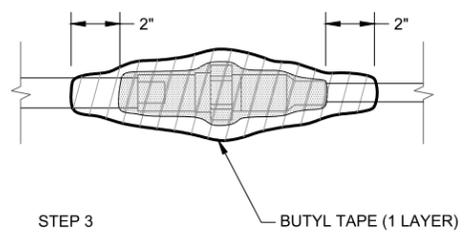
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G-3



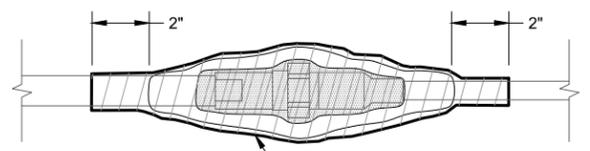
STEP 1



STEP 2

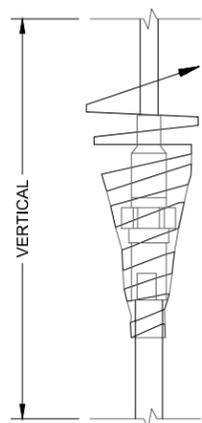


STEP 3



STEP 4

TAPE (3 LAYERS IN 1-1/2" TAPE AND 3 LAYERS IN 3/4" TAPE, ALL WITH A MINIMUM 50% OVERLAP) COAT WITH 3M SCOTCH COTE.

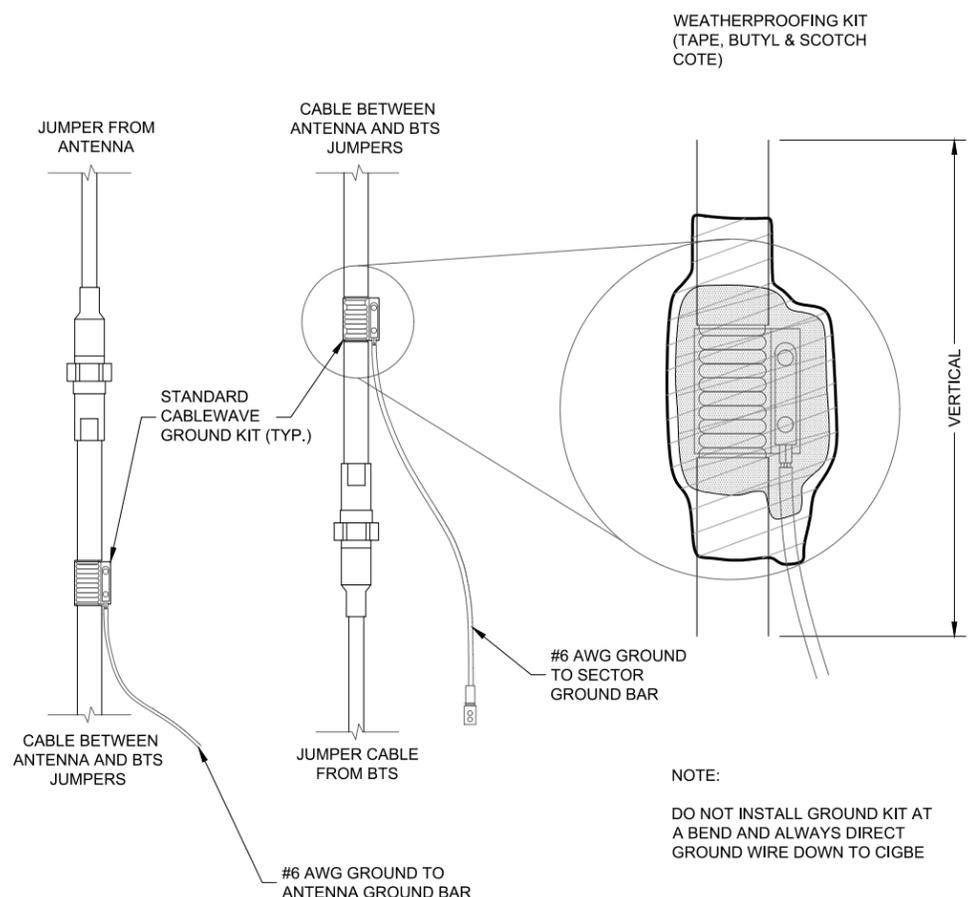


NOTES

1. VERTICAL CONNECTIONS SHOULD BE TAPED FROM THE BOTTOM UP SO OVERLAP SHEDS WATER AWAY FROM CONNECTION.
2. ELECTRICAL TAPE ENDS ARE TO BE CUT, (DO NOT STRETCH).

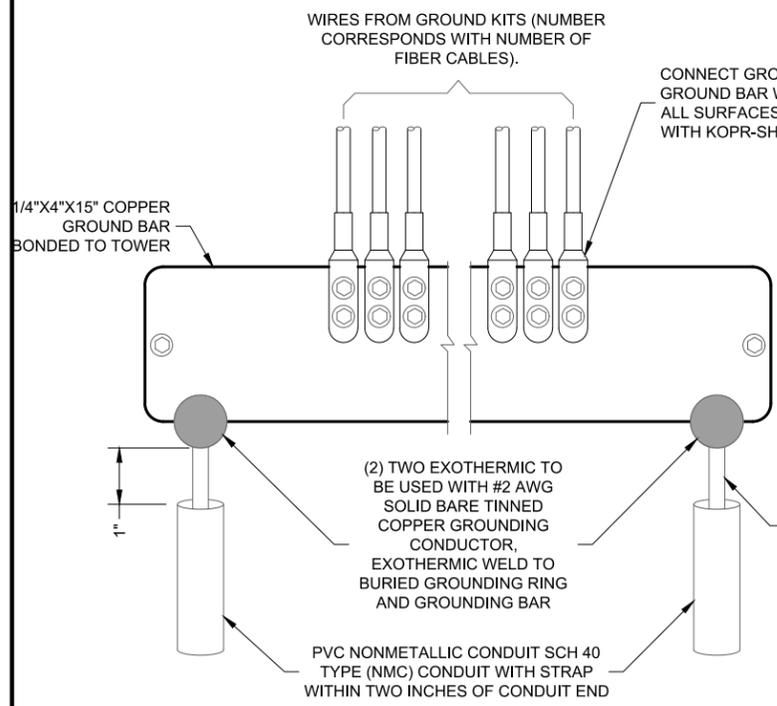
**CABLE WEATHERPROOFING DETAILS**

SCALE: N.T.S.



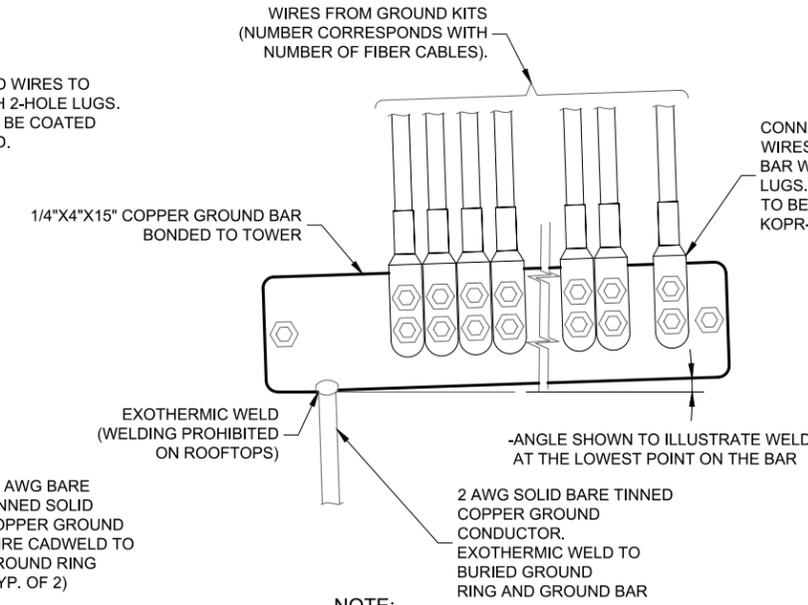
**GROUND KIT CONNECTION DETAILS**

SCALE: N.T.S.



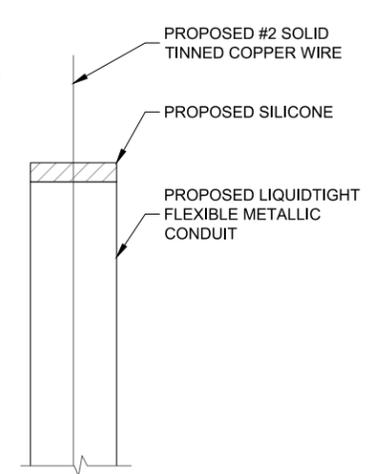
**LOWER GROUND BAR**

SCALE: N.T.S.



**UPPER/INTERMEDIATE GROUND BAR**

SCALE: N.T.S.

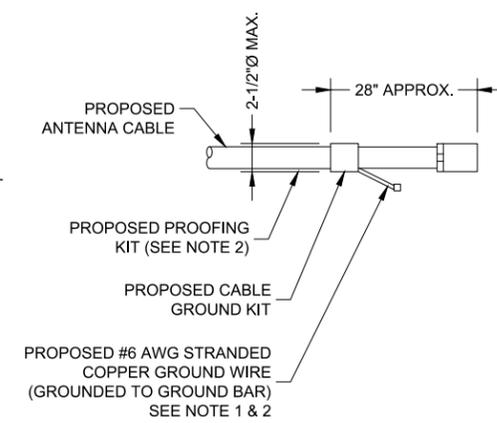


NOTE:

CONTRACTOR TO USE CLEAR OR GRAY SILICONE AS NECESSARY TO SEAL LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT.

**GROUND WIRE WEATHERPROOFING**

SCALE: N.T.S.



GROUND KIT NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT AND WEATHER PROOFING KIT SHALL BE OF THE SAME TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.

**CABLE BAR DETAIL**

SCALE: N.T.S.



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MCMANUS

SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
GROUNDING DETAILS

SHEET NUMBER  
G-4

**ELECTRICAL-GROUNDING ROD SYSTEM NOTES:**

- ALL GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC PROCESS CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE, SPLICES, ETC. ALL CABLE TO GROUND RODS, GROUND RODS SPLICES, AND LIGHTNING PROTECTION SYSTEM AS INDICATED. GROUND FOUNDATION ONLY AS INDICATED BY PM. ALL MATERIALS USED (MOLDS, WELDING, METAL, TOOLS, ETC.) SHALL BE BY EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND PROCEDURES. GROUND CONDUCTOR SHALL HAVE A MINIMUM 24" BENDING RADIUS.
- ALL EXOTHERMIC CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COLORED TO MATCH SURFACE WITH (2) TWO COATS OF SHERWIN-WILLIAMS GALVITE (WHITE) PAINT B50W3 (OR EQUAL) OR SHERWIN-WILLIAMS SILVERBRITE (ALUMINUM) B59S11 (OR EQUAL).
- ALL ELECTRICAL & MECHANICAL GROUND CONNECTIONS SHALL HAVE ANTI-OXIDANT COMPOUND APPLIED TO CONNECTION.
- GROUND RODS SHALL BE INSTALLED VERTICALLY IN THE PROPOSED UNDISTURBED EARTH.
- GROUND RING AROUND BUILDING SHALL BE BARE COPPER, 4/0, BARE TINNED COPPER CONDUCTOR, IN CONTACT WITH BARE EARTH AT A MINIMUM DEPTH OF 42". ALL CONDUCTOR BENDS SHALL NOT BE LESS THAN A MINIMUM RADIUS OF 8".
- THE FENCE LINE WILL BE GROUNDED AT THE CORNER POSTS AND GATES. POSTS SHALL HAVE ONE #4/0 THWN COPPER CONDUCTOR WIRE CONNECTED TO A 5/8"x8" SOLID COPPER CLAD GROUND ROD WHICH IS INCORPORATED INTO THE EXTERIOR GROUND RING. GATE POSTS SHALL HAVE A STRANDED COPPER GROUND-JUMPER TO THE SWING GATE FRAME. ALL CONNECTIONS ARE TO BE CAD-WELDED AND SPRAYED WITH COLD-GALVANIZED PAINT.
- FENCE/GATE: GROUND FENCE POSTS WITHIN 6' OF ENCLOSURE AND 25' OF TOWER AS INDICATED ON DRAWINGS. GROUND EACH GATE POST AND CORNER POST. GROUND CONNECTIONS TO FENCE POSTS SHALL BE MADE BY THE EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES. ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY THE EXOTHERMIC PROCESS, AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
- ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL GROUNDING INSTALLATION AND CONSTRUCTION MAY VARY DUE TO THE SPECIFIC SITE CONDITIONS.
- UTILITY COMPANY COORDINATION: ELECTRICAL CONTRACTOR SHALL

CONFIRM THAT ALL WORK IS IN ACCORDANCE WITH THE RULES OF THE LOCAL UTILITY COMPANY BEFORE SUBMITTING THE BID, THE CONTRACTOR SHALL CHECK WITH THE UTILITY COMPANIES SUPPLYING SERVICE TO THIS PROJECT AND SHALL DETERMINE FROM THEM ALL EQUIPMENT AND CHARGES WHICH THEY WILL REQUIRE AND SHALL INCLUDE THE COSTS IN THE BID.

- GROUND TEST: GROUND TESTS SHALL BE PERFORMED AS REQUIRED BY LESSEE STANDARD PROCEDURES. GROUND GRID RESISTANCE SHALL NOT EXCEED 5 OHMS.
- GROUND RINGS ARE TO BE INSTALLED A MINIMUM OF 2'-0" FROM EQUIPMENT AND TOWER.

**ELECTRICAL-GROUNDING ROD SYSTEM NOTES:**

- GROUND RODS SHALL BE INSTALLED NOT MORE THAN 8' APART.
- GROUND RODS SHALL BE INSTALLED 6" MIN. BELOW FROST.
- ALL BELOW GRADE GROUND RINGS AND GROUND LEADS SHALL BE #2 AWG SOLID, TINNED BARE COPPER WIRE.
- ALL BELOW GROUND CONNECTIONS SHALL BE EXOTHERMIC WELDS.
- UNLESS PROVIDED WITH A FACTORY APPLIED LEAD, ALL CONNECTIONS TO GROUND BARS SHALL BE BURNDY HYGROUND COMPRESSION LUGS OR EQUAL.
- STEEL SHALL BE TO BARE METAL. GRIND GALV. FINISH OR PAINT OFF PRIOR TO WELDING, REPAIR GALV. FINISH OR PAINT AS REQUIRED, MATCH PAINT COLOR.
- ALL LUG CONNECTORS SHALL BE 2 HOLD LONG BARREL COMPRESSION TYPE OR APPROVED EQUAL.
- ALL HARDWARE TO ATTACH MECHANICAL GROUND CONNECTIONS SHALL BE STAINLESS STEEL.
- ALL MECHANICAL CONNECTIONS SHALL HAVE NO-OX OR APPROVED EQUAL APPLIED BETWEEN COMPRESSION LUG AND FIXTURE.

**LEAD IDENTIFICATION & DESCRIPTION:**

1	RING, EXTERNAL BURIED W/RODS	#2 SBTC
1A	RING, CONCRETE ENCASED	#2 SBTC
2	DEEP ANODE (TO IMPROVE OHMS)	ROD OR PIPE
3	RING TO BLDG STL FRAME	#2 SBTC
4	MAN AC PANEL NEUTRAL BUS TO (2) GROUND RODS, ISOLATED FROM LEAD #1	NEC 250.66
5	RING TO GROUND BAR	(2) #2 SBTC
6	RING TO EXT MTL OBJECT	#2 SBTC
7	DEEP ANODE TO MGB	NSTD33-9
8	AC PANEL TO WATER METER	NEC 250.66
9	EXT WATER TO INT WATER PIPES	NSTD33-9
10	INT WATER PIPE TO MGB	NSTD33-9
11-12	NOT USED	
13	AC PANEL TO MGB	NSTD33-9
14	MGB/FGB TO BLDG STL FRAME	#2/0 I-STR
14C	MGB/FGB TO ROOF/WALL MTL PNL	#1/0 I-STR
15	MGB/FGB TO FGB-HE SAME FLOOR	#2/0 I-STR
16	NOT USED	
16A	ECPGB TO CABLE ENTRY RACK	#1/0 I-STR
17	MGB TO CABLE SHIELDING	#6 I-STR
17A	ECPGB TO CABLE SHIELDING	#6 I-STR
17B	MGB/FGB TO F-0 SPLICE SHELF	#1 I-STR
18	LOWEST MGB/FGB TO HIGHEST FGB	#2/0 I-STR
19	LEAD 18 TO OTHER FGB, <6'	#2/0 I-STR
20	MGB/FGB TO BRANCH AC PNL	#6 I-STR
20A	NEAREST GRIND TO DISCONNECT PNL	NEC 250.66
20B	GWB TO AC DISTR PNL	#6 I-STR
21	MGB/FGB TO INT HALO	#2 I-STR
21A	INTERIOR 'GREEN' HALO	#2 I-STR
21B	INT HALO TO EXT RING	#2 SBTC
21C	INT HALO TO EQUIPMENT MTL	#6 I-STR
22	ROOF TOWER RING TO ROOF GRND	NFPA 780
23	MGB/FGB TO ECPGB, SAME FLOOR	#1 I-STR
23A	MGB/FGB TO CXR-HF LINR PROT	#6 I-STR
24	ECPGB TO EACH PROTECTOR ASSEMBLY	#6 I-STR
24A	LOWER PROT ASSY TO UPPER	#6 I-STR

25	RING TO NEAREST LIGHTNING ROD	#2 SBTC
26	LIGHTNING ROD SYS TO NEARBY MTL	NFPA 780
27	RING TO TOWER RING	(2) #2 SBTC
28	RING TO SHELTER RING	(2) #2 SBTC
29	BRANCH AC PNL TO BTTY CHG FRM	NSTD33-11
30	BRANCH AC PNL TO OUTLETS	NSTD33-11
31	MGB/FGB TO PWR, BTTY FRAMES	#2/0 I-STR
32	#31 TO BATTERY CHARGER FRAME	#6 I-STR
33	#31 TO BATTERY RACK FRAME	#6 I-STR
34	#31 TO PCU FRAME	#6 I-STR
35	#31 TO DCU FRAME	#6 I-STR
36	#31 TO PCU FRAME	#6 I-STR
37	MGB/FGB TO BTTY RETURN	NSTD33-14.5
37A	MGB/FGB TO RTN TERM CARR SUPP	#6 I-STR
38	FGB TO PDU GB	#750MCM I-STR
38A	FGB TO PDU GB CARRIER SUPPLY	#2/0 I-STR
39	DC BUS DUCT TO NEXT SECTION	#6 I-STR
40	DC BUS DUCT TO MGB/FGB	#6 I-STR
41A	MGB/FGB TO #58	#2/0 I-STR
42-44	NOT USED	
45	MAIN AC PNL TO BRANCH AC PNL	NSTD33-11
46	BRANCH AC PNL TO DED OUTLET	NSTD33-11
47	FGB TO INTEG FRM	#2 I-STR
48	LEAD #31 TO INTEG FRM	#6 I-STR
49	INTEG FRM TO EQUIP SHELF	BY FASTENERS
50	PDU BTTY RET TO #51	#2/0 I-STR
51	#50 TO TRANS FROM ISO DC PWR	#6 I-STR
52	TRANS FRM FUSE TO FRM OR BAR	#8 I-STR
53A	MGB/FGB TO PDF/BDFB	NSTD33-22
54	MGB/FGB TO STATIC DEVICES	#6 I-STR
55	MGB/FGB TO CABLE AT ENTRY	#6 I-STR
56	MGB/FGB TO AC PWR RADIO XMTRR	#6 I-STR
57A	MGB/FGB TO CBLGRID/RUNWAY	#2/0 I-STR
58A	#41A TO AISLE FRAME	#2 I-STR
59A	#58A TO EACH SGL FRAME GRND	#6 I-STR
60-89	NOT USED	
90	GENERATOR FRAME TO EXT RING	#2 SBTC



**SUBMITTALS**

DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
10/30/19	REVISED	6	SRF
12/09/19	REVISED	7	SRF
04/13/20	REVISED	8	SRF
04/24/20	REVISED	9	SRF
08/17/20	COUNTY COMMENTS	10	MKW

DRAWN BY: SRN  
 CHECKED BY: HGS  
 APPVD BY: MCS  
 DEWBERRY PROJECT NO: 50107722

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PREPARED FOR:

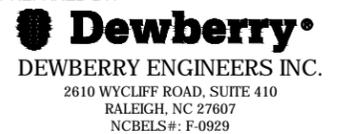


PREPARED FOR:



820 MORRIS TURNPIKE, SUITE 104, SHORT HILLS, NJ 07078

PREPARED BY:



SITE ID:  
074-4106

SITE NAME:  
MCMANUS

SITE ADDRESS:  
11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:  
12829624

SITE NUMBER:  
N/A

SHEET TITLE  
GROUNDING NOTES

SHEET NUMBER  
G-5

STATE OF NORTH CAROLINA  
CABARRUS COUNTY

BEFORE THE CABARRUS COUNTY  
BOARD OF ADJUSTMENT

DIAMOND COMMUNICATIONS LLC'S )  
CONDITIONAL USE PERMIT APPLICATION )  
TO CONSTRUCT A 195-FOOT MONOPOLE )  
WIRELESS ANTENNA SUPPORT )  
STRUCTURE WITH A FOUR-FOOT )  
LIGHTNING ROD FOR AN OVERALL )  
HEIGHT OF 199 FEET )

PROJECT NARRATIVE  
AND  
STATEMENT OF COMPLIANCE  
WITH  
CABARRUS COUNTY  
DEVELOPMENT ORDINANCE

**I.  
STATEMENT OF APPLICATION**

Diamond Communications LLC (“Diamond” or “Applicant”), pursuant to the requirements set forth in the Cabarrus County Development Ordinance (“Ordinance”), files this Conditional Use Permit Application seeking approval to construct and operate a 195-foot monopole wireless communications antenna support structure (195-foot monopole with a four-foot lightning rod for an overall height of 199 feet) so that AT&T Mobility (“AT&T”), the First Responder Network Authority (“FirstNet”), and other wireless providers may attach their antennas and equipment to the tower in order to improve wireless telecommunications services and coverage to the first responders, citizens, businesses, travelers, and visitors to Cabarrus County under their licenses issued by the Federal Communications Commission (“FCC”).

**II.  
BACKGROUND**

Modern wireless communications include far more than cellular and digital phone networks. Today, wireless communications include a great number of services, such as voice, advanced messaging, data, real-time information (news, weather, sports, etc.), photographs, video, entertainment, and connections to social media. The number of services that are available continues to increase.

The convenience, safety and efficiency benefits – as well as the “connectedness” with the world -- achieved through digital phones (and especially the latest generation of “smart phones”) has created a tremendous demand for these and other burgeoning services. It is projected that, within the next few years, fully three-quarters of the American population will utilize a wireless device to communicate on a daily basis. It is clear that wireless infrastructure is needed to serve a growing population of wireless customers, especially since roughly one of five traditional U.S. landline phone users has switched to “wireless-only”. Today, more than 247 billion emails and 90 billion “tweets” are sent each day, and it is projected that video over instant messaging and video calling will increase sevenfold in the

next few years. Individuals and households are not the only ones who are going wireless. Businesses increasingly depend on wireless service to conduct their business, and more people are working remotely from their homes and away from their business' physical locations. For example, more than three times as many small businesses today strongly agree that wireless technology is key to staying competitive – 49 percent versus 16 percent in 2007.

The FCC has designated and auctioned a limited number of radio spectra for wireless communication providers to deliver wireless communications services across the United States. AT&T holds one of those licenses. Increasingly, AT&T and other wireless communication licensees are competing with existing telecommunication services, and each other, giving consumers more flexibility and lower prices, and fueling innovation and technological improvements.

The FCC's grant of wireless licenses comes with a mandate that the licensees substantially complete construction of their respective communication systems expeditiously. To complete their systems, licensees must develop an infrastructure or system of strategically placed, low-powered antennas. The signal for the antennas is limited by factors such as variations of the terrain and the finite capacity of signals at any given time; therefore, each antenna covers a limited geographic area. The antennas are, thereby, placed in such a way as to provide contiguous coverage and fill the gaps throughout a given region, as well as to provide sufficient and consistent capacity.

In addition, in 2017, the Department of Commerce and FirstNet signed a 25-year contract with AT&T to build the first nationwide wireless network for America's first responders. The FirstNet network is planned to cover all 50 states, five U.S. territories, the District of Columbia, rural communities, and tribal lands. The proposed tower will be utilized by AT&T to support the deployment of FirstNet as well as their existing wireless network needs. For further information about the FirstNet deployment, please refer to Tab 4 of the application binder or online at <https://www.firstnet.gov>.

### **III. PROJECT DESCRIPTION**

To fill a significant gap in wireless telecommunications coverage in Cabarrus County, Diamond respectfully requests that a Conditional Use Permit be issued so that it may develop a 195-foot monopole (with a four-foot lightning rod, for an overall height of 199 feet) wireless antenna support structure and facility, to be located on the property of Nathaniel James McManus, Jr., within a 100-foot by 100-foot leased area of the 35.35-acre parcel, located in a LDR zoned area of Cabarrus County (Parcel Identification Number 5554-89-1609-0000).

The tower compound will be located a great distance from all adjacent property lines. The tower compound will be located approximately 819 feet from the property to the west, 267 feet from the property to the north, 1,199 feet from the property to the east, and 417 feet from the property to the south. The site will be accessed by a proposed gravel road off McManus Road. The tower and wireless telecommunications facility compound will have room to accommodate the antennas and equipment of AT&T and three additional wireless service providers within the 50-foot by 50-foot fenced area. The tower compound will be

secured by a six-foot tall, slatted wood fence. Please refer to Sheet C-10 of the construction drawings.

The tower will comply with all FAA regulations, federal, state, and local regulations, as well as all applicable regulations of the County's Ordinance. In short, this site is an ideal location for a telecommunications facility to provide not only AT&T's and FirstNet's wireless telecommunications services to a currently unserved area of Cabarrus County, but other wireless providers' services as well.

#### **IV. STATEMENT OF NECESSITY**

The voice and data signals for mobile wireless telecommunications systems travel through the air to receiving and transmitting antennas. The antennas must be at a height sufficient to simultaneously provide coverage for users in the surrounding territory. In unserved areas (or where the antennas' capacity have been reached), calls are "dropped" when a caller enters such areas and calls cannot be made. Where such gaps in coverage exist, the wireless provider issues a "search ring" within which well-placed antennas would fill the gap. Considerations in selecting a site include the size of the tract of land, zoning requirements, elevation, topography, accessibility, natural visual buffers, and proximity to current and prospective users. In selecting the proposed site, AT&T considered the Ordinance's objectives in conjunction with the area where service is needed, and determined that attaching its antenna to a tower facility situated on the proposed site would provide the needed coverage where AT&T lacks coverage and where FirstNet coverage is needed. In this case, AT&T then contracted with Diamond for the construction of a wireless antenna support structure and wireless telecommunications facility upon approval from the County to do so.

The proposed tower is required so that wireless coverage may be provided along U.S. Highway 24/27 and the surrounding areas.

#### **V. RELATIONSHIP OF PROPERTY OWNER TOWER OWNER / APPLICANT CARRIER AND AUTHORIZED AGENT**

The property owner, James McManus, Jr., entered into an Option and Lease Agreement (the "Agreement") on March 26, 2019 with New Cingular Wireless PCS, LLC ("Cingular"), an affiliated company of AT&T, to allow New Cingular to lease a 100-foot by 100-foot (10,000 square foot) area of the property to construct a wireless telecommunications antenna support structure and facility within the lease area. Cingular contracted with Diamond to construct the facility, and upon approval by the County, Diamond and Cingular will enter into an Assignment and Assumption Agreement wherein Diamond will assume the lease and all details thereof.

Karen Kemerait, Fox Rothschild, LLP, has been retained by Diamond to assist with the Cabarrus County permitting process. AT&T, Diamond, and their respective agents will cooperate with the County in permitting, construction, and operation of this proposed facility.

**VI.**  
**STATEMENT OF COMPLIANCE**  
**WITH THE CABARRUS COUNTY**  
**DEVELOPMENT ORDINANCE**

Diamond respectfully requests that the Cabarrus County Board of Adjustment approve its Application for a Conditional Use Permit, as the application meets all applicable requirements of the Ordinance.

**Chapter 3 – Establishment of Zones**

**Section 3-7 – Low Density Residential District (LDR)**

This district is intended to permit development with a low density residential community character. This district allows conventional, open space and amenity subdivisions. This district is located where public utilities are available or are envisioned to be available within the next two to five years.

This district is designed to provide permanent protection for those who want to live in a low density residential environment. The district, which is focused on single-family residential development, is designed to allow a wide variety of residential types.

*Communication towers and wireless communication services are classified as low density residential conditional uses. This proposed tower will provide needed wireless services for the area.*

**Section 3-8 – Table of Permitted Uses**

*Wireless telecommunications services are listed in the Table of Permitted Uses in the LDR district as a conditional use.*

**Section 8-3 – Petitioning for a Conditional Use**

Because of their potential for affecting neighboring landowners, conditional uses warrant review in a public forum. The Planning and Zoning Commission, acting as Board of Adjustment, hears the request for a conditional use permit. A simple majority vote by the Commission members present and not excused from voting is required for the issuance of a conditional use permit. If a conditional use permit request is denied by the Board of Adjustment, the applicant may appeal the decision to the Superior Court of Cabarrus County, North Carolina.

In general, the process for seeking a conditional use is as follows:

**Step 1** – Prior to filing a Conditional Use Permit Application, the Applicant is required to attend a pre-application meeting with Planning and Development Staff. At that time, the proposed project will be discussed and required submittal materials will be determined. Examples of items that may be required, in addition to a complete application and site plan, include but are not limited to:

Traffic Impact Analysis Documentation (See Appendix A);  
Intent to Serve Letters;  
NCDOT Driveway Permit;  
Post-Construction Stormwater Permits.

***Pre-application meeting:*** *On July 8, 2019, a pre-application meeting was held with Mr. Phillip Collins, Cabarrus County Planning Director.*

***Traffic Impact Analysis:*** *A traffic impact analysis will not be necessary for this project. Please see the confirmation of same from Mr. Jeff A Burleson, Assistant District Engineer, Division 10 / District 01 of the NC Department of Transportation (“NCDOT”) located under Tab 23 of the application binder.*

***Letter of Intent to Serve:*** *The proposed tower is designed for a total of four carriers. Diamond will actively market the tower to other carriers who need coverage in the area at a fair market value reciprocal with that as would be charged by the carrier proposing to lease from other tower owners. Diamond’s goal is to fill the tower, rather than limit the tower’s use, restrict, prevent, or prohibit competition among carriers. See also Diamond’s Letter of Intent located under Tab 17 of the application binder.*

***NC DOT Street and Driveway Access Permit:*** *Please refer to Tab 24 of the application binder.*

***Post Construction Stormwater Permits:*** *Please refer to the e-mail communications provided under Tab 22 of the application binder from Mr. Christopher E. Graybeal, Assistant Regional Engineer, Land Quality Division, Division of Energy, Mineral and Land Resources, at the North Carolina Department of Environmental Quality. He advises as long as the project disturbs less than one acre, an erosion control plan will not be required. The disturbed acreage for this project is 0.563-acre (24,543.3 square feet).*

*Mr. Graybeal further advises that NCDEQ can become involved if sediment should leave the project site regardless of the project size and that measures should be in place to prevent such occurrence. Please refer to Sheets C-2.1 and C-2.2 of the construction drawings, Grading and Erosion Control Plan, located under Tab 6 of the application binder.*

**Step 2** – The Applicant files a complete application with Cabarrus County Planning and Development. This includes filing the required number of copies of the proposed site plan and any other materials required for the application to be considered complete, as determined during the pre-application meeting.

*A digital copy of the Conditional Use Permit Application binder will be filed with the Cabarrus County Planning Department. The full application binder and nine (9) additional sets of the construction drawings will also be submitted by Federal Express delivery in hard copy.*

**Step 3** – The project is distributed to review agents and comments are returned by Staff to the Applicant regarding changes or revisions needed to the proposed plan and / or application materials.

*Acknowledged.*

**Step 4** – When revisions are submitted, approved, and the plan and application materials conform to the applicable ordinances, the revised complete application is presented to the Planning and Zoning Commission, acting as Board of Adjustment, for consideration.

*Acknowledged.*

Applications for a Conditional Use must demonstrate compliance with the general standards of review. Additionally, Conditional Uses must:

- a. Maintain or enhance the public health, safety and general welfare if located where proposed, developed and operated according to the plan as submitted.

*The proposed tower will not only maintain the public health, safety, and general welfare of the County if located where proposed and developed and operated according the plans submitted with this application, but it will enhance the public health, safety, and general welfare of the County and the residents and people living, working, and traveling near the proposed site. The tower will also fulfill a need for first responders in the area.*

*Thousands of facilities such as this one are located throughout the State of North Carolina (and tens of thousands nationwide). None present any threat or danger to public health or safety. Radio emissions from the facility will comply with all federal laws, including those established by the FCC, and the emissions will fall well below emission standards for this type of facility, as established by the American National Standards Institute (ANSI). Please refer to the statement of certification that this facility will be in compliance with FCC Emission Standards located under Tab 16 of the application binder.*

*In addition, as a result of this conditional use permit application and request to construct this wireless communication facility, the communications service will increase public safety because first responders, residents and those traveling through the proposed coverage area will be able to place and receive calls during emergencies. Please refer to the Radio Frequency Propagation Studies provided under Tab 14 of the application binder that show the current, insufficient coverage for the area and the coverage that will be provided with the addition of the proposed wireless facility.*

*Wireless communications is a public safety necessity, as communication is critical in times of crisis. Seventy-four percent of Americans who own mobile phones say that they have used their hand-held devices in an emergency and gained valuable help. Most importantly, in times of natural disasters, wireless communication consistently emerges as the essential—and often only—means for emergency communication. Cabarrus County first responders, residents, businesses and travelers in the coverage area will be able to access 911 emergency services in the event that severe weather or other unforeseen circumstances down traditional landline communication services. Thus, the first responders, residents, businesses and travelers in this area of Cabarrus County will directly benefit from the availability of improved wireless telecommunications services.*

- b. Maintain or enhance the value of contiguous property (unless the use is a public necessity, in which case the use need not do so).

*The proposed tower and wireless communications facility will maintain or enhance the value of contiguous property. The vast majority of people wish to live where wireless coverage and internet and digital capabilities are available, as many people are working from home and families with school age children frequently receive assignments through Google Classroom and other on-line sources. People want to be where it is safe to live, work, and play and where they can have emergency access should the need arise.*

*The proposed tower is located and designed to ensure it will not injure the value of contiguous property. The proposed tower will be located within a large 35.35-acre parcel, and it will be surrounded by mature vegetation on three of its four sides. The large size of the property ensures that the tower will exceed the setback requirement and be located great distances from all adjacent properties. The tower compound will be located approximately 819 feet from the property to the west, 267 feet from the property to the north, 1,199 feet from the property to the east, and 417 feet from the property to the south. Please refer to the site photographs provided under Tab 15 of the application binder.*

*Please see the Impact Study that concludes that the tower will maintain or enhance contiguous property values located under Tab 25 of the application binder.*

- c. Assure the adequacy of:

1. Sewage disposal facilities.

*The proposed use will be an unmanned facility. There will be no need for sewage disposal.*

2. Solid waste and water facilities.

*The proposed use will be an unmanned facility. There will be no need for water or solid waste disposal.*

3. Police, fire and rescue squad protection.

*The proposed use will be an unmanned facility. There should be no need for police, fire, or rescue squad protection at this facility. In the unlikely event that such services are needed, this site falls under the jurisdiction of the Cabarrus County Sheriff's Department and the Midland VFD Station 1.*

4. Schools.

*Schools in the coverage vicinity of this tower and wireless communications facility will benefit from this facility being constructed in the area as they will receive enhanced wireless, digital, and internet coverage.*

5. Transportation systems (within and around the site) and other public facilities.

*The transportation systems in the area will benefit from the enhanced wireless coverage once this site has been constructed.*

- d. Comply with the general plans for the physical development of the County as embodied in these regulations or in the Land Use Plans adopted by the Cabarrus County Board of Commissioners.

*This proposed site will comply with the general plans for the physical development of the County. The proposed location of the tower will be situated in a LDR district of the County that is intended to permit development with a low density residential community character where public utilities are available or are envisioned to be available within the next two to five years. The tower will provide needed services and public safety protection for those living in the low density residential district, and the tower will provide the infrastructure to support those objectives.*

### **Special Conditions arrived at by the Planning and Zoning Commission**

When the Commission finds that circumstances relating to a particular use warrant more requirements, in addition to those listed in connection with the use, the Commission may attach necessary conditions such as time limitations, requirements that one or more things be done before the request can be initiated or permits obtained and / or conditions of a continuing nature. These may include other requirements such as screening, landscaping, lighting, size and location of signs, etc.

To summarize, conditional uses are subject to both general and specific requirements, rather than being automatically permitted. The review process of a conditional use assures that County government is meeting its responsibility of providing for the general health, safety and welfare of the residents of Cabarrus County.

*Acknowledged.*

## **Section 8-4-Conditional Uses**

### **7. Communications Tower, 911 Communications Tower**

Countryside Residential, Low Density Residential, Medium Density Residential, High Density Residential / Mixed Use and Office / Institutional districts:

- a. The tower must be designed to land upon its own property in the event of a fall and shall be certified by a North Carolina registered Professional Engineer (PE).

*Under Tab 19 of the application binder is the structural design report for the 195-foot monopole, certified by a NC registered Professional Engineer, that addresses the fall zone of the tower.*

- b. Certification is waived if the tower is located on the property such that the radial distance to the nearest structure or property line is equal to the height of the tower plus 50 feet.

*Survey sheet 2 of 3 in the construction drawings located under Tab 6 of the application binder shows that the distance from the tower to the nearest property line is 332.1 feet. Sheet C-1 shows that the tower will be 434 feet from the nearest residential structure.*

- c. Towers shall be enclosed by a security fence not less than six (6) feet and no taller than eight (8) feet in height.

*Please refer to Sheet C-10 of the construction drawings located under Tab 6 of the application binder. The fencing for the proposed compound will be a six-foot tall, slatted wood fence.*

- d. The tower and any accessory buildings must be screened from public view by a buffer that is a minimum of four (4) feet wide and located immediately adjacent to the perimeter of the compound. Plantings shall effectively screen the compound from adjacent residential properties.

*Please refer to Sheet C-1.1 of the construction drawings located under Tab 6 of the application binder for the proposed Landscape Plan.*

### **36. Wireless Telecommunication Services – All Zones**

#### **Section 1 Purpose**

The purpose of this Section 36 is to:

- a. Protect residential areas and land uses from potential adverse impacts of towers and antennas.

- b. Encourage the location of towers in non-residential and less developed areas.
- c. Strongly encourage joint use of new and existing tower sites as a primary option rather than construction of an additional single-use tower.
- d. Encourage users of towers and antennas to locate them, to the extent possible, in areas where the adverse impact on the community is minimal.
- e. Encourage users of towers and antennas to configure them in a way that minimizes the adverse visual impact of the towers and antennas through careful design, siting, landscape screening, and innovative camouflaging techniques.
- f. Enhance the ability of the providers of telecommunications services to provide such services to the community quickly, effectively, and efficiently.
- g. Consider the public's health and safety in regard to communication towers.
- h. Avoid potential damage to adjacent properties from tower failure through engineering and careful siting of tower structures.

*Acknowledged. The above purposes are addressed in the application.*

## **Section 2 Definitions**

## **Section 3 Applicability**

The provisions of Section 36 shall apply to any new Wireless Telecommunications Tower, Antenna or substantial modification, except as provided below. The use of land for wireless telecommunication service antenna or tower shall be permitted as set forth in Chapter 3, Section 3.8, subject to the criteria below.

## **Section 4 General Guidelines and Requirements**

- a. **PRINCIPAL OR ACCESSORY USE** – Antennas and towers may be considered either principal or accessory uses. A different existing use or an existing structure on the same lot shall not preclude the installation of an antenna or tower on such lot.

*The 35.35-acre parcel is currently used for agriculture purposes. The tower and wireless communications facility will be contained within a 50-foot by 50-foot fenced compound within a 100-foot by 100-foot leased area of the 35.35-acre parcel.*

- b. **LOT SIZE** – In the event that a tower or antenna is installed and / or leased on a portion of a lot, the lot in its entirety will determine any and all district development regulations that the structure may be subjected to; including but not limited to setback, lot coverage, and other such requirements.

*The proposed tower and wireless communications facility will meet and/or exceed all LDR district development regulations, including setbacks, lot size, and other requirements.*

- c. INVENTORY OF EXISTING SITES – Each applicant for an antenna and / or tower shall provide to the Zoning Administrator an inventory of its existing towers, antennas, or sites approved for towers or antennas, that are within the jurisdiction of Cabarrus County, the City of Kannapolis, the City of Concord, the Town of Harrisburg, the Town of Mt. Pleasant, the City of Locust or the Town of Midland. Such information shall include specific information about the location, height, and design of each tower.

*See Tab 12 of the application binder for an inventory of existing tower sites and antennas as well as approved sites within the County, including the City of Kannapolis, the City of Concord, the Town of Harrisburg, the Town of Mt. Pleasant, the City of Locust, and the Town of Midland.*

Each applicant shall also provide a one-year build out plan for all other proposed wireless communications facilities within the County.

*Currently, the only AT&T projects that are expected to be constructed in Cabarrus County within the next year are the current project and a collocation on the Highwoods Tower that was approved the week of 11/4/2019.*

The Zoning Administrator, and / or his or her designee, may share such information with other applicants applying for administrative approvals or conditional use permits under this Ordinance, or with other organizations seeking to locate towers or antennas within the jurisdiction of this Ordinance provided, however, that the Zoning Administrator, and / or his or her designee, is not, by sharing such information, in any way representing or warranting that such sites are available or suitable. Notwithstanding the applicant is not required to provide proprietary, confidential or other business information to justify the need for the new wireless support structure, including propagation maps and telecommunication traffic studies.

*Acknowledged.*

## **Section 5 Aesthetics**

- a. Towers shall either maintain a galvanized steel finish or be painted a neutral color to blend in with the surrounding area and to reduce visual obtrusiveness.

*The proposed monopole will be constructed of a galvanized steel finish that will blend with the backdrop of the sky and natural surroundings.*

- b. The design of the buildings and related structures shall, to the extent possible, use materials, colors, textures, screening, and landscaping that will blend them into the natural setting and surrounding buildings located adjacent to the tower or antenna site.

*The equipment shelters are designed as grey or light beige in color, and they will blend with the natural surroundings. Please refer to Sheet C-5 of the construction drawings located under Tab 6 of the application binder for the proposed cabinet details.*

*In addition to the six-foot tall, slatted wood fence proposed for this compound, there will be a landscape border around the 50-foot by 50-foot fenced compound as shown on Sheet C-1.1 of the construction drawings located under Tab 6 of the application binder that will further shield the ground equipment from view.*

- c. If an antenna is installed on a structure other than a tower, the antenna and supporting electrical and mechanical equipment must be a neutral color that is identical to, or closely compatible with, the color of the supporting structure. This is in order to make the antenna, and related equipment, as visually unobtrusive as possible.

*Not applicable to this request or project.*

- d. Lights – No tower or antenna shall have affixed or attached to it in any way except during time of repair or installation, any lights, reflectors, flashers, day-time strobes or steady night time light or other illumination devices, except as required by the FAA, FCC or the County. This restriction against lights shall not apply to towers which have been combined with light standards for illumination of ball fields, parking lots, playgrounds, or other similar public uses. If lighting is required, the lighting sources and design shall be designed to create the minimum practicable penetration of areas outside the boundaries of the Lot or Parcel.

*The FAA Determination Report provided under Tab 18 of the application binder states: "As a condition to this Determination, the structure is to be marked / lighted in accordance with FAA Advisory Circular 70 / 7460-1 Change, Obstruction Marking and Lighting, a med-dual system – Chapters 4, 8 (M-Dual), & 12". The reason the FAA's Determination states this requirement is that when the FAA Determination was requested by AT&T, the tower was targeted to be a 205-foot tower and the FAA's Determination was based on that height and request. However, the tower design has been reconfigured to be a 195-foot tower.*

*As referenced in the County's comments of August 5, 2020, the FAA does not require towers less than 200 feet in height to be lit, and this tower is therefore not required to be lit. The only lighting proposed for this site will be a down shielded motion detector lamp that will be mounted on each carrier's equipment cabinet primarily for the maintenance technicians should they be called to the site in the evening hours. Please refer to Sheet C-5A of the construction drawings located under Tab 6 of the application binder to see the exterior lighting proposed for this compound.*

- e. State or Federal Requirements – All towers and antennas must meet or exceed current standards and regulations of the FAA, the FCC, and any other state or federal government agency with the authority to regulate towers and antennas. If such standards and regulations are changed, then the owners of the towers and antennas governed by this chapter shall bring such towers and antennas into compliance with the revised standards and regulations within six (6) months of the effective date of such standards and regulations, unless a different compliance schedule is mandated by the controlling state or federal agency. Failure to bring towers and antennas into compliance with such revised standards and regulations shall constitute grounds for the removal of the tower or antenna at the owner's expense.

*Acknowledged. The Applicant will at all times maintain the tower and all associated equipment in compliance with all FAA, FCC, federal, state, and local standards and regulations.*

- f. Building Codes, Safety Standards – To ensure the structural integrity of towers and antennas, the owners of such facilities shall ensure that they are maintained in compliance applicable with standards contained in the State Building Code.

*Acknowledged. The Applicant will at all times maintain the tower and all associated equipment in compliance with standards contained in the State Building Code.*

- g. Fall Zone – Towers shall be designed so that in the event of a structural failure, the tower falls on the subject parcel or within the leased area of the subject parcel. No tower or antenna shall be designed and / or sited such that it poses a potential hazard to nearby residences or surrounding properties or improvements. To this end, any tower or antenna, shall be designed to withstand the maximum forces expected from wind and ice when the tower is fully loaded with antennas, transmitters, and other equipment. Compliance with this requirement shall be certified by a professional engineer licensed by the State of North Carolina in a report describing the tower structure, specifying the number and type of antennas it is designed to accommodate, providing the basis for the calculations done, and documenting the actual calculations performed.

*The tower will meet and/or exceed these requirements. Please refer to the certified Structural Design Report located under Tab 19 of the application binder, which addresses the fall zone.*

- h. Essential Services – Wireless telecommunication towers and antennas shall be regulated and permitted pursuant to this chapter and shall not be regulated or permitted as essential services, public utilities, or private utilities.

*Acknowledged.*

- i. Signs – Signs on a tower, or on any portion of the premises leased for wireless communication use, shall be limited to those needed to identify the property and the owner and to warn of any danger. Signs which advertise for commercial purposes are prohibited. All signs shall comply with the requirements of Chapter 11, Signage.

*The signage posted at the proposed site will comply with the requirements as stated in Chapter 11 of this Ordinance. Please refer to Sheet C-11 in the construction drawings located under Tab 6 of the application binder for the proposed signage.*

## **Section 6 Permit Requirements**

No wireless telecommunications tower, antennae, or substantial modification shall be erected or established unless and until a Zoning Clearance Permit has been issued pursuant to this Ordinance.

- a. A Stealth Antenna or Repeater which does not exceed sixty-five (65) feet in height are permitted as of right and does not require a conditional use permit.

*Not applicable to the proposed project or request.*

- b. Repeaters shall either maintain a galvanized steel finish or be painted a neutral color to blend in with the surrounding area and / or structure and to reduce visual obtrusiveness. Where a pole frame is used, the frame shall be similar and compatible with the existing light poles and fixtures in the area.

- 1. Where repeaters are proposed to be located in a public or private right-of-way, encroachment agreements shall be submitted as part of the site plan review application package.

*Not applicable to the proposed project or request.*

In addition to procedures, standards and criteria set forth in this Ordinance, Conditional Use Permits for towers, antennas, and substantial modifications shall be issued in accordance with the following provisions:

- a. Towers or antennas sixty-five (65) feet or more from the average ground level shall require a conditional use permit. This applies to mounted antennas, referring to the total height from the base of the building or other structure to the top of the antennas.

*Acknowledged. The proposed monopole tower will be 195-feet in height with a four-foot lightning rod at the top.*

- b. Any information of an engineering nature that the applicant submits, whether civil, mechanical, or electrical, shall be certified by a professional engineer licensed in the State of North Carolina.

*Acknowledged. The construction drawings provided under Tab 6 of the application binder have been signed and sealed by a PE licensed in the State of North Carolina.*

- c. In addition to any other information required pursuant to this Ordinance, applications for conditional use permits for towers shall include the following information:

1. A site plan consistent with the procedures of this Ordinance which clearly indicates the location, type, and height of the proposed tower; on-site land uses and zoning; adjacent land uses and zoning (including when adjacent to other zoning jurisdictions); adjacent roadways; proposed means of access; setbacks from property lines, elevation drawings of the proposed tower and any other structures; and other information deemed by the Administrator to be necessary to assess compliance with this Section.

*The construction drawings located under Tab 6 of the application binder meet this requirements.*

2. The setback distance between the proposed tower and the nearest residential unit and residentially zoned properties.

*This information is shown on Sheet C-1 of the construction drawings located under Tab 6 of the application binder. The distance between the proposed tower and the nearest residential unit is 434 feet, and note of the adjacent properties are zoned residential. The distance between the proposed tower and the nearest commercially zoned property used for residential purposes is 332 feet.*

3. The availability of suitable existing tower, other structures, or alternative technology.

*RF engineers did a search of the area to determine if there are any suitable existing towers, structures, or alternative technology that could be utilized rather than constructing a new tower. Located under Tab 10 of the application binder is the engineer's search ring that shows that there are no existing or proposed towers or other structures within 1,500 feet of the proposed location, and that there are no suitable alternative technologies to this proposed tower. Please see the statement provided by AT&T's Sr. Manager of Construction and Engineering located under Tab 11 of the application binder.*

4. The separation distance from other towers pursuant to Table 1 shall be shown on an updated site plan or map. The applicant shall also identify the type of construction of the existing tower(s) and the owner / operator of the existing tower(s), if known.

*The closest tower to the location of the proposed site is 6,531 feet away and could not be utilized to fulfill the coverage objective needed for this area.*

#### **Table 1 Separation Requirements from Offsite Uses / Areas**

Tower shall be located a minimum of the tower height plus 50 feet from any property line or residential structure.

*As shown on Sheet C-1 of the construction drawings located under Tab 6 of the application binder, the nearest property line from the tower is 332 feet, and the distance from the tower to the nearest residential structure is 434 feet.*

In no case shall a tower be located less than 100 feet from any property line or residential structure. This applies to single-family residential unit (including modular homes, manufactured homes, townhome units, group home facilities and family care homes - separation measured from edge of lease area or compound (fenced in area) to closest property line or structure), vacant residentially zoned land which is either platted or has preliminary plat approval which is not expired, vacant residentially zoned land, and existing multi-family resident units.

*Acknowledged. This site will setback 267.5 feet from the edge of the leased area to the closest property line as shown on Sheet 2 of 3 of the Survey located under Tab 6 of the application binder. This parcel is zoned commercial and contains a residential use.*

None, only setbacks apply to non-residentially zoned lands or non-residential uses.

*Acknowledged.*

5. Method of fencing and finished color and, if applicable, the method of camouflage and illumination.

*The compound will be secured by a six-foot tall, slatted wood fence, as shown on C-10 of the construction drawings located under Tab 6 of the application binder. The fenced compound will be further camouflaged by a landscape buffer as shown on Sheet C-1.1 of the construction drawings.*

6. A notarized statement by the applicant as to whether construction of the tower will accommodate co-location of additional antennas for future users.

*The proposed tower is being designed for a total of four carriers. Diamond will actively market the tower to other carriers that need coverage in the area at a fair market value reciprocal with that as would be charged by the carrier proposing to lease on other tower owners. Diamond's goal is to fill the tower rather than limit the tower's use, restrict, prevent or prohibit competition among carriers. This statement is provided on behalf of Diamond and this project narrative has been properly notarized. Please also refer to Letters of Intent from Diamond and AT&T Mobility located under Tab 17 of the application binder.*

7. A description of the suitability of the use of existing towers, other structures or alternative technology not requiring the use of towers or structures to provide the services to be provided through the use of the proposed new tower.

*The closest tower to this proposed site, where coverage is needed, is 6,531 feet. This tower is not able to satisfy AT&T's coverage objectives. Please refer to AT&T's statement provided under Tab 11 of the application binder.*

8. A description of the feasible alternative location(s) of future towers or antennas within the County based upon existing physical, engineering, technological or geographical limitations in the event the proposed tower is erected.

*There are no feasible alternative locations of existing or future towers that will need AT&T's coverage objectives.*

9. A statement of compliance with the Federal Communications Act 47 U.S.C. §332 as amended and the applicable rules promulgated by the Federal Communications Act.

*Please see the statement provided under Tab 16 of the application binder.*

## **Section 7 Approval Criteria**

All non-stealth and stealth towers and mounted antennas are permitted by right or as a conditional use as listed in Chapter 3, Section 3-8.

### Factors Considered in Granting Conditional Use Permits for Towers

In determining whether to issue a conditional use permit, the Board of Adjustment shall consider, in addition to any other standards in this Ordinance governing conditional use permits, the following factors:

- a. Height of the proposed tower.
- b. Proximity of the tower to residential structures and residentially zoned district boundaries.
- c. Nature of uses on adjacent and nearby properties.
- d. Surrounding topography.
- e. Surrounding tree coverage and vegetation.
- f. Design of the tower, with particular reference to design characteristics that reduce or eliminate visual obtrusiveness.
- g. Proposed ingress and egress.
- h. Availability of suitable existing towers, other structures, or alternative technologies not requiring the use of tower or structures, as discussed in Section 8 below.

*Acknowledged. All of the above factors are addressed in this application.*

## **Section 8 Availability of Suitable Existing Towers, other Structures, or Alternative Technology**

No new tower shall be permitted unless the applicant demonstrates to the reasonable satisfaction of the Administrator, or Board of Adjustment (if conditional use permit is required), that no existing tower, structure or alternative technology, that does not require the use of towers or structures, can accommodate the applicant's proposed tower or antenna. Evidence submitted to demonstrate that no existing tower, structure or alternative technology can accommodate the applicant's proposed tower or antenna may consist of any or all of the following:

1. No existing towers or structures are located within the geographical area which meets applicant's engineering requirements.

*The closest tower to the proposed site where coverage is needed is 6,531 feet away and will not meet AT&T's coverage objectives.*

2. Existing towers or structures are not of sufficient height to meet applicant's engineering requirements.

*Not applicable. There are none.*

3. Existing towers or structures do not have sufficient structural strength to support applicant's proposed antenna and related equipment.

*Not applicable. There are none.*

4. The applicant's proposed antenna would cause electromagnetic interference with the antenna on the existing towers or structures, or the antenna on the existing towers or structures would cause interference with the applicant's proposed antenna.

*Not applicable.*

5. The fees, costs, or contractual provisions required by the owner in order to share an existing tower structure or to adapt an existing tower or structure for sharing are unreasonable. Costs required by the owner of existing tower or structure that exceed new tower development are presumed to be unreasonable.

*Not applicable.*

6. The applicant demonstrates that there are other limiting factors that render existing towers and structures unsuitable.

*Existing towers are located too far away to meet AT&T's coverage objectives.*

7. The applicant demonstrates that alternative technologies, such as a cable microcell network using multiple low-powered transmitters/receivers attached to a wire line system, that does not require the use of towers or structures, are unsuitable. Costs of alternative technology that exceed new tower or antenna development cost shall not be presumed to render the technology unsuitable.

*There are no suitable alternative technologies to this proposed tower.*

8. Separation – Towers shall be separated a distance, as measured from the base, equal to at least the minimum standards established in Table 2. The separation distances shall be measured by drawing or following a straight line between the base of the preexisting tower and the base location, pursuant to a site plan, of the proposed tower.

*The nearest tower is 6,531 feet to the west.*

### **Table 2 Separation Distances Between Towers**

Separation to be measured from the base of the tower.

Monopoles 65 feet in height or greater shall have a 1,500 foot separation distance from other monopoles 65 feet in height or greater and a 750 foot separation distance from other monopoles less than 65 feet in height.

*The closest tower to the proposed site where coverage is needed is 6,531 feet away.*

Monopoles less than 65 feet in height shall have a 750 foot separation distance from monopoles 65 feet in height or greater and also a 750 foot separation distance from monopoles less than 65 feet in height.

*Not applicable. The proposed monopole is 195 feet.*

9. Security Fencing – Towers shall be enclosed by security fencing not less than six (6) feet in height and no more than eight (8) feet in height, constructed of block or masonry or wood material, and shall be equipped in such a manner as to deter climbing.

*The proposed fencing at this site will be a six-foot tall, slatted wood fence. Please refer to Sheet C-10 of the construction drawings located under Tab 6 of the application binder.*

10. Landscaping – Tower facilities shall be landscaped with a buffer of plant materials that effectively screens the view of the tower compound from adjacent residential property. The standard buffer shall consist of a landscaped strip at least four (4) feet wide outside the perimeter of the compound. Plant materials forming the visual buffer may be existing on the subject property or installed as part of the proposed facility, but existing mature plant growth and natural land forms on the site shall be preserved to the maximum extent possible. The Administrator may waive these requirements in locations where the view of the tower base is obstructed by existing buildings or natural topography and cannot be viewed from adjacent property or a public street.

*The full parcel is surrounded by mature vegetation on three of its four sides. Please refer for Sheet C-1 of the construction drawings located under Tab 6 of the application binder for the proposed additional landscaping to be planted around the perimeter of the 50-foot by 50-foot fenced compound. Please also refer to the photographs located under Tab 15 of the application binder. The wireless compound and tower facility will have no adverse visual effect on the area.*

### **Section 9 Buildings or Other Equipment Storage**

Structures used in association with towers or antennas shall comply with the following provisions:

- a. Equipment cabinets and / or other structures shall comply with all applicable building codes.
- b. Guys and accessory buildings shall satisfy the minimum zoning district setback requirements.
- c. Equipment cabinets and / or structures shall be no greater than fourteen (14) feet in height or three hundred (300) square feet in gross floor area. The entry or access side of a cabinet and / or structure shall be gated by a solid, sight-obscuring gate that is separate from the cabinet and / or structure. Such access way shall not face residentially zoned property.

*The equipment shelters proposed for this wireless communications facility and compound will meet all of the above specifications. Please see the cabinet details as shown on Sheets C-5 and C-5A of the construction drawings located under Tab 6 of the application binder. The equipment shelters will be located within the fenced compound area as described above and the fenced compound will be secured with a locked gate. The fenced compound will be obscured from site with the additional landscape buffer as shown on Sheet C-1.1 of the construction drawings. The proposed tower is a monopole, and there are no guy wires associated with this project.*

## Section 10 Collocation

- a. Good Faith – Applicants shall make a good faith effort to share wireless communication structures, facilities and sites where feasible and appropriate. Good faith effort shall include sharing technical information necessary to determine if collocation is feasible under the design configuration most accommodating to collocation, and may include negotiations for erection of a replacement support structure to accommodate collocation. A competitive conflict to collocation or financial burden caused by sharing such information normally will not be considered as an exception to the duty of good faith.

*Acknowledged and agreed. Applicant will market available space/positions on the proposed tower in good faith to other carriers. The tower is being constructed to support four carriers.*

- b. Third Party Technical Review – In the event a dispute arises as to whether an Applicant has exercised good faith in accommodating other users, the Administrator may require the applicant to obtain a third party technical study at the Applicant's expense. The Administrator may review any information submitted by the Applicant in determining whether good faith has been exercised.

*Acknowledged.*

- c. Exceptions – No collocation may be required where shared use would or does result in significant interference with the broadcast or reception capabilities of the existing wireless communication facilities or the failure of the facilities to meet federal standards for emissions.

*Acknowledged.*

- d. Violation Penalty – Failure to comply with the collocation requirements may result in denial of a permit request or revocation of an existing permit.

*Acknowledged.*

## Section 11 Removal of Abandoned Antennas and Towers

Any antenna or tower that is not operated for a continuous period of one (1) year shall be considered abandoned, and the owner of such facility shall remove the antenna or tower within ninety (90) days of receipt of notice from the Board of Adjustment notifying the owner of such abandonment. If there are two or more users of a single tower or antenna, then this provision shall not become effective until all users cease using the tower or antenna for the prescribed period. "Physically remove" shall include, but not be limited to:

1. Removal of antennas, mount, equipment shelters and security barriers from the subject property.

2. Proper disposal of the waste materials from the site in accordance with local and state solid waste disposal regulations.
3. Restoring the location of the facility to its natural condition, except that any landscaping and grading shall remain in the after condition.

*Acknowledged.*

The company that is constructing and leasing the tower shall provide a performance bond for 1.25 times the estimated cost of the removal of the tower, antennas, and any accessory equipment or structures anticipated to be located on the site at build out. The performance bond shall be filed prior to issuance of a zoning clearance permit. This amount will be determined by a removal company and certified by a North Carolina licensed engineer. For every year following approval, the bond shall increase by an inflation factor based upon the Consumer Price Index (CPI) Index. A revised bond shall be provided every fifth year that a tower is in place.

*Acknowledged. Dewberry Engineers Inc. 's certified letter providing the future tower removal cost estimate, the Tower/ Structure/Antenna/Equipment Removal Bond and the Surety Rider for the Tower/Structure/Antenna/Equipment Removal Bond are provided under Tab 21 of the application binder.*

## **Section 12 Non-Conforming Uses**

- a. No Expansion of Non-Conforming Use – Towers that are constructed and antennas that are installed, in accordance with the provisions of this chapter, shall not be deemed to constitute the expansion of a nonconforming use or structure. In addition, a change to a tower that does not constitute a substantial modification must be permitted.

*Acknowledged.*

- b. Pre-existing Towers – Towers constructed prior to the adoption of this Ordinance shall be allowed to continue their usage as they presently exist. Routine maintenance (including replacement with a new tower of like construction and height) shall be permitted on such preexisting towers. New construction other than routine maintenance on a preexisting tower shall comply with the requirements of this Chapter.

*Not Applicable.*

- c. Rebuilding Damaged or Destroyed Nonconforming Towers or Antennas- Notwithstanding this Section, bona fide nonconforming towers or antennas that are damaged or destroyed by weather events or other non-manmade causes are not required to conform to the requirements of this Ordinance provided the type, height, and location if the tower onsite shall be the same type and intensity as the original facility; provided, however, that any destroyed lattice or guyed tower shall be replaced with a monopole structure only. If no permit is obtained or if such permit expires, the tower or antenna shall be deemed abandoned.

*Acknowledged.*

### **Section 13 Duration of Permit**

The county may condition a permit on a requirement to construct the facility within a reasonable period of time, which shall be no less than two (2) years.

## **VII. CONCLUSION**

The proposed tower and telecommunications facility will be in conformity with the Cabarrus County Development Ordinance and will be an integral part of AT&T's, FirstNet's, and other wireless carriers' wireless telecommunications systems, bringing wireless digital services to this geographic area of Cabarrus County.

This wireless antenna support structure (195-foot monopole) and wireless communications facility will comply with the telecommunications and other applicable provisions of the County's Ordinances. At all times, Diamond and its agents will cooperate with the County in permitting, construction, and operation of this proposed facility.

Diamond hereby respectfully requests that the Conditional Use Permit Application be approved.

I certify that all of the information presented by me in this application on behalf of Diamond Communications LLC is true and accurate to the best of my knowledge, information and belief.

Respectfully submitted on this 19<sup>th</sup> day of August, 2020.

*Kemerait*

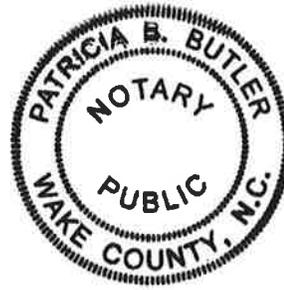
Karen M. Kemerait  
Counsel for Diamond Communications LLC

Sworn to and subscribed before me this  
19 day of August, 2020.

*Patricia B. Butler*

Notary Public

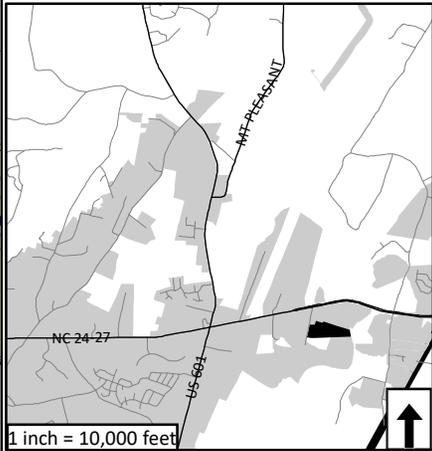
My Commission Expires: 3-10-2023



# Midland Planning Area Existing Zoning

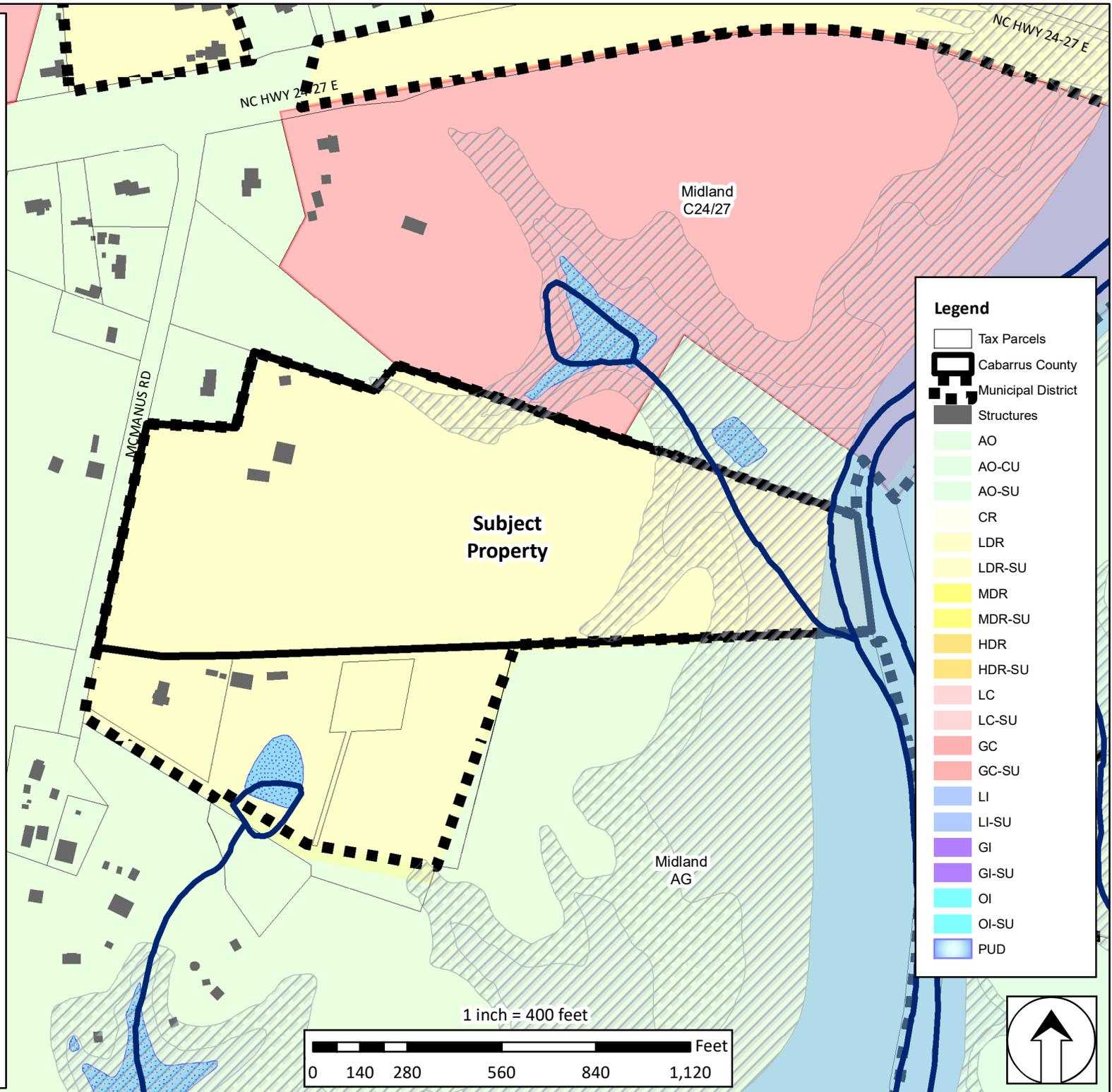


Applicant: Diamond Communications  
Owner: Nathaniel McManus  
Case: CUSE2020-00002  
Address: 11979 McManus Road  
Purpose: WTC Tower  
PINs: 5554-89-1609

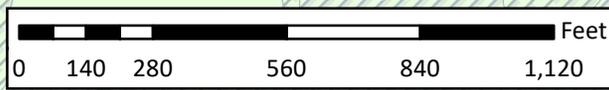


Cabarrus County shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. These data cannot be construed to be a legal document. Primary sources from which these data were compiled must be consulted for verification of information contained within the data.

Map Prepared by Cabarrus County Planning & Development - July, 2020



Legend	
	Tax Parcels
	Cabarrus County
	Municipal District
	Structures
	AO
	AO-CU
	AO-SU
	CR
	LDR
	LDR-SU
	MDR
	MDR-SU
	HDR
	HDR-SU
	LC
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	GC
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	LI
	LI-SU
	GI
	GI-SU
	OI
	OI-SU
	PUD

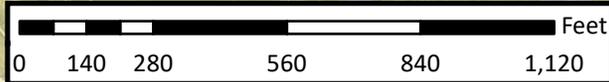
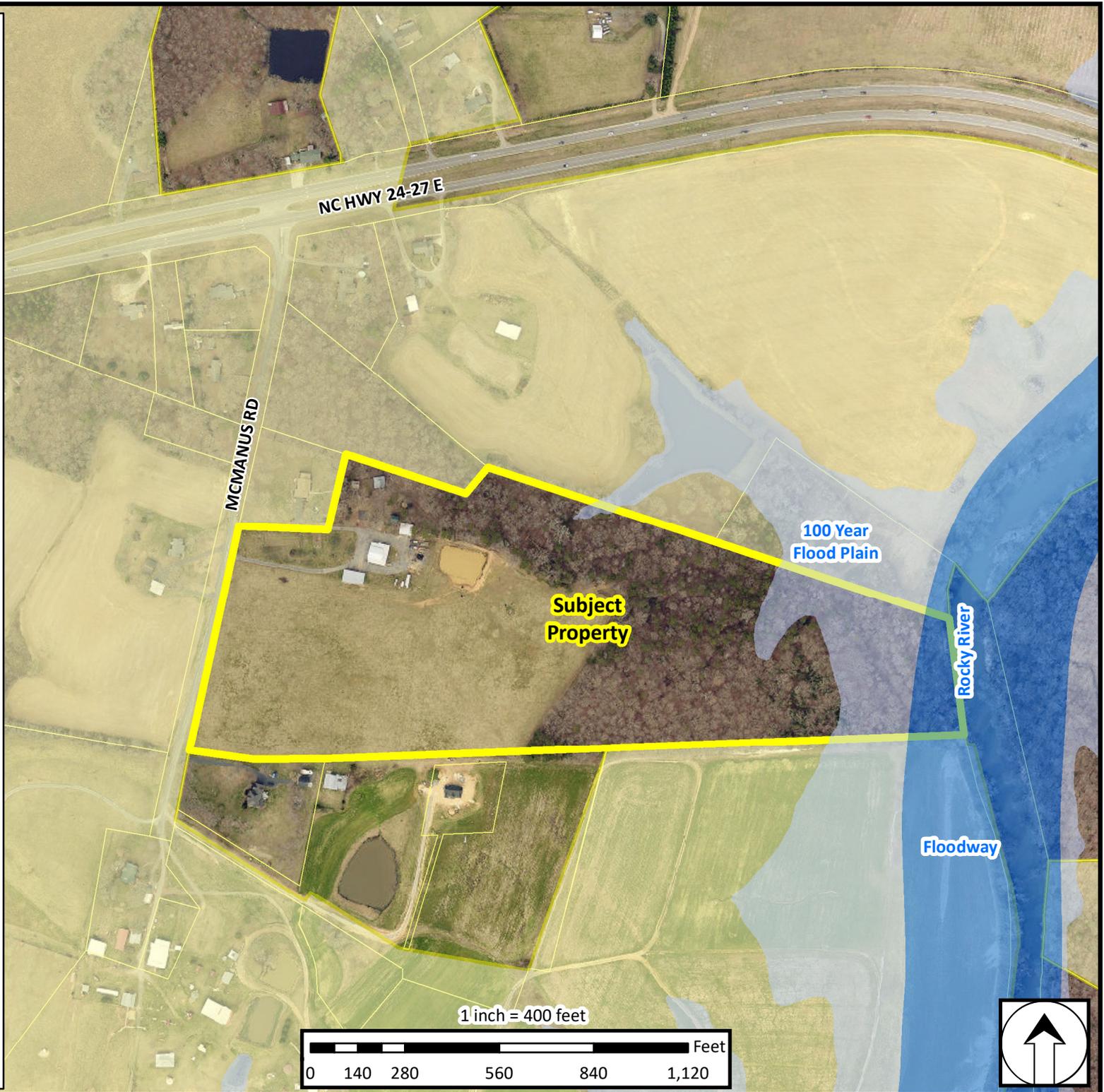
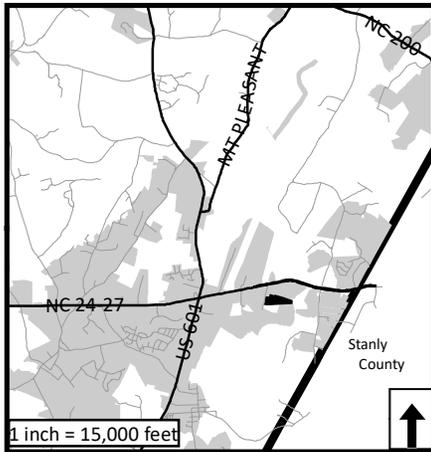


**Midland Planning Area  
Aerial Map**



Applicant: Diamond Communications  
 Owner: Nathaniel McManus  
 Case: CUSE2020-00002  
 Address: 11979 McManus Road  
 Purpose: WTC Tower  
 PINs: 5554-89-1609

- Cabarrus County
- Municipal District
- Tax Parcels



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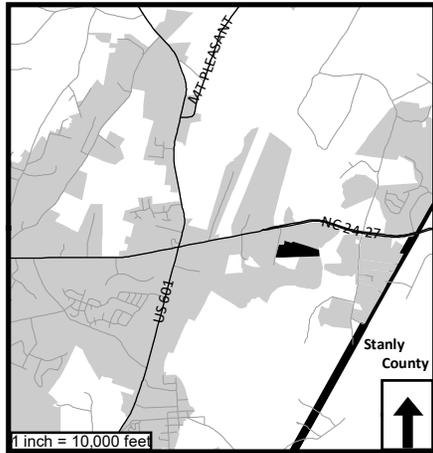
Map Prepared by Cabarrus County Planning & Development - July 2020



# Midland Planning Area Future Land Use

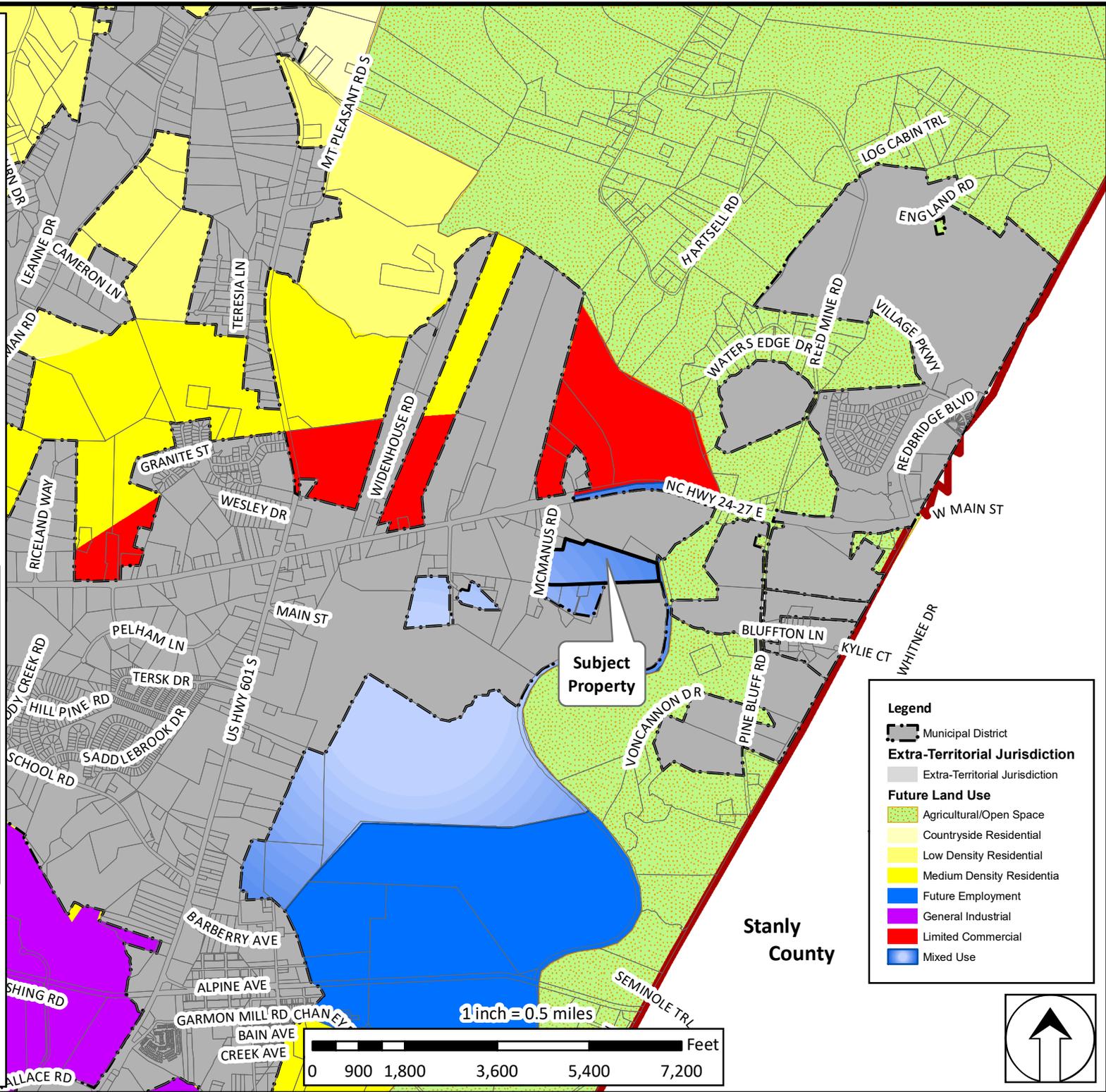


Applicant: Diamond Communications  
 Owner: Nathaniel McManus  
 Case: CUSE2020-00002  
 Address: 11979 McManus Road  
 Purpose: WTC Tower  
 PINs: 5554-89-1609



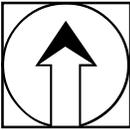
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Map Prepared by Cabarrus County Planning & Development - July 2020



**Legend**

- Municipal District
- Extra-Territorial Jurisdiction
- Future Land Use
  - Agricultural/Open Space
  - Countryside Residential
  - Low Density Residential
  - Medium Density Residential
  - Future Employment
  - General Industrial
  - Limited Commercial
  - Mixed Use





# Transforming public safety communications



The First Responder Network Authority (FirstNet) has entered into a public-private partnership with AT&T to build the first nationwide wireless broadband network dedicated to first responders for use in disasters, emergencies and daily public safety work.



FirstNet provides initial funding, 20 MHz of spectrum and deep public safety expertise to the partnership. AT&T brings a proven track record and strong commitment to public safety, as well as the commercial expertise and nationwide resources to deploy, maintain and operate the network.



This 25-year partnership offers the best overall value to America and its public safety responders – both from an investment perspective and in terms of the lifesaving technology it will put in the hands of law enforcement, fire and emergency medical personnel in communities across the nation.

## FirstNet will serve...



## Technology first responders need to save lives, protect communities

MODERNIZED	PRIORITIZED	SPECIALIZED
<p>innovative app &amp; device ecosystem</p>  <p>network improvements &amp; upgrades</p>  <p>commercially proven cybersecurity solutions</p> 	<p>emergency communications receive highest priority</p>  <p>rapid buildout with public safety input</p>  <p>nationwide public safety solutions leveraging existing infrastructure</p> 	<p>robust coverage where public safety needs it</p>  <p>connectivity for advanced mobile data</p>  <p>24h highly available customer care</p> 



# TOP 10 FREQUENTLY ASKED QUESTIONS



## 1. What is the First Responder Network Authority?

The First Responder Network Authority is the independent authority established by Congress to deliver a nationwide broadband network dedicated to public safety. The Network is strengthening public safety users' communications capabilities, enabling them to respond more quickly and effectively to accidents, disasters, and emergencies.

The First Responder Network Authority is led by a [Board of leaders and executives](#) from the public safety community; federal, state, and local governments; and the technology, finance, and wireless sectors. It has a staff of about 200 employees with expertise in public safety, telecommunications, customer service, technology, procurement, and other areas needed to develop the Network. It is headquartered in Reston, VA, and has a technology center and lab in Boulder, CO.

## 2. What led to the creation of the First Responder Network Authority?

The 9/11 terrorist attacks brought to the forefront the many communications challenges that first responders face during emergencies and disasters. These issues were captured in the *9/11 Commission Report*, which identified gaps in emergency communications and recommended a nationwide network for law enforcement, fire, and emergency medical personnel communications.

The public safety community united to fulfill the 9/11 Commission's recommendation. Public safety organizations and associations advocated before Congress for a dedicated, reliable wireless network for first responders. Their advocacy efforts led to the passage of legislation in 2012 to create the agency to deploy the Network in all U.S. states and territories, including rural communities and tribal nations.

## 3. How has public safety been involved in the vision for the FirstNet network?

Public safety officials have worked closely with the First Responder Network Authority since its inception in 2012 to ensure the Network meets first responders' needs – today and in the future. The agency's outreach and consultation efforts have connected the organization to more than 1.8 million first responders and state public safety and technology executives across the country.

Specifically, the First Responder Network Authority has consulted extensively with [state single points of contact \(SPOCs\)](#) in each of the 50 U.S. states, 5 territories, and the District of Columbia, as well as local/municipal, tribal and federal public safety leaders. It also coordinates with public safety through the [Public Safety Advisory Committee \(PSAC\)](#), which provides guidance and subject matter expertise from a first responder perspective. Public safety leaders at the national, state and local levels continue to advocate for and support deployment of the Network.

## 4. How was AT&T selected to build, operate, and maintain the FirstNet network?

The First Responder Network Authority and the Department of Interior made the 25-year award based on the determination of the overall best value solution for FirstNet and public safety. The buildup to the award included a fair, competitive procurement process that began in January 2016 with [release of the Network RFP](#).

The procurement process followed the Federal Acquisition Regulation (FAR) and encouraged offerors to provide innovative solutions that could meet or exceed the needs of public safety.

The procurement was open to all entities, whether traditional wireless companies or new entrants, provided their proposal could meet the RFP's statement of objectives. AT&T was selected on a best-value award that considered financial sustainability and was based on more than just a technically acceptable solution at the lowest cost. The evaluation of proposals assessed the offerors' ability to submit a cost-effective and innovative model, and to meet or exceed the 16 objectives and evaluation factors outlined in the FirstNet RFP.

## 5. Why is the Network being built and operated through a public-private partnership?

The First Responder Network Authority and AT&T are modernizing and improving public safety communications by leveraging private sector resources, infrastructure, and cost-saving synergies to deploy and operate the Network. This public-private model also helps keep costs down for American taxpayers. To do this, Congress used the sale of communications airwaves (or spectrum) to fund FirstNet's initial operations and help start network deployment; the \$7 billion FirstNet received in initial funding came from FCC spectrum auction revenue, not taxpayer funds.

If the federal government were to build, maintain and operate this Network, the estimated cost would be tens of billions of dollars over 25 years. [The Government Accountability Office has estimated](#) it could cost up to \$47 billion over 10 years to construct and operate the Network.

With this partnership approach, the First Responder Network Authority and AT&T do not need any additional federal funding to build and operate the Network – it is a fully funded, self-sustaining Network. In return, America's first responders get services far above and beyond what they have today over a first-class broadband network dedicated to their communications needs.

## 6. What are the key terms this public-private partnership?

Congress intended for the Network to be built and operated as a public-private partnership that brings together the best of the private sector, including commercial best practices, infrastructure, and resources – with the First Responder Network Authority’s public safety expertise. This approach will lead to a fully-funded, self-sustaining Network that will serve public safety for years to come. This business model is built upon the efficient use of resources, infrastructure, cost-saving synergies, and incentives, including:

- 20 MHz of federally owned spectrum and \$6.5 billion in initial funding to the partnership; in return AT&T will deploy and operate a nation-wide high-speed broadband network for public safety over 25 years.
- AT&T will invest about \$40 billion over the life of the contract to build, operate, deploy, and maintain the Network, and together with the First Responder Network Authority will help ensure the Network evolves with the needs of public safety.
- AT&T can use FirstNet’s spectrum when it is not being used by public safety for other, commercial purposes. The company will prioritize first responders over any other commercial users.
- First Responder Network Authority will oversee the contract to ensure it delivers innovation, technology and customer care to public safety through various mechanisms, including subscriber adoption targets, milestone buildouts, disincentive fees and other mechanisms outlined in the contract.

## 7. What will the FirstNet Network provide first responders that they don’t have today?

Today, in emergencies and at large events, heavy public use can lead to wireless communications networks becoming overloaded and inaccessible. In those instances, public safety users are treated the same as any other commercial or enterprise user, and communications can be limited due to congestion and capacity issues.

With the FirstNet Network, public safety will get a dedicated “fast lane” that provides highly secure communications every day and for every emergency. It will deliver specialized features to public safety that are not available on wireless networks today – such as priority access; preemption; more network capacity; and a resilient, hardened connection. The Network will deliver more than just a public-safety-dedicated wireless connection – it is also creating devices and apps ecosystems that will connect first responders to innovative, life-saving technologies.

## 8. How will the Network benefit first responders and help them do their jobs better?

FirstNet will improve communications, response times and outcomes for first responders from coast-to-coast, in rural and urban areas, inland and on boarders – leading to safer, and more secure communities. The Network will provide first responders with innovation and robust capacity so they can take advantage of advanced technologies, tools and services during emergencies, such as:

- Applications that allow first responders to reliably share videos, text messages, photos and other information during incidents in near real-time;
- Advanced capabilities, like camera-equipped connected drones and robots, to deliver images of wildfires, floods or other events;
- Improved location services to help with mapping capabilities during rescue and recovery operations; and
- Wearables that could relay biometric data of a patient to the hospital or alert when a fire fighter is in distress.

Network technology will also be tested and validated through the [FirstNet Innovation and Test Lab](#), located in Boulder, CO, so first responders will have the proven tools they need in disasters and emergencies.

## 9. What’s happening with FirstNet now?

All 50 states, five U.S. territories and Washington, D.C., have “opted in,” to FirstNet, meaning each has accepted its individual State Plan detailing how the network will be deployed in their state/territory.

The First Responder Network Authority’s public-private partnership with AT&T provides first responders with immediate access to mission-critical capabilities over the FirstNet network. This includes priority and preemption features that give first responders their own “fast lane” on the public safety network to communicate and share information during emergencies, large events, or other situations when commercial networks could become congested. FirstNet is the only broadband network to provide ruthless preemption for public safety.

Key FirstNet activities include:

**Expanding the Network and Building Out Band 14:** The First Responder Network Authority has issued work orders to deploy the RANs. This gave AT&T the green light to expand FirstNet’s footprint and deploy Band 14 capacity and coverage throughout the nation, providing first responders with the bandwidth and mission critical connections they need to communicate, share information, and use innovative technologies every day and in every emergency.

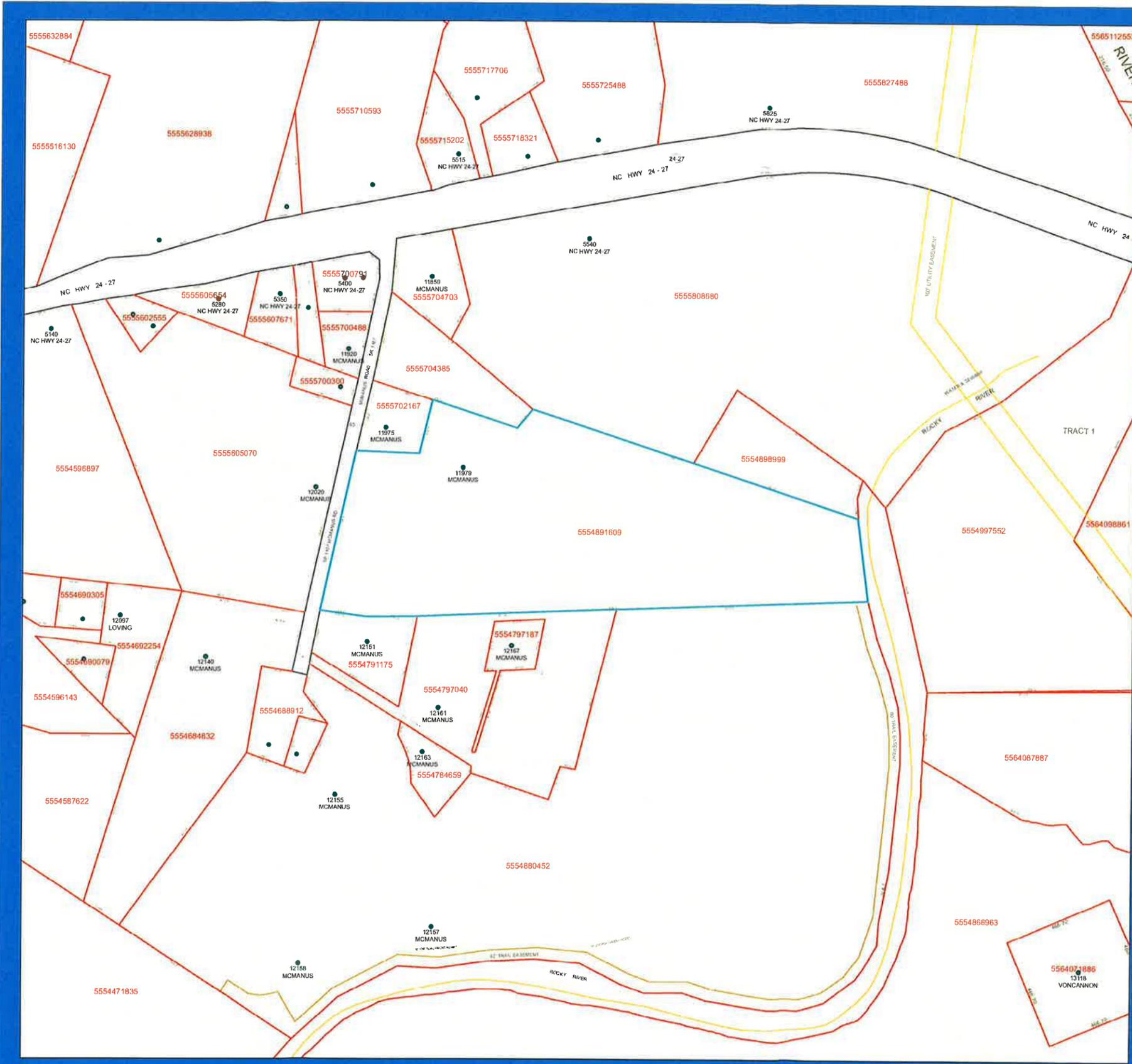
**Driving public safety innovation:** FirstNet is also unlocking a new technology marketplace for public safety, enabling first responders to benefit from advancements in innovation. The FirstNet App Catalog store will be filling up with FirstNet-approved mobile apps that are optimized for public safety use over the Network.

**Securing emergency communications:** FirstNet’s first-of-its-kind core infrastructure will give first responders the dedicated, highly secure, non-commercial network they deserve. The FirstNet Core, delivered in March 2018, provides full encryption of public safety data over FirstNet and end-to-end cyber security. FirstNet subscribers also have access to a dedicated Security Operations Center, offering 24/7/365 support.

**Engaging with public safety:** The First Responder Network Authority will continue to engage with public safety in the states, territories, federal agencies, and tribal nations to ensure the network meets their needs and incorporate their feedback in the design of future FirstNet products and services.

## 10. How can I learn more?

Stay up-to-date on the First Responder Network Authority activities and the building and deployment of FirstNet at [www.firstnet.gov](http://www.firstnet.gov). Follow us on [Twitter](#), [Facebook](#) and [YouTube](#).



# CABARRUS COUNTY PROPERTY MAP



**PIN 5554-89-1609**

- Address Points
- Cadastral Lines**
  - <all other values>
- SUBTYPE, LIN\_CODE**
  - Utility Easement, Utility Easement
  - Property Line : Road ROW
  - Property Line
  - Parcel Hooks, Parcel Hooks
  - Ingress/Egress Easement, Ingress Egress Easement
  - Historic Property Line, Historic Property Line



Scale: 1 inch = 300 feet  
 300 0 300 Feet

Printed: April 21, 2020

**DISCLAIMER:**  
 Cabarrus County shall not be held liable for any errors in the data represented on this map. This includes errors of omission, commission, concerning the content of the data, and relative positional accuracy of the data. The data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information represented on this map document.

Property Owner	Property Address	Owner Mailing Address	Parcel Number (PIN)
Nathaniel J. McManus, Jr.	11979 McManus Road	12020 McManus Road, Midland, NC 28107	5554-89-1609
Joseph Randolph McManus & wf Leny R. McManus	11975 McManus Road	11975 McManus Road, Midland, NC 28107	5555-70-2167
Nathaniel J. McManus, Jr.	N/A	12020 McManus Road, Midland, NC 28107	5554-89-8999
Nathaniel J. McManus, Jr.	N/A	12020 McManus Road, Midland, NC 28107	5555-70-4385
Miles Edward Little & wf Carol Stack Little	5540 NC Hwy 24 - 27 E Midland, NC	12555 Highway 601, Midland, NC 28107	5555-80-8680
Catawba Land Conservancy	Hwy 24 - 27 E Midland, NC	4530 Park Road Suite 420, Charlotte, NC 28209	5554-99-7552
Jimmie R. Little	12155 McManus Road	12150 McManus Road, Midland, NC 28107	5554-88-0452
Jordan Hartsell	12167 McManus Road	12167 McManus Road, Midland, NC 28107	5554-79-7187
Angela Farman & hsb Dale Farman	12151 McManus Road	12151 McManus Road, Midland, NC 28107	5554-79-1175
Nathaniel J. McManus, Jr.	12020 McManus Road	12020 McManus Road, Midland, NC 28107	5555-60-5070
Robert E. Smith & Sybil M. Smith	11960 McManus Road	11960 McManus Road, Midland, NC 28107	5555-70-0300

Catawba County shall not be held liable for any errors in the data represented on this record. This includes errors of omission, commission, concerning the content of the data, and relative positional accuracy of the data. The data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information represented on this map document.



**Cabarrus County Government – Planning and Development Department**

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August 17, 2020

Dear Property Owner:

A Conditional Use Permit Application has been filed in our office for your property. The specifics of the request are listed below. The Cabarrus County Board of Adjustment will consider this petition on Wednesday, September 9, 2020 at 7:00 PM in the Cabarrus Room of the Cabarrus Arena & Events Center, located at 4751 NC Highway 49 North, Concord, NC 28025. A Public Hearing will be conducted and public input will be allowed during that time. If you have any comments about this request, I encourage you to attend this meeting.

- |                            |  |
|----------------------------|--|
| • <b>Petitioner</b>        | <b>Diamond Communications LLC</b>        |
| • <b>Petition Number</b>   | <b>CUSE2020-00002</b>                    |
| • <b>Property Location</b> | <b>11979 McManus Road</b>                |
| • <b>Parcel ID Number</b>  | <b>5554-89-1609</b>                      |
| • <b>Existing Zoning</b>   | <b>Low Density Residential (LDR)</b>     |
| • <b>Variance Request</b>  | <b>Wireless Telecommunications Tower</b> |

If you have any questions regarding this petition, or the hearing process, please contact me at Cabarrus County Planning and Development at 704.920.2181.

Sincerely,

A handwritten signature in cursive script that reads "Phillip Collins".

Phillip Collins, AICP  
Senior Planner  
Cabarrus County Planning and Development  
704.920.2181



**Cabarrus County Government – Planning and Development Department**

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August 17, 2020

Dear Property Owner:

A Conditional Use Permit Application has been filed in our office for property **adjacent** to yours. The property and specifics of the request are listed below. The Cabarrus County Board of Adjustment will consider this petition on Wednesday, September 9, 2020 at 7:00 PM in the Cabarrus Room of the Cabarrus Arena & Events Center, located at 4751 NC Highway 49 North, Concord, NC 28025. A Public Hearing will be conducted and public input will be allowed during that time. If you have any comments about this variance request, I encourage you to attend this meeting.

- |                            |  |
|----------------------------|--|
| • <b>Petitioner</b>        | <b>Diamond Communications LLC</b>        |
| • <b>Petition Number</b>   | <b>CUSE2020-00002</b>                    |
| • <b>Property Location</b> | <b>11979 McManus Road</b>                |
| • <b>Parcel ID Number</b>  | <b>5554-89-1609</b>                      |
| • <b>Existing Zoning</b>   | <b>Low Density Residential (LDR)</b>     |
| • <b>Variance Request</b>  | <b>Wireless Telecommunications Tower</b> |

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Sincerely,

A handwritten signature in cursive script that reads "Phillip Collins".

Phillip Collins, AICP  
Senior Planner  
Cabarrus County Planning and Development  
704.920.2181  
[pecollins@cabarruscounty.us](mailto:pecollins@cabarruscounty.us)

**CABARRUS COUNTY**  
**ZONING**



**NOTICE**  
CUSE2020—00002  
**FOR DETAILS CALL**  
**704 - 920 - 2141**

Aug 17, 2020 3:03:13 PM  
11975 McManus Road  
Midland  
Cabarrus County  
North Carolina



Bateman Civil Survey Company, PC  
 2524 Reliance Avenue  
 Apex, NC 27539

Phone: (919) 577-1080  
 Fax: (919) 577-1081  
 info@batemancivilsurvey.com

### 1A Certification of Location and Elevation

**Date of Survey:** December 7, 2018

**Prepared For:** Dewberry  
 2610 Wycliff Road  
 Suite 410  
 Raleigh, NC 27606-3073

**Site Reference:** 074-4106 McManus

**Site Address:** 11979 McManus Road  
 Midland, NC, 28107  
 Cabarrus County

The elevation of the ground at the tower center referenced hereon are based on NAVD 1988, and are accurate to within 3 feet as determined by our field survey of the subject property. The elevation is as follows:

**Ground Elevation of Site Above Mean Sea Level: 519.0 Feet**

The horizontal values of the above referenced point, and the geodetic coordinates thereof, were established by taking multiple readings with Global Positioning Satellite receivers and are hereby certified to be within 15 feet. The values are based on NAD 1983 and are as follows:

**Latitude:** 35° 15' 05.636"  
**Longitude:** -80° 28' 50.282"

Jeffrey W. Baker  
 NC PLS L-4412



Market: Charlotte  
 Cell Site Number: 074-4106  
 Cell Site Name: McManus  
 Search Ring Name: 074-4106  
 Fixed Asset Number: 12829624

## OPTION AND LAND LEASE AGREEMENT

THIS OPTION AND LAND LEASE AGREEMENT ("**Agreement**"), dated as of the latter of the signature dates below (the "**Effective Date**"), is entered into by N. James McManus, a North Carolina, Owner, having a mailing address of 12020 McManus Road, Midland, NC, 28107 ("**Landlord**") and New Cingular Wireless PCS, LLC, a Delaware limited liability company, having a mailing address of 575 Morosgo Drive NE, Atlanta, GA 30324 ("**Tenant**").

### BACKGROUND

Landlord owns or controls that certain plot, parcel or tract of land, as described on **Exhibit 1**, together with all rights and privileges arising in connection therewith, located at 11979 McManus Road, Midland, NC, 28107, in the County of Cabarrus, State of North Carolina (collectively, the "**Property**"). Landlord desires to grant to Tenant the right to use a portion of the Property in accordance with this Agreement.

The parties agree as follows:

#### 1. OPTION TO LEASE.

(a) Landlord grants to Tenant an exclusive option (the "**Option**") to lease a certain portion of the Property containing approximately 10000 square feet including the air space above such ground space, as described on attached **Exhibit 1**, (the "**Premises**"), for the placement of a Communication Facility in accordance with the terms of this Agreement.

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

(c) In consideration of Landlord granting Tenant the Option, Tenant agrees to pay Landlord the sum of \_\_\_\_\_ within thirty (30) business days after the Effective Date. The Option may be exercised during an initial term of one (1) year commencing on the Effective Date (the "**Initial Option Term**") which term may be renewed by Tenant for an additional one (1) year (the "**Renewal Option Term**") upon written notification to Landlord and the payment of an additional

\_\_\_\_\_ no later than five (5) days prior to the expiration date of the Initial Option Term. The Initial Option Term and any Renewal Option Term are collectively referred to as the "**Option Term.**"

(d) The Option may be sold, assigned or transferred at any time by Tenant without the written consent of Landlord. Upon notification to Landlord of such sale, assignment or transfer, Tenant shall immediately

be released from any and all liability under this Agreement, including the payment of any rental or other sums due, without any further action.

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

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

2. **PERMITTED USE.** Tenant may use the Premises for the transmission and reception of communications signals and the installation, construction, maintenance, operation, repair, replacement and upgrade of communications fixtures and related equipment, cables, accessories and improvements, which may include a suitable support structure ("**Structure**"), associated antennas, equipment shelters or cabinets and fencing and any other items necessary to the successful and secure use of the Premises (the "**Communication Facility**"), as well as the right to test, survey and review title on the Property; Tenant further has the right but not the obligation to add, modify and/or replace equipment in order to be in compliance with any current or future federal, state or local mandated application, including, but not limited to, emergency 911 communication services, (collectively, the "**Permitted Use**"). Landlord and Tenant agree that any portion of the Communication Facility that may be conceptually described on **Exhibit 1** will not be deemed to limit Tenant's Permitted Use. If **Exhibit 1** includes drawings of the initial installation of the Communication Facility, Landlord's execution of this Agreement will signify Landlord's approval of **Exhibit 1**. For a period of ninety (90) days following the start of construction, Landlord grants Tenant, its subtenants, licensees and sublicensees, the right to use Landlord's contiguous, adjoining or surrounding property (the "**Surrounding Property**") as may reasonably be required during construction and installation of the Communication Facility. Tenant has the right to install and operate transmission cables from the equipment shelter or cabinet to the antennas, electric lines from the main feed to the equipment shelter or cabinet and communication lines from the Property's main entry point to the equipment shelter or cabinet, install a generator and to make other improvements, alterations, upgrades or additions appropriate for Tenant's Permitted Use, including the right to construct a fence around the Premises or equipment, install warning signs to make individuals aware of risks, install protective barriers, install any other control measures reasonably required by Tenant's safety procedures or applicable law, and undertake any other appropriate means to secure the Premises or equipment at Tenant's expense. Tenant has the right to modify, supplement, replace, upgrade, expand the Communication Facility (including, for example, increasing the number of antennas or adding microwave dishes) or relocate the Communication Facility within the Premises at any time during the Term. Tenant will be allowed to make such alterations to the Property in order to ensure that the Communication Facility complies with all applicable federal, state or local laws, rules or regulations. In the event Tenant desires to modify or upgrade the Communication Facility, in a manner that requires an additional portion of the Property (the "**Additional Premises**") for such modification or upgrade, Landlord agrees to lease to Tenant the Additional Premises, upon the same terms and conditions set forth herein, except that the Rent shall increase, in conjunction with the lease of the Additional Premises by the amount equivalent to the then-current per square foot rental rate charged by Landlord to Tenant times the square footage of the Additional Premises. Landlord agrees to take such actions and enter into and deliver to Tenant such documents as Tenant reasonably requests in order to effect and memorialize the lease of the Additional Premises to Tenant.

3. **TERM.**

(a) The initial lease term will be five (5) years (the "**Initial Term**"), commencing on the effective date of written notification by Tenant to Landlord of Tenant's exercise of the Option (the "**Term Commencement Date**"). The Initial Term will terminate on the fifth (5th) anniversary of the Term Commencement Date.

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

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

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

4. **RENT.**

(a) Commencing on the first day of the month following the date that Tenant commences construction (the "**Rent Commencement Date**"). Tenant will pay Landlord on or before the fifth (5<sup>th</sup>) day of each calendar month in advance, (the "**Rent**"), at the address set forth above. In any partial month occurring after the Rent Commencement Date, the Rent will be prorated. The initial Rent payment will be forwarded by Tenant to Landlord within forty-five (45) days after the Rent Commencement Date.

(b) Upon the commencement of each Extension Term, the monthly Rent will increase by ten percent (10%) over the Rent paid during the previous five (5) year term.

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

5. **APPROVALS.**

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

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

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

6. **TERMINATION.** This Agreement may be terminated, without penalty or further liability, as follows:

(a) by either party on thirty (30) days prior written notice, if the other party remains in default under Section 05 of this Agreement after the applicable cure periods;

(b) by Tenant upon written notice to Landlord, if Tenant is unable to obtain, or maintain, any required approval(s) or the issuance of a license or permit by any agency, board, court or other governmental authority necessary for the construction or operation of the Communication Facility as now or hereafter intended by Tenant; or if Tenant determines, in its sole discretion that the cost of or delay in obtaining or retaining the same is commercially unreasonable;

(c) by Tenant, upon written notice to Landlord, if Tenant determines, in its sole discretion, due to the title report results or survey results, that the condition of the Premises is unsatisfactory for its intended uses;

(d) by Tenant upon written notice to Landlord for any reason or no reason, at any time prior to commencement of construction by Tenant; or

(e) by Tenant upon sixty (60) days' prior written notice to Landlord for any reason or no reason, so long as Tenant pays Landlord a termination fee equal to three (3) months' Rent, at the then-current rate, provided, however, that no such termination fee will be payable on account of the termination of this Agreement by Tenant under any termination provision contained in any other Section of this Agreement, including the following: Section 5 Approvals, Section 6(a) Termination, Section 6(b) Termination, Section 6(c) Termination, Section 6(d) Termination, Section 11(d) Environmental, Section 08 Condemnation or Section 19 Casualty.

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

8. **INTERFERENCE.**

(a) Prior to or concurrent with the execution of this Agreement, Landlord has provided or will provide Tenant with a list of radio frequency user(s) and frequencies used on the Property as of the Effective Date. Tenant warrants that its use of the Premises will not interfere with those existing radio frequency uses on the Property, as long as the existing radio frequency user(s) operate and continue to operate within their respective frequencies and in accordance with all applicable laws and regulations.

(b) Landlord will not grant, after the Effective Date, a lease, license or any other right to any third party, if the exercise of such grant may in any way adversely affect or interfere with the Communication Facility, the operations of Tenant or the rights of Tenant under this Agreement. Landlord will notify Tenant in writing prior to granting any third party the right to install and operate communications equipment on the Property.

(c) Landlord will not, nor will Landlord permit its employees, tenants, licensees, invitees, agents or independent contractors to interfere in any way with the Communication Facility, the operations of Tenant or the rights of Tenant under this Agreement. Landlord will cause such interference to cease within twenty-four (24) hours after receipt of notice of interference from Tenant. In the event any such interference does not cease within the aforementioned cure period, Landlord shall cease all operations which are suspected of causing interference (except for intermittent testing to determine the cause of such interference) until the interference has been corrected.

(d) For the purposes of this Agreement, "interference" may include, but is not limited to, any use on the Property or Surrounding Property that causes electronic or physical obstruction with, or degradation of, the communications signals from the Communication Facility.

9. **INDEMNIFICATION.**

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

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

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

#### 10. WARRANTIES.

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

(b) Landlord represents, warrants and agrees that: (i) Landlord solely owns the Property as a legal lot in fee simple, or controls the Property by lease or license; (ii) the Property is not and will not be encumbered by any liens, restrictions, mortgages, covenants, conditions, easements, leases, or any other agreements of record or not of record, which would adversely affect Tenant's Permitted Use and enjoyment of the Premises under this Agreement; (iii) then Landlord grants to Tenant sole, actual, quiet and peaceful use, enjoyment and possession of the Premises in accordance with the terms of this Agreement without hindrance or ejection by any persons lawfully claiming under Landlord; (iv) Landlord's execution and performance of this Agreement will not violate any laws, ordinances, covenants or the provisions of any mortgage, lease or other agreement binding on Landlord; and (v) if the Property is or becomes encumbered by a deed to secure a debt, mortgage or other security interest, then Landlord will provide promptly to Tenant a mutually agreeable subordination, non-disturbance and attornment agreement executed by Landlord and the holder of such security interest in the form attached hereto as **Exhibit 10(b)**.

#### 11. ENVIRONMENTAL.

(a) Landlord represents and warrants, except as may be identified in **Exhibit 11** attached to this Agreement, (i) the Property, as of the Effective Date, is free of hazardous substances, including asbestos-containing materials and lead paint, and (ii) the Property has never been subject to any contamination or hazardous conditions resulting in any environmental investigation, inquiry or remediation. Landlord and Tenant agree that each will be responsible for compliance with any and all applicable governmental laws, rules, statutes, regulations, codes, ordinances, or principles of common law regulating or imposing standards of liability or standards of conduct with regard to protection of the environment or worker health and safety, as may now or at any time hereafter be in effect, to the extent such apply to that party's activity conducted in or on the Property.

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

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

(c) The indemnification provisions contained in this Section 11 specifically include reasonable costs, expenses and fees incurred in connection with any investigation of Property conditions or any clean-up, remediation, removal or restoration work required by any governmental authority. The provisions of this Section 01 will survive the expiration or termination of this Agreement.

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

**12. ACCESS.** At all times throughout the Term of this Agreement, Tenant, Tenant and its employees, agents, and subcontractors, will have twenty-four (24) hour per day, seven (7) day per week pedestrian and vehicular access ("**Access**") to and over the Property, from an open and improved public road to the Premises, for the installation, maintenance and operation of the Communication Facility and any utilities serving the Premises. As may be described more fully in **Exhibit 1**, Landlord grants to Tenant an easement for such Access and Landlord agrees to provide to Tenant such codes, keys and other instruments necessary for such Access to Tenant. Upon Tenant's request, Landlord will execute a separate recordable easement evidencing this right. Landlord shall execute a letter granting Tenant Access to the Property substantially in the form attached as **Exhibit 12**; upon Tenant's request, Landlord shall execute additional letters during the Term. If Tenant elects to utilize an Unmanned Aircraft System ("**UAS**") in connection with its installation, construction, monitoring, site audits, inspections, maintenance, repair, modification, or alteration activities at a Property, Landlord hereby grants Tenant, or any UAS operator acting on Tenant's behalf, express permission to fly over the applicable Property and Premises, and consents to the use of audio and video navigation and recording in connection with the use of the UAS. Landlord acknowledges that in the event Tenant cannot obtain Access to the Premises, Tenant shall incur significant damage. If Landlord fails to provide the Access granted by this Section 12, such failure shall be a default under this Agreement. In connection with such default, in addition to any other rights or remedies available to Tenant under this Agreement or at law or equity, Landlord shall pay Tenant, as liquidated damages and not as a penalty, . . . in consideration of Tenant's damages until Landlord cures such default. Landlord and Tenant agree that Tenant's damages in the event of a denial of Access are difficult, if not impossible, to ascertain, and the liquidated damages set forth above are a reasonable approximation of such damages.

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

**14. MAINTENANCE/UTILITIES.**

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

(b) Tenant will be responsible for paying on a monthly or quarterly basis all utilities charges for electricity, telephone service or any other utility used or consumed by Tenant on the Premises. In the event Tenant cannot secure its own metered electrical supply, Tenant will have the right, at its own cost and expense, to sub-meter from Landlord. When sub-metering is required under this Agreement, Landlord will read the meter and provide Tenant with an invoice and usage data on a monthly basis. Tenant shall reimburse Landlord for such utility usage at the same rate charged to Landlord by the utility service provider. Landlord further agrees to provide the usage data and invoice on forms provided by Tenant and to send such forms to such address and/or agent designated by Tenant. Tenant will remit payment within sixty (60) days of receipt of the usage data and required forms. Landlord shall maintain accurate and detailed records of all utility expenses, invoices and payments applicable to Tenant's reimbursement obligations hereunder. Within fifteen (15) days after a request from Tenant, Landlord shall provide copies of such utility billing records to the Tenant in the form of copies of invoices, contracts and cancelled checks. If the utility billing records reflect an overpayment by Tenant, Tenant shall have the right to deduct the amount of such overpayment from any monies due to Landlord from Tenant.

(c) As noted in Section 0(c) above, any utility fee recovery by Landlord is limited to a twelve (12) month period. If Tenant submeters electricity from Landlord, Landlord agrees to give Tenant at least twenty-four (24) hours advance notice of any planned interruptions of said electricity. Landlord acknowledges that Tenant provides a communication service which requires electrical power to operate and must operate twenty-four (24) hours per day, seven (7) days per week. If the interruption is for an extended period of time, in Tenant's reasonable determination, Landlord agrees to allow Tenant the right to bring in a temporary source of power for the duration of the interruption. Landlord will not be responsible for interference with, interruption of or failure, beyond the reasonable control of Landlord, of such services to be furnished or supplied by Landlord.

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

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

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

(b) The following will be deemed a default by Landlord and a breach of this Agreement: (i) Landlord's failure to provide Access to the Premises as required by Section 12 within twenty-four (24) hours after written notice of such failure; (ii) Landlord's failure to cure an interference problem as required by Section 8 within twenty-four (24) hours after written notice of such failure; or (iii) Landlord's failure to perform any term, condition or breach of any warranty or covenant under this Agreement within forty-five (45) days after written notice from Tenant specifying the failure. No such failure, however, will be deemed to exist if Landlord

has commenced to cure the default within such period and provided such efforts are prosecuted to completion with reasonable diligence. Delay in curing a default will be excused if due to causes beyond the reasonable control of Landlord. If Landlord remains in default beyond any applicable cure period, Tenant will have: (i) the right to cure Landlord's default and to deduct the costs of such cure from any monies due to Landlord from Tenant, and (ii) any and all other rights available to it under law and equity.

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

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

If to Tenant:                   New Cingular Wireless PCS, LLC  
  Attn: Network Real Estate Administration  
  Re: Cell Site #: 074-4106; Cell Site Name: McManus, NC  
  Fixed Asset #: 12829624  
  575 Morosgo Drive NE  
  Atlanta, Georgia 30324

With a copy to:                New Cingular Wireless PCS, LLC  
  Attn.: Legal Dept – Network Operations  
  Re: Cell Site #: 074-4106; Cell Site Name: McManus, NC  
  Fixed Asset #: 12829624  
  208 S. Akard Street  
  Dallas, TX 75202-4206

The copy sent to the Legal Department is an administrative step which alone does not constitute legal notice.

If to Landlord:                James McManus  
  12020 McManus Road  
  Midland, NC, 28107

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

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

**19. CASUALTY.** Landlord will provide notice to Tenant of any casualty or other harm affecting the Property within twenty-four (24) hours of the casualty or other harm. If any part of the Communication Facility or the Property is damaged by casualty or other harm as to render the Premises unsuitable, in Tenant's sole determination, then Tenant may terminate this Agreement by providing written notice to Landlord, which

termination will be effective as of the date of such casualty or other harm. Upon such termination, Tenant will be entitled to collect all insurance proceeds payable to Tenant on account thereof and to be reimbursed for any prepaid Rent on a *pro rata* basis. Landlord agrees to permit Tenant to place temporary transmission and reception facilities on the Property, but only until such time as Tenant is able to activate a replacement transmission facility at another location; notwithstanding the termination of this Agreement, such temporary facilities will be governed by all of the terms and conditions of this Agreement, including Rent. If Landlord or Tenant undertakes to rebuild or restore the Premises and/or the Communication Facility, as applicable, Landlord agrees to permit Tenant to place temporary transmission and reception facilities on the Property until the reconstruction of the Premises and/or the Communication Facility is completed. If Landlord determines not to rebuild or restore the Property, Landlord will notify Tenant of such determination within thirty (30) days after the casualty or other harm. If Landlord does not so notify Tenant and Tenant decides not to terminate under this Section 19, then Landlord will promptly rebuild or restore any portion of the Property interfering with or required for Tenant's Permitted Use of the Premises to substantially the same condition as existed before the casualty or other harm. Landlord agrees that the Rent shall be abated until the Property and/or the Premises are rebuilt or restored, unless Tenant places temporary transmission and reception facilities on the Property.

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

**21. TAXES.**

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

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

(c) For any tax amount for which Tenant is responsible under this Agreement, Tenant shall have the right to contest, in good faith, the validity or the amount thereof using such administrative, appellate or other

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

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

(e) Tenant shall have the right but not the obligation to pay any taxes due by Landlord hereunder if Landlord fails to timely do so, in addition to any other rights or remedies of Tenant. In the event that Tenant exercises its rights under this Section 21(e) due to such Landlord default, Tenant shall have the right to deduct such tax amounts paid from any monies due to Landlord from Tenant as provided in Section 15(b), provided that Tenant may exercise such right without having provided to Landlord notice and the opportunity to cure per Section 15(b).

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

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

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

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

(b) If Landlord, at any time during the Term of this Agreement, decides to rezone or sell, subdivide or otherwise transfer all or any part of the Premises, or all or any part of the Property or the Surrounding Property, to a purchaser other than Tenant, Landlord shall promptly notify Tenant in writing, and such rezoning, sale, subdivision or transfer shall be subject to this Agreement and Tenant's rights hereunder. In the event of a change in ownership, transfer or sale of the Property, within ten (10) days of such transfer, Landlord or its successor shall send the documents listed below in this Section 2222(b) to Tenant. Until Tenant receives all such documents, Tenant's failure to make payments under this Agreement shall not be an event of default and Tenant reserves the right to hold payments due under this Agreement.

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

(c) Landlord agrees not to sell, lease or use any areas of the Property or the Surrounding Property for the installation, operation or maintenance of other wireless communication facilities if such installation, operation or maintenance would interfere with Tenant's Permitted Use or communications equipment as determined by radio propagation tests performed by Tenant in its sole discretion. Landlord or Landlord's

prospective purchaser shall reimburse Tenant for any costs and expenses of such testing. If the radio frequency propagation tests demonstrate levels of interference unacceptable to Tenant, Landlord shall be prohibited from selling, leasing or using any areas of the Property or the Surrounding Property for purposes of any installation, operation or maintenance of any other wireless communication facility or equipment.

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

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

**24. MISCELLANEOUS.**

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

(b) **Memorandum of Lease.** Contemporaneously with the execution of this Agreement, the parties will execute a recordable Memorandum of Lease substantially in the form attached as **Exhibit 24(b)**. Either party may record this Memorandum of Lease at any time during the Term, in its absolute discretion. Thereafter during the Term, either party will, at any time upon fifteen (15) business days’ prior written notice from the other, execute, acknowledge and deliver to the other a recordable Memorandum of Lease.

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

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

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

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

accountants) incurred in connection with the negotiation, drafting, execution and performance of this Agreement and the transactions it contemplates.

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

(h) **Interpretation.** Unless otherwise specified, the following rules of construction and interpretation apply: (i) captions are for convenience and reference only and in no way define or limit the construction of the terms and conditions hereof; (ii) use of the term "including" will be interpreted to mean "including but not limited to"; (iii) whenever a party's consent is required under this Agreement, except as otherwise stated in the Agreement or as same may be duplicative, such consent will not be unreasonably withheld, conditioned or delayed; (iv) exhibits are an integral part of this Agreement and are incorporated by reference into this Agreement; (v) use of the terms "termination" or "expiration" are interchangeable; (vi) reference to a default will take into consideration any applicable notice, grace and cure periods; (vii) to the extent there is any issue with respect to any alleged, perceived or actual ambiguity in this Agreement, the ambiguity shall not be resolved on the basis of who drafted the Agreement; (viii) the singular use of words includes the plural where appropriate; and (ix) if any provision of this Agreement is held invalid, illegal or unenforceable, the remaining provisions of this Agreement shall remain in full force if the overall purpose of the Agreement is not rendered impossible and the original purpose, intent or consideration is not materially impaired.

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

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

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

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

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

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

(o) **No Additional Fees/Incidental Fees.** Unless otherwise specified in this Agreement, all rights and obligations set forth in the Agreement shall be provided by Landlord and/or Tenant, as the case may be, at no additional cost. No unilateral fees or additional costs or expenses are to be applied by either party to the other party, for any task or service including, but not limited to, review of plans, structural analyses, consents, provision of documents or other communications between the parties.

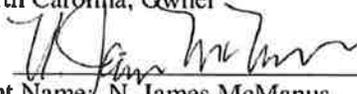
(p) **Further Acts.** Upon request, Landlord will cause to be promptly and duly taken, executed, acknowledged and delivered all such further acts, documents, and assurances as Tenant may request from time to time in order to effectuate, carry out and perform all of the terms, provisions and conditions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

**[SIGNATURES APPEAR ON NEXT PAGE]**

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

**"LANDLORD"**

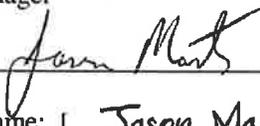
N. James McManus  
North Carolina, Owner

By:   
Print Name: N. James McManus  
Its: Owner  
Date:

**"TENANT"**

New Cingular Wireless PCS, LLC,  
a Delaware limited liability company

By: AT&T Mobility Corporation  
Its: Manager

By:   
Print Name: Jason Martin  
Its: [Insert Title] Area Manager  
Date: [Insert Date] 3/18/2019

**[ACKNOWLEDGMENTS APPEAR ON NEXT PAGE]**

**TENANT ACKNOWLEDGMENT**

STATE OF North Carolina  
COUNTY OF Mecklenburg

I, Camik McNeill, a Notary Public in and for the State and County aforesaid, do hereby certify that Jason Martin personally came before me this day and acknowledged that he is Area Manager of Construction & Engineers, a \_\_\_\_\_ corporation, and that he, as Owner, being authorized to do so, executed the foregoing instrument on behalf of the corporation.

Witness my hand and official seal, this the 18<sup>th</sup> day of March, 2019.



Camik McNeill  
Notary Public

My Commission Expires: 4/10/2025

(NOTARIAL STAMP/SEAL)

**LANDLORD ACKNOWLEDGMENT**

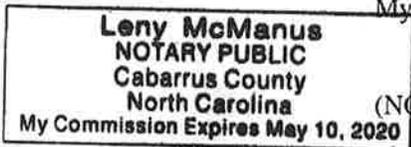
STATE OF North Carolina  
COUNTY OF Cabarrus

I, Leny McManus, a Notary Public in and for the State and County aforesaid, do hereby certify that James McManus personally came before me this day and acknowledged that he is \_\_\_\_\_ of \_\_\_\_\_, a \_\_\_\_\_ corporation, and that he, as owner, being authorized to do so, executed the foregoing instrument on behalf of the corporation.

Witness my hand and official seal, this the 26 day of March, 2019.

Leny McManus  
Notary Public

My Commission Expires: May 10 2020



(NOTARIAL STAMP/SEAL)

## EXHIBIT 1

### DESCRIPTION OF PROPERTY AND PREMISES

Page 1 of 3

to the Land Lease Agreement dated \_\_\_\_\_, 2019, by and between N. James McManus, a North Carolina, Owner, as Landlord, and New Cingular Wireless PCS, LLC, a Delaware limited liability company, as Tenant.

The Property is legally described as follows:

**TRACT ONE:** A tract of land lying in Number 10 Township, Cabarrus County, North Carolina, on the west bank of Rocky River, and being a part of the J.F. McManus lands, and adjoining the lands of H.S. Brooks, J.T. Brooks Estate and others, and is bounded as follows: BEGINNING at an iron stake on the line of J.T. Brooks Estate and in the center of a farm road (said stake has a bearing of S 70 $\frac{1}{2}$ ° E 1288.6 feet from an iron stake on the north side of NC Highway #27, a corner of J.F. McManus, Loving and others) and runs thence with the line of J.T. Brooks Estate, S 70 $\frac{1}{2}$ ° E 675.4 feet to an iron stake; thence N 41 $\frac{1}{2}$ ° E 102 feet to a cedar post; thence with line of J.T. Brooks Estate, S 70 $\frac{1}{2}$ ° E 1440 feet to an iron stake in a hickory stump on the west bank of Rocky River; thence with a line along the west bank of Rocky River, S 7 $\frac{1}{2}$ ° E 346 feet to an iron stake, a corner of H.S. Brooks; thence with the line of H.S. Brooks, S 88 $\frac{1}{2}$ ° W 2098 feet to an iron stake, a corner of H.S. Brooks, thence with a line of said Brooks, N 78 $\frac{1}{2}$ ° W (passing an iron stake on line at 220.7 feet) 242.4 feet to an iron stake in the center of a farm road, a new corner of J.F. McManus on said line; thence with a new line of J.F. McManus, N 13 $\frac{1}{2}$ ° N 1006.5 feet to the BEGINNING, containing 36.13 acres. Back title reference in Deed Book 268 Page 158 Cabarrus County Registry.

The Premises are described and/or depicted as follows:

**30' WIDE NON-EXCLUSIVE ACCESS & UTILITY RIGHTS OF WAY DESCRIPTION**

All that certain parcel of land, situated in Midland, Cabarrus County, North Carolina, being on the lands of Nathaniel J McManus jr as described in Deed Book 1920 at Page 329, Cabarrus County Records, and being more particularly described as follows:

Commencing at a Point on the Eastern Right of Way of McManus Road and being the South Western property corner of Joseph Randolph & Leny R McManus (DB 12241, PG 239), and the North Western property corner of Nathaniel J McManus jr (DB 1920, PG 329) Cabarrus County Records, having State Plane Coordinates N:550020.97, E:1557106.87, thence S00°17'22"E, 128.33' to a point, said point being the Point of Beginning of the 30' Wide Non-Exclusive Access & Utility Rights of Way having State Plane Coordinates N:549892.64, E:1557107.52; thence S80°25'30"E, 588.59' to a point; thence N89°57'30"E, 247.20' to a point; thence S01°37'37"E, 30.01' to a point; thence S89°57'30"W, 250.55' to a point; thence N80°25'30"W, 593.03' to a point; thence N13°13'47"E, 30.06' to a point, said point being the Point of Beginning of the 30' Wide Non-Exclusive Access & Utility Rights of Way. Said 30' Wide Non-Exclusive Access & Utility Rights of Way contains 25,191 square feet, more or less.

**100'x100' LESSEE LAND SPACE DESCRIPTION**

All that certain parcel of land, situated in Midland, Cabarrus County, North Carolina, being on the lands of Nathaniel J McManus jr as described in Deed Book 1920 at Page 329, Cabarrus County Records, and being more particularly described as follows:

Commencing at a Point on the Eastern Right of Way of McManus Road and being the South Western property corner of Joseph Randolph & Leny R McManus (DB 12241, PG 239), and the North Western property corner of Nathaniel J McManus jr (DB 1920, PG 329) Cabarrus County Records, having State Plane Coordinates N:550020.97, E:1557106.87, thence S00°17'22"E, 128.33' to a point, thence S80°25'30"E, 588.59' to a point; thence N89°57'30"E, 247.20' to a point; said point being the Point of Beginning of the 100'x100' Lessee Land Space having State Plane Coordinates N:549794.91, E:1557935.11, thence N01°37'37"W, 34.99' to a point; thence N88°22'23"E, 100.00' to a point; thence S01°37'37"E, 100.00' to a point, thence S88°22'23"W, 100.00' to a point, thence N01°37'37"W, 34.99' to a point; thence N01°37'33"W, 30.01' to a point; said point being the Point of Beginning of the 100'x100' Lessee Land Space. Said 100'x100' Lessee Land Space contains 10,000 square feet, more or less.

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**EXHIBIT 10(b)**

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

[FOLLOWS ON NEXT PAGE]

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

**THIS SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT** (“**Agreement**”), dated as of the date below, between [Insert Mortgagee's Name] having its principal office at [Insert Mortgagee's Address], (hereinafter called “**Mortgagee**”) and [Insert Landlord's Name], a [Insert Jurisdictional State, and Entity Type] having its principal office/residing at [Insert Landlord's Address] (hereinafter called “**Landlord**”), and New Cingular Wireless PCS, LLC, a Delaware limited liability company, having a mailing address of 575 Morosgo Drive NE, Atlanta, GA 30324 (“**Tenant**”).

**RECITALS:**

- A. Tenant has entered into a certain Option and Lease Agreement dated [Insert Date], 20 , (the “**Lease**”) with Landlord, covering property more fully described in **Exhibit 1** attached hereto and made a part hereof (the “**Premises**”); and
- B. Landlord has given to Mortgagee a mortgage (the “**Mortgage**”) upon property having a street address of [Insert Address], being identified as Lot in Block in the of [Insert City], [Insert County] County, State of [Insert State] (“**Property**”), a part of which Property contains the Premises; and
- C. The Mortgage on the Property is in the original principal sum of [Spell Out Dollar Amount](\$ ) Dollars, which Mortgage has been recorded in the appropriate public office in and for [Insert County] County, [Insert State] (“**Mortgage**”); and
- D. Tenant desires to be assured of continued occupancy of the Premises under the terms of the Lease and subject to the terms of this Agreement.

**AGREEMENT**

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

- 1. So long as this Agreement will remain in full force and effect, the Lease is and will be subject and subordinate to the lien and effect of the Mortgage insofar as it affects the real property and fixtures of which the Premises forms a part (but not Tenant’s trade fixtures and other personal property), and to all renewals, modifications, consolidations, replacements and extensions thereof, to the full extent of the principal sum secured thereby and interest thereon, with the same force and effect as if the Mortgage had been executed, delivered, and duly recorded among the above-mentioned public records, prior to the execution and delivery of the Lease.
- 2. In the event Mortgagee takes possession of the Premises as mortgagee-in-possession, including but not limited to, by deed in lieu of foreclosure or foreclosure of the Mortgage, Mortgagee agrees not to affect or disturb Tenant’s right to possession of the Premises and any of Tenant’s other rights under the Lease in the exercise of Mortgagee’s rights so long as Tenant is not then in default, after applicable notice and/or grace periods, under any of the terms, covenants, or conditions of the Lease.
- 3. In the event that Mortgagee succeeds to the interest of Landlord or other landlord under the Lease and/or to title to the Premises, Mortgagee and Tenant hereby agree to be bound to one another under all of the terms, covenants and conditions of the Lease; accordingly, from and after such event, Mortgagee and Tenant will have the same remedies against one another for the breach of an agreement contained in the Lease as Tenant and

Landlord had before Mortgagee succeeded to the interest of Landlord; provided, however, that Mortgagee will not be:

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

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

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

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

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

[Remainder of Page Intentionally Blank – Signature Page Follows]

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

LANDLORD:

[Insert Landlord's Name]  
[Insert Jurisdictional State, and Entity Type]  
By: [Signature]  
Print Name: [ JAMES McMANUS ]  
Its: \_\_\_\_\_ [Insert Title]  
Date: \_\_\_\_\_ [Insert Date] 3/20/2019

TENANT:

New Cingular Wireless PCS, LLC,  
a Delaware limited liability company

By: AT&T Mobility Corporation  
Its: Manager

By: [Signature]  
Print Name: [ Jason Martin ]  
Its: \_\_\_\_\_ [Insert Title] Area Manager  
Date: \_\_\_\_\_ [Insert Date] 3/12/2019

MORTGAGEE:

[Insert Mortgagee's Name]  
By: \_\_\_\_\_  
Print Name: [ \_\_\_\_\_ ]  
Its: \_\_\_\_\_ [Insert Title]  
Date: \_\_\_\_\_ [Insert Date]

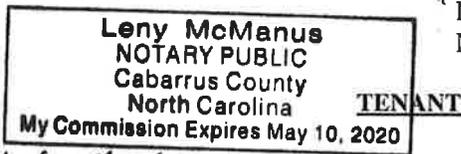
[ACKNOWLEDGMENTS APPEAR ON NEXT PAGE]

**ACKNOWLEDGEMENTS**

**LANDLORD**

STATE OF North Carolina )  
 ) ss:  
COUNTY OF Cabarrus )

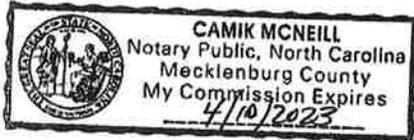
On the 26 day of March, 2019, before me, personally appeared \_\_\_\_\_, who acknowledged under oath, that he/she is the person/officer named in the within instrument, and that he/she executed the same in his/her stated capacity as the voluntary act and deed of the Landlord for the purposes therein contained.



Notary Public: Leny McManus  
My Commission Expires: May 10, 2020

STATE OF North Carolina )  
 ) ss:  
COUNTY OF Mecklenburg )

On the 18th day of March, 2019, before me personally appeared Sason P. Martin, who acknowledged under oath that he/she is the Area Manager of AT&T Mobility Corporation, the Manager of New Cingular Wireless PCS, LLC, the Tenant named in the attached instrument, and as such was authorized to execute this instrument on behalf of the Tenant.



Camik McNeill  
Notary Public: Camik McNeill  
My Commission Expires: 4/10/2023

**MORTGAGEE**

STATE OF \_\_\_\_\_ )  
 ) ss:  
COUNTY OF \_\_\_\_\_ )

On the \_\_\_\_ day of \_\_\_\_\_, 20\_\_ before me, personally appeared \_\_\_\_\_, who acknowledged under oath, that he/she is the person/officer named in the within instrument, and that he/she executed the same in his/her stated capacity as the voluntary act and deed of the Mortgagee for the purposes therein contained.

Notary Public: \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

**EXHIBIT 1**  
**DESCRIPTION OF PROPERTY AND PREMISES**

The Property is legally described as follows:

The Premises is legally described as follows:

**EXHIBIT 11**

**ENVIRONMENTAL DISCLOSURE**

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

*None*

**EXHIBIT 12**  
**STANDARD ACCESS LETTER**  
**[FOLLOWS ON NEXT PAGE]**

{This Letter Goes On Landlord's Letterhead}

[Insert Date]

Building Staff / Security Staff  
[Landlord, Lessee, Licensee]  
[Street Address]  
[City, State, Zip]

Re: Authorized Access granted to [ ]

Dear Building and Security Staff,

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

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

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

---

Landlord Signature

**EXHIBIT 24(b)**  
**MEMORANDUM OF LEASE**  
**[FOLLOWS ON NEXT PAGE]**

**MEMORANDUM  
OF  
LEASE**

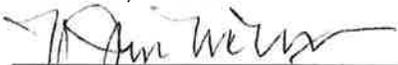
This Memorandum of Lease is entered into on this \_\_\_\_\_ day of \_\_\_\_\_, 2019, by and between N. James McManus, a North Carolina, Owner having its principal office/residing at 12020 McManus Road, Midland, NC, 28107 (hereinafter called "**Landlord**"), and New Cingular Wireless PCS, LLC, a Delaware limited liability company, having a mailing address of 575 Morosgo Drive NE, Atlanta, GA 30324 ("**Tenant**").

1. Landlord and Tenant entered into a certain Land Lease Agreement ("**Agreement**") on the \_\_\_\_\_ day of \_\_\_\_\_, 2019, for the purpose of installing, operating and maintaining a communication facility and other improvements. All of the foregoing is set forth in the Agreement.
2. The initial lease term will be five (5) years commencing on the Effective Date, with five (5) successive automatic five (5) year options to renew.
3. The portion of the land being leased to Tenant and associated easements are described in **Exhibit 1** annexed hereto.
4. The Agreement gives Tenant a right of first refusal in the event Landlord receives a bona fide written offer from a third party seeking any sale, conveyance, assignment or transfer, whether in whole or in part, of any property interest in or related to the Premises, including without limitation any offer seeking an assignment or transfer of the Rent payments associated with the Agreement or an offer to purchase an easement with respect to the Premises.
5. This Memorandum of Lease is not intended to amend or modify, and shall not be deemed or construed as amending or modifying, any of the terms, conditions or provisions of the Agreement, all of which are hereby ratified and affirmed. In the event of a conflict between the provisions of this Memorandum of Lease and the provisions of the Agreement, the provisions of the Agreement shall control. The Agreement shall be binding upon and inure to the benefit of the parties and their respective heirs, successors, and assigns, subject to the provisions of the Agreement.

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

**LANDLORD:**

N. James McManus, a  
North Carolina, Owner

By:   
Print Name: N. James McManus  
Its: Owner  
Date: \_\_\_\_\_

**TENANT:**

New Cingular Wireless PCS, LLC,  
a Delaware limited liability company

By:   
Print Name: Jason Martin  
Its: [Insert Title] Area Manager  
Date: [Insert Date] 3/12/2019

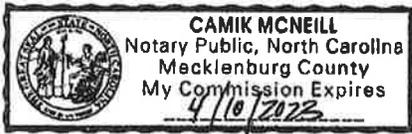
**[ACKNOWLEDGMENTS APPEAR ON NEXT PAGE]**

**TENANT ACKNOWLEDGMENT**

STATE OF North Carolina  
COUNTY OF Mecklenburg

I, Camik McNeill, a Notary Public in and for the State and County aforesaid, do hereby certify that Sason Martin personally came before me this day and acknowledged that he is Area Manager of Construction + Engineering, a \_\_\_\_\_ corporation, and that he, as manager, being authorized to do so, executed the foregoing instrument on behalf of the corporation.

Witness my hand and official seal, this the 18<sup>th</sup> day of March, 2019.



Camik McNeill  
Notary Public

My Commission Expires: 4/10/2022

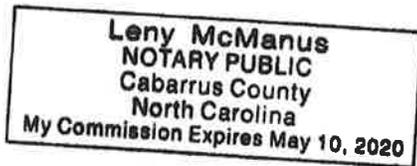
(NOTARIAL STAMP/SEAL)

**LANDLORD ACKNOWLEDGMENT**

STATE OF North Carolina  
COUNTY OF Cabarrus

I, Leny McManus, a Notary Public in and for the State and County aforesaid, do hereby certify that James McManus personally came before me this day and acknowledged that he is \_\_\_\_\_ of \_\_\_\_\_, a \_\_\_\_\_ corporation, and that he, as \_\_\_\_\_, being authorized to do so, executed the foregoing instrument on behalf of the corporation.

Witness my hand and official seal, this the 26 day of March, 2019.



Leny McManus  
Notary Public

My Commission Expires: May 10 2020

(NOTARIAL STAMP/SEAL)

**EXHIBIT 1 TO MEMORANDUM OF LEASE  
DESCRIPTION OF PROPERTY AND PREMISES**

Page 1 of 3

to the Memorandum of Lease dated \_\_\_\_\_, 2019, by and between N. James McManus, a North Carolina, Owner, as Landlord, and New Cingular Wireless PCS, LLC, a Delaware limited liability company, as Tenant.

The Property is legally described as follows:

**TRACT ONE:** A tract of land lying in Number 10 Township, Cabarrus County, North Carolina, on the west bank of Rocky River, and being a part of the J.F. McManus lands, and adjoining the lands of H.S. Brooks, J.T. Brooks Estate and others, and is bounded as follows: BEGINNING at an iron stake on the line of J.T. Brooks Estate and in the center of a farm road (said stake has a bearing of S 70% E 1288.6 feet from an iron stake on the north side of NC Highway #27, a corner of J.F. McManus, Loving and others) and runs thence with the line of J.T. Brooks Estate, S 70% E 675.4 feet to an iron stake; thence N 41% E 102 feet to a cedar post; thence with line of J.T. Brooks Estate, S 70% E 1440 feet to an iron stake in a hickory stump on the west bank of Rocky River; thence with a line along the west bank of Rocky River, S 7% E 346 feet to an iron stake, a corner of H.S. Brooks; thence with the line of H.S. Brooks, S 88% W 2098 feet to an iron stake, a corner of H.S. Brooks, thence with a line of said Brooks, N 78% W (passing an iron stake on line at 220.7 feet) 242.4 feet to an iron stake in the center of a farm road, a new corner of J.F. McManus on said line; thence with a new line of J.F. McManus, N 13% N 1006.5 feet to the BEGINNING, containing 36.13 acres. Back title reference in Deed Book 268 Page 158 Cabarrus County Registry.

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**100'x100' LESSEE LAND SPACE DESCRIPTION**

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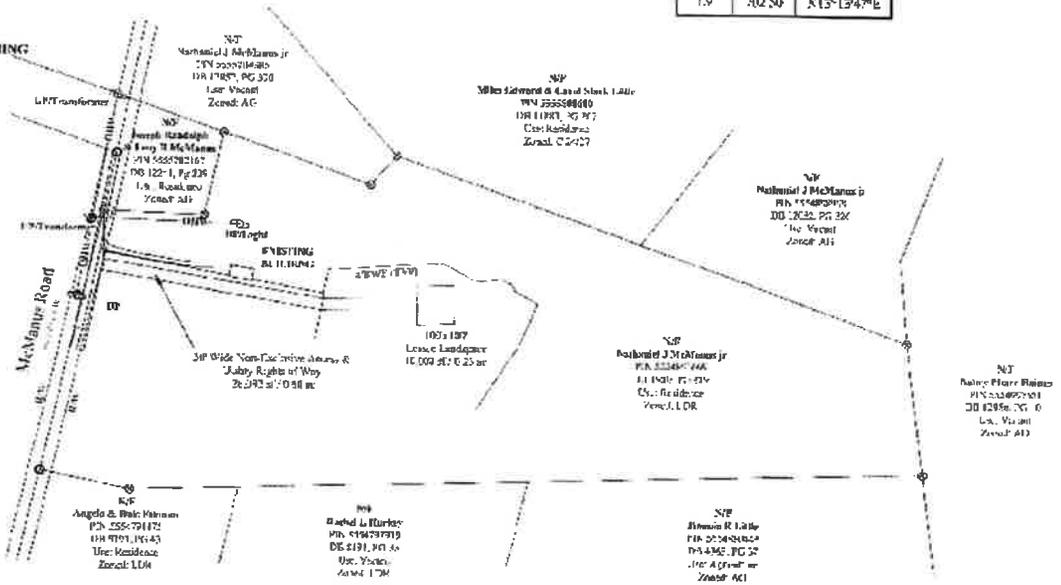
VICINITY MAP  
1:10,000

- LEGEND**
- EXIST. UTILITY POLE
  - EXIST. TRUNK PIP
  - NAIL POINT
  - IRON PIPE FOUND
  - COMPUTED POINT
  - CONCRETE MONUMENT
  - BARBED WIRE FENCE
  - REINFORCED CONCRETE PIPE
  - FIRE HYDRANT
  - WATER VALVE
  - WATER METER
  - OVERHEAD WIRE
  - POINT OF BEGINNING
  - RIGHT OF WAY

**GENERAL NOTES**

1. THIS SURVEY WAS PREPARED BY RAYTAN CIVIL ENGINEERS, UNDER THE SUPERVISION OF JEFFREY D. BAKER, P.E.
2. THIS PLAN HAS BEEN PREPARED FOR LAYOUT AND ONLY TO BE USED FOR CONSTRUCTION ONLY.
3. THIS IS A BOUNDARY SURVEY. PROPERTY LINES SHOWN. VERTICAL CURVES AND EXISTING PIPES AND UTILITIES ARE SHOWN. EXISTING UTILITIES AND PLANS OF ADJACENT PROPERTIES ARE NOT SHOWN UNLESS OTHERWISE NOTED. ALL INFORMATION SUPPLIED TO THE SURVEYOR BY THE CLIENT.
4. VERTICAL CURVES (RELEVANT) ARE SHOWN. CURVE DATA AND STATE PLANNED BOUNDARIES ARE SHOWN. ALL DATA IS IN THE U.S. CUSTOMARY SYSTEM.
5. ALL EQUIPMENT USED TO BE PROVIDED BY THE CLIENT. ALL EQUIPMENT AND OBSERVATIONS ARE TO BE MADE BY THE SURVEYOR.
6. ALL DISTANCES AND BEARINGS ARE IN DEGREES AND MINUTES AND SECONDS. ALL BEARINGS ARE TO BE GIVEN AS AN AZIMUTH UNLESS OTHERWISE NOTED.
7. PROPERTY OWNERS: NATHANIEL J. McMANUS JR. TAXID BAYVIEW ROAD, MILLBURN, NC, 28057
8. THIS MAP IS NOT A CERTIFIED SURVEY AND HAS NOT BEEN REVIEWED BY ANY LOCAL GOVERNMENT AGENCY FOR COMPLIANCE WITH ANY APPLICABLE LAND DEVELOPMENT REGULATIONS.
9. ALL EQUIPMENT AND OBSERVATIONS ARE TO BE MADE BY THE SURVEYOR.
10. THE PROPERTY LINES IN ZONE AC & WM ARE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP 17-0559904C DATED NOVEMBER 10, 2014 LAMP 310559-004 (FIRM) NOVEMBER 6, 2019.
11. PROPERTY INFORMATION OBTAINED FROM GRANVILLE COUNTY GIS.

Line #	Length	Direction
1.1	264.27	S83°00'42"E
1.2	223.18	N13°03'37"W
1.3	411.18	S70°52'37"E
1.4	102.00	N40°59'33"W
1.5	1440.00	S70°37'17"E
1.6	342.00	S97°37'37"E
1.7	2098.00	S88°22'23"W
1.8	242.40	N79°07'37"W
1.9	702.50	N15°13'47"E



**BCSC**  
BORDER SURVEYING & CONSULTING, INC.  
1000 BAYVIEW ROAD, SUITE 100  
MILLSBORO, DE 19966  
TEL: 302-391-1111  
WWW.BCSC-DE.COM

4412  
DEPARTMENT OF REVENUE  
STATE OF DELAWARE

074-6106 McManus  
11979 McManus Road  
Millersville, NC 28059  
Carteret County

DATE: 07/20/2023  
BY: J. BAKER

SCALE: 1" = 250'

SHEET NUMBER 1 OF 2

Market: Charlotte  
Cell Site Number: 074-4106  
Cell Site Name: McManus  
Search Ring Name: 074-4106  
Fixed Asset Number: 12829624

FILED Aug 21, 2019 10:04 am  
BOOK 13671  
PAGE 0264 THRU 0268  
INSTRUMENT # 21877  
EXCISE TAX \$0.00  
BJW

FILED  
CABARRUS  
COUNTY NC  
WAYNE NIXON  
REGISTER  
OF DEEDS

**MEMORANDUM  
OF  
LEASE**

This Memorandum of Lease is entered into on this 26<sup>th</sup> day of March, 2019, by and between N. James McManus, a North Carolina, Owner having its principal office/residing at 12020 McManus Road, Midland, NC, 28107 (hereinafter called "**Landlord**"), and New Cingular Wireless PCS, LLC, a Delaware limited liability company, having a mailing address of 575 Morosgo Drive NE, Atlanta, GA 30324 ("**Tenant**").

1. Landlord and Tenant entered into a certain Land Lease Agreement ("**Agreement**") on the 26<sup>th</sup> day of March, 2019, for the purpose of installing, operating and maintaining a communication facility and other improvements. All of the foregoing is set forth in the Agreement.
2. The initial lease term will be five (5) years commencing on the Effective Date, with five (5) successive automatic five (5) year options to renew.
3. The portion of the land being leased to Tenant and associated easements are described in **Exhibit 1** annexed hereto.
4. The Agreement gives Tenant a right of first refusal in the event Landlord receives a bona fide written offer from a third party seeking any sale, conveyance, assignment or transfer, whether in whole or in part, of any property interest in or related to the Premises, including without limitation any offer seeking an assignment or transfer of the Rent payments associated with the Agreement or an offer to purchase an easement with respect to the Premises.
5. This Memorandum of Lease is not intended to amend or modify, and shall not be deemed or construed as amending or modifying, any of the terms, conditions or provisions of the Agreement, all of which are hereby ratified and affirmed. In the event of a conflict between the provisions of this Memorandum of Lease and the provisions of the Agreement, the provisions of the Agreement shall control. The Agreement shall be binding upon and inure to the benefit of the parties and their respective heirs, successors, and assigns, subject to the provisions of the Agreement.

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

**LANDLORD:**

N. James McManus, a  
North Carolina, Owner

By: [Signature]  
Print Name: N. James McManus  
Its: Owner  
Date: 3/26/2019

**TENANT:**

New Cingular Wireless PCS, LLC,  
a Delaware limited liability company

By: [Signature]  
Its: Manager  
By: [Signature]  
Print Name: Jason Martin  
Its: [Insert Title] Area Manager  
Date: [Insert Date] 3/18/2019

[ACKNOWLEDGMENTS APPEAR ON NEXT PAGE]

FedEx Env  
2

Hellman, Yates & Trisdale  
Attn: Kelly Bailey  
3<sup>rd</sup> Floor  
105 Broadstreet  
Charleston SC 29401

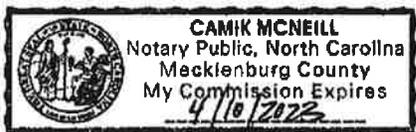
25/nst 26/5

**TENANT ACKNOWLEDGMENT**

STATE OF North Carolina  
COUNTY OF Mecklenburg

I, Camik McNeill, a Notary Public in and for the State and County aforesaid, do hereby certify that Jason Martin personally came before me this day and acknowledged that he is Area Manager of Construction + Engineering, a \_\_\_\_\_ corporation, and that he, as manager, being authorized to do so, executed the foregoing instrument on behalf of the corporation.

Witness my hand and official seal, this the 18<sup>th</sup> day of March, 2019.



Camik McNeill  
Notary Public

My Commission Expires: 4/10/2023

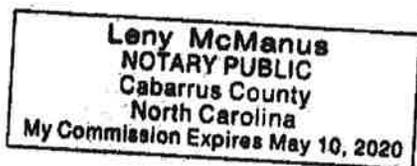
(NOTARIAL STAMP/SEAL)

**LANDLORD ACKNOWLEDGMENT**

STATE OF North Carolina  
COUNTY OF Cabarrus

I, Lenny McManus, a Notary Public in and for the State and County aforesaid, do hereby certify that James McManus personally came before me this day and acknowledged that he is \_\_\_\_\_ of \_\_\_\_\_, a \_\_\_\_\_ corporation, and that he, as \_\_\_\_\_, being authorized to do so, executed the foregoing instrument on behalf of the corporation.

Witness my hand and official seal, this the 26 day of March, 2019.



Lenny McManus  
Notary Public

My Commission Expires: May 10 2020

(NOTARIAL STAMP/SEAL)

**EXHIBIT 1 TO MEMORANDUM OF LEASE  
DESCRIPTION OF PROPERTY AND PREMISES**

Page 1 of 3

to the Memorandum of Lease dated \_\_\_\_\_, 2019, by and between N. James McManus, a North Carolina, Owner, as Landlord, and New Cingular Wireless PCS, LLC, a Delaware limited liability company, as Tenant.

The Property is legally described as follows:

**TRACT ONE:** A tract of land lying in Number 10 Township, Cabarrus County, North Carolina, on the west bank of Rocky River, and being a part of the J.F. McManus lands, and adjoining the lands of H.S. Brooks, J.T. Brooks Estate and others, and is bounded as follows: BEGINNING at an iron stake on the line of J.T. Brooks Estate and in the center of a farm road (said stake has a bearing of S 70 $\frac{1}{2}$  E 1288.6 feet from an iron stake on the north side of NC Highway #27, a corner of J.F. McManus, Loving and others) and runs thence with the line of J.T. Brooks Estate, S 70 $\frac{1}{2}$  E 675.4 feet to an iron stake; thence N 41 $\frac{1}{2}$  E 102 feet to a cedar post; thence with line of J.T. Brooks Estate, S 70 $\frac{1}{2}$  E 1440 feet to an iron stake in a hickory stump on the west bank of Rocky River; thence with a line along the west bank of Rocky River, S 7 $\frac{1}{2}$  E 346 feet to an iron stake, a corner of H.S. Brooks; thence with the line of H.S. Brooks, S 88 $\frac{1}{2}$  W 2098 feet to an iron stake, a corner of H.S. Brooks, thence with a line of said Brooks, N 78 $\frac{1}{2}$  W (passing an iron stake on line at 220.7 feet) 242.4 feet to an iron stake in the center of a farm road, a new corner of J.F. McManus on said line; thence with a new line of J.F. McManus, N 13 $\frac{1}{2}$  W 1006.5 feet to the BEGINNING, containing 36.13 acres. Back title reference in Deed Book 268 Page 158 Cabarrus County Registry.

The Premises are described and/or depicted as follows:

**30' WIDE NON-EXCLUSIVE ACCESS & UTILITY RIGHTS OF WAY DESCRIPTION**

All that certain parcel of land, situated in Midland, Cabarrus County, North Carolina, being on the lands of Nathaniel J McManus jr as described in Deed Book 1920 at Page 329, Cabarrus County Records, and being more particularly described as follows:

Commencing at a Point on the Eastern Right of Way of McManus Road and being the South Western property corner of Joseph Randolph & Leny R McManus (DB 12241, PG 239), and the North Western property corner of Nathaniel J McManus jr (DB 1920, PG 329) Cabarrus County Records, having State Plane Coordinates N:550020.97, E:1557106.87, thence S00°17'22"E, 128.33' to a point, said point being the Point of Beginning of the 30' Wide Non-Exclusive Access & Utility Rights of Way having State Plane Coordinates N:549892.64, E:1557107.52; thence S80°25'30"E, 588.59' to a point; thence N89°57'30"E, 247.20' to a point; thence S01°37'37"E, 30.01' to a point; thence S89°57'30"W, 250.55' to a point; thence N80°25'30"W, 593.03' to a point; thence N13°13'47"E, 30.06' to a point; said point being the Point of Beginning of the 30' Wide Non-Exclusive Access & Utility Rights of Way. Said 30' Wide Non-Exclusive Access & Utility Rights of Way contains 25,191 square feet, more or less.

**100'x100' LESSEE LAND SPACE DESCRIPTION**

All that certain parcel of land, situated in Midland, Cabarrus County, North Carolina, being on the lands of Nathaniel J McManus jr as described in Deed Book 1920 at Page 329, Cabarrus County Records, and being more particularly described as follows:

Commencing at a Point on the Eastern Right of Way of McManus Road and being the South Western property corner of Joseph Randolph & Leny R McManus (DB 12241, PG 239), and the North Western property corner of Nathaniel J McManus jr (DB 1920, PG 329) Cabarrus County Records, having State Plane Coordinates N:550020.97, E:1557106.87, thence S00°17'22"E, 128.33' to a point; thence S80°25'30"E, 588.59' to a point; thence N89°57'30"E, 247.20' to a point; said point being the Point of Beginning of the 100'x100' Lessee Land Space having State Plane Coordinates N:549794.91, E:1557935.11, thence N01°37'37"W, 34.99' to a point; thence N88°22'23"E, 100.00' to a point; thence S01°37'37"E, 100.00' to a point; thence S88°22'23"W, 100.00' to a point; thence N01°37'37"W, 34.99' to a point; thence N01°37'33"W, 30.01' to a point; said point being the Point of Beginning of the 100'x100' Lessee Land Space. Said 100'x100' Lessee Land Space contains 10,000 square feet, more or less.

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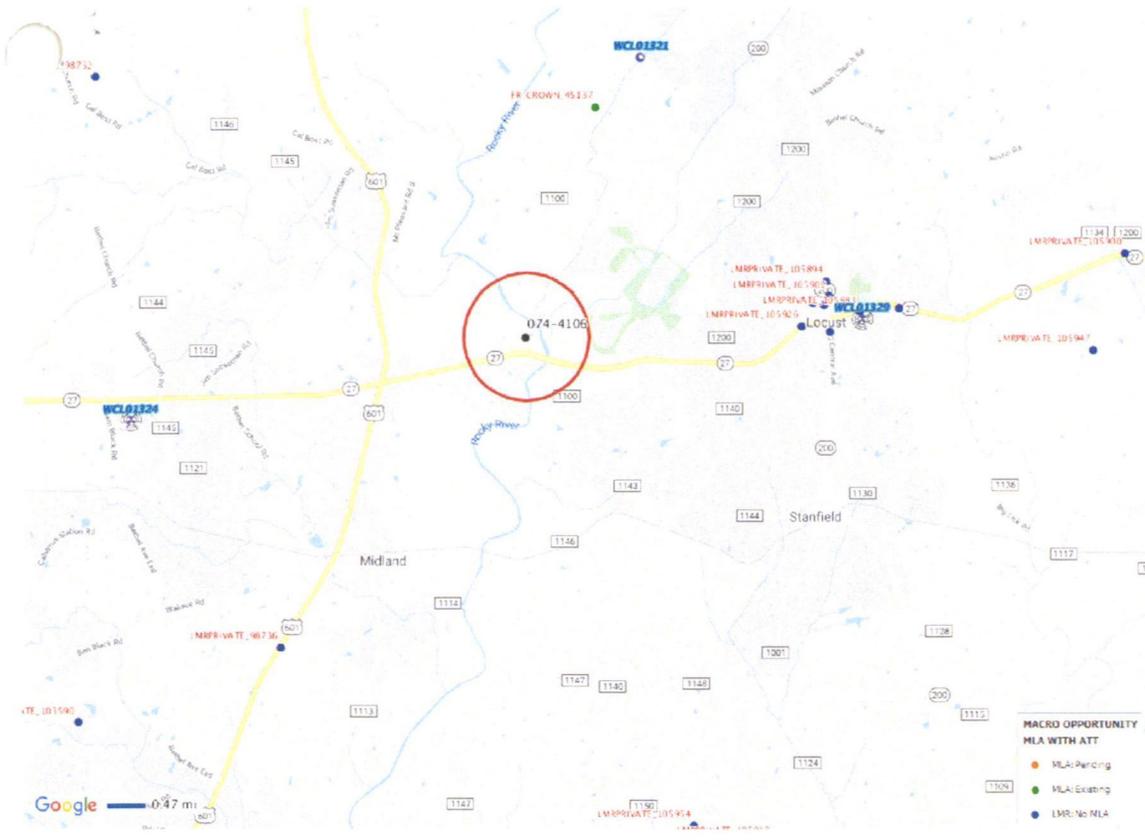
SARF Details

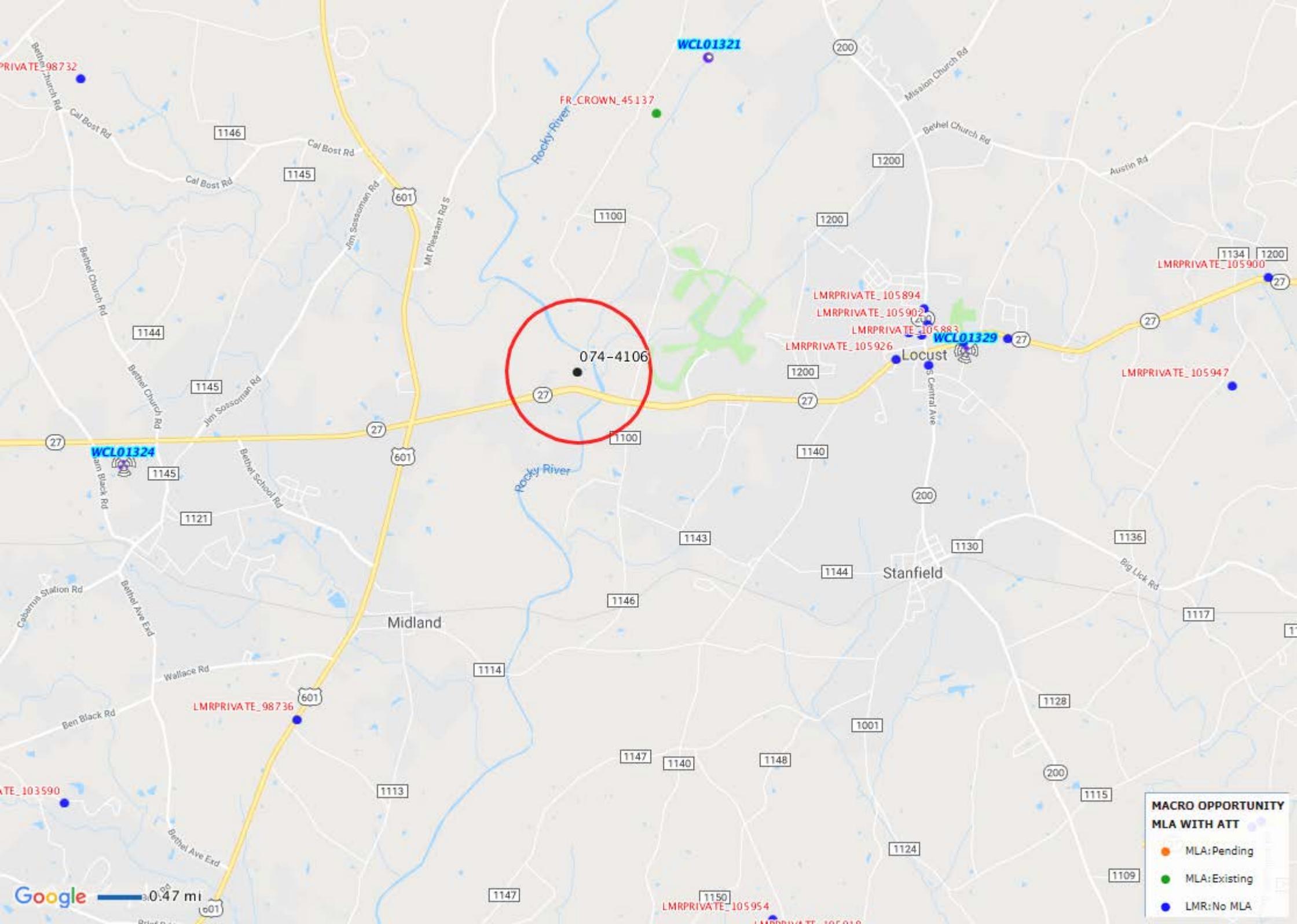
<b>SARF ID</b>	28501	<b>Assigned To</b>	TURFING VENDOR	<b>Issued Date</b>	09/04/2018
<b>SARF Name</b>	SARF-074-4106	<b>Status</b>	TV Complete	<b>Last Modified By</b>	YR6527
				<b>Last Modified Date</b>	10/01/2018
<b>Name (Atoll Sites)</b>	074-4106				
<b>FA Code</b>	12829624	<b>FA Type</b>	CELL		
<b>Search Ring ID</b>	074-4106	<b>Search Ring Name</b>	074-4106		
<b>IPlan Job #</b>	SER-RCAR-13-00607	<b>Solution Type</b>	NSB	<b>Allocation</b>	
<b>Pace #</b>	MRCAR036660	<b>MOD Code</b>		<b>Oracle Project Number</b>	2302A0K22Y
<b>Market</b>	CHARLOTTE	<b>Market Cluster</b>	NORTH CAROLINA/SOUTH CAROLINA	<b>Region</b>	SOUTHEAST
<b>Turfing Vendor Company</b>	MasTec	<b>Turf Vendor ATTUID</b>	YR6527	<b>RF Design Engineer ATTUID</b>	EP712A
<b>Design Engineer</b>	PRYCHODKO, PAUL	<b>Design Manager</b>	Jerry O Jones	<b>Performance Manager</b>	Joe Shahoud

Search Ring Information

<b>County</b>	Cabarrus	<b>City</b>	Midland	<b>Sub-Market</b>	CHARLOTTE
<b>Polygon Cluster</b>		<b>Site Build Priority</b>	High	<b>Select Objective</b>	B-COV
<b>Spectrum</b>	700C	<b>Est # of RRHs</b>	3	<b>Job Description</b>	BDN_COV_MIDATL_54
<b>Latitude (N)</b>	35 15' 28.332"	<b>Longitude (W)</b>	-80 28' 34.896"	<b>Location Short Description</b>	
<b>Latitude Decimal (N)</b>	35.25787	<b>Longitude Decimal (W)</b>	-80.47636	<b>NAD</b>	NAD83
<b>Required Height Min AGL</b>	300.00	<b>Required Height Max AGL</b>	300.00	<b>Search Ring Radius</b>	0.60
<b>Overall Total Height Min AGL</b>		<b>Overall Total Height Max AGL</b>		<b>Ground Elevation AMSL</b>	511.00
<b>Number of Antennas</b>	0	<b>Total Sectors</b>	0	<b>Estimated Equipment Weight (lbs)</b>	
<b>Azimuths</b>		<b>Rad Center Height (ft AGL)</b>	0	<b>Rad Center Tolerance (ft)</b>	0
<b>Remarks</b>	No LMR towers for this Search Ring				

074-4106-SAM1.png





**MACRO OPPORTUNITY  
MLA WITH ATT**

- MLA: Pending
- MLA: Existing
- LMR: No MLA



November 25, 2019

Phillip Collins  
Senior Planner  
Cabarrus County  
65 Church Street S.  
Concord, NC 28025

**RE: Proposed AT&T Mobility tower located at 11979 McManus Road, Midland NC  
(AT&T Site 074-4106)**

Dear Mr. Collins:

When conducting its search for a solution to the coverage and capacity issues in the engineered search ring 074-4106, AT&T Mobility did not find any existing or proposed towers or any other structures within 1,500 feet of the above referenced location. Additionally, there are no suitable alternative technologies to this proposed tower.

Thank you for your consideration of this matter.

Very truly yours,

A handwritten signature in black ink that reads "Stephen M. Howard". The signature is fluid and cursive, with a long, sweeping underline.

Stephen M. Howard  
Sr. Manager Construction and Engineering.

Location Name	TYPE	OWNER	OVERALL HEIGHT	RAD CENTER	USID	FA Code(s)	Latitude	Longitude	City	County	State	Street Address 1	Zip/Postal Code
074-148	MONOPOLE	CROWN	170	167	62339	10132900	35.4744444	-80.6643611	KANNAPOLIS	CABARRUS	NC	4465 ROGERS LAKE ROAD	28081
074-047	ROOFTOP	ATRIUM	under construction	under construction	196405	11646716	35.3651111	-80.7011667	CONCORD	CABARRUS	NC	5400 JOHN Q HAMMONDS DRIVE NW	28027
074-053	MONOPOLE	AMERICAN TOWER	170	170	117323	10144079	35.491091	-80.582667	KANNAPOLIS	CABARRUS	NC	2420 BRANTLEY ROAD	28083
074-074	MONOPOLE	CROWN	155	159	62291	10019159	35.4141667	-80.5945278	CONCORD	CABARRUS	NC	187 BUFFALO AVENUE	28025
074-075	MONOPOLE	CROWN	185	190	62292	10019160	35.4701111	-80.6091667	KANNAPOLIS	CABARRUS	NC	807 NEVADA STREET	28083
074-080	GUYED	TIME WARNER	260	200	62297	10132890	35.4080556	-80.6511111	CONCORD	CABARRUS	NC	568 NORTHWEST OLD SPEEDWAY DRIVE	28027
074-081	SELF SUPPORT	CROWN	275	275	62298	10132889	35.3699806	-80.5448333	CONCORD	CABARRUS	NC	3553 HIGHWAY 601	28025
074-082	GUYED	CROWN	300	297	28013	10019128	35.3985833	-80.4005278	MOUNT PLEASANT	CABARRUS	NC	1471 RED ANGUS DRIVE	28124
074-119	MONOPOLE	HIGHWOOD	195	180	139315	10154780	35.3442139	-80.6532194	CONCORD	CABARRUS	NC	722 PITTS SCHOOL ROAD SOUTHWEST	28027
074-144	SELF SUPPORT	CROWN	250	246	35753	10019116	35.3508611	-80.6103611	CONCORD	CABARRUS	NC	4832 STOUGH ROAD	28027
074-146	WATER TANK	TOWN OF HARRISBURG	146	150	93061	10132882	35.2928361	-80.639725	HARRISBURG	CABARRUS	NC	8885 ROCKY RIVER ROAD	28075
074-211	SELF SUPPORT	CROWN	280	275	62399	10019040	35.450925	-80.7345	CONCORD	CABARRUS	NC	2777 ODELL SCHOOL ROAD	28027
074-312	MONOPOLE	SBA	110	100	84381	10132832	35.385278	-80.703334	CONCORD	CABARRUS	NC	7575 RUBEN LINKER ROAD NORTHWEST	28027
074-313	WATER TANK	TOWN OF MOUNT PLEASANT	to be built	to be built	121601	10154674	35.415783	-80.434695	MOUNT PLEASANT	CABARRUS	NC	191 NORTH MAIN STREET	28124
074-321	GUYED	AMERICAN TOWER	400	228	62504	10132837	35.3201083	-80.4316278	STANFIELD	CABARRUS	NC	7130 MISSION ROAD	28163
074-323	MONOPOLE	CROWN	185	190	35935	10132839	35.3071667	-80.5160833	CONCORD	CABARRUS	NC	7940 US HIGHWAY 601 SOUTH	28025
074-324	SELF SUPPORT	SBA	250	245	62507	10132840	35.2463889	-80.5434278	MIDLAND	CABARRUS	NC	1790 HIGHWAY 27	28107
074-330	MONOPOLE	SBA	190	190	35758	10132843	35.4239722	-80.5453056	CONCORD	CABARRUS	NC	410 NEISLER ROAD	28025
074-331	SELF SUPPORT	CABARRUS COUNTY	300	224	39869	10132844	35.4083611	-80.4805833	MOUNT PLEASANT	CABARRUS	NC	698 WALKER ROAD	28124
074-333	SELF SUPPORT	SBA	250	219	62516	10132846	35.4565278	-80.3575	GOLD HILL	CABARRUS	NC	2633 BETHLEHEM CHURCH ROAD	28071
074-360	MONOPOLE	GTP TOWER	130	98	6416	10132861	35.372093	-80.732498	CONCORD	CABARRUS	NC	3049 C DERITA ROAD	28027
074-370	MONOPOLE	CROWN	190	163	62547	10132860	35.4149694	-80.5779889	CONCORD	CABARRUS	NC	159 BRUMLEY AVENUE	28025
074-375	SELF SUPPORT	AMERICAN TOWER	146	99	6355	10132857	35.4084389	-80.6861889	CONCORD	CABARRUS	NC	399 WOODHAVEN ROAD	28027
074-402	SELF SUPPORT	AMERICAN TOWER	250	235	62561	10132855	35.4543333	-80.5938583	CONCORD	CABARRUS	NC	575 COPPERFIELD BOULEVARD NORTHEAST	28025
074-403	GUYED	SBA	300	185	62562	10132908	35.4933333	-80.7688611	DAVIDSON	CABARRUS	NC	11315 MOORESVILLE ROAD	28036
074-460	SELF SUPPORT	AMERICAN TOWER	250	240	35754	10132906	35.3039722	-80.5970556	CONCORD	CABARRUS	NC	8100 LOWER ROCKY RIVER ROAD	28025
074-468	MONOPOLE	SBA	190	180	62598	10132870	35.4825	-80.7072222	CONCORD	CABARRUS	NC	4920 RANKIN STREET	28027
074-472	SELF SUPPORT	CROWN	170	135	6332	10132866	35.434441	-80.607423	CONCORD	CABARRUS	NC	104 OLD DAVIDSON PLACE	28027
074-474	SELF SUPPORT	SBA	250	235	62604	10132864	35.4208056	-80.7497222	HUNTERSVILLE	CABARRUS	NC	10301 POPLAR TENT ROAD	28078
074-477	SELF SUPPORT	AMERICAN TOWER	245	240	62607	10132850	35.5025833	-80.5509167	KANNAPOLIS	CABARRUS	NC	6151 LUMBER LANE	28083
074-478	MONOPOLE	AMERICAN TOWER	185	185	62608	10132851	35.3196944	-80.6624444	HARRISBURG	CABARRUS	NC	5129 HIGHWAY 49	28075
074-518	GUYED	CROWN	280	170	62629	10132912	35.4010556	-80.6176111	CONCORD	CABARRUS	NC	1012 GROFF STREET	28027
074-525	WATER TANK	CITY OF CONCORD	164	118	175874	13905143	35.348012	-80.680343	CONCORD	CABARRUS	NC	5007 MOREHEAD ROAD DUP1	28027
074-547	MONOPOLE	SBA	200	191	93584	10132913	35.440361	-80.663369	CONCORD	CABARRUS	NC	2125 TRINITY CHURCH ROAD	28027
074-549	MONOPOLE	AMERICAN TOWER	190	188	93121	10132914	35.3814917	-80.5861889	CONCORD	CABARRUS	NC	615 WILSHIRE AVENUE SOUTHWEST	28025
074-555	MONOPOLE	SBA	190	190	84079	10132915	35.369775	-80.669978	CONCORD	CABARRUS	NC	3234 PERRY STREET	28027
074-596	MONOPOLE	SBA	190	190	88670	10132918	35.3927	-80.5468	CONCORD	CABARRUS	NC	1495 BRANCHVIEW ROAD	28025
074-730	MONOPOLE	CROWN	145	145	119864	10154686	35.1860333	-80.5281778	MIDLAND	CABARRUS	NC	306 BRIEF ROAD	28107
074-963	SELF SUPPORT	amERICAN TOWER	300	195	138753	10142272	35.4927778	-80.5322222	KANNAPOLIS	CABARRUS	NC	5405 SAPP ROAD	28083
074-964	MONOPOLE	CROWN	190	181	114076	10142271	35.4619444	-80.5444611	CONCORD	CABARRUS	NC	3240 OLD SALISBURY CONCORD ROAD	28025
074-973	MONOPOLE	SBA	195	190	138944	10154781	35.4031944	-80.7647833	HUNTERSVILLE	CABARRUS	NC	11202 HARRIS ROAD	28078
074-974	SELF SUPPORT	CROWN	165	128	114074	10142261	35.4902139	-80.6396028	KANNAPOLIS	CABARRUS	NC	575 PLEASANT AVENUE	28081
074-976	MONOPOLE	HIGHWOOD	to be built	to be built	231481	12683728	35.265279	-80.601663	CONCORD	CABARRUS	NC	10555 CRIMSON WAY	28025

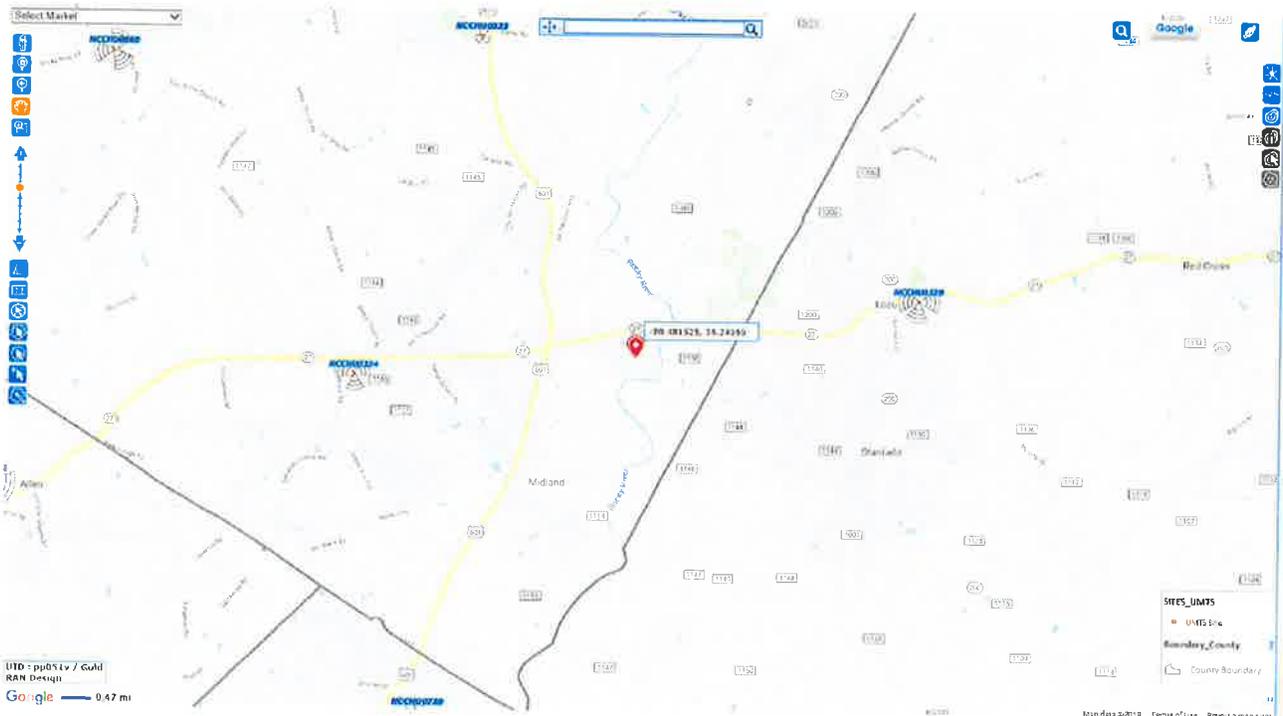


Paul Prychodko  
AT&T Mobility LLC.  
Charlotte/Greensboro Markets

**DATE:** June 28, 2019  
**SUBJECT:** RF Justification for AT&T Wireless Site: 074-4106

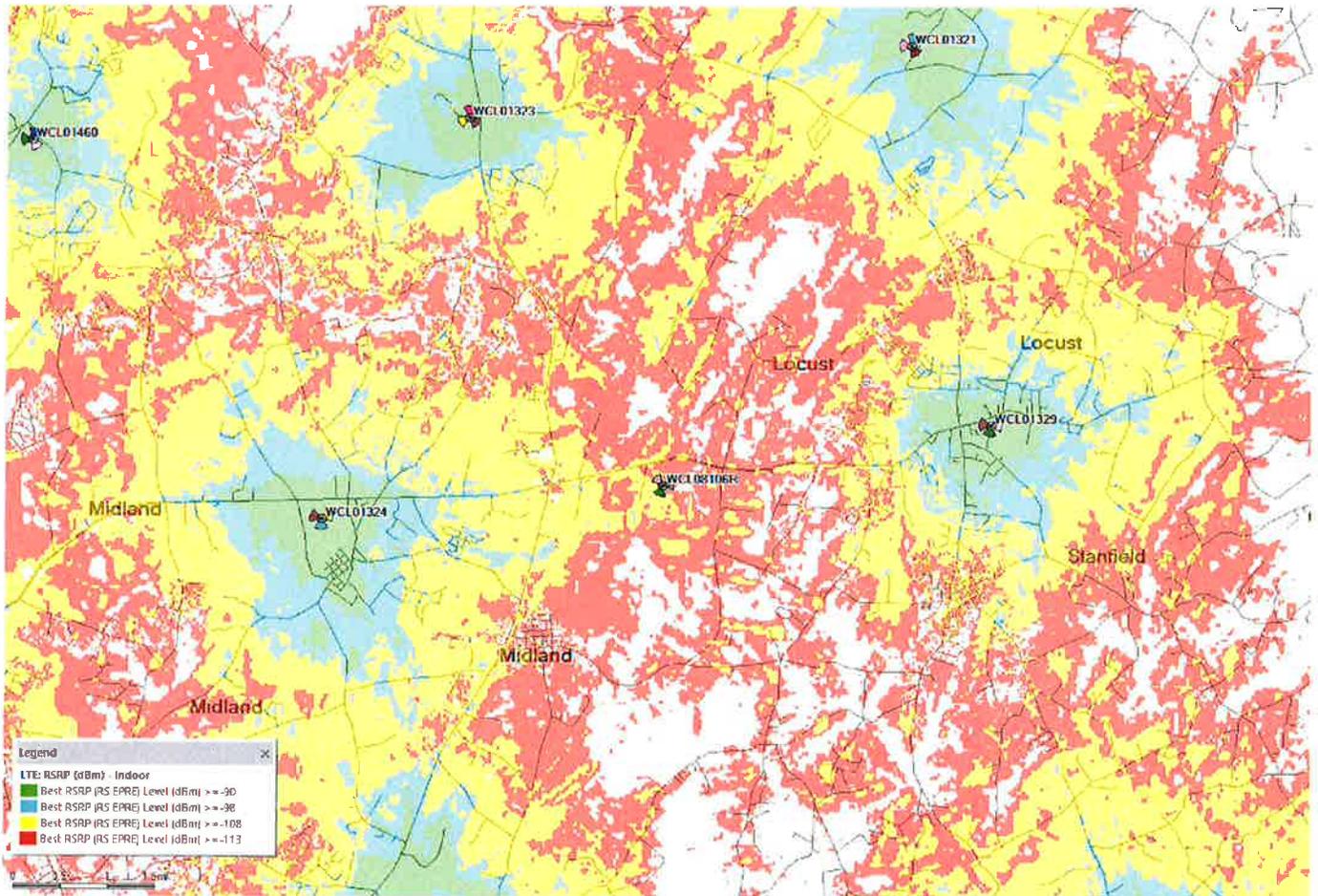
AT&T Mobility has been requested to provide justification for our proposed site 074-4106. AT&T Mobility is currently in the process of enhancing our existing coverage in Cabarrus/Stanly Counties. The proposed site will extend the coverage along U.S. Highway 24/27, and provide indoor/outdoor coverage to residential and businesses in and around those areas. The proposed tower height of 189 feet is the minimum necessary to meet AT&T's coverage objectives. Existing structures have been utilized whenever possible. AT&T certifies that all of its equipment will be installed and operated in keeping with applicable FAA and FCC rules and regulations and appropriate industry standards. The construction of this tower, including AT&T's installation of transmitter/receiver equipment, will not interfere with the usual and customary transmission or reception of radio, television, etc. service enjoyed by adjacent properties. AT&T certifies that the proposed tower will not interfere with Public Safety radio equipment in the vicinity. **Figure 1** shows the general area within Cabarrus/Stanly Counties that the new site will be located. In **Figure 1** blue text indicate the location of all existing sites and the AT&T pin and the white text box indicates the location of the proposed site.

Figure 1: Map of AT&T Wireless' Existing and Proposed Site



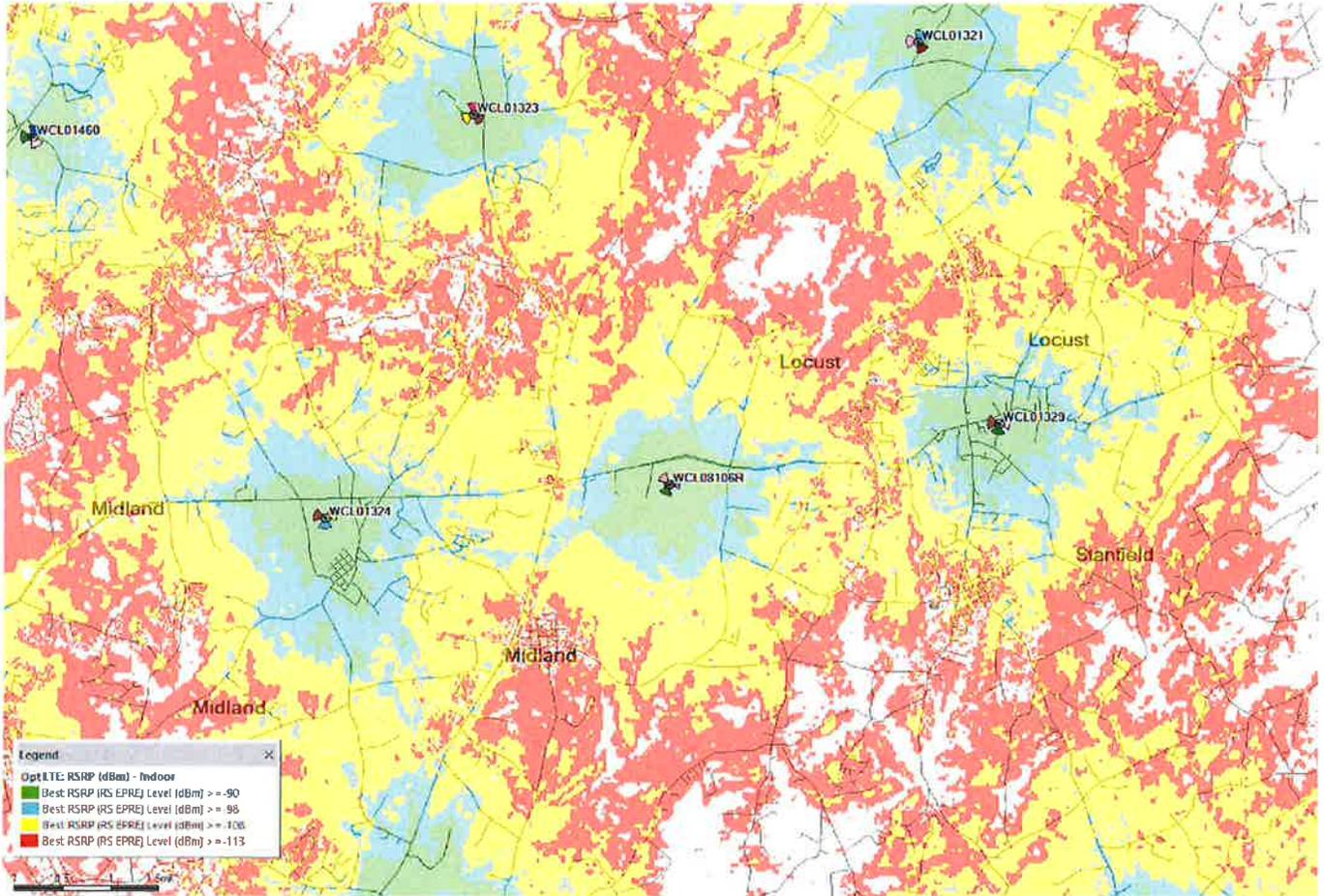
Currently AT&T Mobility does not have adequate outdoor/indoor coverage in the concerning area. Refer to **Figure 2**, which shows coverage without the proposed site 074-4106.

**Figure 2: Map of AT&T Wireless' Coverage without 074-4106**



With the addition of the proposed site 074-4106, AT&T Mobility will enhance the coverage and also provide outdoor/indoor coverage to residential and businesses along the Hwy 24/27. Refer to **Figure 3** which shows coverage with proposed site 074-4106.

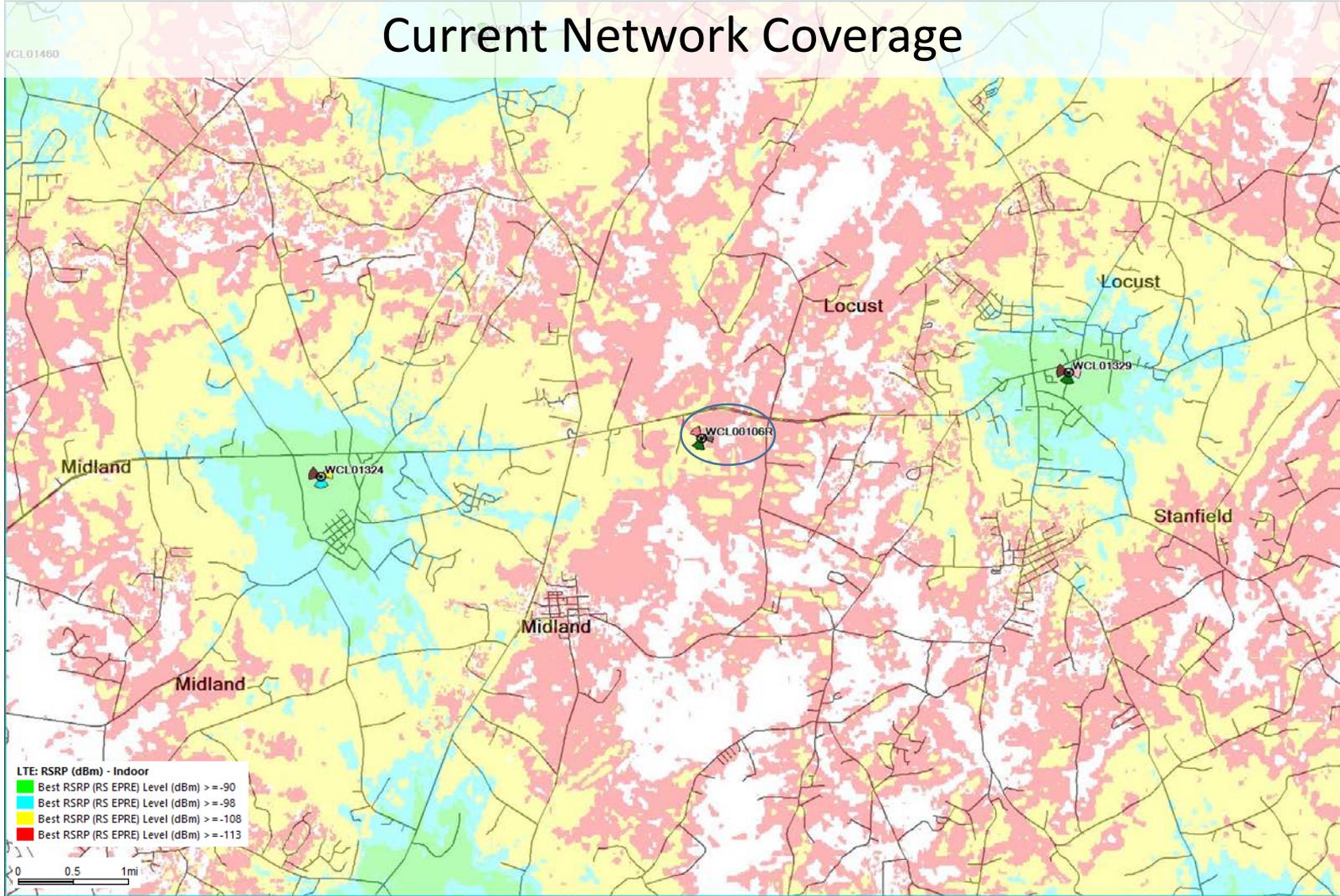
Figure 3: Map of AT&T Wireless' Coverage with 074-4106



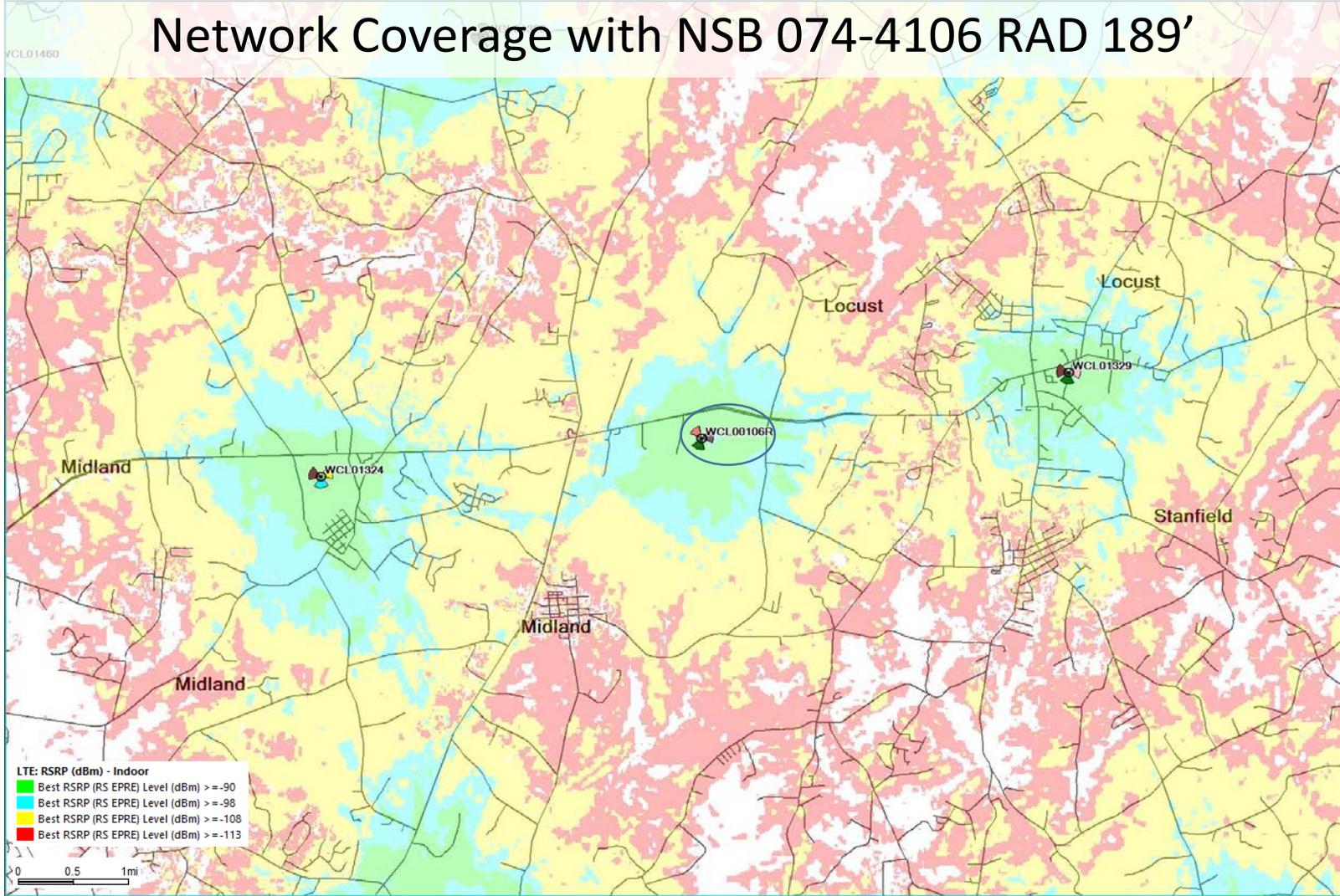
Paul Prychodko  
AT&T Mobility LLC.  
Charlotte/Greensboro Markets

# **NSB 074-4106 Plots**

# Current Network Coverage



# Network Coverage with NSB 074-4106 RAD 189'



View of Power , Telco and Access Gate



074-4106 Power and Telco

074-4106 McManus View of Access Gate



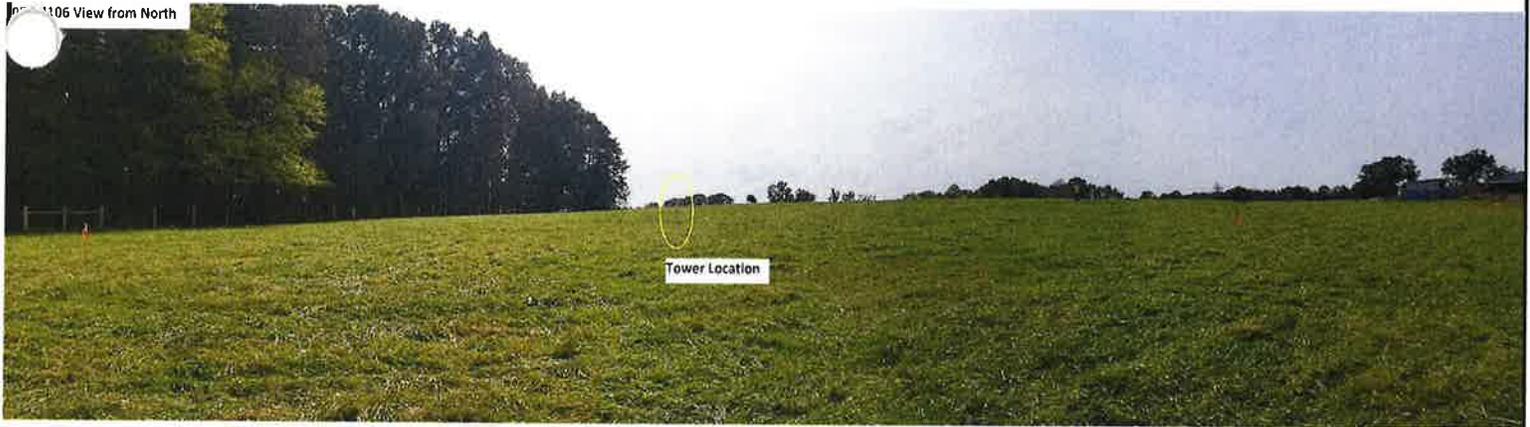
View of Equipment Area

074-4106 McManus View of Compound looking from East



View from North

074-4106 View from North



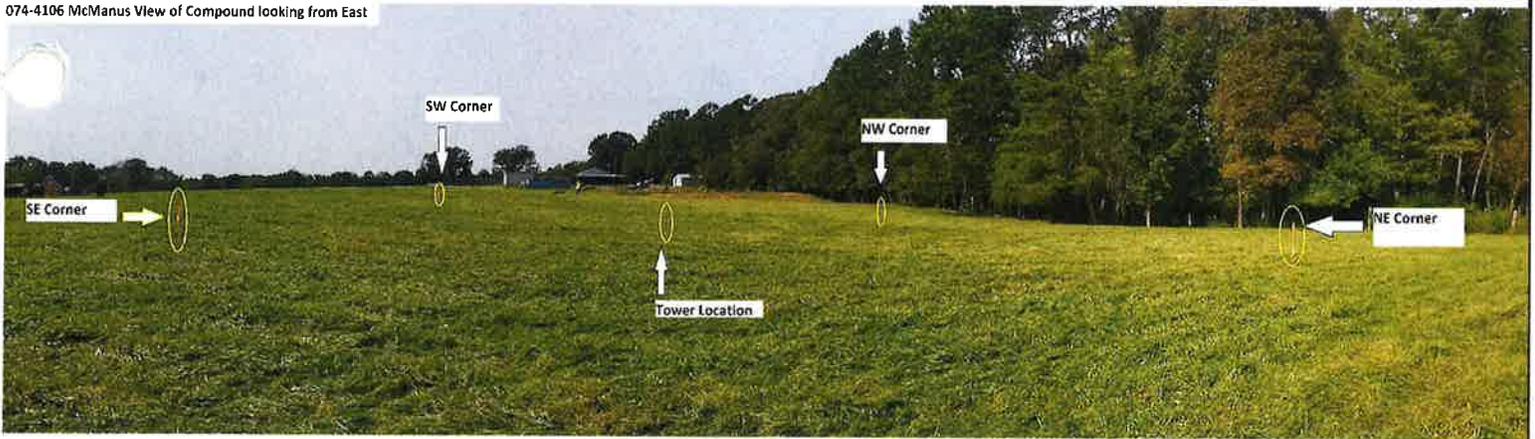
View from South

074-4106 View from the South



View from East

074-4106 McManus View of Compound looking from East



View from West

074-4106 McManus View from the West





**DATE:** November 20, 2019  
**SUBJECT:** FCC Compliance Assessment for Proposed AT&T Mobility Site 074-4106

AT&T Mobility has been requested to evaluate the radio frequency emissions of our proposed site 074-4106. In addition, AT&T Mobility has been requested to address other RF related topics such as transmitter operation and maximum permissible output power levels. The remainder of this report will address all RF related items requested by Cabarrus County Zoning/Planning for proposed site 074-4106.

### **Transmitter Operation**

AT&T Mobility owns the LTE 700 B/C/D Band, PCS B/F Band, AWS A/C/H/I Band, and WCS A/B licenses in Cabarrus County. The transmitters being used on the proposed site are authorized to operate in the 734-746, 758-763, 1950-1965, 1970-1975, 2110-2120, 2130-2135, 2160-2170 and 2350-2360 Megahertz (MHz) frequency range. The Ericsson Node B base station transmitters AT&T Mobility utilizes have a maximum output level of 60 watts. AT&T Mobility utilizes the LTE 4G digital technology. As a result, our transmitters utilize LTE OFDM, 16-State Quadrature Amplitude (16QAM), 64-State Quadrature Amplitude (64 QAM), 256-State Quadrature Amplitude (256 QAM) and Quadrature Phase Shift Keying (QPSK) modulation. Precision filters limit unwanted and spurious emissions to levels below the FCC specification. **The signals being transmitted will not interfere with the operation of commercial radio, cellular radio, television, telephone or other FCC approved telecommunication carrier or equipment.** For our proposed site 074-4106, UMTS technology will not be deployed.

### **Maximum Permissible Output Power**

The maximum permissible output power for the 1900 band per sector is 1640 Watts/MHz of effective radiated power (ERP) from the antennas in Cabarrus County. The proposed site 074-4106 is only transmitting 283.77 total watts ERP.

The maximum permissible output power for the 700 band per sector is 1000 Watts/MHz of effective radiated power (ERP) from the antennas in Cabarrus County. The proposed site 074-4106 is only transmitting 274.85 total watts/MHz ERP.

### **RF Exposure (NIER levels)**

The FCC states in 47 CFR 1.1310 that the maximum permissible exposure (MPE) level from non-ionizing electromagnetic radiation (NIER) to the general population at cellular and PCS frequencies is 1.0 milliwatt per centimeter squared (mW/cm<sup>2</sup>). MPE is a measure of the RF power density at or below which there are no potential harmful effects from the exposure.

Power density calculations are based on guidelines given by the ANSI Standard C95.1-1992 and are based on a worst case scenario. For analysis purposes, worst case conditions were chosen for all output power levels based on the deployment of LTE technologies for the 700 and 1900 Band. A summary of the results of the power density calculations for site 074-4106 is listed below in **Table 1** and **Table 2**.

Distance From Tower (Feet)	Power Density (mw/cm2)	%FCC Standard
1	0.0000196	0.007832
25	0.0000189	0.007566
50	0.0000078	0.003121
75	0.0000199	0.007963
100	0.0000379	0.015151

**Table 1: Power Density Summary for Site 074-4106 for 1900 Band**

Distance From Tower (Feet)	Power Density (mw/cm2)	%FCC Standard
1	0.0000146	0.0118778
25	0.0000294	0.0239759
50	0.0000461	0.0376005
75	0.0000562	0.0459123
100	0.0000616	0.0502714

**Table 2: Power Density Summary for Site 074-4106 for 700 Band**

The Distance from Tower for Site 074-4106 is 240 feet. As shown in **Table 1**, the maximum power density will not exceed 0.0000379 mW/cm<sup>2</sup> at ground level in the 1900 Band and as shown in **Table 2**, the maximum power density will not exceed 0.0000616mW/cm<sup>2</sup> at ground level in the 700 Band. Moreover, the average energy expected near ground level is less than 1% of the MPE level. This level does not exceed the MPE limit or threshold set by the Federal Communications Commission or the American National Standards Institute.

**Based upon the ANSI/FCC standard and the predicted levels of electromagnetic energy emitted by site 074-4106, this installation will be of no safety concern to the general public. This site will comply with FCC Act 47 U.S.C. Section 332 and applicable rules promulgated by the FCC.**

If there are any further questions, feel free to contact me.

Sincerely

*Michael Dennis*

Michael Dennis  
RF Safety Engineer  
AT&T Mobility LLC.  
Mid-Atlantic Market  
Tel: 704-451-6672  
E-mail: [MD2543@att.com](mailto:MD2543@att.com)



April 17, 2020

Mr. Phillip Collins  
Senior Planner  
**Cabarrus County Planning and Zoning**  
65 Church Street S.  
Concord, NC 28025

**Re: Letter of Intent to Market Space to Other Wireless Telecommunications Providers in Regard to Diamond Communications LLC's Conditional Use Permit Application Proposed 195-Foot Telecommunications Tower and Wireless Facility**  
**Location: 11979 McManus Road, Midland, NC 28107**

Dear Mr. Collins:

In accordance with the Cabarrus County Development Ordinance, and in support of Diamond Communications LLC's ("Diamond") Conditional Use Permit Application, as Senior Vice President, I herewith certify on behalf of Diamond, that the proposed tower, if approved, will be constructed and designed to accommodate at least four carriers and will be managed so as to not restrict, prevent or prohibit competition amongst carriers.

It is the intent of Diamond to fill the tower with tenants and to market and negotiate in good faith for the shared use of the proposed wireless support structure by AT&T Mobility and other wireless service providers. The rates and charges offered to the prospective carriers, users and tenants of the facility shall be reasonable, of fair market value and shall not exceed those charges made by other similar wireless facilities in Cabarrus County.

Sincerely,

A handwritten signature in blue ink, appearing to read "Thomas Waniewski", with a stylized flourish at the end.

Thomas Waniewski  
Sr. Vice President



November 20, 2019

Mr. Phillip Collins  
Sr. Planner  
Cabarrus County Planning and Zoning Office  
65 Church Street S.  
Concord, NC 28025

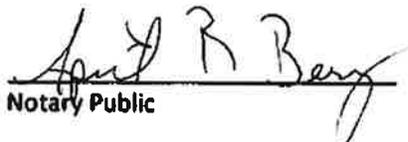
Re: Letter of Intent to Market Space to Other Wireless Telecommunications Providers  
In regard to AT&T Mobility Corp.'s Conditional Use Permit Application  
Proposed 195-Foot Telecommunications Tower and Wireless Facility  
Location: 11979 McManus Road, Midland, NC 28107  
AT&T Site No. 074-4106

Dear Mr. Collins:

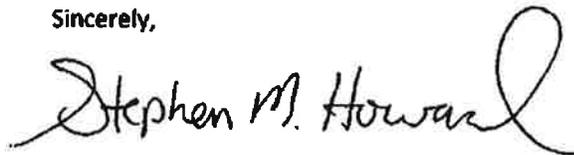
In accordance with the Cabarrus County's Development Ordinance, and in support of the Conditional Use Permit Application for AT&T Mobility Corp. ("AT&T"), as the Senior Manager of Construction and Engineering for AT&T, I herewith certify on behalf of AT&T that the proposed tower, if approved, will be constructed and designed to accommodate at least four carriers and will be managed so as to not restrict, prevent or prohibit competition among carriers.

It is the intent of AT&T to market and negotiate in good faith for the shared use of the proposed wireless support structure by other wireless service providers. The rates and charges offered to other prospective carriers or users of the facility shall be reasonable and shall not exceed those charges made by other facility users in Cabarrus County using similar facilities.

Sworn to and Subscribed before me,  
this 20<sup>th</sup> day of November, 2019.

  
Notary Public

Sincerely,



Stephen M. Howard  
Senior Manager  
Construction and Engineering

My Commission Expires:

APRIL R BERRY  
Notary Public, North Carolina  
Guilford County  
My Commission Expires  
5-5-2021

Active\105351779.v1-11/20/19



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

Aeronautical Study No.  
 2019-ASO-10640-OE

Issued Date: 07/08/2019

Amanda J. Perkins  
 AT&T  
 208 S. Akard St.  
 Dallas, TX 75202

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

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

Structure: Monopole 074P4106  
 Location: Midland, NC  
 Latitude: 35-15-05.63N NAD 83  
 Longitude: 80-28-50.28W  
 Heights: 519 feet site elevation (SE)  
 205 feet above ground level (AGL)  
 724 feet above mean sea level (AMSL)

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

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

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

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

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

This determination expires on 01/03/2021 unless:

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

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

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

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

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

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

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

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

If we can be of further assistance, please contact our office at (202) 267-0105, or [j.garver@faa.gov](mailto:j.garver@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-ASO-10640-OE.

**Signature Control No: 400473606-410418152**

( DNE )

Jay Garver  
Specialist

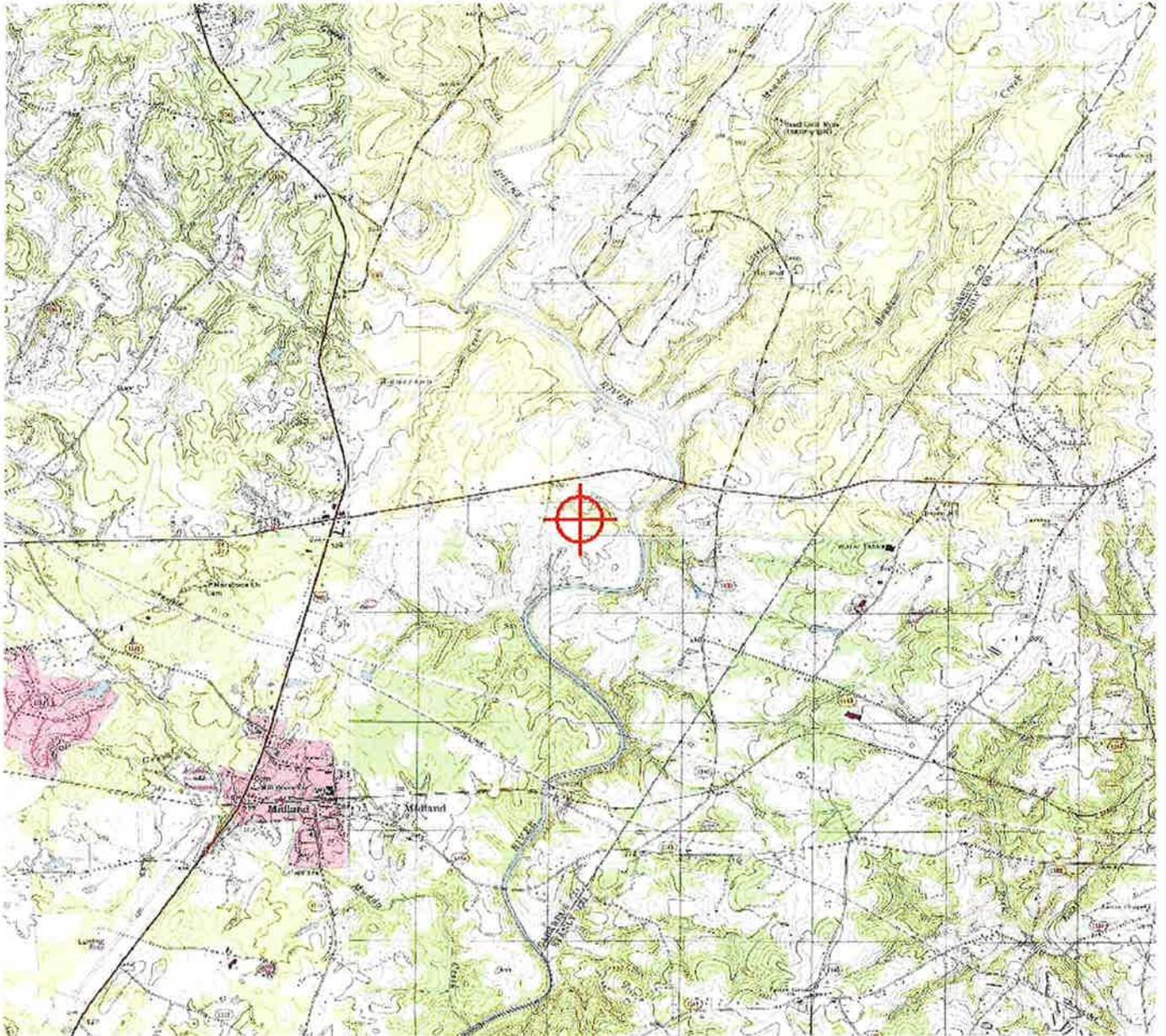
Attachment(s)  
Frequency Data  
Map(s)

cc: FCC

**Frequency Data for ASN 2019-ASO-10640-OE**

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

TOPO Map for ASN 2019-ASO-10640-OE



\*\*\*\*\*  
\* Federal Airways & Airspace \*  
\* Summary Report: New Construction \*  
\* Antenna Structure \*  
\*\*\*\*\*

Airspace User: Mattie Carter

File: dd963m\_074-4106

Location: Locust, NC

Latitude: 35°-15'-05.6" Longitude: 080°-28'-50.3"

SITE ELEVATION AMSL.....519 ft.  
STRUCTURE HEIGHT.....199 ft.  
OVERALL HEIGHT AMSL.....718 ft.  
SURVEY HEIGHT AMSL.....718 ft.

NOTICE CRITERIA

FAR 77.9(a): NNR (DNE 200 ft AGL)  
FAR 77.9(b): NNR (DNE Notice Slope)  
FAR 77.9(c): NNR (Not a Traverse Way)  
FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for 28A  
FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for 8A6  
FAR 77.9(d): NNR (Off Airport Construction)

NR = Notice Required

NNR = Notice Not Required

PNR = Possible Notice Required (depends upon actual IFR procedure)

For new construction review Air Navigation Facilities at bottom  
of this report.

Notice to the FAA is not required at the analyzed location and height for  
slope, height or Straight-In procedures. Please review the 'Air  
Navigation'  
section for notice requirements for offset IFR procedures and EMI.

OBSTRUCTION STANDARDS

FAR 77.17(a)(1): DNE 499 ft AGL  
FAR 77.17(a)(2): DNE - Airport Surface  
FAR 77.19(a): DNE - Horizontal Surface  
FAR 77.19(b): DNE - Conical Surface  
FAR 77.19(c): DNE - Primary Surface  
FAR 77.19(d): DNE - Approach Surface  
FAR 77.19(e): DNE - Approach Transitional Surface  
FAR 77.19(e): DNE - Abeam Transitional Surface

VFR TRAFFIC PATTERN AIRSPACE FOR: 28A: GOOSE CREEK

Type: A RD: 55841.7 RE: 551.2

FAR 77.17(a)(1): DNE

FAR 77.17(a)(2): Does Not Apply.  
 VFR Horizontal Surface: DNE  
 VFR Conical Surface: DNE  
 VFR Primary Surface: DNE  
 VFR Approach Surface: DNE  
 VFR Transitional Surface: DNE

VFR TRAFFIC PATTERN AIRSPACE FOR: 8A6: WILGROVE AIR PARK

Type: A RD: 57742.34 RE: 799

FAR 77.17(a)(1): DNE  
 FAR 77.17(a)(2): Does Not Apply.  
 VFR Horizontal Surface: DNE  
 VFR Conical Surface: DNE  
 VFR Primary Surface: DNE  
 VFR Approach Surface: DNE  
 VFR Transitional Surface: DNE

TERPS DEPARTURE PROCEDURE (FAA Order 8260.3, Volume 4)

FAR 77.17(a)(3) Departure Surface Criteria (40:1)  
 DNE Departure Surface

MINIMUM OBSTACLE CLEARANCE ALTITUDE (MOCA)

FAR 77.17(a)(4) MOCA Altitude Enroute Criteria  
 The Maximum Height Permitted is 1400 ft AMSL

PRIVATE LANDING FACILITIES

FACIL IDENT TYP NAME	BEARING To FACIL	RANGE IN NM	DELTA ARP FAA ELEVATION IFR
5NC3 AIR REED MINE No Impact to VFR Transitional Surface. Below surface height of 208 ft above ARP.	21.37	3.08	+137
3NC3 AIR TUCKER FIELD No Impact to VFR Transitional Surface. Below surface height of 260 ft above ARP.	94.42	3.6	+73

AIR NAVIGATION ELECTRONIC FACILITIES

APCH ANGLE BEAR	FAC IDNT	ST TYPE	AT FREQ	VECTOR	DIST (ft)	DELTA ELEVA ST	LOCATION	GRND
	CLT	RADAR	ON	264.3	140133	-83	NC CHARLOTTE/DOUGLAS	-.03
	CLT	VOR/DME	R	115.0	260.86	142477	-14 NC CHARLOTTE	-.01
	QRM	RADAR ARSR	Y	1277.4	300.31	260870	-251 NC Maiden	-.06

CFR Title 47, §1.30000-§1.30004

AM STUDY NOT REQUIRED: Structure is not near a FCC licensed AM station.  
 Movement Method Proof as specified in §73.151(c) is not required.  
 Please review 'AM Station Report' for details.

Nearest AM Station: WNOW @ 16403 meters.

Airspace® Summary Version 19.9.543

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Copyright © 1989 - 2019

11-20-2019  
07:57:10



May 1, 2020

Ms. Karey Vawter  
**Diamond Communications LLC**  
820 Morris Turnpike  
Suite 104  
Short Hills, NJ 07078

RE: Proposed 195' Monopole for McManus, NC

Dear Ms. Vawter,

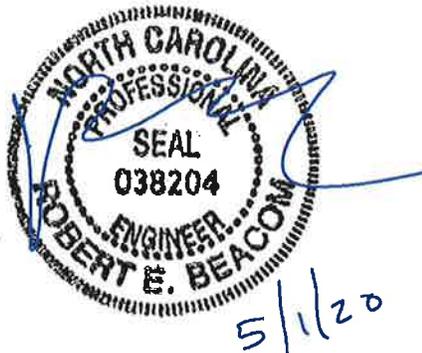
Upon receipt of order, we propose to design and supply the above referenced tower for a Basic Wind Speed of 112 mph with no ice and 30 mph + 1.5" ice, Structure Class II, Exposure Category C, and Topographic Category 1, in accordance with the Telecommunications Industry Association Standard ANSI/TIA-222-G, "Structural Standard for Antenna Supporting Structures and Antennas" to support the equipment of (4) wireless carriers.

When designed according to this standard, the wind pressures and steel strength capacities include several safety factors, resulting in an overall minimum safety factor of 25%. Therefore, it is highly unlikely that the monopole will fail structurally in a wind event where the design wind speed is exceeded within the range of the built-in safety factors.

Should the wind speed increase beyond the capacity of the built-in safety factors, to the point of failure of one or more structural elements, the most likely location of the failure would be within the monopole shaft, above the base plate. Assuming that the wind pressure profile is similar to that used to design the monopole, the monopole will buckle at the location of the highest combined stress ratio within the monopole shaft. This is likely to result in the portion of the monopole above leaning over and remaining in a permanently deformed condition. **Please note that this letter only applies to the above referenced monopole designed and manufactured by Sabre Towers & Poles.** This would effectively result in a fall radius equal to 50% of the tower height.

Sincerely,

Robert E. Beacom, P.E., S.E.  
Engineering Supervisor



# TOWER / STRUCTURE / ANTENNA / EQUIPMENT REMOVAL BOND

Location of tower/structure/equipment:  
11979 McManus Road, Midland, NC

Site: 074-4106

Fixed Asset No. 12829624

Bond Number: 674211995

KNOW ALL MEN BY THESE PRESENTS:

THAT New Cingular Wireless PCS, LLC 4100 South Stream, Charlotte, NC 28217 as Principal, and Liberty Mutual Insurance Company a corporation duly organized under the laws of the State of Massachusetts as Surety, are held and firmly bound unto Cabarrus County, 65 Church Street SE, Concord, NC 28025 as Obligee, the penal sum of Seventy-five Thousand (\$75,000.00) for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents, the liability of the surety being limited to the penal sum of this bond regardless of the number of years the bond is in effect.

WHEREAS, the Principal has entered into a written agreement with the property owner for the placement of a tower, structure or equipment furnishing telephone, television or other electronic media service, which agreement sets forth the terms and conditions which govern the use of such towers, structures or equipment and which agreement is hereby specifically referred to and made part hereof, and

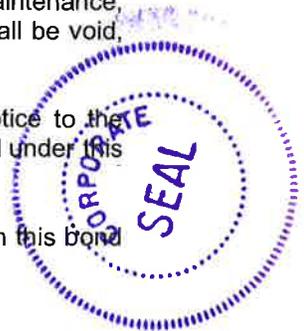
WHEREAS, the Cabarrus County agreement and/or the property owner, requires a bond guaranteeing the maintenance, replacement, removal or relocation of said tower or equipment,

NOW THEREFORE, the condition of this obligation is such, that if the above bounden Principal shall perform in accordance with the aforesaid ordinance and/or agreement, and indemnify the Obligee against all loss caused by Principal's breach of any ordinance or agreement relating to the maintenance, replacement, removal or relocation of a tower, structure or equipment, then this obligation shall be void, otherwise to remain in full force and effect unless cancelled as set forth below.

THIS BOND may be cancelled by Surety by giving 30 days written notice to the Obligee by certified mail. Such cancellation shall not affect any liability the surety has incurred under this bond prior to the effective date of the termination.

PROVIDED that no action, suit or proceeding shall be maintained against the Surety on this bond unless the action is brought within twelve (12) months of the cancellation date of this bond.

SIGNED and sealed this 18th day of December, 2019.



New Cingular Wireless PCS, LLC  
by AT&T Mobility Corporation its manager

Principal:

*Sherri Bazan*

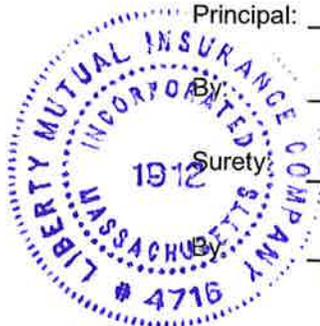
**Sherri Bazan**  
Assistant Treasurer

Surety:

Liberty Mutual Insurance Company

*Heidi A. Notheisen*

Heidi A. Notheisen, Attorney in Fact





This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No: 8201331

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Heidi A. Notheisen all of the city of St. Louis, state of Missouri each individually if there be more than one named, its true and lawful attorney-in-fact, with full power and authority hereby conferred to sign, execute and acknowledge the above-referenced surety bond.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 30th day of May, 2019.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company



By: David M. Carey

David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 30th day of May, 2019, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS: Section 12. Power of Attorney.

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, of Liberty Mutual Insurance Company, The Ohio Casualty Insurance Company, and West American Insurance Company do hereby certify that this power of attorney executed by said Companies is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 18th day of December, 2019.



By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary



Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00am and 4:30pm EST on any business day.



August 18, 2020

Community Development  
 County of Cabarrus  
 65 Church Street S,  
 Concord, NC 28025  
 Attn: Phillip Collins

RE: AT&T/Diamond Communications – 11979 McManus Road (NC042/McManus) – Future Tower Removal Cost Estimate

Dear Mr. Collins,

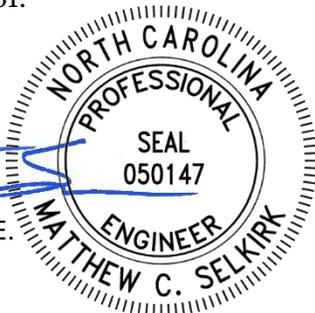
Pursuant to your request, we have reviewed the design of the proposed tower site at 11979 McManus Road. Based on similar project experience, and consultation with a well-regarded General Contractor with similar experience in decommissioning communications towers. We would estimate that should the proposed tower site need to be decommissioned in the near future a reasonable cost for said decommissioning including restoration of the tower site to the previous condition would be approximately, **\$75,000**. A break down of the cost estimation is below.

1. MOBILIZATION	\$	<u>3,000</u>
2. SITE/CIVIL WORK (clear, grade, grub, stone, erosion control, etc.)	\$	<u>3,000</u>
3. REMOVAL ACCESS ROAD AND SITE RESTORATION	\$	<u>5,000</u>
4. REMOVA OF TOWER FOUNDATION	\$	<u>4,000</u>
5. RESTORATION OF FENCING	\$	<u>4,500</u>
6. REMOVAL EQUIPMENT COMPOUND AND FOUNDATIONS	\$	<u>3,000</u>
8. REMOVAL OF SITE GROUNDING	\$	<u>3,000</u>
9. DECOMMISSIONING OF ELECTRICAL/TELEPHONE SERVICES	\$	<u>6,000</u>
10. TOWER DE-ERECTION (Including Antenna Mounts)	\$	<u>28,500</u>
11. LINE & ANTENNA REMOVAL	\$	<u>12,000</u>
12. LANDSCAPING	\$	<u>1,500</u>
13. PERMITS	\$	<u>1,500</u>
<b>TOTAL SITE DECOMMISSIONING COST ESTIMATE</b>	<b>\$</b>	<b><u>75,000</u></b>

If you have any questions, please don't hesitate to contact me via email at [mseikirk@dewberry.com](mailto:mseikirk@dewberry.com) or by phone at (804) 205.3361.

Sincerely,

Matthew C. Selkirk, P.E.  
 Project Engineer  
 NCBELS#: F-0929



**Butler, Trisha**

---

**From:** Angelia Copeland <Angelia.Copeland@mastec.com>  
**Sent:** Wednesday, October 30, 2019 11:40 AM  
**To:** Butler, Trisha  
**Cc:** Kemerait, Karen; Stephen Howard (sh0548@att.com)  
**Subject:** RE: [External] New Proposed Cabarrus County Site for AT&T - Location: 11979  
McManus Road, Midland, NC 28107 - Site 074-4106  
**Attachments:** Mimecast Large File Send (keyless)

Please see updated attached. If anything else is still missing, please let me know.

TOTAL DISTURBED AREA:  
24,343.3 SQ FT = 0.553 ACRE

727'-0"  
TO NEAREST ST

**Angelia "Angela" Copeland**  
Project Manager - Site Acquisition NC/SC NSB



507 Airport Blvd, Suite 111  
Morrisville, NC 27560  
(804) 819-0821 mobile  
Email: [angelia.copeland@mastec.com](mailto:angelia.copeland@mastec.com)

[www.mastecnetworksolutions.com](http://www.mastecnetworksolutions.com)

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**From:** Butler, Trisha <tbutler@foxrothschild.com>  
**Sent:** Thursday, October 24, 2019 3:51 PM  
**To:** Stephen Howard (sh0548@att.com) <sh0548@att.com>; Angelia Copeland <Angelia.Copeland@mastec.com>  
**Cc:** Kemerait, Karen <KKemerait@foxrothschild.com>  
**Subject:** RE: [External] New Proposed Cabarrus County Site for AT&T - Location: 11979 McManus Road, Midland, NC 28107 - Site 074-4106  
**Importance:** High

**Butler, Trisha**

---

**From:** Graybeal, Christopher E <christopher.graybeal@ncdenr.gov>  
**Sent:** Friday, August 23, 2019 9:40 AM  
**To:** Butler, Trisha  
**Subject:** [EXT] RE: [External] RE: New Proposed Cabarrus County Site for AT&T Tower Location: 11979 McManus Road, Midland, NC 28107

Trisha,

As long as the project disturbs less than one acre an erosion control plan will not be required by the Division Of Land Quality for this site.

As a reminder DEQ can become involved if sediment should leave the project site regardless of project size therefore measures should be in place to prevent such an occurrence.

Best regards,

Christopher E. Graybeal  
Assistant Regional Engineer  
Land Quality Division  
Division of Energy, Mineral, and Land Resources  
North Carolina Department of Environmental Quality

Phone: (704) 663-1699 x2147  
Fax: (704) 663-6040  
Email: [christopher.graybeal@ncdenr.gov](mailto:christopher.graybeal@ncdenr.gov)  
Physical and Mailing Address: 610 E. Center Ave. Suite 301  
Mooresville, NC 28115

*10-30-19 Provided by Angela Copeland, disturbed acreage is 0.569/acre or 24,548.3 sq. feet - Sheet C-2.4 of the CDs.*



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**From:** Butler, Trisha [mailto:tbutler@foxrothschild.com]  
**Sent:** Thursday, August 22, 2019 4:49 PM  
**To:** Graybeal, Christopher E <christopher.graybeal@ncdenr.gov>; Khan, Zahid <zahid.khan@ncdenr.gov>  
**Subject:** [External] RE: New Proposed Cabarrus County Site for AT&T Tower Location: 11979 McManus Road, Midland, NC 28107  
**Importance:** High

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Mr. Graybeal and / or Mr. Khan,

Can you please let me know if you received this request and if it is being reviewed by your office?

Thank you.

**Trisha Butler**  
Paralegal  
**Fox Rothschild LLP**  
434 Fayetteville Street  
Suite 2800  
Raleigh, NC 27601  
(919) 755-8789 - direct  
(919) 755-8800 - fax  
[tbutler@foxrothschild.com](mailto:tbutler@foxrothschild.com)  
[www.foxrothschild.com](http://www.foxrothschild.com)

---

**From:** Butler, Trisha <[tbutler@foxrothschild.com](mailto:tbutler@foxrothschild.com)>  
**Sent:** Wednesday, August 14, 2019 12:18 PM  
**To:** Graybeal, Christopher E <[christopher.graybeal@ncdenr.gov](mailto:christopher.graybeal@ncdenr.gov)>; Khan, Zahid <[zahid.khan@ncdenr.gov](mailto:zahid.khan@ncdenr.gov)>  
**Subject:** FW: New Proposed Cabarrus County Site for AT&T Tower Location: 11979 McManus Road, Midland, NC 28107  
**Importance:** High

Mr. Khan and / or Graybeal,

We are working on a second proposed telecommunications tower site in Cabarrus County which will be an unmanned facility and will not require water or sewer.

The Cabarrus County Ordinance requires us to provide to the County a letter from NC DENR – DEQ that a soil and erosion control permit will not be required and to also provide a letter that a storm water permit will not be required.

We have attached the site survey for your reference.

You assisted us in April of this year with the first Cabarrus County site and providing an assessment and e-mail advising these would not be required at that location and we ask that you please assess this current site and let us know as well.

Please let me know if you should need any additional information or documentation for your review.

Thank you so much.

**Trisha Butler**  
Paralegal  
**Fox Rothschild LLP**  
434 Fayetteville Street  
Suite 2800  
Raleigh, NC 27601  
(919) 755-8789 - direct  
(919) 755-8800 - fax

[tbutler@foxrothschild.com](mailto:tbutler@foxrothschild.com)  
[www.foxrothschild.com](http://www.foxrothschild.com)

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## Butler, Trisha

---

**From:** Burleson, Jeff A <jaburleson@ncdot.gov>  
**Sent:** Wednesday, August 14, 2019 4:15 PM  
**To:** Butler, Trisha  
**Subject:** [EXT] RE: [External] New Proposed Cabarrus County Site for AT&T - Location: 11979 McManus Road, Midland, NC 28107

You won't need a TIA for a cell tower site. We require them for when your trips are at 3,000/day or more.

**Jeff A. Burleson**  
Assistant District Engineer  
Division 10 / District 01  
North Carolina Department of Transportation

704 983 4360 office  
704 982 9659 fax  
[Jaburleson@ncdot.gov](mailto:Jaburleson@ncdot.gov)

615 Concord Rd  
Albemarle, NC 28001



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**From:** Butler, Trisha <tbutler@foxrothschild.com>  
**Sent:** Wednesday, August 14, 2019 11:59 AM  
**To:** Burleson, Jeff A <jaburleson@ncdot.gov>  
**Subject:** [External] New Proposed Cabarrus County Site for AT&T - Location: 11979 McManus Road, Midland, NC 28107  
**Importance:** High

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Mr. Burleson,

AT&T Mobility has asked us to assist them in complying with Cabarrus County requirements in order to obtain permits and approvals so they can construct a 195-foot monopole telecommunications tower and wireless facility at the above referenced location.

We will be filing a NC DOT Street and Driveway Permit Application with your office for same in the next couple of weeks.

One of the other confirmations the County has asked us to obtain from the NC DOT is whether or not a Traffic Impact Assessment will be necessary.

I have attached a copy of the survey drawing showing the access drive to the proposed facility. After construction and for maintenance purposes only, one or two monthly trips to the facility by a technician should be necessary. We anticipate this facility generating no additional trips or congestion off of McManus Road.

Can you please advise whether a Traffic Impact Assessment will be necessary?

Thank you so much for your help.

**Trisha Butler**  
Paralegal  
**Fox Rothschild LLP**  
434 Fayetteville Street  
Suite 2800  
Raleigh, NC 27601  
(919) 755-8789 - direct  
(919) 755-8800 - fax  
[tbutler@foxrothschild.com](mailto:tbutler@foxrothschild.com)  
[www.foxrothschild.com](http://www.foxrothschild.com)

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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

April 20, 2020

Division 10  
District 1 -- Cabarrus County

Nathaniel McManus, Jr &  
12020 McManus Rd  
Midland, NC 28107

Subject: Driveway Permit No. C-1846 -- McManus Cell Tower  
Location: SR-1107 (McManus Rd)

Dear Mr. McManus:

Enclosed is an executed copy of the subject Driveway Entrance Permit, which has been reviewed by the appropriate staff agencies within the Division of Highways. The permit covers the following:

- Construction of one (1) twenty foot (20') full movement concrete access. This site is located 0.2 miles south of NC 24/27 on the east side of McManus Rd.

This approval is subject to the attached Special Provisions and approved plans as noted. All work within NCDOT right of way must be in accordance with NCDOT's Standards and Specifications.

Sincerely,

Marc P. Morgan, PE  
District Engineer

/jab

Attachments

Cc: File

Mailing Address:  
NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DIVISION 10 DISTRICT 1  
615 CONCORD ROAD  
ALBEMARLE, NC 28001

Telephone: (704) 983-4360  
Fax: (704) 982-9659  
Customer Service: 1-877-368-4968

Website: [www.ncdot.gov](http://www.ncdot.gov)

Location:  
615 CONCORD ROAD  
ALBEMARLE, NC 28001

Original

<b>APPLICATION IDENTIFICATION</b>		<b>N.C. DEPARTMENT OF TRANSPORTATION STREET AND DRIVEWAY ACCESS PERMIT APPLICATION</b>
Driveway Permit No. <b>C-1846</b>	Date of Application August 26, 2019	
County: Cabarrus		
Development Name: McManus		

**LOCATION OF PROPERTY:**

Route/Road: 11979 McManus Road, Midland, NC 28107

Exact Distance **1,000 ft S of NC 24127**  Miles  Feet

~~900 feet off of McManus Road.~~

N S E W

Property Will Be Used For:  Residential /Subdivision  Commercial  Educational Facilities  TND  Emergency Services  Other

Property  is  is not within City Zoning Area.

**AGREEMENT**

- I, the undersigned property owner, request access and permission to construct driveway(s) or street(s) on public right-of-way at the above location.
- I agree to construct and maintain driveway(s) or street entrance(s) in absolute conformance with the current "Policy on Street and Driveway Access to North Carolina Highways" as adopted by the North Carolina Department of Transportation.
- I agree that no signs or objects will be placed on or over the public right-of-way other than those approved by NCDOT.
- I agree that the driveway(s) or street(s) will be constructed as shown on the attached plans.
- I agree that that driveway(s) or street(s) as used in this agreement include any approach tapers, storage lanes or speed change lanes as deemed necessary.
- I agree that if any future improvements to the roadway become necessary, the portion of driveway(s) or street(s) located on public right-of-way will be considered the property of the North Carolina Department of Transportation, and I will not be entitled to reimbursement or have any claim for present expenditures for driveway or street construction.
- I agree that this permit becomes void if construction of driveway(s) or street(s) is not completed within the time specified by the "Policy on Street and Driveway Access to North Carolina Highways".
- I agree to pay a \$50 construction inspection fee. Make checks payable to NCDOT. This fee will be reimbursed if application is denied.
- I agree to construct and maintain the driveway(s) or street(s) in a safe manner so as not to interfere with or endanger the public travel.
- I agree to provide during construction proper signs, signal lights, flaggers and other warning devices for the protection of traffic in conformance with the current "Manual on Uniform Traffic Control Devices for Streets and Highways" and Amendments or Supplements thereto. Information as to the above rules and regulations may be obtained from the District Engineer.
- I agree to indemnify and save harmless the North Carolina Department of Transportation from all damages and claims for damage that may arise by reason of this construction.
- I agree that the North Carolina Department of Transportation will assume no responsibility for any damages that may be caused to such facilities, within the highway right-of-way limits, in carrying out its construction.
- I agree to provide a Performance and Indemnity Bond in the amount specified by the Division of Highways for any construction proposed on the State Highway system.
- The granting of this permit is subject to the regulatory powers of the NC Department of Transportation as provided by law and as set forth in the N.C. Policy on Driveways and shall not be construed as a contract access point.
- **I AGREE TO NOTIFY THE DISTRICT ENGINEER WHEN THE PROPOSED WORK BEGINS AND WHEN IT IS COMPLETED.**

**SIGNATURES OF APPLICANT**

**PROPERTY OWNER (APPLICANT)**

COMPANY Nathaniel J. McManus, Jr.  
SIGNATURE *Nathaniel J. McManus, Jr.*  
ADDRESS 12020 McManus Road, Midland, NC 28107  
Phone No. 980-622-9770

**WITNESS**

SYBIL M. SMITH  
SIGNATURE *Sybil M. Smith*  
ADDRESS 1960 McManus Road  
Midland, NC 28107

**AUTHORIZED AGENT**

COMPANY Fox Rothschild, LLP  
SIGNATURE *Kathleen*  
ADDRESS 434 Fayetteville Street, Suite 2800  
Raleigh, NC 27601 Phone No. 919/755-8700

**WITNESS**

Patricia B. Butler  
SIGNATURE *Patricia B. Butler*  
ADDRESS 434 Fayetteville Street, Suite 2800  
Raleigh, NC 27601

**APPROVALS**

APPLICATION RECEIVED BY DISTRICT ENGINEER

SIGNATURE *[Signature]* DATE 8-27-19

APPLICATION APPROVED BY LOCAL GOVERNMENTAL AUTHORITY (when required)

SIGNATURE TITLE DATE

APPLICATION APPROVED BY DISTRICT ENGINEER

SIGNATURE *[Signature]* DATE 4/16/2020

INSPECTION BY NCDOT

SIGNATURE TITLE DATE

COMMENTS

## SPECIAL PROVISIONS

1. Notify the District Office at 704-983-4360 prior to construction to set up a pre-construction meeting.
2. Notify owners of conflicting utilities to provide for adjustments prior to the onset of construction. Any utility that may, upon completion of the roadway widening, create a safety hazard to the traveling public, will be relocated at the expense of the developer.
3. A copy of the approved street entrance permit is to be kept on the job site during working hours.
4. Working hours shall be from 9:00 a.m. to 4:00 p.m. Monday-Friday with all lanes open to traffic by 4:00 p.m. No work shall be performed on weekends or holidays. No lane closures will be allowed during NASCAR/major race events if determined to be in that nearby area. Other special events may require work to temporarily cease at the discretion of the District Engineer. NCDOT has authority to alter the time restrictions if deemed necessary.
5. Complete restoration including fertilizing, seeding and mulching of all areas disturbed during construction will follow within a maximum of thirty (30) working days of the initial disturbing activity in accordance with NCDOT specifications. See attached seeding schedule.
6. During construction operations no material is to be left on the pavement and at the end of each work day, the roadway is to be cleaned.
7. Any damages caused to the roadway, bridges, culverts or storm drains due to the construction of this entrance will be repaired at the discretion of the engineer in charge.
8. All OSHA rules and regulations shall be adhered to as pertain to this operation.
9. Contact NC 811 for a locate prior to construction if any work is to be done within 500 feet of any traffic signal. The developer is responsible for entering into a developer agreement with NCDOT for modifications to the traffic signal, installation of pedestrian signal and crossing. The developer agreement will cover the costs of signal plan review and inspection. Any damage to any signal related equipment will be repaired by NCDOT at the expense of the developer.
10. The Division Engineer, or representative thereof, reserves the right to stop any work for non-compliance with the terms of this contract.
11. All roadway signs removed due to this construction are to be re-installed as soon as possible.
12. During non-working hours, equipment is to be parked off the right of way.
13. The Department of Transportation does not guarantee the right of way on this road nor will it be responsible for any claims or damages brought by any property owner. The developer is responsible for obtaining any rights of way necessary in which to construct required roadway improvements.
14. All work shall be constructed in accordance with the attached plans and typicals.
15. The pavement structure for the roadway widening shall be as follows utilizing Superpave: 6" AC Base Course, Type B25.0C (in 2 lifts of 3" each with the first lift extending 6" behind the back of

the curb), 2.5" AC Binder Course, Type 119.0C & 1.5" AC Surface Course Type S9.5C. 1.5". Widening shall be performed as indicated in the approved plans unless otherwise specified by NCDOT inspector. Prior to constructing the widening, a clean pavement edge shall be established by saw cutting along the white edge line. The existing roadway shall be resurfaced with the surface course of the new pavement structure or as otherwise directed by the NCDOT inspector.

16. The Department of Transportation reserves the right to require compensation for any vegetation located within the right of way that is disturbed or destroyed due to this construction. Removal of vegetation within the right of way must be approved in writing prior.
17. Strict compliance with the "**POLICY ON STREET AND DRIVEWAY ACCESS TO NORTH CAROLINA HIGHWAYS**" manual shall be required.
18. Backfill shall achieve 95% density in accordance with AASHTO T99 as modified by the NCDOT.
19. Any work requiring equipment or personnel within 5' of the edge of the travel lane (10' on a divided highway) shall require a lane closure with appropriate taper.
20. The installation of all required traffic signs and striping, including raised pavement markers, must meet current NCDOT specifications and is the responsibility of the permit applicant. Pavement striping shall be thermoplastic. A pavement marking plan is required to be submitted with roadway widening plans. Related information may be obtained from the Division Traffic Engineer's Office at 704-983-4400.
21. The Developer shall correct any drainage problems, on-site or off-site, created or made apparent by the construction of these improvements.
22. Any future development or change in use from that which is specified herein will require additional review and may require modifications to and/or additional roadway improvements.
23. NCDOT does not maintain sidewalk; however, sidewalk placed within NCDOT right of way must be installed to meet current ADA specifications.
24. An encroachment agreement from NCDOT is required for any utility installation, including irrigation, that is proposed within NCDOT right of way. This driveway permit does not approve the installation of any utilities. Utilities shall be placed prior to any roadway widening or paving.
25. NCDOT does not allow canopy trees to be planted within the right of way or within the clear recovery area. Any trees that are deemed potentially hazardous to the traveling public will be relocated/removed at the owner's expense. Any shrubs planted w/in the right of way shall not exceed 24" in height so as not to interfere with the line of sight. Tree canopies that are within sight triangles, that are blocking sight distance, or overhanging over sidewalk shall be removed or limbed up to meet current NCDOT and ADA specifications at the owner's expense.
26. The Developer is responsible for maintaining the Line of Sight Easement.
27. The Developer is required to have third-party testing unless otherwise directed, in writing, by the District Engineer.



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

April 20, 2020

Division 10  
District 1 -- Cabarrus County

Route: SR-1107 (McManus Rd)

**MEMORANDUM**

TO: Mr. David Tyeryar  
Chief Financial Officer

FROM: Jeff A. Burleson  
Assistant District Engineer

SUBJECT: Driveway Permit Application Fee -- C-1846

Please find attached Check No. 629158, drawn on Wells Fargo Bank in the amount of \$50.00 for the construction inspection fee of the entrance for the proposed subject driveway permit. The check is remitted by Fox Rothschild LLP, 2000 Market St. 20<sup>th</sup> Floor, Philadelphia, PA 19103-3291.

Please credit to 150404-47900024-10.201311-2712.

If additional information is needed, please advise.

Atta.  
cc: File

•FOX ROTHSCHILD LLP  
ATTORNEYS AT LAW  
2000 MARKET STREET 20TH FLOOR  
PHILADELPHIA PA, 19103-3291  
215-299-2000

WELLS FARGO  
3-50/310

CHECK DATE CHECK # 629158  
08/26/19

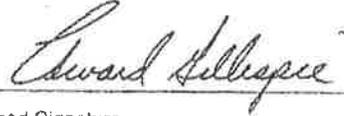
PAY FIFTY AND 00/100

CHECK AMOUNT

\$50.00

VOID AFTER 180 DAYS

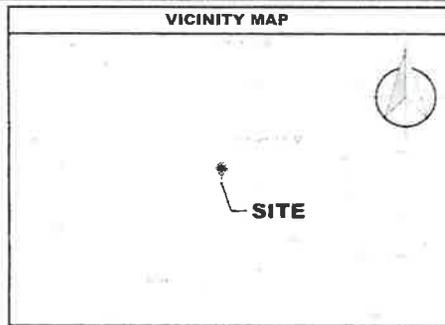
PAY TO THE ORDER OF NC DEPARTMENT OF TRANSPORTATION



Authorized Signature

⑈629158⑈ ⑆031000503⑆

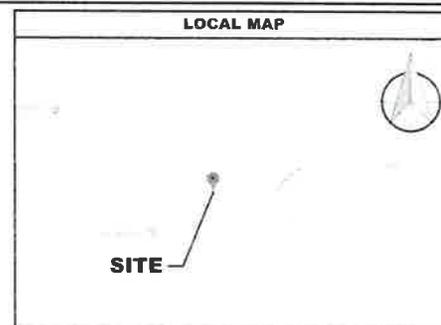
2100019564260⑈



**DIRECTIONS**

FROM AT&T OFFICE: 2002 PISGAH CHURCH ROAD, SUITE 300, GREENSBORO, NC 27455

START OUT GOING SOUTHEAST ON PISGAH CHURCH RD TOWARD LAWDALE DR. TURN LEFT ONTO LAWDALE DR. USE ANY LANE TO TURN SLIGHTLY LEFT ONTO BATTLEGROUND AVE. CONTINUE ONTO W SMITH ST. TURN RIGHT ONTO N SPRING ST. USE THE LEFT 2 LANES TO TURN SLIGHTLY ONTO FREEMAN MILL RD. CONTINUE ONTO US HWY 220 S. TAKE EXIT 79 FOR I-85 BUS TOWARD CHARLOTTE/HIGH POINT. MERGE ONTO I-85 S. KEEP LEFT TO CONTINUE ON I-85 S. TAKE EXIT 60 FOR DALE EARNHARDT BLVD TOWARD COPPERFIELD BLVD. USE THE LEFT 2 LANES TO TURN LEFT ONTO DALE EARNHARDT BLVD. CONTINUE ONTO COPPERFIELD BLVD NE. TURN LEFT ONTO NC-3 S/RANCHVIEW DR NE. USE ANY LANE TO TURN SLIGHTLY LEFT ONTO US-601 S. TURN LEFT ONTO NC-24 E/NC-27 E. TURN RIGHT ONTO MCMANUS RD. TOWER WILL BE ON YOUR LEFT.



# NSB - RAWLAND CONSTRUCTION DRAWINGS



FA #: **12829624**      SITE ID: **074-4106**

SITE NAME:  
**MCMANUS**

SITE ADDRESS:  
**11979 MCMANUS RD  
MIDLAND, NC 28107  
(CABARRUS COUNTY)**

**GENERAL NOTES**



THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, THEREFORE HANDICAP ACCESS IS NOT REQUIRED. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE, NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED. NO WORK SHALL COMMENCE WITHOUT THE APPROVED TOWER/ANTENNA MOUNT STRUCTURAL ANALYSIS REPORT SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER UNDER SEPARATE COVER

**CODE COMPLIANCE**

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

- 2012 NC BUILDING CODE
- ANS/IEEE/EIA-222-G
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES
- FAA COMPLIANCE
- FCC COMPLIANCE
- 2017 NEC CODE COMPLIANCE
- 2012 INTERNATIONAL RESIDENTIAL CODE
- 2012 INTERNATIONAL FIRE CODE
- 2012 INTERNATIONAL MECHANICAL CODE
- 2015 NC EXISTING BUILDING CODE (BASED ON 2012 IBC)
- 2012 RESIDENTIAL CODES

**LOCAL MAP**



04/15/2020

NCDOT Revision: Please see revised sheet C-2.

**SITE SUMMARY**

SCOPE TYPE:	NSB - RAWLAND
OCCUPANCY TYPE:	TELECOMMUNICATIONS
STRUCTURE HEIGHT:	195'
STRUCTURE TYPE:	MONOPOLE
LATITUDE:	35° 15' 05.636" N (35.251566°)
LONGITUDE:	80° 28' 50.262" W (-80.480634°)
JURISDICTION:	CABARRUS COUNTY
COUNTY:	CABARRUS
PARCEL ID:	5554-89-1609-0000

**PROJECT DIRECTORY**

APPLICANT:	AT&T MOBILITY CORP. 2002 PISGAH CHURCH ROAD, SUITE 300 GREENSBORO, NC 27455
TOWER OWNER:	AT&T TOWERS 12TH FLOOR, EAST TOWER 575 MOROSCO DRIVE ATLANTA, GA 30324 PHONE: (877) 231-5447
PROJECT MANAGER:	MASTEC NETWORK SOLUTIONS 507 AIRPORT BLVD, SUITE 111 MORRISVILLE, NC 27560 YVETTE RHINEHARDT PHONE: (919) 674-5846
SITE DESIGN:	DEWBERRY ENGINEERS INC 2610 WYCLIFF ROAD, SUITE 410 RALEIGH, NC 27607 CONTACT: JESSICA ROBBINS PHONE: (919) 636-6303

**SHEET INDEX**

SHEET	DESCRIPTION	REV.	REV. DATE
T-1	TITLE SHEET	7	12/09/19
GN-1	GENERAL NOTES	7	12/09/19
1 OF 3	SITE SURVEY (BY OTHERS)	C	02/04/19
2 OF 3	SITE SURVEY (BY OTHERS)	C	02/04/19
3 OF 3	SITE SURVEY (BY OTHERS)	C	02/04/19
C-2.1	COMPOUND PLAN	7	12/09/19
C-2.2	EQUIPMENT LAYOUT	7	12/09/19
C-2.3	LANDSCAPE PLAN	7	12/09/19
C-2.4	GRADING & EROSION CONTROL PLAN	7	12/09/19
C-2	ACCESS APRON PLAN & DETAIL	7	12/09/19
C-3	ANTENNA LAYOUT & TOWER ELEVATION	7	12/09/19
C-4	EQUIPMENT DETAILS	7	12/09/19
C-5	CABINET DETAILS	7	12/09/19
C-5A	CABINET MOUNTING DETAILS	7	12/09/19
C-6	GENERATOR DETAILS	7	12/09/19
C-7	CIVIL DETAILS	7	12/09/19
C-8	CIVIL DETAILS	7	12/09/19
C-9	CIVIL DETAILS	7	12/09/19
C-10	CIVIL DETAILS	7	12/09/19
C-11	CIVIL DETAILS	7	12/09/19
E-1	SERVICE ROUTING & SINGLE LINE DIAGRAM	7	12/09/19
E-2	ELECTRICAL NOTES	7	12/09/19
E-3	SINGLE LINE DIAGRAM	7	12/09/19
E-4	PANEL SCHEDULE	7	12/09/19
G-1	GROUNDING PLAN DETAILS	7	12/09/19
G-2	GROUNDING DETAILS	7	12/09/19
G-3	GROUNDING DETAILS	7	12/09/19
G-4	GROUNDING DETAILS	7	12/09/19
G-5	GROUNDING NOTES	7	12/09/19



**SUBMITTALS**

DATE	DESCRIPTION	REV.	ISSUED BY
03/27/19	CONSTRUCTION	0	SRN
06/24/19	REVISED	3	SRN
07/05/19	REVISED	4	SRN
10/04/19	REVISED	5	SRP
10/28/19	REVISED	6	SRP
12/09/19	REVISED	7	SRP
	REVISED	7	SRP

DRAWN BY: SRN  
 CHECKED BY: DSW  
 APP'D BY: JME  
 DEWBERRY PROJECT NO: 50107722

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PREPARED FOR:



PREPARED BY:

**MasTec**  
Network Solutions  
507 AIRPORT BLVD, SUITE 111  
MORRISVILLE, NC 27560

PREPARED BY:

**Dewberry**  
DEWBERRY ENGINEERS INC.  
2610 WYCLIFF ROAD, SUITE 410  
RALEIGH, NC 27607  
HOBELSF: F-0029

SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

SITE ADDRESS:  
**11979 MCMANUS RD  
MIDLAND, NC 28107**

FA LOCATION:  
**12829624**

SITE NUMBER:  
**N/A**

SHEET TITLE  
**TITLE SHEET**

SHEET NUMBER  
**T-1**

**GENERAL NOTES:**

1. ALL REFERENCES MADE TO OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED AT&T OR ITS DESIGNATED REPRESENTATIVE
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF NORTH CAROLINA.
3. THE STRUCTURE SHALL BE DESIGNED IN ACCORDANCE WITH ANSI/AIA-222-G-2-2009. THIS CONFORMS TO THE REQUIREMENTS OF THE NORTH CAROLINA BUILDING CODE, 2012 EDITION.
4. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE NORTH CAROLINA BUILDING CODE, 2012 EDITION.
5. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
6. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERSEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
7. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
8. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATION. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.
9. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR INSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK. RENTAL CHARGES, SAFETY, PROTECTION AND MAINTENANCE OF RENTED EQUIPMENT SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
11. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE AT&T PROJECT MANAGER.
12. BILL OF MATERIALS AND PART NUMBERS LISTED ON CONSTRUCTION DRAWINGS ARE INTENDED TO AID CONTRACTOR/OWNER. CONTRACTOR/OWNER SHALL VERIFY PARTS AND QUANTITIES WITH MANUFACTURER PRIOR TO BIDDING AND/OR ORDERING MATERIALS.
13. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
14. 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER.
15. THE CONTRACTOR SHALL REWORK (DRY SCARIFY ETC.) ALL MATERIAL NOT SUITABLE FOR SUBGRADE IN ITS PRESENT STATE. AFTER REWORKING, IF THE MATERIAL REMAINS UNSUITABLE, THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE WITH APPROVED MATERIAL. ALL SUBGRADES SHALL BE PROOFROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PAVING. ANY SOFT MATERIAL SHALL BE REWORKED OR REPLACED.
16. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL PIPES, DITCHES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURE IN OPERABLE CONDITION.
17. THE OWNER SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.
18. ANY BUILDINGS ON THIS SITE ARE INTENDED TO SHELTER EQUIPMENT WHICH WILL ONLY BE PERIODICALLY MAINTAINED AND ARE NOT INTENDED FOR HUMAN OCCUPANCY.
19. TEMPORARY FACILITIES FOR PROTECTION OF TOOLS AND EQUIPMENT SHALL CONFORM TO LOCAL REGULATIONS AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
20. THE CONTRACTOR AND ITS SUBCONTRACTORS SHALL CARRY LIABILITY INSURANCE IN THE AMOUNTS AND FORM IN ACCORDANCE WITH AT&T SPECIFICATIONS. CERTIFICATES DEMONSTRATING PROOF OF COVERAGE SHALL BE PROVIDED TO AT&T PRIOR TO THE START OF THE WORK ON THE PROJECT.
21. THE CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITY SERVICES TO VERIFY LOCATIONS OF EXISTING UTILITIES AND REQUIREMENTS FOR NEW UTILITY CONNECTIONS PRIOR TO EXCAVATING.
22. THE CONTRACTOR SHALL MAINTAIN THE JOB CLEAR OF TRASH AND DEBRIS. ALL WASTE MATERIALS SHALL BE REMOVED FROM THE SITE PRIOR TO SUBSTANTIAL COMPLETION AND PRIOR TO FINAL ACCEPTANCE. THE CONTRACTOR SHALL FURNISH ONE 55 GALLON BARREL AND TRASH BAGS, AND SHALL REMOVE TRASH, DEBRIS, ETC., ON A DAILY BASIS.
23. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL CONDITIONS PRIOR TO SUBMITTING HIS PROPOSAL. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN ON THESE DRAWINGS WITH THOSE AT THE SITE. ANY VARIATION WHICH REQUIRES PHYSICAL CHANGE SHALL BE BROUGHT TO THE ATTENTION OF THE AT&T PROJECT ENGINEER FOR FACILITIES/CONSTRUCTION.
24. THE CONTRACTOR SHALL GUARANTEE THE WORK PERFORMED ON THE PROJECT BY THE CONTRACTOR AND ANY OR ALL OF THE SUBCONTRACTORS WHO PERFORMED WORK FOR THE CONTRACTOR ON THIS PROJECT. THE GUARANTEE SHALL BE FOR A FULL YEAR FOLLOWING ISSUANCE OF THE FINAL PAYMENT OF RETAINAGE. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.



**SUBMITTALS**

DATE	DESCRIPTION	REV.	ISSUED BY
03/19/19	CONSTRUCTION	0	SRW
06/20/19	REVISED	4	SRW
07/24/19	REVISED	4	SRW
10/24/19	REVISED	6	SRW
10/30/19	REVISED	8	SRW
12/09/19	REVISED	7	SRW

DRAWN BY: SRW  
CHECKED BY: OSW  
APP'D BY: JME  
DEWBERRY PROJECT NO: 50107722

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PREPARED FOR:



PREPARED BY:



PREPARED BY:



SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

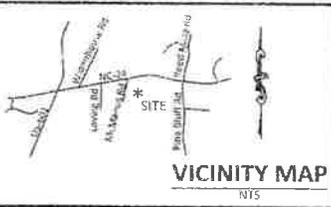
SITE ADDRESS:  
**11979 MCMANUS RD  
MIDLAND, NC 28107**

FA LOCATION:  
**12829624**

SITE NUMBER:  
**N/A**

SHEET TITLE  
**GENERAL NOTES**

SHEET NUMBER  
**GN-1**



VICINITY MAP  
NTS

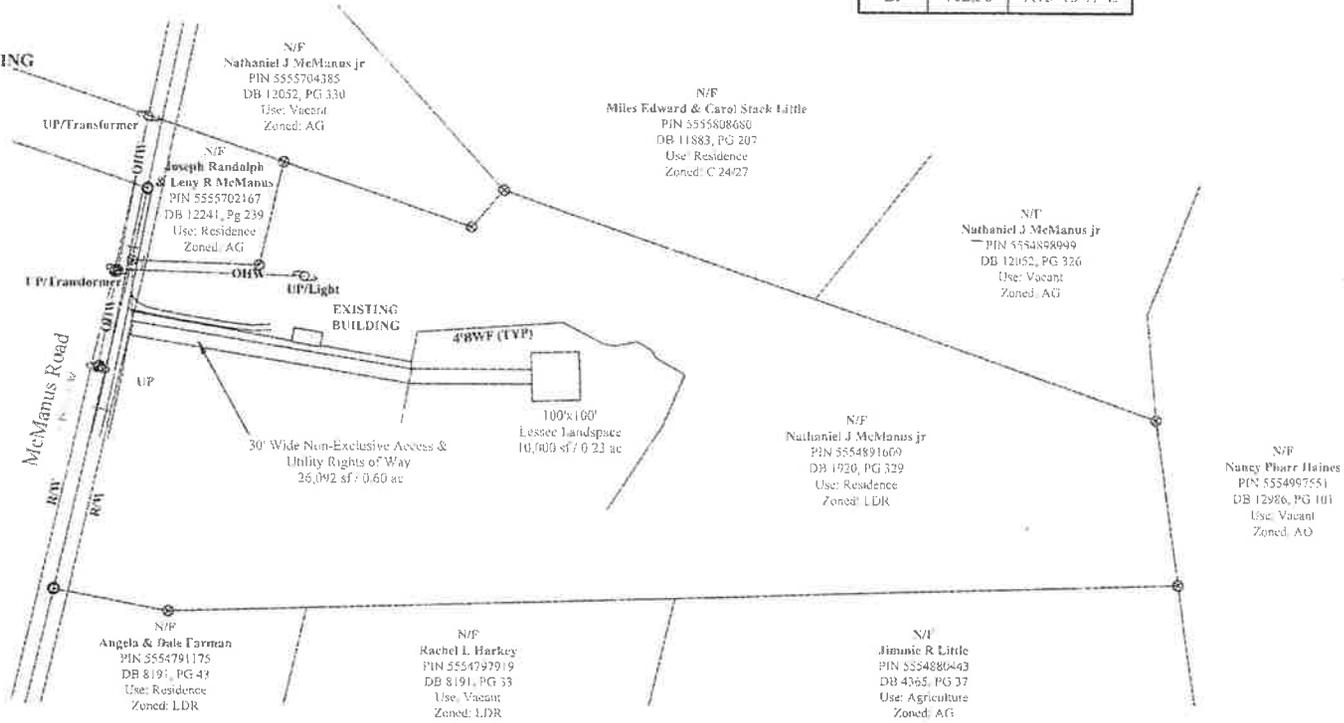
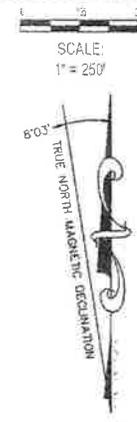
LEGEND

- EXIST. UTILITY POLE
- EXIST. TELE PED
- NAIL FOUND
- IRON PIPE FOUND
- COMPUTED POINT
- CONCRETE MONUMENT
- BWF BARBED WIRE FENCE
- RCP REINFORCED CONCRETE PIPE
- FH FIRE HYDRANT
- WV WATER VALVE
- WM WATER METER
- OHW OVERHEAD WIRE
- POB POINT OF BEGINNING
- R/W RIGHT OF WAY

GENERAL NOTES

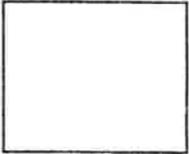
1. THIS SURVEY WAS PREPARED BY BATEMAN CIVIL SURVEY CO., UNDER THE SUPERVISION OF JEFFREY W. BAKER, PLS.
2. THIS PLAN HAS BEEN PREPARED FOR LAYOUT AND PERMITTING PURPOSES ONLY.
3. THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES SHOWN WERE TAKEN FROM EXISTING FIELD EVIDENCE, EXISTING DEEDS AND PLATS OF PUBLIC RECORD, AND INFORMATION SUPPLIED TO THE SURVEYOR BY THE CLIENT.
4. VERTICAL DATUM IS (NAVD88), THE LATITUDE, LONGITUDE AND STATE PLANE COORDINATES, IF SHOWN, ARE GIVEN IN NORTH AMERICAN DATUM OF 1983 (NAD83).
5. FIELD EQUIPMENT USED: TRIMBLE TOTAL STATION, TRIMBLE VRS.
6. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES AND ALL BEARINGS ARE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM UNLESS OTHERWISE SHOWN.
7. PROPERTY OWNER: NATHANIEL J McMANUS jr  
12020 McMANUS ROAD, MIDLAND, NC, 28107
8. THIS MAP IS NOT A CERTIFIED SURVEY AND HAS NOT BEEN REVIEWED BY A LOCAL GOVERNMENT AGENCY FOR COMPLIANCE WITH ANY APPLICABLE LAND DEVELOPMENT REGULATIONS.
9. ALL EQUIPMENT AND IMPROVEMENTS ARE LOCATED WITHIN THE LEASE AREA.
10. THE PROPERTY LIES IN ZONE "X" & "AE", PER NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP 3710565500K, DATED: NOVEMBER 16, 2016 & MAP 3710565400K, DATED: NOVEMBER 16, 2016.
11. PROPERTY INFORMATION DERIVED FROM CABARRUS COUNTY GIS.

Line Table		
Line #	Length	Direction
L1	264.22	S88°00'42"E
L2	223.18	N13°08'33"E
L3	411.18	S70°52'37"E
L4	102.00	N40°52'23"E
L5	1440.00	S70°37'37"E
L6	346.00	S07°37'37"E
L7	2098.00	S88°22'23"W
L8	242.40	N79°07'37"W
L9	702.50	N13°13'47"E



**BCSC**  
BATEMAN CIVIL SURVEY CO., PC

Bateman Civil Survey Co, PC  
2224 Reliance Ave. Apex, NC 27505  
Phone: 919.577.1060 Fax: 919.577.1061  
NCBLS # 02327



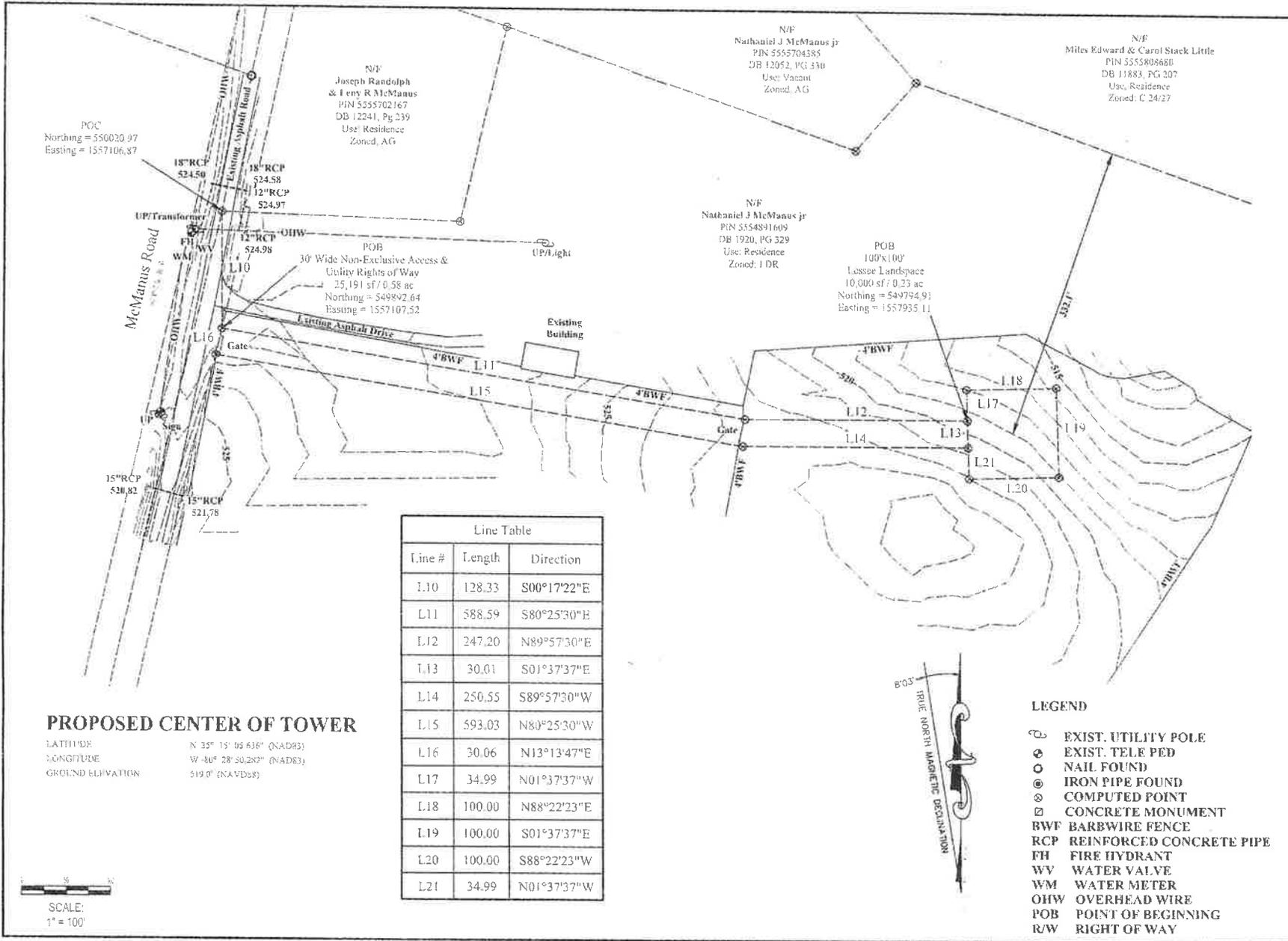
DRAWN BY: JCH  
CHECKED BY: JWB  
DRAWING NUMBER: 12072016

JEFFREY W. BAKER  
14412  
2/4/19  
NORTH CAROLINA  
PROFESSIONAL ENGINEER

REVISIONS	DATE	BY	DESCRIPTION
1	12/07/2016	JWB	Issue
2	12/07/2016	JWB	Issue
3	12/07/2016	JWB	Issue

074-4106 McManus  
11979 McManus Road  
Midland  
NC, 28107  
Cabarrus County

DATE OF SURVEY: 12/07/2016  
BCSC JOB #: 180576  
SHEET TITLE: SURVEY  
SHEET NUMBER: 1 OF 3



**PROPOSED CENTER OF TOWER**

LATITUDE N 35° 15' 06.636" (NAD83)  
 LONGITUDE W 80° 28' 50.282" (NAD83)  
 GROUND ELEVATION 519.0' (NAVD88)

Line #	Length	Direction
L10	128.33	S00°17'22"E
L11	588.59	S80°25'30"E
L12	247.20	N89°57'30"E
L13	30.01	S01°37'37"E
L14	250.55	S89°57'30"W
L15	593.03	N80°25'30"W
L16	30.06	N13°13'47"E
L17	34.99	N01°37'37"W
L18	100.00	N88°22'23"E
L19	100.00	S01°37'37"E
L20	100.00	S88°22'23"W
L21	34.99	N01°37'37"W

**LEGEND**

- EXIST. UTILITY POLE
- ⊙ EXIST. TELE PED
- NAIL FOUND
- ⊕ IRON PIPE FOUND
- ⊙ COMPUTED POINT
- ⊠ CONCRETE MONUMENT
- BWF BARB WIRE FENCE
- RCP REINFORCED CONCRETE PIPE
- FH FIRE HYDRANT
- WV WATER VALVE
- WM WATER METER
- OHW OVERHEAD WIRE
- POB POINT OF BEGINNING
- R/W RIGHT OF WAY

**BCSC**  
 Bateman Civil Survey Co, PC  
 2224 Refanda Ave. Suite 202  
 Raleigh, NC 27609  
 Phone: 919.677.1000 Fax: 919.571.1000  
 NCELS Firm # C-2078

DRAWN BY: JCH  
 CHECKED BY: JWB  
 DRAWING DATE:

Professional Surveyor Seal  
 L. 4412  
 2/4/16  
 JERRY W. BAKER

REVISONS	DATE	DESCRIPTION
1	12/18/2015	Show base area cover sheet.
2	12/18/2015	Make final
3	2/04/2016	ADD C/T Tower info

074-4106 McManus  
 11979 McManus Road  
 Midland  
 NC, 28107  
 Cabarrus County

DATE OF SURVEY: 12/07/2015  
 BCSC JOB # 180678  
 SHEET TITLE: SURVEY  
 SHEET NUMBER: 2 OF 3

**30' WIDE NON-EXCLUSIVE ACCESS & UTILITY RIGHTS OF WAY DESCRIPTION**

All that certain parcel of land, situated in Midland, Cabarrus County, North Carolina, being on the lands of Nathaniel J McManus jr as described in Deed Book 1920 at Page 329, Cabarrus County Records, and being more particularly described as follows:

Commencing at a Point on the Eastern Right of Way of McManus Road and being the South Western property corner of Joseph Randolph & Leny R McManus (DB 12241, PG 239) , and the North Western property corner of Nathaniel J McManus jr (DB 1920, PG 329) Cabarrus County Records, having State Plane Coordinates N:550020.97, E:1557106.87, thence S00°17'22"E, 128.33' to a point, said point being the Point of Beginning of the 30' Wide Non-Exclusive Access & Utility Rights of Way having State Plane Coordinates N:549892.64, E:1557107.52; thence S80°25'30"E, 588.59' to a point; thence N89°57'30"E, 247.20' to a point; thence S01°37'37"E, 30.01' to a point; thence S89°57'30"W, 250.55' to a point; thence N80°25'30"W, 593.03' to a point; thence N13°13'47"E, 30.06' to a point; said point being the Point of Beginning of the 30' Wide Non-Exclusive Access & Utility Rights of Way. Said 30' Wide Non-Exclusive Access & Utility Rights of Way contains 25,191 square feet, more or less.

**100'x100' LESSEE LAND SPACE DESCRIPTION**

All that certain parcel of land, situated in Midland, Cabarrus County, North Carolina, being on the lands of Nathaniel J McManus jr as described in Deed Book 1920 at Page 329, Cabarrus County Records, and being more particularly described as follows:

Commencing at a Point on the Eastern Right of Way of McManus Road and being the South Western property corner of Joseph Randolph & Leny R McManus (DB 12241, PG 239) , and the North Western property corner of Nathaniel J McManus jr (DB 1920, PG 329) Cabarrus County Records, having State Plane Coordinates N:550020.97, E:1557106.87, thence S00°17'22"E, 128.33' to a point; thence S80°25'30"E, 588.59' to a point; thence N89°57'30"E, 247.20' to a point; said point being the Point of Beginning of the 100'x100' Lessee Land Space having State Plane Coordinates N:549794.91, E:1557935.11, thence N01°37'37"W, 34.99' to a point; thence N88°22'23"E, 100.00' to a point; thence S01°37'37"E, 100.00' to a point; thence S88°22'23"W, 100.00' to a point; thence N01°37'37"W, 34.99' to a point; thence N01°37'33"W, 30.01' to a point; said point being the Point of Beginning of the 100'x100' Lessee Land Space. Said 100'x100' Lessee Land Space contains 10,000 square feet, more or less.



**Bateman Civil Survey Co, PC**  
2524 Reliance Ave. Apex, NC 27539  
Phone: 919 577 1050 Fax: 919 577 1061  
NCEM # 1994-0276

DRAWN BY: JCH  
CHECKED BY: JWB  
DRAWING NO: 074-4106



REVISIONS	NO.	DATE	DESCRIPTION
	A.	1/22/2018	BOOK ISSUED BY PLANNING DEPT
	B.	1/22/2018	ISSUE FIRM
	C.	2/04/2018	PLAT CT, REPLY INFO

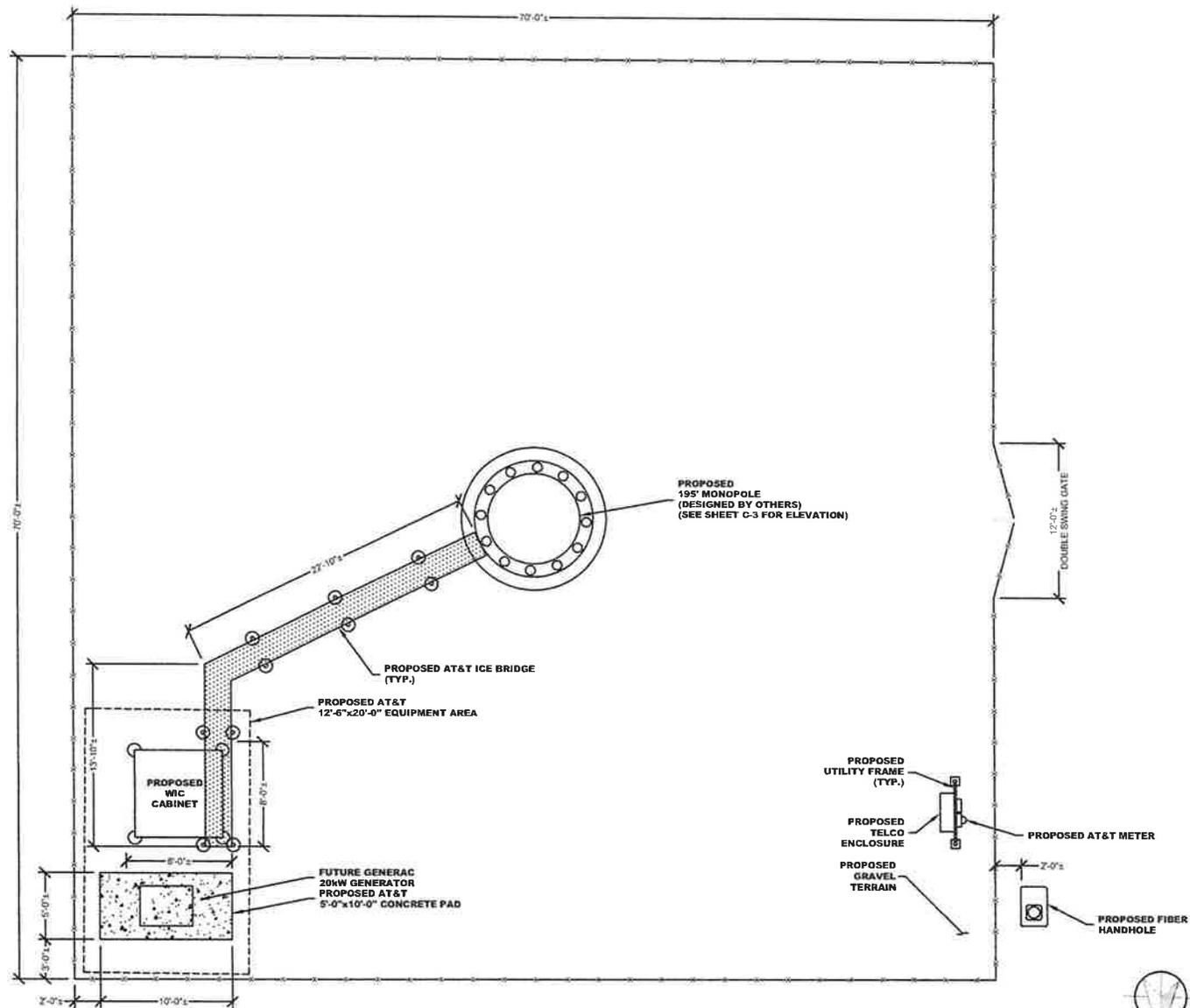
074-4106 McManus  
11979 McManus Road  
Midland  
NC, 28107  
Cabarrus County

DATE OF SURVEY: 12/07/2018

BCSC JOB # 180676

SHEET TITLE: SURVEY

SHEET NUMBER 3 OF 3



**COMPOUND PLAN**  
11"x17" SCALE: 1" = 8'-0"



**SUBMITTALS**

DATE	DESCRIPTION	REV.	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
06/04/19	REVISED	1	SRN
07/09/19	REVISED	2	SRN
10/04/19	REVISED	3	SRN
10/07/19	REVISED	4	SRN
10/09/19	REVISED	5	SRN
10/09/19	REVISED	6	SRN
10/09/19	REVISED	7	SRN

DRAWN BY: SRN  
 CHECKED BY: DSW  
 APP'VD BY: JME  
 DEWBERRY PROJECT NO: 50107722

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PREPARED BY:

507 AIRPORT BLVD, SUITE 111  
 MORRISVILLE, NC 27560

PREPARED BY:

DEWBERRY ENGINEERS INC.  
 2610 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCBELS#: F 0929

SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

SITE ADDRESS:  
**11979 MCMANUS RD  
 MIDLAND, NC 28107**

FA LOCATION:  
**12829624**

SITE NUMBER:  
 N/A

SHEET TITLE  
**COMPOUND PLAN**

SHEET NUMBER  
**C-2.1**



**SUBMITTALS**

DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
06/04/19	REVISED	1	SRN
07/04/19	REVISED	2	SRN
10/04/19	REVISED	3	SRN
10/30/19	REVISED	4	SRN
12/09/19	REVISED	7	SRN

DRAWN BY: SRN  
 CHECKED BY: DSW  
 APP'D BY: JME  
 DEWBERRY PROJECT NO: 5010722

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PREPARED FOR:



PREPARED BY:

**MasTec**  
 Network Solutions  
 307 AIRPORT BLDG. SUITE 111  
 MORRISVILLE, NC 27560

PREPARED BY:

**Dewberry**  
 DEWBERRY ENGINEERS INC.  
 2619 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCBELSA: F-0929

SITE ID:

**074-4106**

SITE NAME:

**MCMANUS**

SITE ADDRESS:

**11979 MCMANUS RD  
 MIDLAND, NC 28107**

FA LOCATION:

**12829624**

SITE NUMBER:

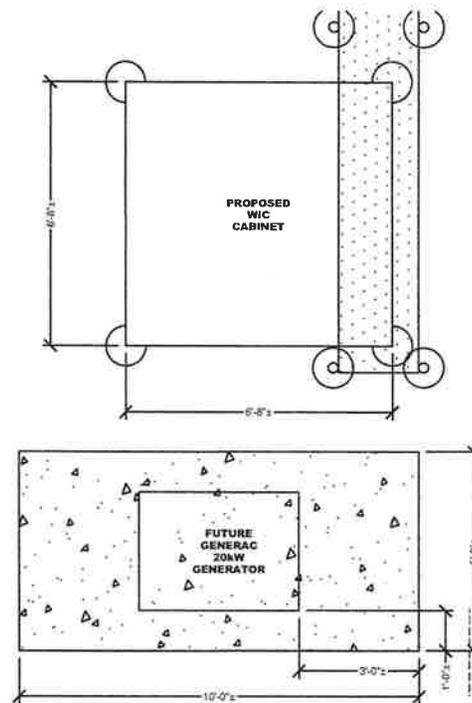
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SHEET TITLE

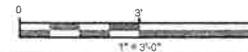
**EQUIPMENT LAYOUT**

SHEET NUMBER

**C-2.2**



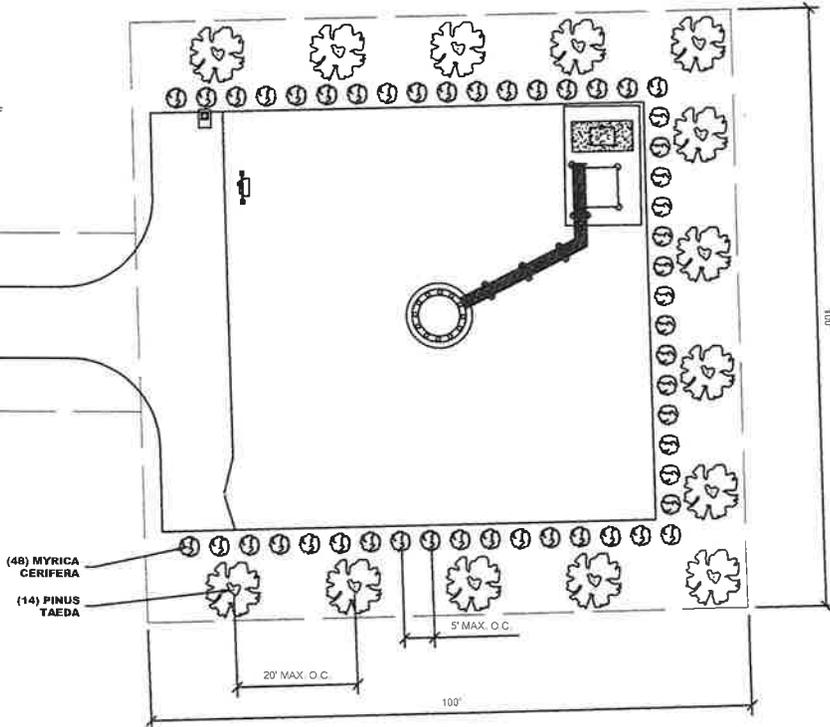
**EQUIPMENT LAYOUT**  
 11"x17" SCALE: 1" = 3'-0"



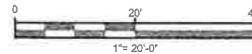
SYMBOL	QUANTITY	SCIENTIFIC NAME	COMMON NAME	CALIPER @ PLANTING	HEIGHT @ MATURITY
	14	PINUS TAEDA	LOBLOLLY PINE	3"	80'
	48	MYRICA CERIFERA	WAX MYRTLE	3"	6'-12"

**LANDSCAPE NOTES:**

1. ALL PRIMARY EVERGREEN TREES SHALL BE MINIMUM OF SIX (6) FEET IN HEIGHT AT TIME OF INSTALLATION AND SHALL BE NOT LESS THAN TEN (10) FEET IN HEIGHT AT MATURITY.
2. ALL SUPPLEMENTAL EVERGREEN SHRUBS SHALL BE A MINIMUM OF TWENTY-FOUR (24) INCHES IN HEIGHT AT INSTALLATION, AND SHALL ATTAIN A MINIMUM HEIGHT OF FIVE (5) FEET THREE (3) YEARS AFTER INSTALLATION.



**LANDSCAPE PLAN**  
11"x17" SCALE: 1"= 20'-0"



SUBMITTALS			
DATE	DESCRIPTION	REV.	ISSUED BY
02/06/19	CONSTRUCTION	0	SRN

DRAWN BY: \_\_\_\_\_ SRN  
 CHECKED BY: \_\_\_\_\_ DSW  
 APP'D BY: \_\_\_\_\_ JME  
 DEWBERRY PROJECT NO. 3010732

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PREPARED BY:  
**MasTec**  
 Network Solutions  
 507 AIRPORT BLVD, SUITE 111  
 MORRISVILLE, NC 27560

PREPARED BY:  
**Dewberry**  
 DEWBERRY ENGINEERS INC.  
 2510 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCBELS#: F-0929

SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

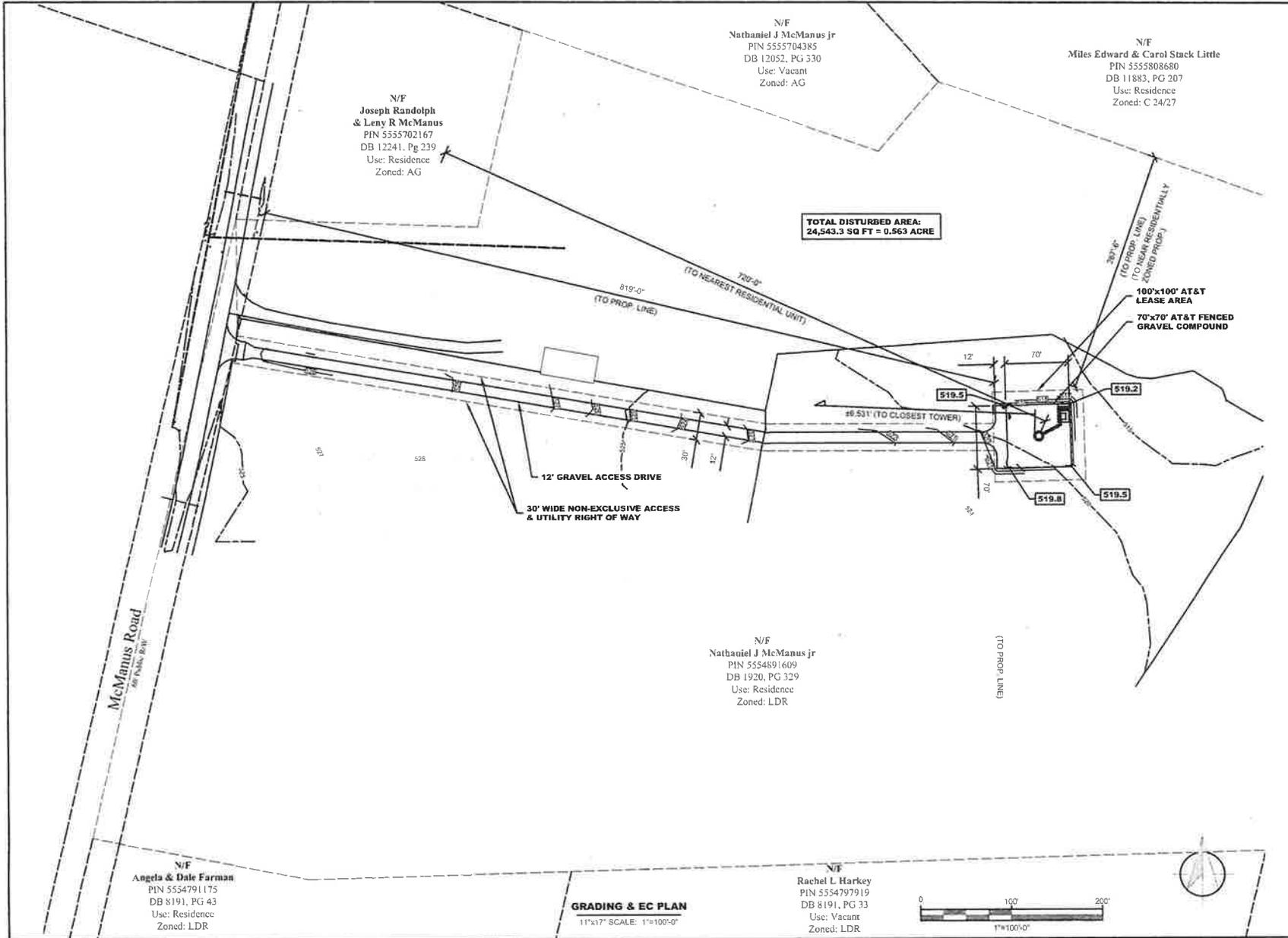
SITE ADDRESS:  
**11979 MCMANUS RD  
 MIDLAND, NC 28107**

FA LOCATION:  
**12829624**

SITE NUMBER:  
**N/A**

SHEET TITLE  
**LANDSCAPE PLAN**

SHEET NUMBER  
**C-2.3**



N/F  
Joseph Randolph  
& Lenny R McManus  
PIN 5555702167  
DB 12241, Pg 239  
Use: Residence  
Zoned: AG

N/F  
Nathaniel J McManus jr  
PIN 5555704385  
DB 12052, PG 330  
Use: Vacant  
Zoned: AG

N/F  
Miles Edward & Carol Stack Little  
PIN 5555808680  
DB 11883, PG 207  
Use: Residence  
Zoned: C 24/27

**TOTAL DISTURBED AREA:  
24,543.3 SQ FT = 0.563 ACRE**

N/F  
Nathaniel J McManus jr  
PIN 5554891609  
DB 1920, PG 329  
Use: Residence  
Zoned: LDR

N/F  
Angela & Dale Farman  
PIN 5554791175  
DB 8191, PG 43  
Use: Residence  
Zoned: LDR

N/F  
Rachel L Harkey  
PIN 5554797919  
DB 8191, PG 33  
Use: Vacant  
Zoned: LDR

**GRADING & EC PLAN**  
11"x17" SCALE: 1"=100'-0"



**SUBMITTALS**

DATE	DESCRIPTION	REV.	ISSUED BY
03/12/19	CONSTRUCTION	3	SRN
06/24/19	REVISED	3	SRN
07/29/19	REVISED	4	SRN
10/04/19	REVISED	5	SRN
10/20/19	REVISED	6	SRN
12/09/19	REVISED	7	SRN

DRAWN BY: SRN  
CHECKED BY: DSW  
APPYD BY: JME

DEWBERRY PROJECT NO: 5010723

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PREPARED BY:

**Dewberry**  
DEWBERRY ENGINEERS INC.  
2610 WYCLIFF ROAD, SUITE 410  
RALEIGH, NC 27607  
NCBELS#: P-0929

SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

SITE ADDRESS:  
**11979 MCMANUS RD  
MIDLAND, NC 28107**

FA LOCATION:  
**12829624**

SITE NUMBER:  
**N/A**

SHEET TITLE  
**GRADING AND EROSION  
CONTROL PLAN**

SHEET NUMBER  
**C-2.4**



12/09/19

**SUBMITTALS**

DATE	DESCRIPTION	REV.	ISSUED BY
03/13/19	CONSTRUCTION	0	SRN
04/24/19	REVISED	3	SRN
07/26/19	REVISED	4	SRN
10/04/19	REVISED	5	SRF
10/20/19	REVISED	6	SRF
12/09/19	REVISED	7	SRF

DRAWN BY: SRN  
 CHECKED BY: DSW  
 APP'D BY: JME  
 DEWBERRY PROJECT NO: 50107722

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**Mastec**  
 Network Solutions  
 507 AIRPORT BLVD, SUITE 111  
 MORRISVILLE, NC 27560

PREPARED BY:  
**Dewberry**  
 DEWBERRY ENGINEERS INC.  
 2610 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCEBS# F-0929

SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

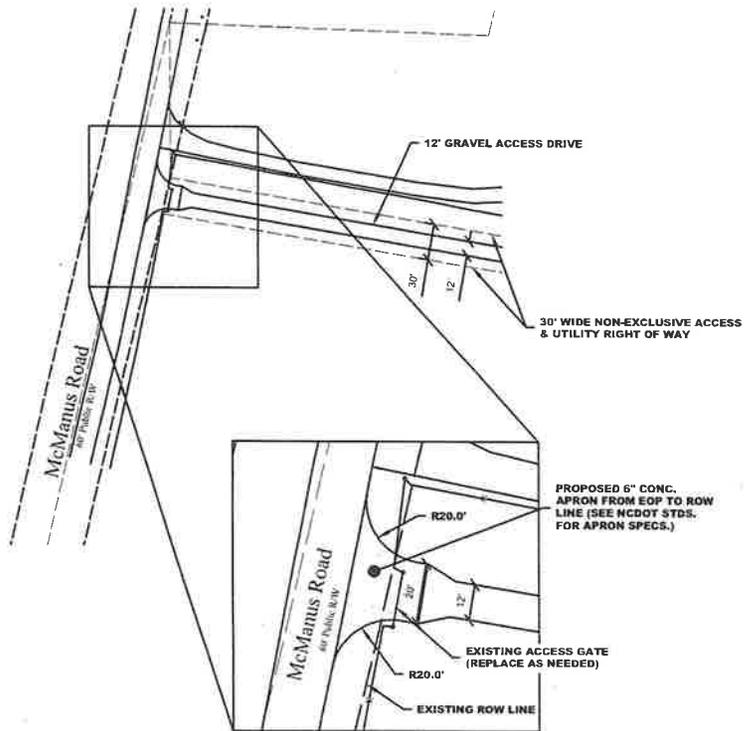
SITE ADDRESS:  
**11979 MCMANUS RD  
 MIDLAND, NC 28107**

FA LOCATION:  
**12829624**

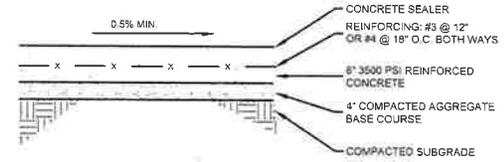
SITE NUMBER:  
**N/A**

SHEET TITLE  
**ACCESS APRON PLAN &  
 DETAIL**

SHEET NUMBER  
**C-2**



**PROPOSED ACCESS APRON PLAN DETAIL**  
 11"x17" SCALE: 1"=40'-0"



**CONCRETE APRON DETAIL**  
 SCALE: NTS

**NOTE:**

\*Sawcut existing edge of pavement 6"-1' to provide a clean joint to tie into.

\*NCDOT approved ditch pipe may be necessary under the access. Please discuss with the NCDOT inspector on proper pipe size, type, placement, etc. if pipe is needed.



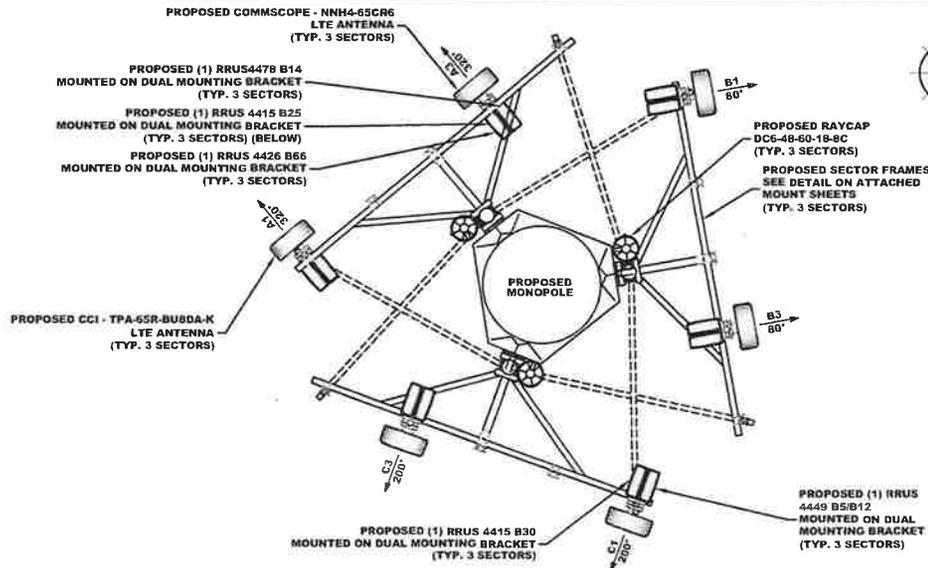
**FINAL RF EQUIPMENT SCHEDULE**

SECTOR POSITION	FREQUENCY BAND	ANTENNA MAKE/MODEL	RAD CENTER	AZIMUTH	E. TILT	M. TILT	(QTY.) RADIO	(QTY.) TMA	(QTY.) SURGE PROTECTION	(QTY.) CABLES	CABLE LENGTH
A1	LTE 700/WCS	CCI - TPA-65R-BUBDA-K (P)	189.0°	320°	7.5°	0°	(1) RRUS 4449 B5/B12 (P) (1) RRUS 4415 B30 (P)		(1) DC9-48-60-24-8C-EV (P)	(1) FIBER TRUNK (P) (2) DC TRUNKS (P) IN 2" INNERDUCT	260'-0"
A2											
A3											
A4	LTE 700 (FN)/AWS/1900	COMMSCOPE - NNH4-65C-R6 (P)	189.0°	320°	7.5°	0°	(1) RRUS 4478 B14 (P) (1) RRUS 4415 B25 (P) (1) RRUS 4426 B66 (P)				
B1	LTE 700/WCS	CCI - TPA-65R-BUBDA-K (P)	189.0°	80°	7.5°	0°	(1) RRUS 4449 B5/B12 (P) (1) RRUS 4415 B30 (P)		(1) DC9-48-60-24-8C-EV (P)	(1) FIBER TRUNK (P) (2) DC TRUNKS (P) IN 2" INNERDUCT	260'
B2											
B3											
B4	LTE 700 (FN)/AWS/1900	COMMSCOPE - NNH4-65C-R6 (P)	189°	80°	7.5°	0°	(1) RRUS 4478 B14 (P) (1) RRUS 4415 B25 (P) (1) RRUS 4426 B66 (P)				
C1	LTE 700/WCS	CCI - TPA-65R-BUBDA-K (P)	189.0°	200°	7.5°	0°	(1) RRUS 4449 B5/B12 (P) (1) RRUS 4415 B30 (P)			(2) DC TRUNKS (P) IN 2" INNERDUCT	260'
C2											
C3											
C4	LTE 700 (FN)/AWS/1900	COMMSCOPE - NNH4-65C-R6 (P)	189°	200°	7.5°	0°	(1) RRUS 4478 B14 (P) (1) RRUS 4415 B25 (P) (1) RRUS 4426 B66 (P)				
<b>TOTALS</b>		<b>(6) ANTENNAS</b>					<b>(15) RRU'S</b>	<b>(0) TMA</b>	<b>(2) SPD</b>	<b>(8) CABLES</b>	

(P) = PROPOSED

• ALL RRU MOUNTING BRACKETS TO BE SUPPLIED BY AT&T

• MAINTAIN 3'-0" MIN. SEPARATION BETWEEN FIRSTNET AND LTE 700 ANTENNAS



**FINAL ANTENNA LAYOUT**  
11"x17" SCALE: 1" = 4'

**NOTES:**

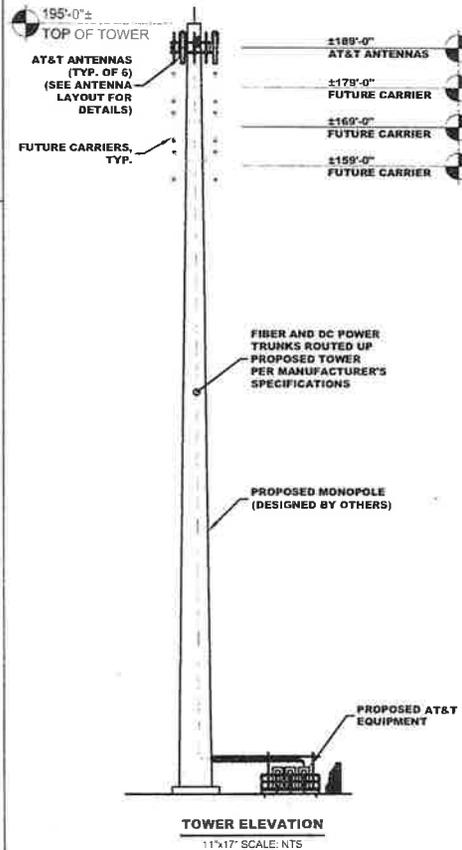
- THE REQUIRED FAA LIGHTING MUST NOT BE BLOCKED IN ANY WAY BY THE ANTENNAS. THE REQUIRED 360° LIGHTING VISIBILITY MUST BE MAINTAINED.
- ALL ANTENNAS, CABLES AND MOUNTS SHALL BE INSTALLED IN ACCORDANCE WITH THE TOWER ENGINEER'S RECOMMENDATIONS IN A MANNER CONSISTENT WITH THE STRUCTURAL ANALYSIS REPORT.
- ALL ANTENNA INFORMATION BASED ON MOST RECENT VERSION OF THIS SITE'S RFDS.

**SCOPING NOTES - TOWER**

- INSTALL (3) TPA-65R-BUBDA-K ANTENNAS
- INSTALL (3) NNH4-65C-R6 ANTENNAS
- INSTALL (3) NEW RRUS 4449 B5/B12
- INSTALL (3) NEW RRUS 4415 B30
- INSTALL (3) NEW RRUS 4478 B14
- INSTALL (3) NEW RRUS 4415 B25
- INSTALL (3) NEW RRUS 4426 B66
- INSTALL (6) NEW 928 DUAL RRU MOUNTING BRACKETS
- INSTALL (2) NEW RAYCAP DC9-48-60-24-8C-EV
- INSTALL (2) NEW FIBER TRUNKS
- INSTALL (6) NEW DC POWER TRUNKS
- INSTALL (3) T1672KT12 SECTOR FRAMES
- INSTALL (12) P1080KT10 ANTENNA MOUNT PIPES

**INNERDUCT NOTES**

- INSTALL (3) 2" INNERDUCTS UP TOWER W/ (1) FIBER & (2) DC POWER INSIDE EACH



**TOWER ELEVATION**  
11"x17" SCALE: NTS



**SUBMITTALS**

DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
06/24/19	REVISED	1	SRN
07/08/19	REVISED	2	SRN
10/24/19	REVISED	3	SRN
10/30/19	REVISED	4	SRN
02/06/19	REVISED	5	SRN
02/06/19	REVISED	6	SRN
02/06/19	REVISED	7	SRN

DRAWN BY: SRN  
CHECKED BY: DSW  
APP'D BY: JME  
DEWBERRY PROJECT NO: 50107722

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PREPARED FOR:



PREPARED BY:



PREPARED BY:



SITE ID:

074-4106

SITE NAME:

MCMANUS

SITE ADDRESS:

11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:

12B29624

SITE NUMBER:

N/A

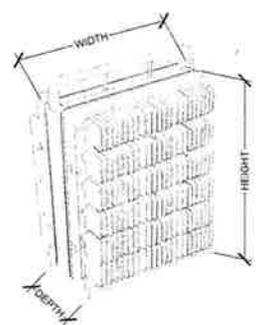
SHEET TITLE  
**ANTENNA LAYOUT & TOWER ELEVATION**

SHEET NUMBER

C-3

**ERICSSON RRU5 4449 B5/B12**

- DIMENSIONS (H x W x D): 17.9" x 13.2" x 9.4" (INCLUDES SUNSHIELD)
- WEIGHT: 71.0 LBS
- B5 TX = 869-894 MHZ, B12 TX = 729-746 MHZ
- B5 RX = 824-849 MHZ, B12 RX = 699-716 MHZ
- CPRI 2 PORTS X 2.5/4 9/9.8/10.1 GBPS

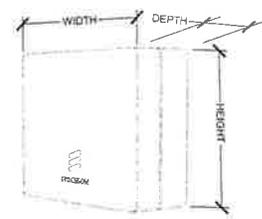


**NOTE:**  
RRUS CAN ONLY BE PAINTED ON SOLAR SHIELD.

**ERICSSON RRU5 4449 B5/B12 DETAIL**  
SCALE: N.T.S.

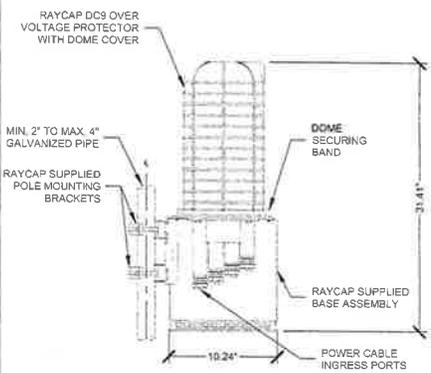
**ERICSSON RRU5 4478 B14**

- DIMENSIONS (H x W x D): 15" x 13.2" x 7.3" (INCLUDES SUNSHIELD)
- WEIGHT: 99.4 LBS
- TX = 758-758 MHZ
- RX = 788-796 MHZ
- CPRI 2 PORTS X 2.5/4 9/9.8/10.1 GBPS



**NOTE:**  
RRUS CAN ONLY BE PAINTED ON SOLAR SHIELD.

**ERICSSON RRU5 4478 B14 DETAIL**  
SCALE: N.T.S.



**NOTES:**  
RAYCAP VIA AT&T SUPPLIES THE DC9 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE

**RAYCAP DC9-48-60-24-8C-EV OVP ASSEMBLY**  
SCALE: N.T.S.

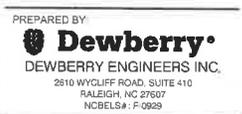


**SUBMITTALS**

DATE	DESCRIPTION	REV	ISSUED BY
09/12/19	CONSTRUCTION	0	SRN
09/24/19	REVISED	3	SRN
07/29/19	REVISED	4	SRN
10/24/19	REVISED	5	SRN
10/30/19	REVISED	6	SRN
12/09/18	REVISED	7	SRN

DRAWN BY: SRN  
 CHECKED BY: CSW  
 APP'D BY: JME  
 DEWBERRY PROJECT NO: 50101722

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SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

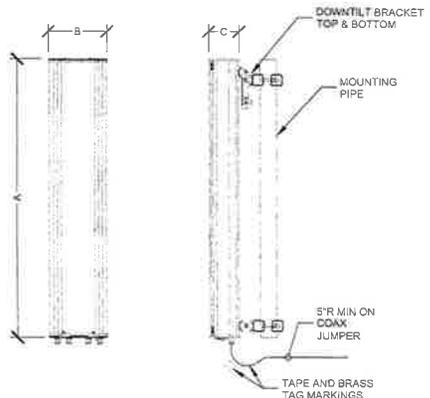
SITE ADDRESS:  
**11979 MCMANUS RD  
MIDLAND, NC 28107**

FA LOCATION:  
**12829624**

SITE NUMBER:  
**N/A**

SHEET TITLE  
**EQUIPMENT DETAILS**

SHEET NUMBER  
**C-4**



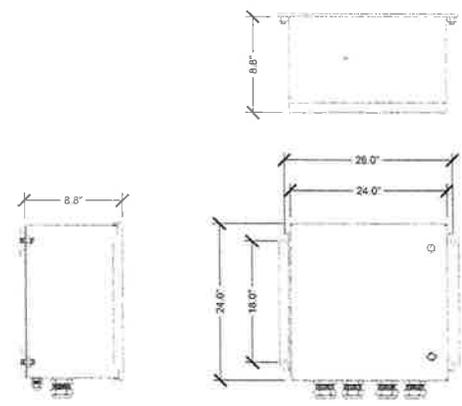
**NEW ANTENNA SPECIFICATIONS**

ANTENNA MODEL	LENGTH (A)	WIDTH (B)	DEPTH (C)	WEIGHT
CCI TPA-6SR-BUBDA-K	96.0"	21.0"	7.8"	87.5 LBS
COMMSCOPE NNH-6SC-R6	96.0"	19.6"	7.8"	102.1 LBS

**NEW ANTENNA SPECIFICATIONS**  
SCALE: N.T.S.

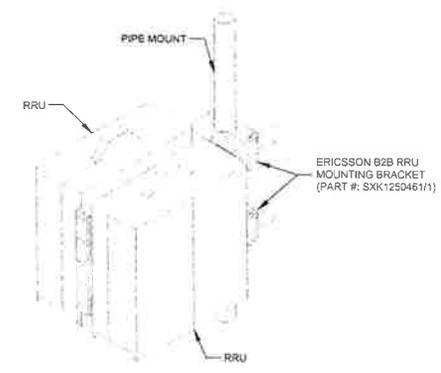
**RAYCAP - DC12-48-60-0-25E-SS**

- DIMENSIONS (H x W x D): 24.0" x 24.0" x 8.8"
- WEIGHT: 56.3 LBS
- (12) CIRCUITS PROTECTED
- NORMAL MODE: 48V TO RETURN
- COMMON MODE: RETURN TO GROUND



**RAYCAP - DC12-48-60-0-25E-SS**  
SCALE: N.T.S.

**AT&T SUPPLIED ERICSSON SXK1250461/1  
B2B RRU MOUNTING BRACKET**

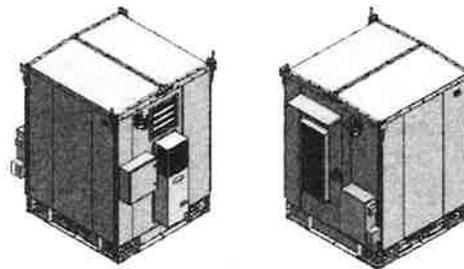
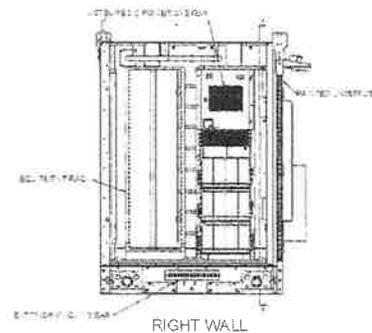
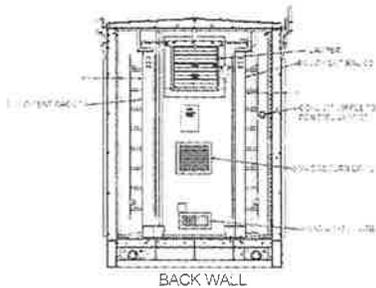
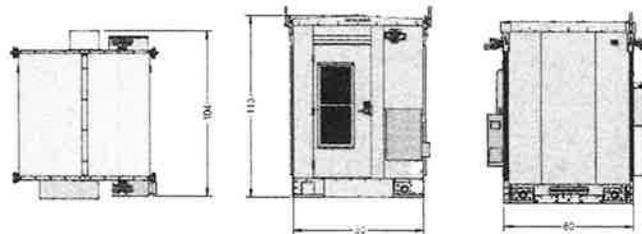
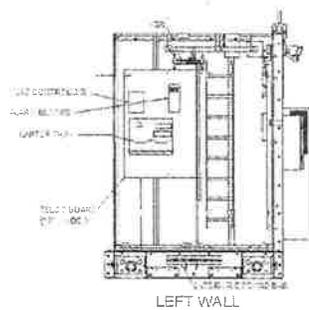
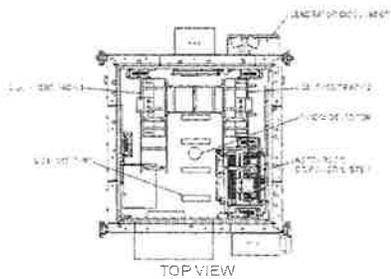


**DUAL B2B RRU MOUNTING BRACKET**  
SCALE: N.T.S.



**EQUIPMENT SPECIFICATIONS**

- EXTERNAL DIMENSIONS (H x W x D): 9'5" x 6'6" x 6'6"
- INTERNAL DIMENSIONS (H x W x D): 96" x 70.5" x 70.5"
- WEIGHT: 5500 LBS



**VERTIV SMARTMOD WALK-IN-CABINET**  
SCALE: N.T.S.

**SUBMITTALS**

DATE	DESCRIPTION	REV	ISSUED BY
02/12/19	CONSTRUCTION	0	SRN
02/24/19	REVISED	3	SRN
07/09/19	REVISED	4	SRN
10/04/19	REVISED	5	SRF
10/30/19	REVISED	6	SRF
12/09/19	REVISED	7	SRF

DRAWN BY: SRN  
 CHECKED BY: OSW  
 APPROVED BY: JME  
 DEWBERRY PROJECT NO: 50107722

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PREPARED FOR:



PREPARED BY:

**MasTec**  
 Network Solutions  
 507 AIRPORT BLVD, SUITE 111  
 MORRISVILLE, NC 27560

PREPARED BY:

**Dewberry**  
 DEWBERRY ENGINEERS INC.  
 2810 WOLF CREEK ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCBELS# F-0929

SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

SITE ADDRESS:  
**11979 MCMANUS RD  
 MIDLAND, NC 28107**

FA LOCATION:  
**12829624**

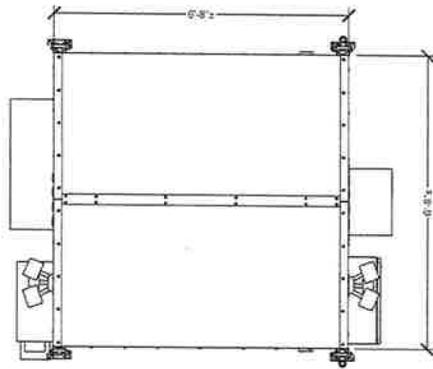
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**N/A**

SHEET TITLE  
**CABINET DETAILS**

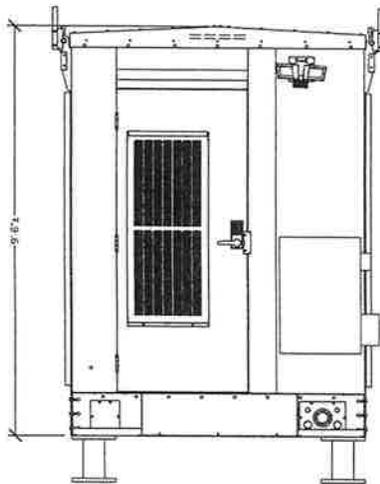
SHEET NUMBER  
**C-5**

**EQUIPMENT SPECIFICATIONS**

- DIMENSIONS (H x W x D): 9'-6" x 6'-6" x 6'-6"
- WEIGHT: 5500 LBS (EMPTY)  
7500 LBS (FULLY INTEGRATED)



**PLAN VIEW**

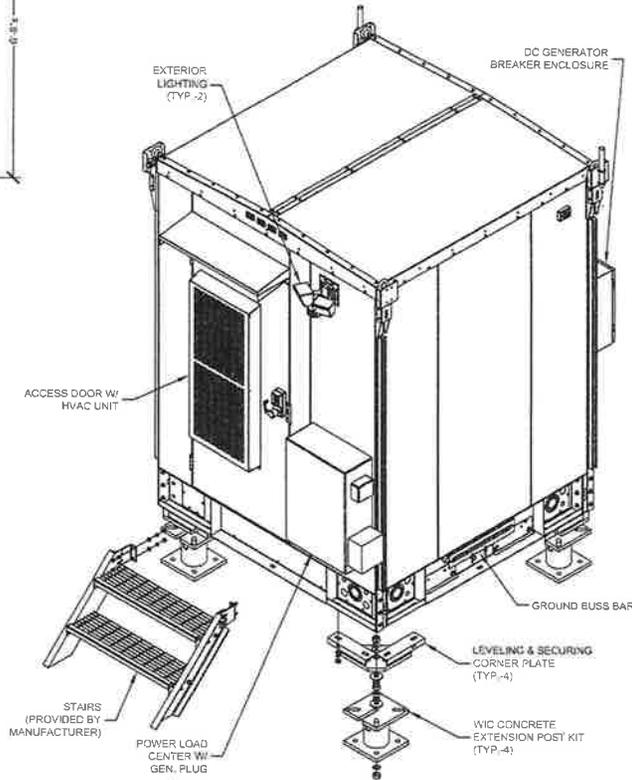


**FRONT VIEW**

**NOTES:**

1. WALK-IN CABINET (WIC) TO BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS & SPECIFICATIONS.
2. WIC COMES FULLY ASSEMBLED. CONTRACTOR TO CONFIRM PARTS & HARDWARE AND COORDINATE W/ AT&T ON PRIOR TO CONSTRUCTION.
3. CONCRETE PIERS MUST BE CONSTRUCTED TO ALLOW WIC TO SIT ABOVE GRADE 18". WIC PLATE ASSEMBLY IS 2.75" TALL AND PLATE IS 1" THICK. LEAVE ENOUGH ROOM FOR LEVELING AND ENOUGH HEIGHT ON LEVELING HARDWARE FOR NUT ABOVE PLATE. IF GRADE IS LEVEL, CONCRETE PIER SHOULD BE 11" ABOVE GRADE, NO MORE THAN 12".
4. DEPTH OF PIER MUST BE DETERMINED BY REGION AND TAKE INTO CONSIDER SUCH ITEMS BUT NOT LIMITED TO DEPTH OF FROST LINE, SOIL TYPE, GENERAL CLIMATE CONDITIONS AND SITE DRAINAGE.
5. 4000 PSI CONCRETE STRENGTH SHOULD BE CONSIDERED AS A MINIMUM TYPE FOR PIER CONSTRUCTION, BUT CAN VARY BASED ON THE LOCAL ARCHITECTURAL STANDARDS AND APPROVALS.
6. MAXIMUM PIER SIZE: 30 INCHES.
7. MINIMUM PIER SIZE: 18 INCHES.

\* RECOMMENDED PIER SIZE IS 18" TO MAXIMIZE BOTTOM CABLE ACCESS AND ABILITY TO MOUNT WIC (2) STAIR SYSTEM. LARGER SIZE WILL INHIBIT ABILITY OF BOTTOM CABLE ACCESS.



**ISOMETRIC VIEW**

**CABINET MOUNTING DETAIL**  
SCALE: N.T.S.



**SUBMITTALS**

DATE	DESCRIPTION	REV	ISSUED BY
09/17/19	CONSTRUCTION	0	SRN
06/24/19	REVISED	1	SRN
07/09/19	REVISED	4	SRN
10/04/19	REVISED	5	SRN
10/30/19	REVISED	6	SRN
12/09/19	REVISED	7	SRN

DRAWN BY: SRN  
 CHECKED BY: ODW  
 APP'D BY: JME  
 DEWBERRY PROJECT NO: 5010722

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 Network Solutions  
 507 AIRPORT BLVD, SUITE 111  
 MCKINNVILLE, NC 27560

PREPARED BY:  
**Dewberry**  
 DEWBERRY ENGINEERS INC.  
 2610 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCBELS#: F-0929

SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

SITE ADDRESS:  
**11979 MCMANUS RD  
 MIDLAND, NC 28107**

FA LOCATION:  
**12829624**

SITE NUMBER:  
 N/A

SHEET TITLE  
**CABINET MOUNTING  
 DETAILS**

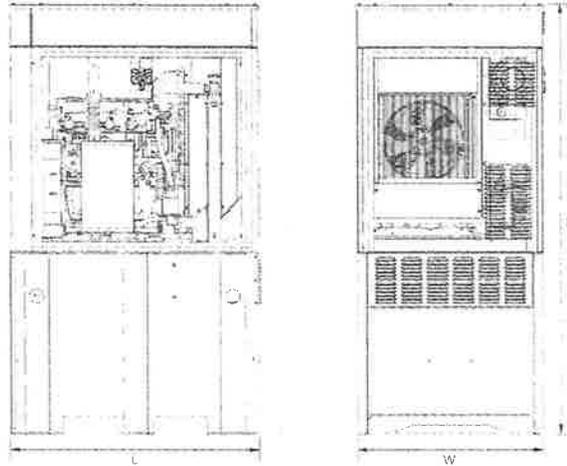
SHEET NUMBER  
**C-5A**

**SDC20 | 2.5L | 20 kW - AC**  
**INDUSTRIAL DIESEL GENERATOR SET**

EPA Certified Stationary Emergency  
 POWER SOLUTIONS AND NETWORKING

**GENERAC** INDUSTRIAL

Model G007098-0 (Steel)



**Level 2 Sound Attenuation Enclosure**

Run Time Hours	48
Usable Capacity Gal (L)	92 (348.2)
L x W x H in (mm)	46 x 36 x 90 (1219.2 x 914.4 x 2286)
Weight lbs (kg)	2400 (1089)
Sound Level	71 dBA

\* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for information purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

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 715.492.8444 • 1-877-356-7356 • Generac Power Systems, Inc. • Milwaukee, WI • www.generac.com • 1-800-441-0000

Document No. 10000009019  
 Rev WIP 11/04/16

**GENERATOR DETAIL**  
 SCALE: N.T.S.

SPEC. SHEET

5 of 5



**SUBMITTALS**

DATE	DESCRIPTION	REV	ISSUED BY
03/12/15	CONSTRUCTION	0	SPN
06/02/15	REVISED	1	SPN
07/09/15	REVISED	2	SPN
10/04/15	REVISED	3	SPN
10/29/15	REVISED	4	SPN
12/09/15	REVISED	5	SPN
12/09/15	REVISED	6	SPN
12/09/15	REVISED	7	SPN

DRAWN BY: SPN  
 CHECKED BY: DSW  
 APP'D BY: JAE  
 DEWBERRY PROJECT NO: 50107722

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PREPARED BY:  
**Dewberry**  
 DEWBERRY ENGINEERS INC.  
 2610 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCBELS#: F 0529

SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

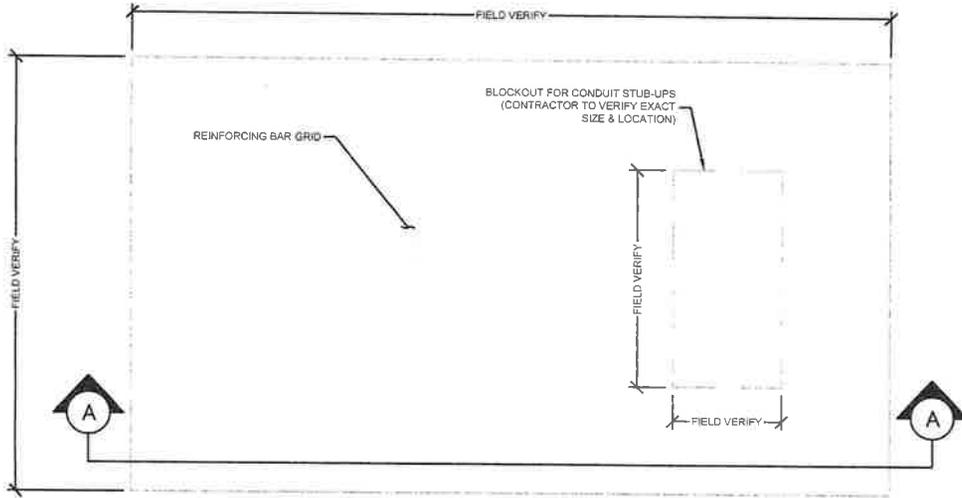
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**11979 MCMANUS RD  
 MIDLAND, NC 28107**

FA LOCATION:  
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SITE NUMBER:  
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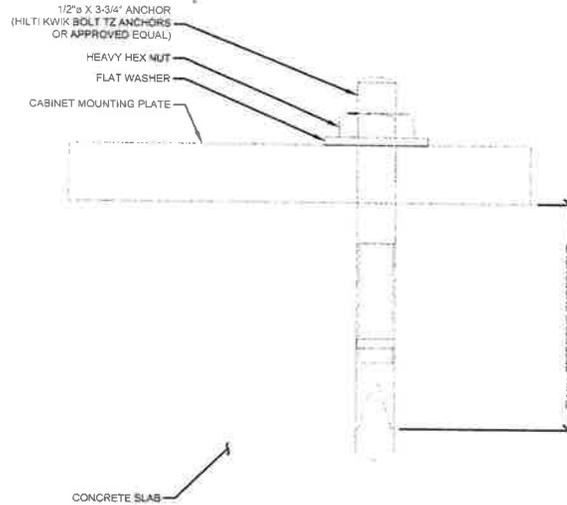
SHEET TITLE  
**GENERATOR DETAILS**

SHEET NUMBER  
**C-6**



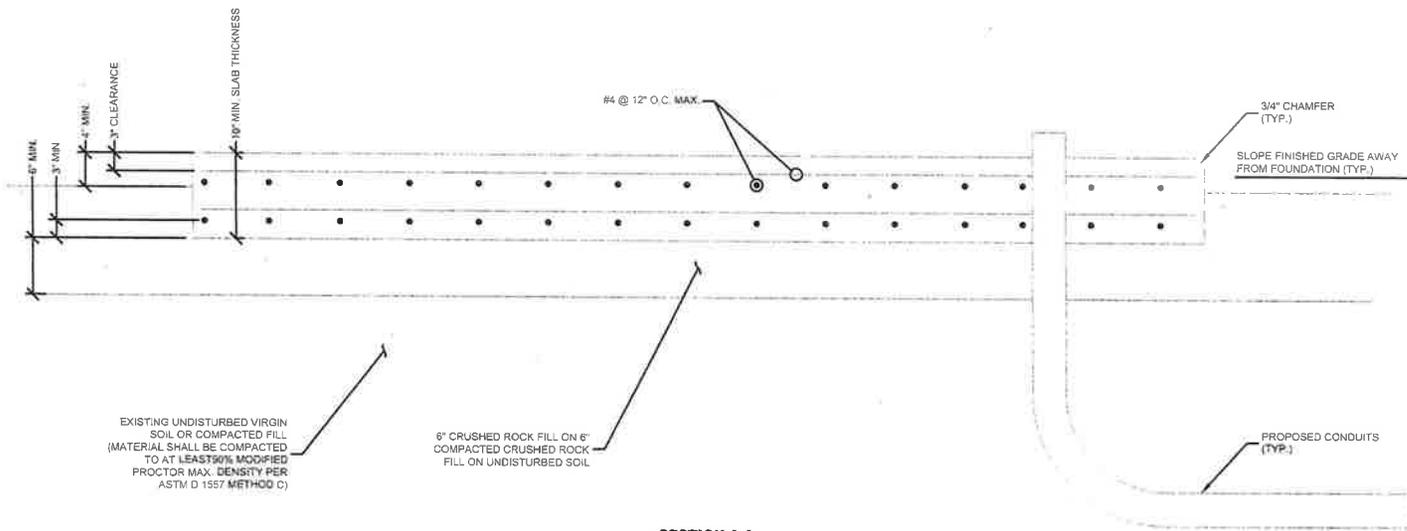
**EQUIPMENT PAD PLAN**

SCALE: N.T.S.



**ANCHORAGE DETAIL**

SCALE: N.T.S.



**SECTION A-A**

SCALE: N.T.S.

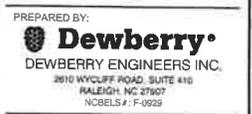


**SUBMITTALS**

DATE	DESCRIPTION	REV.	ISSUED BY
03/12/13	CONSTRUCTION	0	SRN
06/24/13	REVISED	1	JME
07/09/13	REVISED	4	SRN
10/04/13	REVISED	5	SRF
10/30/13	REVISED	6	SRF
12/09/18	REVISED	7	SRF

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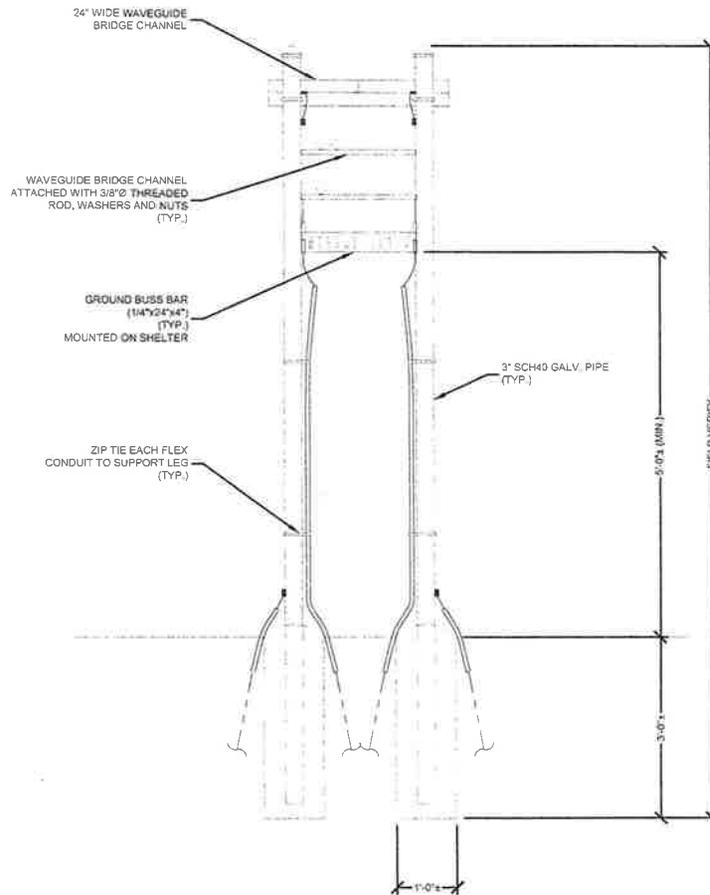
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**11979 MCMANUS RD  
 MIDLAND, NC 28107**

FA LOCATION:  
**12829624**

SITE NUMBER:  
**N/A**

SHEET TITLE  
**CIVIL DETAILS**

SHEET NUMBER  
**C-7**



**SUBMITTALS**

DATE	DESCRIPTION	REV.	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
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PREPARED BY:

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FA LOCATION:  
**12B29624**

SITE NUMBER:  
**N/A**

SHEET TITLE  
**CIVIL DETAILS**

SHEET NUMBER  
**C-8**

**NOTES:**  
 REMOVE ALL TOPSOIL, ORGANIC MATERIAL, AND WET OR POOR SOILS ALONG ACCESS DRIVE.  
 CONTRACTOR TO REVIEW SITE CONDITIONS AND CONSULT GEOTECHNICAL REPORT FOR ANTICIPATED DEPTH OF SOILS THAT WILL REQUIRE REMOVAL IF POOR SOILS ARE ENCOUNTERED AT A DEPTH OF MORE THAN 12". CONTACT CONSTRUCTION MANAGER FOR GUIDANCE.  
 SUBGRADE TO BE COMPACTED TO 95% MODIFIED PROCTOR AND VERIFIED BY PROOF-ROLL OR GEOTECHNICAL RECOMMENDATIONS.  
 CONSULT GRADING PLAN OR SITE PLAN FOR FINAL SITE GRADES.

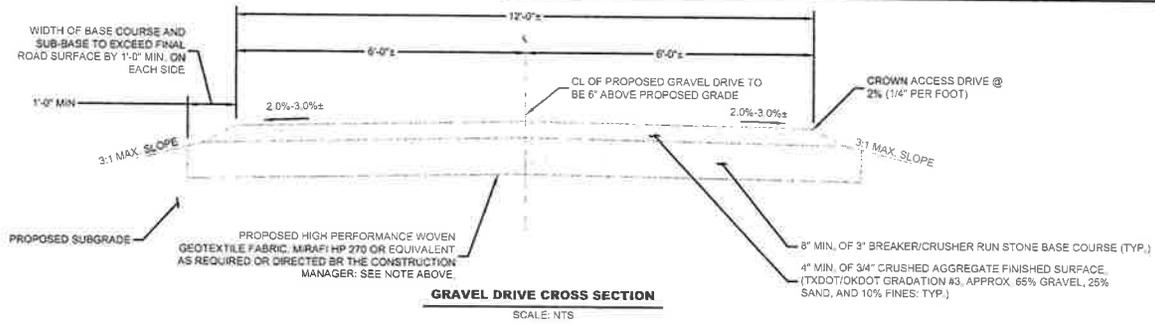
**RESTORATION:**  
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR GRAVEL ACCESS DRIVE REPAIR AND RESTORATION FOLLOWING CONSTRUCTION COMPLETION. ANY DISTRIBUTED OR DAMAGED AREAS SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION UPON COMPLETION OF WORK.

**GRAVEL DRIVE REQUIREMENTS:**  
 THICKNESS OF GRAVEL DRIVE BASE COURSE TO BE DETERMINED BASED ON THE PROPOSED SOIL BEARING CAPACITY (PER UFC DESIGN RECOMMENDATIONS):

BEARING CAPACITY	REQ'D AGGREGATE THICKNESS
1000 PSF	18" MIN.
1500 PSF	12" MIN.
2000 PSF	8" MIN. (SEE DETAIL)

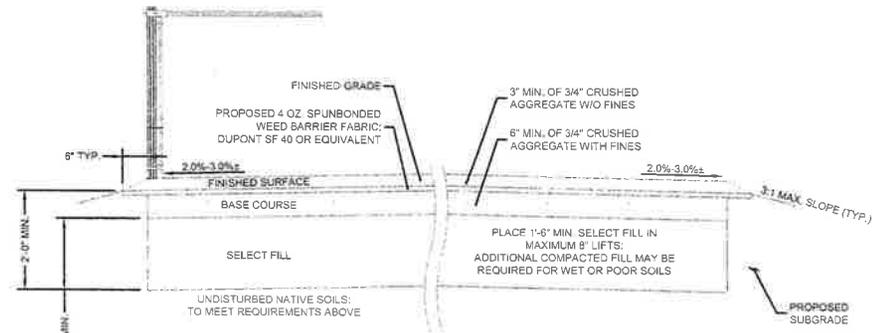
\*A HIGH PERFORMANCE, WOVEN GEOTEXTILE FABRIC MAY BE USED TO REPLACE 6" OF AGGREGATE (MIRAFI HP 270 OR EQUIVALENT)

IF POOR OR WET SOILS ARE PRESENT BELOW BASE COURSE, CONTRACTOR TO INSTALL 6" MIN. WELL-GRADED GRAVEL/SAND SUB-BASE TO FACILITATE ADEQUATE DRAINAGE AND STABILITY.  
 FOR ACCESS DRIVE SLOPES GREATER THAN 10%, CONTRACTOR TO USE MIRAFI HP 270 OR EQUIVALENT GEOTEXTILE FABRIC.  
 CONSULT GEOTECHNICAL REPORT FOR ANTICIPATED SOIL CONDITIONS.



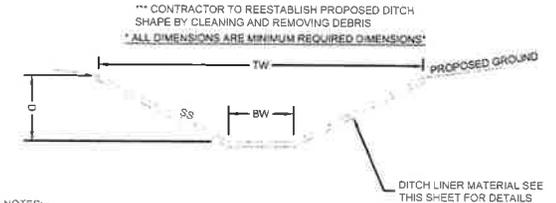
**GRAVEL DRIVE CROSS SECTION**  
 SCALE: NTS

**NOTES:**  
 REMOVE ALL TOPSOIL, ORGANIC MATERIAL, AND WET OR POOR SOILS ALONG ACCESS DRIVE. CONTRACTOR TO REVIEW SITE CONDITIONS AND CONSULT GEOTECHNICAL REPORT FOR ANTICIPATED DEPTH OF SOILS THAT WILL REQUIRE REMOVAL. IF POOR SOILS ARE ENCOUNTERED AT A DEPTH OF MORE THAN 2'-0", CONTACT CONSTRUCTION MANAGER FOR GUIDANCE.  
 FINAL TOWER FOUNDATION DESIGN RECOMMENDATIONS TO SUPERCEDE GRADING PLAN OR SITE PLAN ELEVATIONS.  
 IF THE GEOTECHNICAL REPORT PERMITS, USE ONSITE SOILS FOR SELECT FILL PROVIDED IT IS AVAILABLE AND FREE OF DELETERIOUS MATERIALS AND ORGANICS.



**COMPOUND CROSS SECTION**  
 SCALE: NTS

ID	TW	BW	MIN. D.	SS	DITCH LINER MATERIAL
1	6'	2'	1.0'	3:1	NORTH AMERICAN GREEN C125, OR EQUIVALENT



- NOTES:**
- REMOVE ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA AND DISPOSE OF PROPERLY (THE CHANNEL SECTION SHOULD BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH PREVENT NORMAL FLOW)
  - EXCAVATE AND SHAPE CHANNEL TO DIMENSIONS SHOWN ON PLANS. OVERCUT ENTIRE CHANNEL 0.2 FT TO ALLOW FOR BULKING DURING SEED BED PREPARATION AND GROWTH OF VEGETATION.
  - REMOVE AND PROPERLY DISPOSE OF EXCESS SOIL SO THAT SURFACE WATER MAY ENTER THE CHANNEL FREELY. AVOID WINDROWING SOIL ALONG CHANNEL BANKS
  - FILLS PLACED IN WATERWAYS SHOULD BE THOROUGHLY COMPACTED IN ORDER TO PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE IN THE COMPLETED WATERWAY.
  - PROTECT ALL CONCENTRATED INFLOW POINTS ALONG CHANNEL BY INSTALLING A TEMPORARY LINER, RIPRAP, SOD, OR OTHER APPROPRIATE MEASURES.
  - STABILIZE OUTLETS AND INSTALL SEDIMENT TRAPS AS NEEDED DURING CHANNEL INSTALLATION.
  - VEGETATE THE CHANNEL PER PERMANENT SEEDING SPECIFICATION (THIS SHEET) IMMEDIATELY AFTER GRADING. SMOOTH SLOPES FACILITATE MAINTENANCE.
  - CONTRACTOR TO MAXIMIZE "BW" AS SPACE ALLOWS

**STANDARD DITCH SECTION**  
 SCALE: NTS



**SUBMITTALS**

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10/04/19	REVISED	3	SRF
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 DEWBERRY ENGINEERS INC.  
 2810 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCBELS# F-9929

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SITE NAME:  
**MCMANUS**

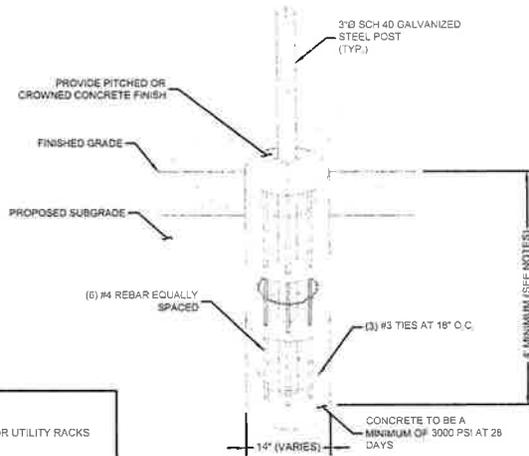
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**11979 MCMANUS RD  
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FA LOCATION:  
**12829624**

SITE NUMBER:  
**N/A**

SHEET TITLE  
**CIVIL DETAILS**

SHEET NUMBER  
**C-9**



- NOTES:**
1. PIER REINFORCING USED FOR UTILITY RACKS AND ICE BRIDGE POSTS.
  2. MAINTAIN 3" MINIMUM REBAR COVER IN ALL DIRECTIONS.
  3. PIER FOUNDATION DEPTH TO BE A MINIMUM OF 48"; DEPTH TO EXCEED LOCAL FROST DEPTH.

**PIER FOUNDATION DETAIL**  
SCALE: NTS

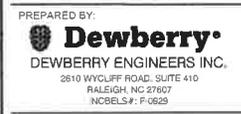


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SHEET TITLE  
**CIVIL DETAILS**

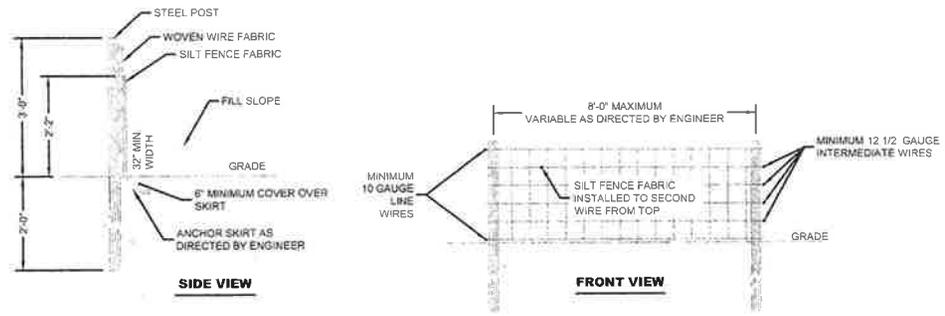
SHEET NUMBER  
**C-10**

SPECIES	% OF MIXTURE	RATE
BAHAGRASS	25%	
COMMON BERMUDAGRASS	25%	25 LBS/ACRE (FLAT AREAS)
ANNUAL RYEGRASS	20%	
WHITE PROSO MILLET	15%	35-40 LBS/ACRE (DITCHES & SLOPES)
CRIMSON CLOVER	15%	

- SEEDBED PREPARATION:**
1. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM. FILL ANY EXISTING RILLS AND GULLIES.
  2. IMMEDIATELY PRIOR TO SPREADING TOPSOIL, CORRECT PH OF THE SUBSOIL WITH LIME PER RECOMMENDATION OF SOILS TEST OR AT A RATE OF 2 TONS/ACRE OF GROUND AGRICULTURAL LIME. LOOSEN THE SUBGRADE OF THE SITE TO RECEIVE THE TOPSOIL BY DISKING OR SCARIFYING TO A DEPTH OF AT LEAST 2" TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.
  3. UNIFORMLY SPREAD TOPSOIL TO A DEPTH OF 6" MIN. MAINTAIN GRADES SHOWN ON CONSTRUCTION PLANS.
  4. APPLY AGRICULTURAL LIME (IF NECESSARY) AND FERTILIZER (8-24-24 OR EQUIVALENT AT A RATE OF 750 LBS/ACRE) TO TOPSOIL UNIFORMLY AND MIX WITH SOIL.
  5. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM REASONABLY UNIFORM SEEDBED IS PREPARED 6 TO 8 INCHES DEEP AND LEAVE SMOOTH SEEDBED.
  6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
  7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
  8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RE-SEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES. COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING AND MULCH.
- SOIL AMENDMENTS**  
 FOLLOW RECOMMENDATIONS OF SOIL TEST OR APPLY 2,000 LB/AC GROUND AGRICULTURAL LIMESTONE AND 750 LB/AC 8-24-24 FERTILIZER.
- MULCH**  
 APPLY 5,000 LB/AC STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NESTING, OR A MULCH ANCHORING TOOL. A DISC WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCHING ANCHORING TOOL.
- MAINTENANCE**  
 RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

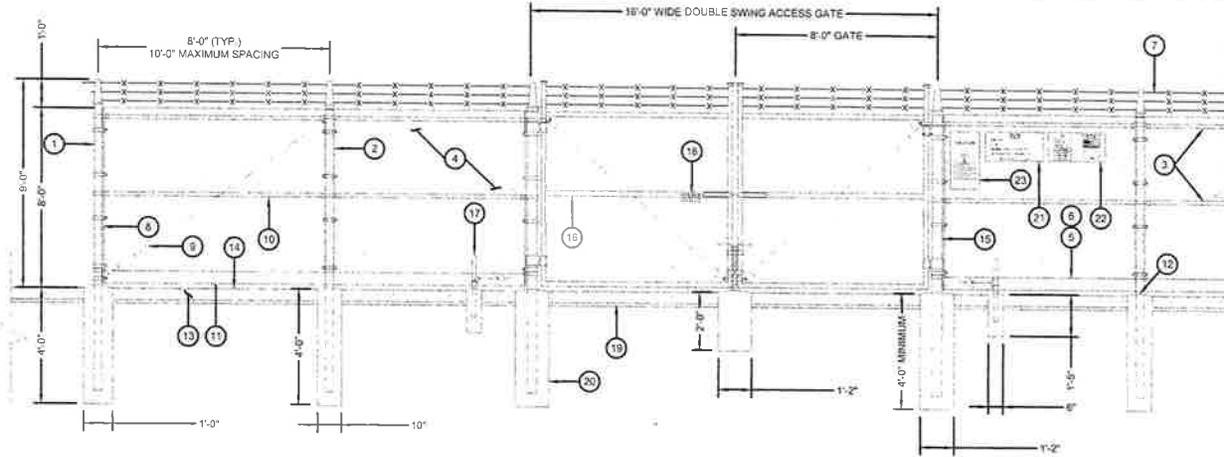
**PERMANENT SEEDING SPECIFICATION**  
SCALE: NTS

- NOTES:**
1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.



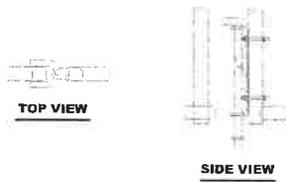
**TEMPORARY SILT FENCE DETAIL**  
SCALE: NTS

- CALLOUTS:**
- 1 3" O.D. GALVANIZED STEEL SCHEDULE 40 CORNER POSTS (PER ASTM-F1083)
  - 2 2-1/2" NOMINAL GALVANIZED STEEL SCHEDULE 40 INTERMEDIARY LINE POSTS (PER ASTM-F1083) LINE POSTS SHALL BE EQUALLY SPACED AT MAXIMUM 10' O.C.
  - 3 1-5/8" O.D. ROUND TOP RAIL & BRACE PIPE RAIL (PER ASTM-F1083)
  - 4 9 GAUGE FABRIC CORE WIRE WITH 2" MESH (TO CONFORM TO ASTM-A392)
  - 5 9 GAUGE ALUMINUM TIE WIRE. PROVIDE HOG RING FABRIC TIES SPACED 12" O.C. FOR POSTS AND GATES AND 24" O.C. FOR RAILS AND WIRE.
  - 6 9 GAUGE ALUMINUM TENSION WIRE
  - 7 3 STRANDS 14 GAUGE BARBED WIRE WITH 4 POINT BARBS, SPACE BARBS APPROXIMATELY 5' O.C.
  - 8 3/16"x3/4" STRETCHER BAR; TO EXTEND FULL HEIGHT OF FENCE
  - 9 3/8" DIAGONAL ROD WITH GALVANIZED STEEL TURNBUCKLE OR DIAGONAL THREADED ROD
  - 10 1-5/8" DIAMETER CORNER POST BRACE
  - 11 MAINTAIN A 1" MAXIMUM CLEARANCE FROM FINISHED GRADE
  - 12 PROVIDE CROWNED/PITCHED FINISH FOR FENCE POST PIER FOUNDATIONS; TO EXTEND 1" ABOVE GRADE
  - 13 6" CRUSHED STONE (TYP.)
  - 14 FINISHED GRADE SHALL BE UNIFORM AND LEVEL
  - 15 4" O.D. GALVANIZED STEEL SCHEDULE 40 GATE POSTS (PER ASTM-F1083)
  - 16 1-1/2" NOMINAL PIPE FOR GATE FRAME BRACE RAIL (PER ASTM F-1063)
  - 17 DUCK BILL OPEN GATE HOLDER. CONTRACTOR TO VERIFY EXACT LOCATION PRIOR TO INSTALLATION.
  - 18 MULTI-TENTANT LOCKING DEVICE
  - 19 PROPOSED GEOTEXTILE FABRIC
  - 20 CONCRETE PIER FOUNDATION; TO ACHIEVE A MINIMUM STRENGTH OF 3000 PSI AT 28 DAYS. CONCRETE DEPTH TO BE A MINIMUM OF 6" BELOW FROST LINE (48" MINIMUM, TYP.)
  - 21 12"x24" SITE INFORMATION SIGN.
  - 22 12"x24" NO TRESPASSING SIGN.
  - 23 12"x24" RF CAUTION SIGN.

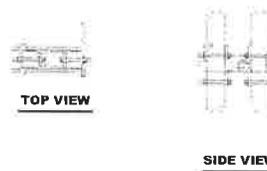


**FENCING DETAIL**  
SCALE: NTS

- NOTES:**
1. ALL FENCING TO BE INSTALLED PER ASTM F-567, ALL SWING GATES TO BE INSTALLED PER ASTM F-900.
  2. BARBED WIRE PERMIT REQUIRED SHALL BE COMPLETED IF LOCAL ORDINANCE REQUIRES.
  3. POST & GATE PIPE SIZES ARE INDUSTRY STANDARDS. ALL PIPE TO BE GALVANIZED (HOT DIP, ASTM A120 GRADE "A" STEEL) ALL GATE FRAMES SHALL BE WELDED. ALL WELDINGS SHALL BE COATED WITH (3) COATS OF GOLD GALV. (OR EQUAL). ALL OPEN POSTS SHALL HAVE END-CAPS.
  4. ALL SIGNS MUST BE MOUNTED ON INSIDE OF FENCE FABRIC USING GALVANIZED HOG-RING WIRE.
  5. MUSHROOM ANCHOR AND PLUNGER REQUIRED FOR GATE. GENERAL CONTRACTOR RESPONSIBLE FOR GATE LOCK.



**DROP ROD ASSEMBLY DETAIL**  
SCALE: NTS



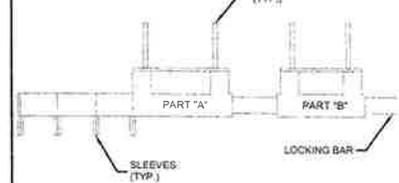
**LATCH ASSEMBLY DETAIL**  
SCALE: NTS

**MULTILOCK INSTALLATION:**

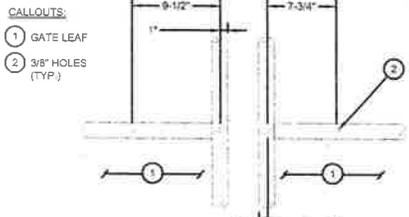
1. DRILL 3/8" HOLES IN THE GATE LEAF USING THE GATE DIMENSIONS PROVIDED.
2. SLIDE THE CARRIAGE BOLTS IN THE SLOTS ON THE BACK OF PART "B" AND PUSH THE BOLTS THROUGH THE HOLES DRILLED IN THE GATE FIGURE. PUT THE NUT AND THE LOCKNUT ON AND TIGHTEN AND CUT THE EXCESS BOLT OFF. DO THE SAME WITH PART "A".
3. ADD THE NUMBER OF SLEEVES NEEDED FOR THE NUMBER OF LOCKS AND SLIDE THE LOCKING BAR INTO PLACE THROUGH BOTH PART "A" AND PART "B". NOW INSTALL THE LOCKS.
4. IF THE GATE HAS NO CENTER BAR IN THE GATE LEAF YOU MAY NEED TO MOUNT THE STYMILOCK VERTICALLY USING THE SAME DIMENSIONS GIVEN ON THE GATE FACE.
5. VERTICAL APPLICATION MAY ALSO BE USED ON SLIDING GATES WITH MULTIPLE LOCKS.

**GATE LOCK ASSEMBLY:**

1. "STYMILOCK" MULTILOCKING DEVICE OR APPROVED EQUAL



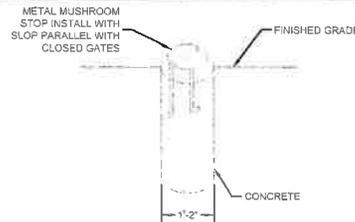
**GATE LOCK ASSEMBLY DETAIL**  
SCALE: NTS



**GATE FACE - ACCOMMODATING MULTI-TENTANT LOCK**  
SCALE: NTS



**GATE KEEPER DETAIL**  
SCALE: NTS



**MUSHROOM STOP DETAIL**  
SCALE: NTS



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SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

SITE ADDRESS:  
**11979 MCMANUS RD  
 MIDLAND, NC 28107**

FA LOCATION:  
**12829624**

SITE NUMBER:  
**N/A**

SHEET TITLE  
**CIVIL DETAILS**

SHEET NUMBER  
**C-11**



**SUBMITTALS**

DATE	DESCRIPTION	REV	ISSUED BY
03/12/19	CONSTRUCTION	0	SRN
06/24/19	REVISED	3	SRN
07/09/19	REVISED	4	SRN
10/04/19	REVISED	5	SAP
10/30/19	REVISED	6	SAP
12/09/19	REVISED	7	SAP

DRAWN BY: SRN  
 CHECKED BY: DSW  
 APP'D BY: JME  
 DEWBERRY PROJECT NO: 20180722

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PREPARED FOR:

PREPARED BY:

367 AIRPORT BLVD, SUITE 111  
MORRISVILLE, NC 27560

PREPARED BY:

DEWBERRY ENGINEERS INC.  
2510 WYCLIFF ROAD, SUITE 410  
RALEIGH, NC 27607  
NCBELS#: F 0629

SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

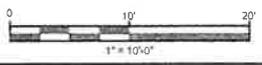
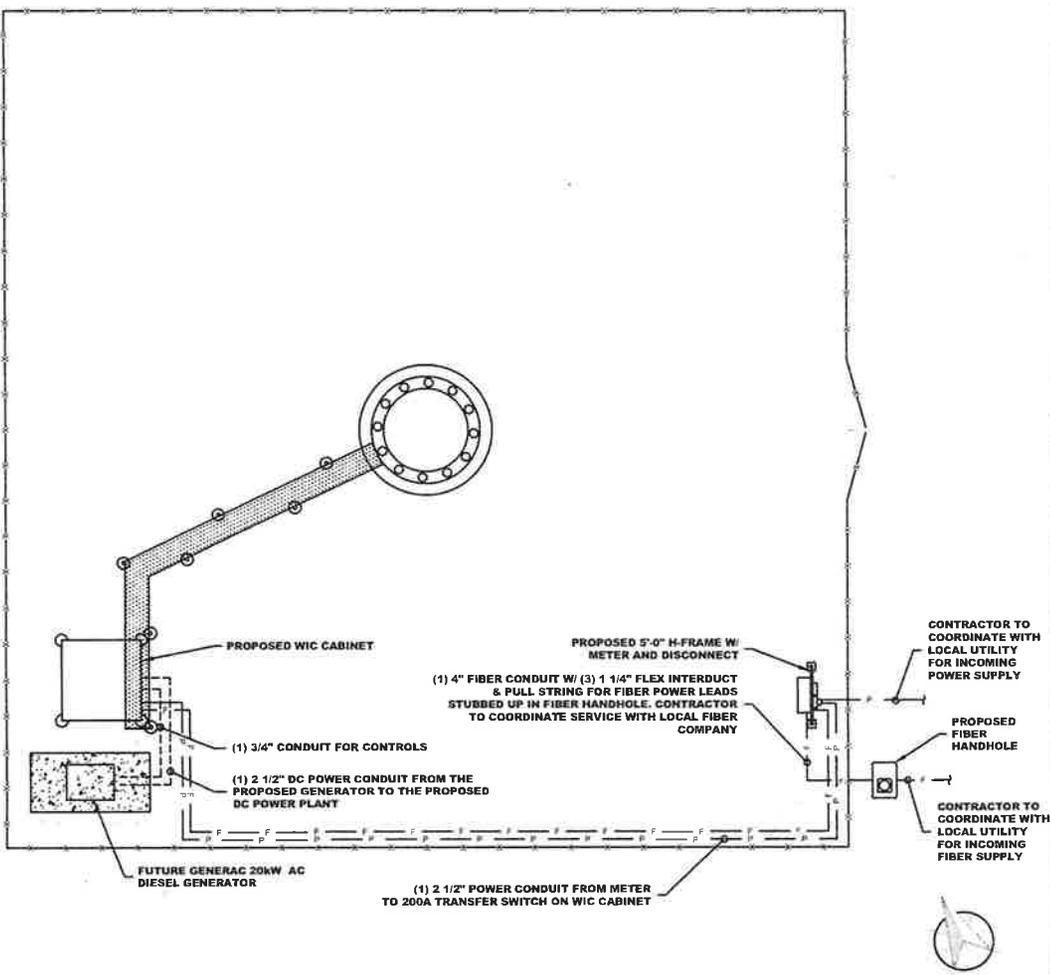
SITE ADDRESS:  
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MIDLAND, NC 28107**

FA LOCATION:  
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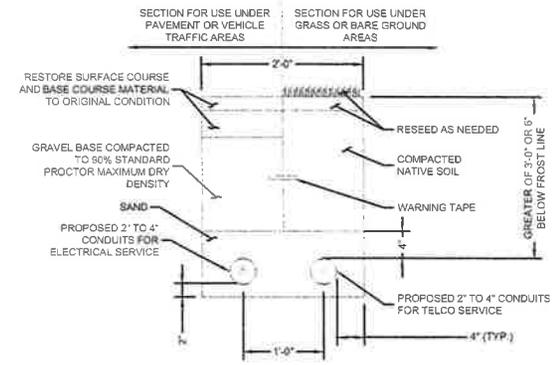
SITE NUMBER:  
**N/A**

SHEET TITLE  
**SERVICE ROUTING &  
SINGLE LINE DIAGRAM**

SHEET NUMBER  
**E-1**



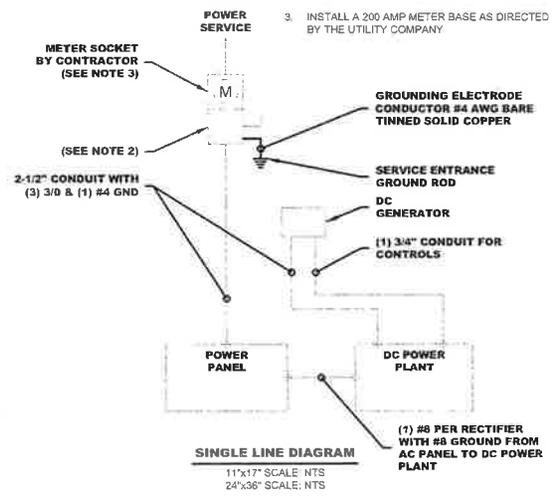
**SERVICE ROUTING PLAN**  
11"x17" SCALE: 1" = 10'-0"



**JOINT UTILITY TRENCH DETAIL**  
SCALE: NTS

**SINGLE LINE DIAGRAM NOTES:**

- ELECTRICAL SERVICE SHALL BE 120/240V, 1Ø, 3W, 200A.
- PROVIDE SERVICE ENTRANCE RATED CIRCUIT BREAKER TYPE DISCONNECT SWITCH
- INSTALL A 200 AMP METER BASE AS DIRECTED BY THE UTILITY COMPANY.



**SINGLE LINE DIAGRAM**  
11"x17" SCALE: NTS  
24"x36" SCALE: NTS

### ELECTRICAL NOTES:

#### SCOPE:

1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

#### CODES:

1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND CODES. THESE INCLUDE BUT ARE NOT LIMITED TO THE LATEST ADOPTED EDITIONS OF:
  - A. THE NATIONAL ELECTRICAL SAFETY CODE
  - B. THE NATIONAL ELECTRIC CODE - NFPA-70
  - C. REGULATIONS OF THE SERVING UTILITY COMPANY
  - D. LOCAL AND STATE AMENDMENTS
  - E. THE INTERNATIONAL ELECTRIC CODE - IEC (WHERE APPLICABLE)

2. PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR.

3. AFTER COMPLETION AND FINAL INSPECTION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF COMPLETION AND APPROVAL.

#### TESTING:

1. UPON COMPLETION OF THE INSTALLATION, OPERATE AND ADJUST THE EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. THE TESTING SHALL BE DONE BY QUALIFIED PERSONNEL.

#### GUARANTEE:

1. IN ADDITION TO THE GUARANTEE OF THE EQUIPMENT BY THE MANUFACTURER, EACH PIECE OF EQUIPMENT SPECIFIED HEREIN SHALL ALSO BE GUARANTEED FOR DEFECTS OF MATERIAL OR WORKMANSHIP OCCURRING DURING A PERIOD OF ONE (1) YEAR FROM FINAL ACCEPTANCE OF THE WORK BY THE OWNER AND WITHOUT EXPENSE TO THE OWNER.
2. THE WARRANTY CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER.

#### UTILITY CO-ORDINATION:

1. CONTRACTOR SHALL COORDINATE WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH THE SERVICE REQUIREMENTS OF EACH UTILITY COMPANY.

#### EXAMINATION OF SITE:

1. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS AFFECTING THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS SECTION WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING THE WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM OR SYSTEMS.

#### CUTTING, PATCHING AND EXCAVATION:

1. COORDINATION OF SLEEVES, CHASES, ETC., BETWEEN SUBCONTRACTORS WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS.
2. NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE ELECTRICAL WORK SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING.
3. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS, ETC., WITH APPROVED METHOD AS LISTED BY UL.

#### RACEWAYS / CONDUITS GENERAL:

1. CONDUITORS SHALL BE INSTALLED IN LISTED RACEWAYS. CONDUIT SHALL BE RIGID STEEL, EMT, SCH40 PVC, OR SCH80PVC AS INDICATED ON THE DRAWINGS. THE RACEWAY SYSTEM SHALL BE COMPLETE COMPLETE BEFORE INSTALLING CONDUITORS.
2. EXTERIOR RACEWAYS AND GROUNDING SLEEVES SHALL BE SEALED AT POINTS OF ENTRANCE AND EXIT. THE RACEWAY SYSTEM SHALL BE BONDED PER NEC.

#### EXTERIOR CONDUIT:

1. EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS. SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL.
2. WHERE INSTALLED ON EXTERIOR STRUCTURES OR EXPOSED TO DAMAGE, THE CONDUIT SHALL BE RIGID STEEL.
3. UNDERGROUND CONDUITS SHALL BE RIGID STEEL, SCH40 PVC, OR SCH80 PVC AS INDICATED ON THE DRAWINGS.
4. BURIAL DEPTH OF CONDUITS SHALL BE AS REQUIRED BY CODE FOR EACH SPECIFIC CONDUIT TYPE AND APPLICATION, BUT SHALL NOT BE LESS THAN THE FROST DEPTH AT THE SITE.
5. CONDUIT ROUTES ARE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY ROUTES BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND/OR BUILDING OWNER.

#### INTERIOR CONDUIT:

1. CONCEALED CONDUIT IN WALLS OR INTERIOR SPACES ABOVE GRADE MAY BE EMT.
2. CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSHING FOR ALL CONDUIT TERMINATIONS. CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS.
3. PROVIDE SUPPORTS FOR CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. CONDUITS SHALL BE SIZED AS REQUIRED BY NEC.

#### EQUIPMENT:

1. DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
2. CONTRACTOR SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK. CONTRACTOR WILL VERIFY THAT EXISTING CIRCUIT BREAKERS ARE RATED FOR MORE THAN AVAILABLE FAULT CURRENT AND REPLACE AS NECESSARY.
3. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY.

#### CONDUCTORS:

1. FURNISH AND INSTALL CONDUCTORS SPECIFIED IN THE DRAWINGS. CONDUCTORS SHALL BE COPPER AND SHALL HAVE TYPE THWN (MIN) (75° C) INSULATION, RATED FOR 600 VOLTS.
2. THE USE OF ALUMINUM CONDUCTORS SHALL BE LIMITED TO THE SERVICE FEEDERS INSTALLED BY THE UTILITY.
3. CONDUCTORS SHALL BE PROVIDED AND INSTALLED AS FOLLOWS:
  - A. MINIMUM WIRE SIZE SHALL BE #12 AWG.
  - B. CONDUCTORS SIZE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS SIZED #10 AND #12 MAY BE SOLID OR STRANDED.
  - C. CONNECTION FOR #10 AWG #12 AWG SHALL BE BY TWISTING TIGHT AND INSTALLING INSULATED PRESSURE OR WIRE NUT CONNECTIONS.
  - D. CONNECTION FOR #8 AWG AND LARGER SHALL BE BY USE OF STEEL CRIMP-ON SLEEVES WITH NYLON INSULATOR.
3. CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC STANDARDS.

#### UL COMPLIANCE:

1. ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E., LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY.

#### GROUNDING:

1. ELECTRICAL NEUTRALS, RACEWAYS AND NON-CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250. THIS SHALL INCLUDE NEUTRAL CONDUCTORS, CONDUITS, SUPPORTS, CABINETS, BOXES, GROUND BUSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED AT A SINGLE POINT.
2. PROVIDE GROUND CONDUCTOR IN RACEWAYS PER NEC.
3. PROVIDE BONDING AND GROUND TO MEET NFPA 780 - "LIGHTNING PROTECTION" AS A MINIMUM.
4. PROVIDE GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS, AS REQUIRED BY THE NATIONAL ELECTRIC CODE, RADIO EQUIPMENT MANUFACTURERS, AND MOTOROLA R56 (AS APPLICABLE).

## ABBREVIATIONS AND LEGEND

A	•	AMPERE	PNLBD	•	PANELBOARD
AFG	•	ABOVE FINISHED GRADE	PVC	•	RIGID NON-METALLIC CONDUIT
ATS	•	AUTOMATIC TRANSFER SWITCH	RGS	•	RIGID GALVANIZED STEEL CONDUIT
AWG	•	AMERICAN WIRE GAUGE	SW	•	SWITCH
BCW	•	BARE COPPER WIRE	TGB	•	TOWER GROUND BAR
BFG	•	BELOW FINISHED GRADE	UL	•	UNDERWRITERS LABORATORIES
BKR	•	BREAKER	V	•	VOLTAGE
C	•	CONDUIT	W	•	WATTS
CKT	•	CIRCUIT	XFMR	•	TRANSFORMER
DISC	•	DISCONNECT	XMTX	•	TRANSMITTER
EGR	•	EXTERNAL GROUND RING			
EMT	•	ELECTRIC METALLIC TUBING			
FSC	•	FLEXIBLE STEEL CONDUIT			
GEN	•	GENERATOR			
GPS	•	GLOBAL POSITIONING SYSTEM			
GRO	•	GROUND			
IGB	•	ISOLATED GROUND BAR			
IGR	•	INTERIOR GROUND RING (HALO)			
KW	•	KILOWATTS			
NEC	•	NATIONAL ELECTRIC CODE			
PCH	•	PERSONAL COMMUNICATION SYSTEM			
PH	•	PHASE			
PNL	•	PANEL			

	•	UNDERGROUND ELECTRICAL CONDUIT
	•	UNDERGROUND FIBER CONDUIT
	•	KILOWATT-HOUR METER
	•	UNDERGROUND BONDING AND GROUNDING CONDUCTOR
	•	GROUND ROD
	•	COMPRESSION TYPE CONNECTIONS
	•	EXOTHERMIC TYPE CONNECTIONS
	•	GROUND ROD WITH INSPECTION WELL



#### SUBMITTALS

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02/12/19	CONSTRUCTION	0	SRN
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10/04/19	REVISED	5	SRF
10/30/19	REVISED	6	SRF
12/23/19	REVISED	7	SRF

DRAWN BY: SRN  
 CHECKED BY: DSW  
 APPROVED BY: JME  
 DEWBERRY PROJECT NO: 50107722

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PREPARED FOR:



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 RALEIGH, NC 27607  
 NCBELS #: F-0929

SITE ID:

074-4106

SITE NAME:

MCMANUS

SITE ADDRESS:

11979 MCMANUS RD  
 MIDLAND, NC 28107

FA LOCATION:

12829624

SITE NUMBER:

N/A

SHEET TITLE

ELECTRICAL NOTES

SHEET NUMBER

E-2

EXISTING TELCO/FIBER SERVICE FROM LOCAL DEMARCATON POINT

PROPOSED CIRCUIT BREAKER TO FEED AT&T (SERVICE DISCONNECT), 200A, 240V, 2POLE

EXISTING 200A, 120/240V, 1 PHASE SERVICE FROM UTILITY COMPANY

AT&T UTILITY METER, 200A, 120/240V, 1 PHASE, 3W

SHELTER DISCONNECT, 200A, 120/240V, 1B, 3W (WHERE REQUIRED)

EXISTING GROUND ELECTRODE

EMERGENCY AC GENERATOR SET (EG), 20 kW, FURNISHED BY AT&T, REFER TO GENERATOR DRAWINGS FOR ADDITIONAL DETAILS

TELCO BACKBOARD (TELCO & ALARM BLOCKS)

#2 AWG CU

SM,GB

(2) 200 A/2P BREAKERS

SHELTER PANEL "LCP", 200A, 120/240 VAC, 30 POLE, 10K AIC, BOLT ON BREAKERS

AUTOMATIC TRANSFER SWITCH, 200 A, 240 V, 2P, 3W

DC POWER PLANT

**GENERAL NOTES:**

- CONTRACTOR SHALL COORDINATE INCOMING SERVICES WITH LOCAL UTILITIES PRIOR TO TRENCHING
- ALL CONDUCTORS SHALL BE COPPER, 75° C RATED (MIN.), AND CONDUCTOR INSULATION SHALL BE THWN OR THHN.
- ALL TERMINATIONS SHALL BE LISTED AND IDENTIFIED FOR USE WITH 75° C RATED CONDUCTORS OPERATING AT 75°C.
- GROUND FAULT PROTECTION REQUIRED FOR UTILITY RECEPTACLES.
- SERVICE NEUTRAL SHALL BE GROUNDED AT ONE LOCATION ONLY.
- WHITE/NEUTRAL, GREEN/GROUND SHALL BE MAINTAINED THROUGHOUT THE SITE ELECTRICAL SYSTEM (TAPE WILL NOT BE ACCEPTABLE).
- EQUIPMENT LOCATED OUTSIDE OR EXPOSED TO MOISTURE SHALL BE NEMA 3R RATED.
- CONTRACTOR SHALL USE RIGID METAL CONDUIT (RMC) OR INTERMEDIATE METAL CONDUIT (IMC) WHERE POWER CONDUITS ARE EXPOSED, OTHERWISE ALL CONDUITS SHALL BE SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED
- ALL NEWLY INSTALLED EQUIPMENT SHALL BE RATED AT 10K AIC MINIMUM. HIGHER RATINGS SHALL BE REQUIRED WHERE AVAILABLE FAULT CURRENT EXCEEDS THIS VALUE. EXACT FAULT CURRENT AVAILABLE SHALL BE COORDINATED WITH LOCAL UTILITY BASED ON EXACT CONDITIONS (TRANSFORMER SIZE, PERCENT IMPEDANCE, LENGTH OF CONDUCTORS, ETC.)

**NOTES BY SYMBOL:**

- CONTRACTOR SHALL FURNISH AND INSTALL POWER CONDUCTORS FROM METER CENTER TO SHELTER. METER WILL BE FURNISHED AND INSTALLED BY LOCAL UTILITY COMPANY.
- CONTRACTOR SHALL PROVIDE AND INSTALL CIRCUIT BREAKER IN METER CENTER TO FEED AT&T SHELTER. CIRCUIT BREAKER SHALL BE 200A, 240V, 2 POLE, TYP AND AIC RATING SHALL MATCH EXISTING.
- CONTRACTOR SHALL PROVIDE ALL CIRCUIT BREAKERS REQUIRED TO FEED AT&T EQUIPMENT. CONTRACTOR SHALL LABEL ALL CIRCUIT BREAKERS WITH RESPECT TO WHAT THEY FEED.
- LOAD CENTER IS EQUIPPED WITH TRANSFER SWITCH FOR GENERATOR CONNECTIONS. BREAKERS ARE INTERLOCKED TO ALLOW ONLY 1 BREAKER CLOSED AT ANY GIVEN TIME.
- CONTRACTOR SHALL PROVIDE AND INSTALL NAMEPLATE ON METER TO INDICATE "AT&T" NAMEPLATES SHALL BE PHENOLIC, WHITE LETTERS ON BLACK BACKGROUND.
- CONTRACTOR SHALL BOND NEUTRAL TO GROUND AT ONE LOCATION ONLY PER NEC 250 AND LOCAL CODE REQUIREMENTS.
- DO NOT BOND GENERATOR NEUTRAL TO GROUND OR GENERATOR FRAME. GENERATOR NEUTRAL IS BONDED TO SERVICE ENTRANCE NEUTRAL BOND VIA SOLIDLY GROUNDED ATS (OPEN TRANSITION, FLOATING NEUTRAL AT GENERATOR)
- DISCONNECT IS FURNISHED WITH SHELTER ON SITES WHERE SERVICE IS OBTAINED FROM AN EXISTING SOURCE (METER CENTER) OR SERVICE DISCONNECT IS LOCATED ON EQUIPMENT RACK, SHELTER DISCONNECT MAY BE OMITTED.

**CABLE AND CONDUIT SCHEDULE**

MARK	CONDUIT		WIRES EACH CONDUIT			EQUIPMENT			FROM	TO	RESPONSIBILITY	REMARKS	
	QTY.	SIZE	TYPE	QTY.	SIZE	GROUND SIZE	VOLTS	AMPS					SUB. CAT.
1	1	0'-2 1/2"	PVC	3	#3/0	#4	240	200	AC POWER	SVC DISC	PNL	MASTEC	POWER TO SHELTER, SEE NOTE 8
2	1	0'-4"	PVC	WITH (3) 1" INNERDUCTS (1) 25 PRCAT 50 SHIELDED (3) 12 FOR DC POWER FOR FIBER					TELCO	HAND HOLE	FLX12	MASTEC	25 PAIR AND 24 VDC POWER FOR FIBER
3	1	2'-1/2"	PVC	3	#3/0	#4	48	400	DC POWER	GEN DISC	DC POWER PLANT	MASTEC	GENERATOR POWER TO SHELTER, NOTE 8
4	1	1"	PVC	(7) #14 AND BELDEN						CNTL PNL	ATS	MASTEC	GENERATOR ALARM/CONTROL

**FAULT CURRENT SUMMARY TABLE**

FAULT LOCATION	AVAILABLE FAULT CURRENT (AMPS RMS SYMMETRICAL)			REMARKS
	SCA L-L	SCA L-N	ON PRIMARY	
TRANSFORMER SECONDARY (*)	13,021	19,533		ASSUMING INFINITE AVAILABLE
METER CENTER	10,936	12,420		IMPEDANCE - 40' INCOMING SERVICE CONDUCTORS
SHELTER MAIN CIRCUIT BREAKER	8,021	6,805		IMPEDANCE - 50' FEEDER CONDUCTORS, MC TO SHELTER

**PANEL SCHEDULE**

11"x17" SCALE: NTS



**SUBMITTALS**

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03/21/19	CONSTRUCTION	0	SRN
06/24/19	REVISED	3	SRN
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10/04/19	REVISED	5	SRF
10/30/19	REVISED	6	SRF
12/09/19	REVISED	7	SRF

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PREPARED FOR:



PREPARED BY:



PREPARED BY:



SITE ID:

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11979 MCMANUS RD  
MIDLAND, NC 28107

FA LOCATION:

12829624

SITE NUMBER:

N/A

SHEET TITLE  
SINGLE LINE DIAGRAM

SHEET NUMBER

E-3

**NOTES:**

1. SERVICE BOND IS TO BE MADE BY DEVICES (STRAPS, SCREWS, ETC.) SUPPLIED BY EQUIPMENT MANUFACTURER. IF NO SUCH DEVICE IS SUPPLIED, BOND IS TO BE MADE IN ACCORDANCE WITH NEC ARTICLE 250.
2. CONDUCTOR OVERCURRENT PROTECTION DEVICES ARE SELECTED IN ACCORDANCE WITH NEC ARTICLE 240-3.
3. CONDUCTOR SIZING IS SELECTED FROM NEC ARTICLE 310-16.
4. ALL LUGS THAT HOLD MORE THAN ONE WIRE SHALL BE LISTED FOR MULTI-BARRELL CONNECTIONS.
5. ALL CONDUCTORS SHALL BE INSULATED THIN WIRE.

<b>PANEL SCHEDULE</b>														
LOAD SERVED	VOLT AMPERES (WATTS)		WIRE	BREAKER		CKT#	PHASE	CKT#	BREAKER		WIRE	VOLT AMPERES (WATTS)		LOAD SERVED
	L1	L2		P	TRIP				TRIP	P		L1	L2	
RECTIFIER #1	2000		10	2	30	1	A	2	20	1	12	180		EXT. GFCI OUTLETS
	2000					3	B	4	30	2	10		2000	RECTIFIER #2
RECTIFIER #3	2000		10	2	30	5	A	6				2000		
		2000				7	B	8	30	2	10		2000	RECTIFIER #4
RECTIFIER #5	2000		10	2	30	9	A	10				2000		
		2000				11	B	12						
FUTURE RECTIFIERS						13	A	14						FUTURE RECTIFIERS
						15	B	16						
						17	A	18						
						19	B	20						
						21	A	22						
						23	B	24						
1 TON AC UNIT	3504		12	2	20	25	A	26						
		3504				27	B	28	20	1	12		70	EXT. FLOOD LIGHTS
APPLIANCE OUTLETS	480		12	1	20	29	A	30						
<b>VOLT AMPS</b>	<b>9984</b>	<b>9504</b>										<b>6180</b>	<b>6070</b>	<b>VOLT AMPS</b>
						<b>L1 VOLT AMPERES</b>	16644	13574						
							31738	<b>TOTAL VOLT AMPERES</b>						
							132.20	<b>TOTAL AMPS</b>						
							165.3	<b>AMPS x +25%</b>						
							181.8	<b>x +10% FOR MAIN</b>						

**WIC PANEL SCHEDULE**

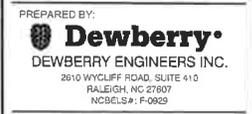
11"x17" SCALE: NTS



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		6	SN	
		7	SN	

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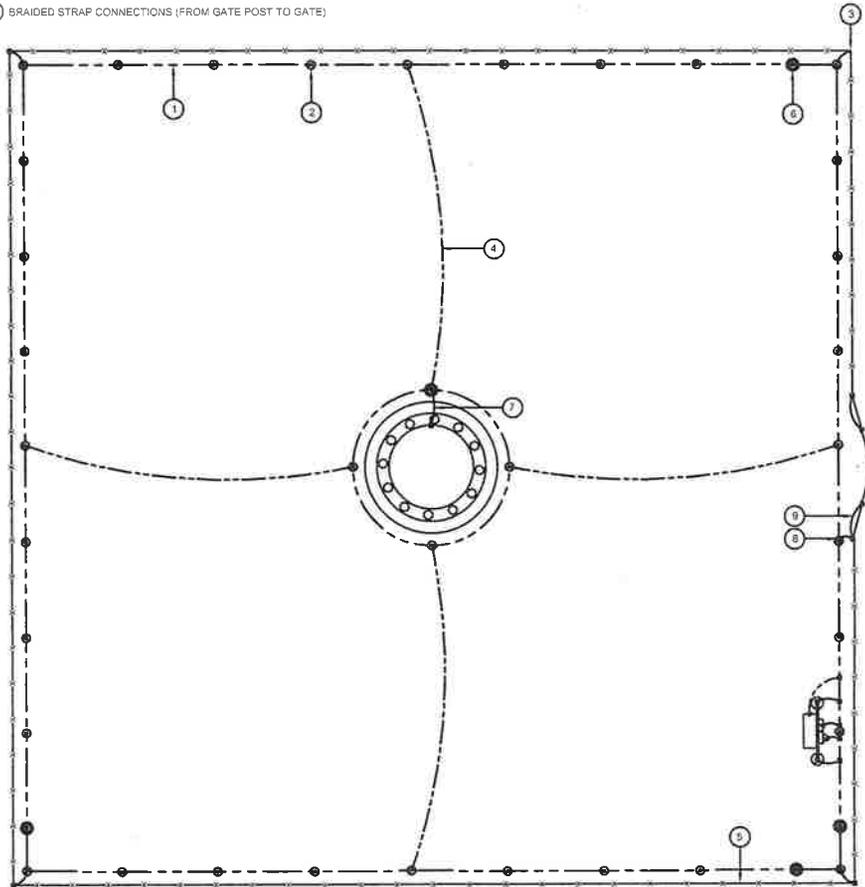
SITE NUMBER:  
**N/A**

SHEET TITLE  
**PANEL SCHEDULE**

SHEET NUMBER  
**E-4**

**CALLOUTS:**

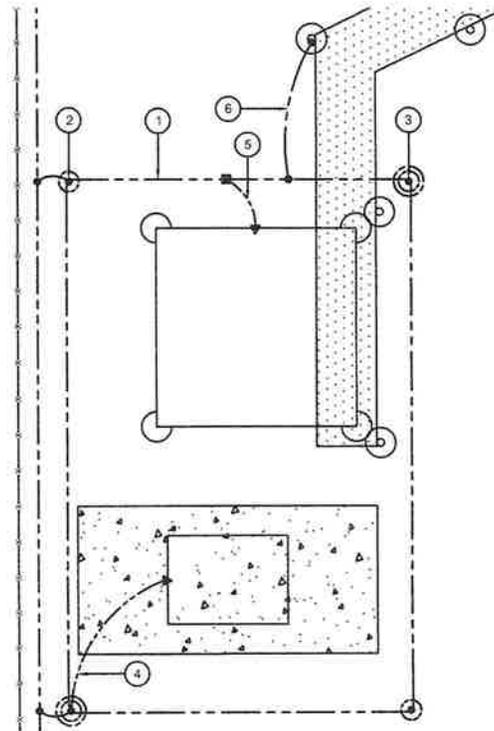
- 1 #2 SOLID BARE TINNED COPPER CONDUCTOR 4" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS GREATER (TYP.) MINIMUM 24" BENDING RADIUS
- 2 5/8"x10" COPPER CLAD GROUND ROD (MAX. 8' APART)
- 3 GROUND ALL CORNER POSTS
- 4 BOND PROPOSED TOWER GROUND RING TO PROPOSED COMPOUND GROUND RING WITH #2 SOLID BARE TINNED COPPER CONDUCTOR IN (4) LOCATIONS
- 5 PERIPHERAL GROUND RING SHOULD BE INSTALLED 1'-2" INSIDE FENCE LINE, THE TOWER GROUND RING SHOULD BE INSTALLED A MINIMUM OF 2' OFF ANY STRUCTURE
- 6 5/8"x10" LONG COPPER CLAD GROUND ROD WITH INSPECTION WELL, TOP OF GROUND ROD MAX 24" BURY (MIN. (4) PER COMPOUND)
- 7 BOND TOWER TO TOWER GROUND RING WITH #2 SOLID BARE TINNED COPPER CONDUCTOR IN (1) LOCATION
- 8 #2 SOLID BARE TINNED COPPER LEADS (FROM GATE POST TO COMPOUND GROUND RING)
- 9 BRAIDED STRAP CONNECTIONS (FROM GATE POST TO GATE)



**COMPOUND GROUNDING DETAIL**  
SCALE: NTS

**CALLOUTS:**

- 1 #2 SOLID BARE TINNED COPPER CONDUCTOR 30" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS GREATER (TYP.) MINIMUM 24" BENDING RADIUS
- 2 5/8"x10" COPPER CLAD GROUND ROD (MAX. 8' APART)
- 3 5/8"Ø 10" LONG COPPER CLAD GROUND ROD WITH INSPECTION WELL, TOP OF GROUND ROD MAX 24" BURY (MIN. (4) PER COMPOUND)
- 4 #2 AWG GENERATOR BOND BURIED 30" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS GREATER (TYP.) MINIMUM 24" BENDING RADIUS
- 5 #2 AWG CABINET BOND BURIED 30" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS GREATER (TYP.) MINIMUM 24" BENDING RADIUS
- 6 #2 AWG ICE BRIDGE BOND BURIED 30" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS GREATER (TYP.) MINIMUM 24" BENDING RADIUS



**EQUIPMENT GROUNDING DETAIL**  
SCALE: NTS



**SUBMITTALS**

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10/30/19	REVISED	6	SRP
12/20/19	REVISED	7	SRP

DRAWN BY: SRN  
 CHECKED BY: DSW  
 APPROVED BY: JME  
 DEWBERRY PROJECT NO: 50107722

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PREPARED BY:



SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

SITE ADDRESS:  
**11979 MCMANUS RD  
MIDLAND, NC 28107**

FA LOCATION:  
**12B29624**

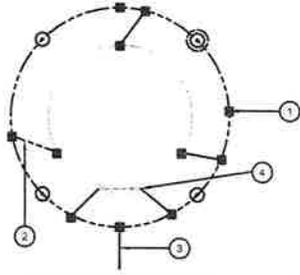
SITE NUMBER:  
**N/A**

SHEET TITLE  
**GROUNDING PLAN  
DETAILS**

SHEET NUMBER  
**G-1**

**CALLOUTS:**

- 1 #2 SOLID BARE TINNED COPPER CONDUCTOR 42" BELOW GRADE OR 6" BELOW FROST LINE, WHICH EVER IS GREATER (TYP.) MINIMUM 24" BENDING RADIUS
- 2 BOND TOWER TO TOWER GROUND RING WITH #2 SOLID BARE TINNED COPPER CONDUCTOR IN (3) LOCATIONS
- 3 BOND PROPOSED TOWER GROUND RING TO PROPOSED COMPOUND GROUND RING WITH #2 SOLID BARE TINNED COPPER CONDUCTOR IN (2) LOCATIONS
- 4 TOWER GROUND BAR

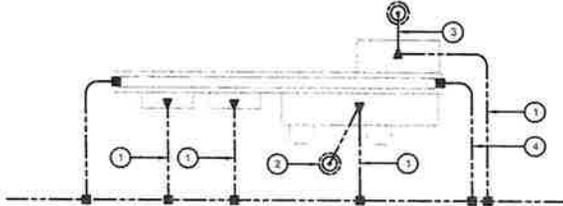


**TOWER GROUNDING DETAIL**

SCALE: NTS

**CALLOUTS:**

- 1 PROVIDE AN EXTERNAL #2 TINNED COATED GROUND LEAD FROM GROUND RING TO ALL METAL CABINETS ON UTILITY BACKBOARD (TELCO, ELECTRIC, BREAKER PANELS, METER RACKS, JUNCTION BOXES, ETC.) SLEEVED IN CONDUIT FROM JUST BELOW GRADE TO SAND CABINETS USING BURNDY TYPE 2 LONG BARREL LUGS WITH NO-OK OR COPPER SHIELD
- 2 BOND THE #6 GREEN INSULATED CONDUCTOR FROM METER PANEL AND DISCONNECT TO SEPARATE GROUND
- 3 BOND THE #6 GREEN INSULATED CONDUCTOR FROM TELCO BOX AND DISCONNECT TO SEPARATE GROUND
- 4 BOND THE #2 SOLID BARE TINNED COPPER LEADS FROM H-FRAME & CADWELD TO COMPOUND GROUND RING

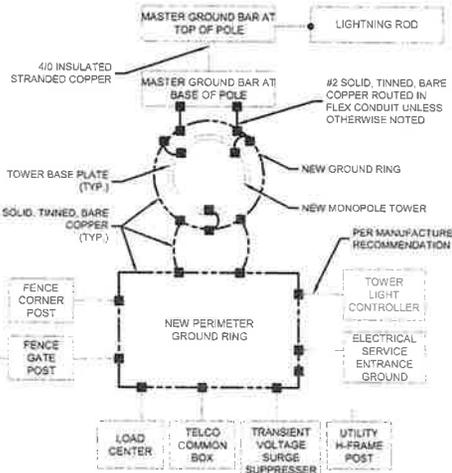


**H-FRAME GROUNDING DETAIL**

SCALE: NTS

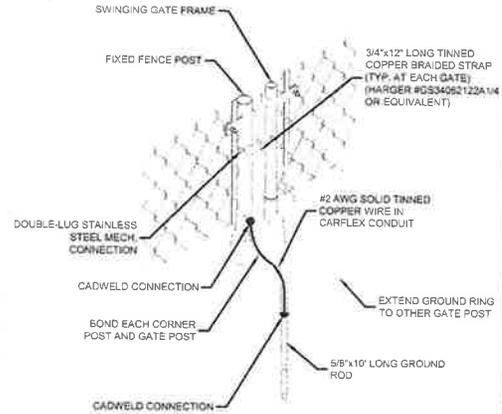
**LEGEND**

- #2 SOLID BARE TINNED COPPER CONDUCTOR
- ▲ MECHANICAL CONNECTION (BURNDY OR EQUIVALENT)
- EXOTHERMIC CONNECTION (CADWELD OR EQUIVALENT)
- ⊙ INSPECTION WELL
- 5/8" DIA. X 10'-0" LONG, STEEL CLAD W/ A PURE COPPER JACKET (10' MAX SEPARATION)



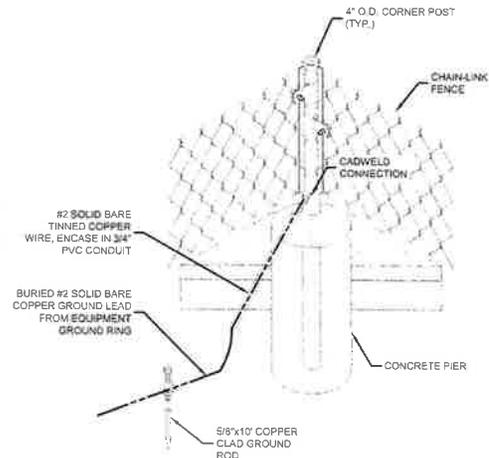
**SINGLE LINE DIAGRAM**

SCALE: NTS



**GATE GROUNDING DETAIL**

SCALE: NTS



**FENCE POST GROUNDING DETAIL**

SCALE: NTS



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 Network Solutions  
 507 AIRPORT BLVD, SUITE 111  
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PREPARED BY:

**Dewberry**  
 DEWBERRY ENGINEERS INC.  
 2510 WYCLIFF ROAD, SUITE 410  
 RALEIGH, NC 27607  
 NCBELS# F-0929

SITE ID:  
**074-4106**

SITE NAME:  
**MCMANUS**

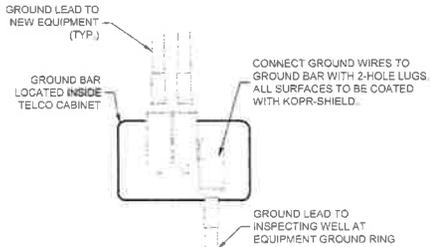
SITE ADDRESS:  
**11979 MCMANUS RD  
 MIDLAND, NC 28107**

FA LOCATION:  
**12829624**

SITE NUMBER:  
**N/A**

SHEET TITLE  
**GROUNDING DETAILS**

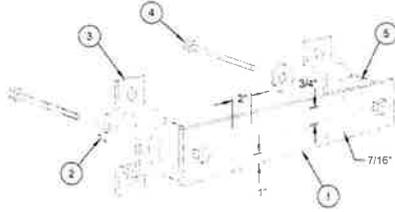
SHEET NUMBER  
**G-2**



**GROUND BAR IN TELCO CABINET**

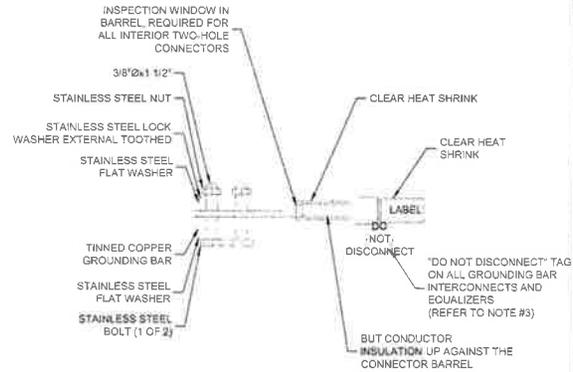
SCALE: N.T.S.

- 1 TINNED COPPER GROUND PLATE, 1/4" x 4" x 20", NEWTON INSTRUMENT CO. CAT NO. B-6142, HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
- 2 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT NO. 3015-8
- 3 WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056.
- 4 5/8" x 11 x 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1
- 5 INSULATOR, NEWTON INSTRUMENT CO. (CAT.# 3061-4)



**GROUND BAR DETAIL**

SCALE: N.T.S.



NOTES:

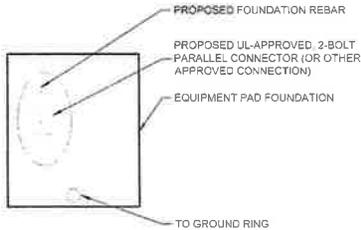
1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING SPLIT WASHER. COAT ALL SURFACES WITH KIPR-SHIELD BEFORE MATING
2. FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH KOPR-SHIELD.
3. PROVIDE "DO NOT DISCONNECT" TAG AS REQUIRED.

**INTERIOR & EXTERIOR TWO HOLE GROUND LUG DETAIL**

SCALE: N.T.S.

NOTES:

1. CONNECTION SHALL BE COVERED BY NO LESS THAN 2" OF CONCRETE
2. ATTEMPT TO MAKE CONNECTION TO A 6"-Ø RUN OF REBAR OR GREATER.
3. APPLY HEAT SHRINK OR ELECTRICAL TAPE AROUND THE CONDUCTOR TO AVOID CORROSION.

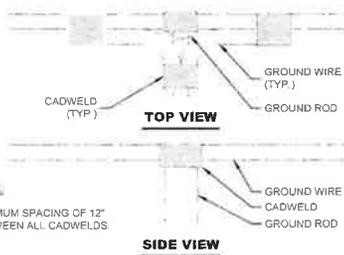


**EQUIPMENT PAD GROUNDING**

SCALE: N.T.S.

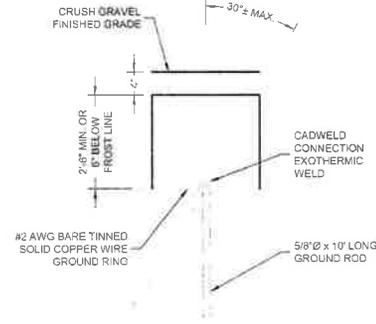
NOTE:

MINIMUM SPACING OF 12" BETWEEN ALL CADWELDS



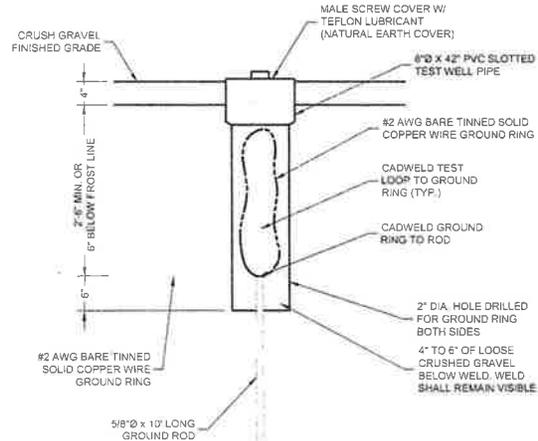
**CADWELD GROUNDING DETAIL**

SCALE: N.T.S.



**GROUND ROD DETAIL**

SCALE: N.T.S.



**GROUND ROD TEST WELL DETAIL**

SCALE: N.T.S.



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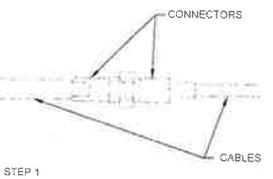
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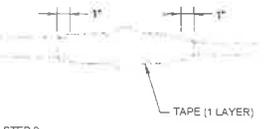
GROUNDING DETAILS

SHEET NUMBER

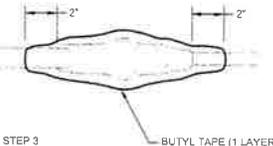
G-3



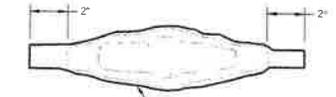
STEP 1



STEP 2



STEP 3



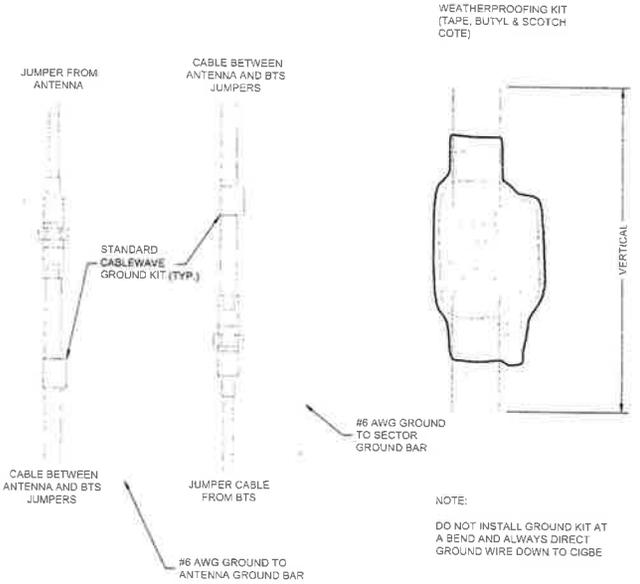
STEP 4



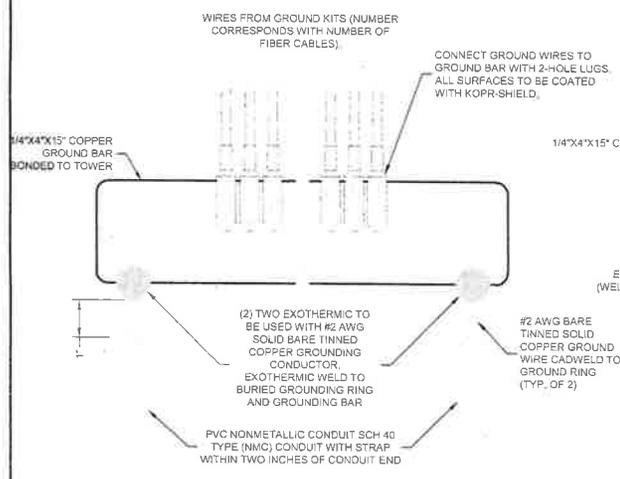
NOTES

1. VERTICAL CONNECTIONS SHOULD BE TAPED FROM THE BOTTOM UP SO OVERLAP SHEDS WATER AWAY FROM CONNECTION.
2. ELECTRICAL TAPE ENDS ARE TO BE CUT, (DO NOT STRETCH).

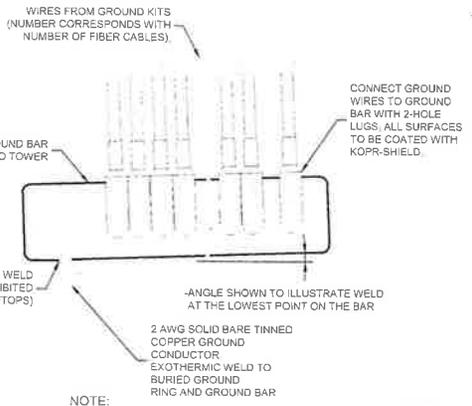
**CABLE WEATHERPROOFING DETAILS**  
SCALE: N.T.S.



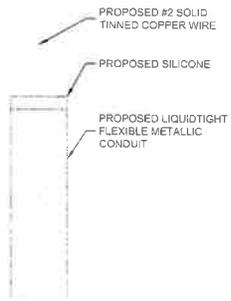
**GROUND KIT CONNECTION DETAILS**  
SCALE: N.T.S.



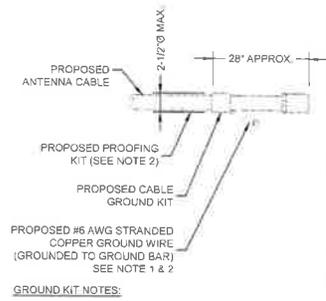
**LOWER GROUND BAR**  
SCALE: N.T.S.



**UPPER/INTERMEDIATE GROUND BAR**  
SCALE: N.T.S.



**GROUND WIRE WEATHERPROOFING**  
SCALE: N.T.S.



**CABLE BAR DETAIL**  
SCALE: N.T.S.

GROUND KIT NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT AND WEATHER PROOFING KIT SHALL BE OF THE SAME TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.

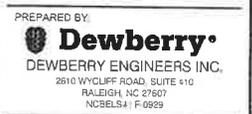


SUBMITTALS

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DESIGNED BY: SRN  
CHECKED BY: SRW  
APPROVED BY: JMB  
DEWBERRY PROJECT NO: 50107722

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FA LOCATION:  
**12829624**

SITE NUMBER:  
**N/A**

SHEET TITLE  
**GROUNDING DETAILS**

SHEET NUMBER  
**G-4**

**ELECTRICAL GROUNDING ROD SYSTEM NOTES:**

- ALL GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC PROCESS CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE SPLICES, ETC. ALL CABLE TO GROUND RODS, GROUND RODS SPLICES, AND LIGHTNING PROTECTION SYSTEM AS INDICATED. GROUND FOUNDATION ONLY AS INDICATED BY PM. ALL MATERIALS USED (MOLDS, WELDING, METAL, TOOLS, ETC.) SHALL BE BY EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND PROCEDURES. GROUND CONDUCTOR SHALL HAVE A MINIMUM 24" BENDING RADIUS.
- ALL EXOTHERMIC CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COLORED TO MATCH SURFACE WITH (2) TWO COATS OF SHERWIN-WILLIAMS GALVITE (WHITE) PAINT B50W3 (OR EQUAL) OR SHERWIN-WILLIAMS SILVERBRITE (ALUMINUM) B5S11 (OR EQUAL).
- ALL ELECTRICAL & MECHANICAL GROUND CONNECTIONS SHALL HAVE ANTI-OXIDANT COMPOUND APPLIED TO CONNECTION.
- GROUND RODS SHALL BE INSTALLED VERTICALLY IN THE PROPOSED UNDISTURBED EARTH.
- GROUND RING AROUND BUILDING SHALL BE BARE COPPER, #10, BARE TINNED COPPER CONDUCTOR, IN CONTACT WITH BARE EARTH AT A MINIMUM DEPTH OF 42" ALL CONDUCTOR BENDS SHALL NOT BE LESS THAN A MINIMUM RADIUS OF 8".
- THE FENCE LINE WILL BE GROUNDED AT THE CORNER POSTS AND GATES, POSTS SHALL HAVE ONE #4/0 THWN COPPER CONDUCTOR WIRE CONNECTED TO A 5/8" X 8" SOLID COPPER CLAD GROUND ROD WHICH IS INCORPORATED INTO THE EXTERIOR GROUND RING. GATE POSTS SHALL HAVE A STRANDED COPPER GROUND-JUMPER TO THE SWING GATE FRAME. ALL CONNECTIONS ARE TO BE CAD-WELDED AND SPRAYED WITH COLD-GALVANIZED PAINT.
- FENCE/GATE: GROUND FENCE POSTS WITHIN 6' OF ENCLOSURE AND 25' OF TOWER AS INDICATED ON DRAWINGS. GROUND EACH GATE POST AND CORNER POST. GROUND CONNECTIONS TO FENCE POSTS SHALL BE MADE BY THE EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES. ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY THE EXOTHERMIC PROCESS, AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
- ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL GROUNDING INSTALLATION AND CONSTRUCTION MAY VARY DUE TO THE SPECIFIC SITE CONDITIONS.
- UTILITY COMPANY COORDINATION: ELECTRICAL CONTRACTOR SHALL

CONFIRM THAT ALL WORK IS IN ACCORDANCE WITH THE RULES OF THE LOCAL UTILITY COMPANY BEFORE SUBMITTING THE BID. THE CONTRACTOR SHALL CHECK WITH THE UTILITY COMPANIES SUPPLYING SERVICE TO THIS PROJECT AND SHALL DETERMINE FROM THEM ALL EQUIPMENT AND CHARGES WHICH THEY WILL REQUIRE AND SHALL INCLUDE THE COSTS IN THE BID.

- GROUND TEST: GROUND TESTS SHALL BE PERFORMED AS REQUIRED BY LESSEE STANDARD PROCEDURES. GROUND GRID RESISTANCE SHALL NOT EXCEED 5 OHMS.
- GROUND RINGS ARE TO BE INSTALLED A MINIMUM OF 2'-0" FROM EQUIPMENT AND TOWER.

**ELECTRICAL-GROUNDING ROD SYSTEM NOTES:**

- GROUND RODS SHALL BE INSTALLED NOT MORE THAN 8' APART.
- GROUND RODS SHALL BE INSTALLED 6" MIN. BELOW FROST.
- ALL BELOW GRADE GROUND RINGS AND GROUND LEADS SHALL BE #2 AWG SOLID, TINNED BARE COPPER WIRE.
- ALL BELOW GROUND CONNECTIONS SHALL BE EXOTHERMIC WELDS.
- UNLESS PROVIDED WITH A FACTORY APPLIED LEAD, ALL CONNECTIONS TO GROUND BARS SHALL BE BURNDY HYGROUND COMPRESSION LUGS OR EQUAL.
- STEEL SHALL BE TO BARE METAL, GRIND GALV. FINISH OR PAINT OFF PRIOR TO WELDING, REPAIR GALV. FINISH OR PAINT AS REQUIRED, MATCH PAINT COLOR.
- ALL LUG CONNECTORS SHALL BE 2 HOLD LONG BARREL COMPRESSION TYPE OR APPROVED EQUAL.
- ALL HARDWARE TO ATTACH MECHANICAL GROUND CONNECTIONS SHALL BE STAINLESS STEEL.
- ALL MECHANICAL CONNECTIONS SHALL HAVE NOXAX OR APPROVED EQUAL APPLIED BETWEEN COMPRESSION LUG AND FIXTURE.

**LEAD IDENTIFICATION & DESCRIPTION**

1	RING, EXTERNAL BURIED W/RODS	#2 SBTC
1A	RING, CONCRETE ENCASED	#2 SBTC
2	DEEP ANODE (TO IMPROVE OHMS)	ROD OR PIPE
3	RING TO BLDG STL FRAME	#2 SBTC
4	MAIN AC PANEL NEUTRAL BUS TO (2) GROUND RODS, ISOLATED FROM LEAD #1	NEC 250.66
5	RING TO GROUND BAR	(2) #2 SBTC
6	RING TO EXT MTL OBJECT	#2 SBTC
7	DEEP ANODE TO MGB	NSTD33-9
8	AC PANEL TO WATER METER	NEC 250.56
9	EXT WATER TO INT WATER PIPES	NSTD33-9
10	INT WATER PIPE TO MGB	NSTD33-9
11-12	NOT USED	
13	AC PANEL TO MGB	NSTD33-9
14	MGB/FGB TO BLDG STL FRAME	#2/0 I-STR
14C	MGB/FGB TO ROOF/WALL MTL PNL	#1/0 I-STR
15	MGB/FGB TO FGB-SAME FLOOR	#2/0 I-STR
16	NOT USED	
16A	ECPGB TO CABLE ENTRY RACK	#1/0 I-STR
17	MGB TO CABLE SHIELDING	#6 I-STR
17A	ECPGB TO CABLE SHIELDING	#6 I-STR
17B	MGB/FGB TO F-0 SPLICE SHELF	#1 I-STR
18	LOWEST MGB/FGB TO HIGHEST FGB	#2/0 I-STR
19	LEAD 18 TO OTHER FGB, <#6	#2/0 I-STR
20	MGB/FGB TO BRANCH AC PNL	#6 I-STR
20A	NEAREST GRIND TO DISCONNECT PNL	NEC 250.66
20B	GWB TO AC DISTR PNL	#6 I-STR
21	MGB/FGB TO INT HALO	#2 I-STR
21A	INTERIOR GREEN HALO	#2 I-STR
21B	INT HALO TO EXT RING	#2 SBTC
21C	INT HALO TO EQUIPMENT MTL	#6 I-STR
22	ROOF TOWER RING TO ROOF GRND	NFPA 780
23	MGB/FGB TO ECPGB, SAME FLOOR	#1 I-STR
23A	MGB/FGB TO CXR-HF LNR PROT	#6 I-STR
24	ECPGB TO EACH PROTECTOR ASSEMBLY	#6 I-STR
24A	LOWER PROT ASSY TO UPPER	#6 I-STR

25	RING TO NEAREST LIGHTNING ROD	#2 SBTC
26	LIGHTNING ROD SYS TO NEARBY MTL	NFPA 780
27	RING TO TOWER RING	(2) #2 SBTC
28	RING TO SHELTER RING	(2) #2 SBTC
29	BRANCH AC PNL TO BITTY CHG FRM	NSTD33-11
30	<b>BRANCH AC PNL TO OUTLETS</b>	
31	MGB/FGB TO PWR, BITTY FRAMES	NSTD33-11
32	#31 TO BATTERY CHARGER FRAME	#2/0 I-STR
33	#31 TO BATTERY RACK FRAME	#6 I-STR
34	#31 TO PCU FRAME	#6 I-STR
35	<b>#31 TO DCU FRAME</b>	#6 I-STR
36	#31 TO PCU FRAME	#6 I-STR
37	MGB/FGB TO BITTY RETURN	NSTD33-14.5
37A	MGB/FGB TO RTN TERM CARR SUPP	#6 I-STR
38	FGB TO PDU GB	#750MCM I-STR
38A	FGB TO PDU GB CARRIER SUPPLY	#2/0 I-STR
39	DC BUS DUCT TO NEXT SECTION	#6 I-STR
40	DC BUS DUCT TO MGB/FGB	#6 I-STR
41A	MGB/FGB TO #58	#2/0 I-STR
42-44	NOT USED	
45	MAIN AC PNL TO BRANCH AC PNL	NSTD33-11
46	BRANCH AC PNL TO DED OUTLET	NSTD33-11
47	FGB TO INTEG FRM	#2 I-STR
48	LEAD #31 TO INTEG FRM	#6 I-STR
49	INTEG FRM TO EQUIP SHELF	BY FASTENERS
50	PDU BITTY RET TO #5	#2/0 I-STR
51	#50 TO TRANS FROM ISO DC PWR	#6 I-STR
52	TRANS FRM FUSE TO FRM OR BAR	#8 I-STR
53A	MGB/FGB TO PDF/DFB	NSTD33-22
54	MGB/FGB TO STATIC DEVICES	#6 I-STR
55	MGB/FGB TO CABLE AT ENTRY	#6 I-STR
56	MGB/FGB TO AC PWR RADIO XMTR	#6 I-STR
57A	MGB/FGB TO CBLGRD/RUNWAY	#2/0 I-STR
58A	#41A TO CABLE FRAME	#2 I-STR
59A	#58A TO EACH SGL FRAME GRND	#6 I-STR
60-69	NOT USED	
90	GENERATOR FRAME TO EXT RING	#2 SBTC



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SITE ADDRESS:

**11979 MCMANUS RD  
MIDLAND, NC 28107**

FA LOCATION:

**12829624**

SITE NUMBER:

**N/A**

SHEET TITLE  
**GROUNDING NOTES**

SHEET NUMBER

**G-5**

**SDC20 | 2.5L | 20 kW - AC**  
**INDUSTRIAL DIESEL GENERATOR SET**

EPA Certified Stationary Emergency

**GENERAC** INDUSTRIAL

Model G007098-0 (Steel)

**Standby Power Rating**  
20 kW AC, 60 Hz



Image used for illustrative purposes only



**Codes and Standards**

Generac products are designed to the following standards:

 UL2200, UL508, UL142, UL489

 NFPA 37, 70, 99, 110

 NEC700, 701, 702, 708

 ISO 3046, 7637, 8528, 9001

 NEMA ICS10, MG1, 250, ICS6, AB1

 ANSI C62.41

**Powering Ahead**

For over 50 years, Generac has provided innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial applications under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

**SDC20 | 2.5L | 20 kW - AC**  
**INDUSTRIAL DIESEL GENERATOR SET**  
 EPA Certified Stationary Emergency

**GENERAC INDUSTRIAL**

**Model G007098-0 (Steel)**

**STANDARD FEATURES**

**ENGINE SYSTEM**

- Oil Drain Extension
- Air Cleaner with Service Indicator
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Exhaust Silencer with Drain
- Factory Filled Oil & Coolant

**Fuel System**

- Primary Fuel Filter

**Cooling System**

- 120V AC Coolant Heater
- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension

**Electrical System**

- Battery Charging Alternator
- AGM Spill Proof Battery
- Battery Cables
- Sealed/Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor
- Output Circuit Breaker

**ALTERNATOR SYSTEM**

- **Class H Insulation Material**
- Vented Rotor
- 2:3 Pitch
- Skewed Stator
- Amortisseur Winding
- Brushless Excitation
- Sealed Bearings
- Rotor Dynamically Spin Balanced
- Full Load Capacity Alternator
- Protective Thermal Shutdown

**GENERATOR SET**

- Single Side Service
- Internal Genset Vibration Isolators
- Separation of Circuits- High/Low Voltage
- Silencer Heat Shield
- High Heat Wrapped Exhaust Piping
- Silencer Enclosed Within Generator
- **5 Year Extended Warranty**
- Extended Factory Testing
- 12 Gallon System Spill Containment
- 2.5 Gallon Fuel Fill Spill Containment

**ENCLOSURE**

- Serviceable Items Accessible Through Lift-Off Door
- High Performance Sound-Absorbing Material
- Gasketed Door
- Stamped Air-Intake Louvers
- Single Door Latch Lockable with Key & Padlock
- Rhino Coat™ - Textured Polyester Powder Coat
- 150 MPH Wind Rating
- 36" Snow Rating

**FUEL TANK**

- UL 142 Compliant
- Double Wall Construction
- Factory Pressure Tested (5 psi)
- Rupture Basin Alarm
- Fuel Level Gauge and Sender
- Check Valve in Supply Line
- Rhino Coat™ - Textured Polyester Powder Coat
- **Stainless Steel Hardware**
- Integrated Fork Pockets

**CONTROL SYSTEM**

- Digital H Control Panel - Dual 4x20 Display
- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable PLC
- RS-232/485 Communications
- All-Phase Sensing Voltage Regulator
- Full System Status
- 2-Wire Start Compatible
- Power Output (kW)
- Power Factor
- **kWh Hours, Total & Last Run**
- **Real/Reactive/Apparent Power**
- **All Phase AC Voltage**
- **All Phase Currents**
- **Oil Pressure**
- **Coolant Temperature**
- **Coolant Level**
- **Engine Speed**
- **Battery Voltage**

- Frequency
- Date/Time Fault History (Event Log)
- Isochronous Governor Control
- Waterproof/Sealed Connectors
- **Adjustable Alarms and Shutdowns**
- Not in Auto (Flashing Light)
- Auto/Oil/Manual Switch
- E-Stop (Red Mushroom-Type)
- NIPPA I 10 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus protocol
- Predictive Maintenance Algorithm
- Sealed Boards
- Password Parameter Adjustment Protection
- Single Point Ground Connections
- 15 Channel Data Logging
- 0.2 msec High Speed Data Logging
- Alarm Information Automatically Comes Up On the Display

**Alarms**

- Generator Run- Dry Contact
- Major Alarm- Dry Contact
- Minor Alarm- Dry Contact
- Low Fuel Alarm- Dry Contact
- Rupture Basin Alarm- Dry Contact
- Alarms & Warnings Time and Date Stamped
- Alarms & Warnings for Transient and Steady State Conditions
- Snap Shots of Key Operation Parameters During Alarms & Warnings
- Alarms and Warnings Spelled Out (No Alarm Codes)

**MODEL OPTIONS**

**CONTROL SYSTEM**

- 21 Light Annunciator- Shipped Loose Kit and Field Installed
- External E-Stop-Shipped Loose Kit and Field Installed

**ENCLOSURE**

- Aluminum Enclosure
- Extreme Cold Weather Kit - Shipped Loose Kit and Field Installed

**TANKS**

- External Fuel Vent- Shipped Loose Kit and Field Installed

SPEC SHEET

**SDC20 | 2.5L | 20 kW - AC**  
**INDUSTRIAL DIESEL GENERATOR SET**

EPA Certified Stationary Emergency

**GENERAC** | INDUSTRIAL

**Model G007098-0 (Steel)**

APPLICATION AND ENGINEERING DATA

**ENGINE SPECIFICATIONS**

**General**

Make	Mitsubishi
EPA Emissions Compliance	Interim Tier 4
Cylinder #	4
Type	In-Line
Displacement - L (Cu In)	2.5 (158)
Bore - mm (in)	88 (3.5)
Stroke - mm (in)	103 (4.1)
Compression Ratio	22:1
Intake Air Method	Naturally Aspirated

**Engine Governing**

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	± 0.25%

**Lubrication System**

Oil Pump Type	Trochoid Gear Pump
Oil Filter Type	Filtering Paper, Full Flow
Crankcase Capacity - L (qts)	6.5 (6.9)

**Cooling System**

Cooling System Type	Forced Circulation
Water Pump Type	Centrifugal Pump
Fan Type	Pusher
Fan Speed (rpm)	2100
Fan Diameter - mm (in)	431.8 (17)
Coolant Heater Wattage	1000
Coolant Heater Voltage	120

**Fuel System**

Fuel Type	Ultra Low Sulfur Diesel #2
Fuel Specifications	ASTM
Fuel Filtering (microns)	6
Fuel Inject Pump Make	Busch
Injector Type	Engine Driven Gear
Engine Type	Diesel
Fuel Supply Line - mm (in.)	6.6 (0.26)

**Engine Electrical System**

System Voltage	12 VDC
Battery Charger Alternator	12V-50A
Battery Size	650 CCA
Battery Group	35
Battery Voltage	12 VDC
Ground Polarity	Negative

**ALTERNATOR SPECIFICATIONS**

Standard Model	Moco Alte ECP 28-2L/4
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<5%
Telephone Interference Factor (TIF)	< 45
Standard Excitation	Roughness

Bearings	Dual Sealed
Coupling	Belt, Pulley
Load Capacity - Standby	100%
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	±0.5%

**RATING DEFINITIONS**

Standby - Applicable for a varying emergency load for the duration of a utility power outage with no overload capability.

SPEC SHEET

**SDC20 | 2.5L | 20 kW - AC**  
**INDUSTRIAL DIESEL GENERATOR SET**  
 EPA Certified Stationary Emergency

**GENERAC INDUSTRIAL**

**Model G007098-0 (Steel)**

**OPERATING DATA**

**POWER RATINGS**

Single-Phase 120/240 VAC @1.0pf	20 kW	Amps: 83
Circuit Breaker Size	100A	

**FUEL CONSUMPTION RATES\***

Diesel - gph (lph)	
Percent Load	Standby
25%	0.74 (2.80)
50%	0.99 (3.75)
75%	1.41 (5.39)
100%	1.90 (7.19)

\* Fuel supply installation must accommodate fuel consumption rates at 100% load.

**COOLING**

		Standby
Coolant Flow per Minute	gpm (lpm)	11.9 (45)
Coolant System Capacity	gal (L)	3.5 (13.2)
Heat Rejection to Coolant	Btu/hr	238 200
Inlet Air	cfm (m <sup>3</sup> /min)	2385 (67)
Max. Operating Ambient Temperature (Before Derate)	°F (°C)	77° (25°)
Maximum Radiator Backpressure	in H <sub>2</sub> O	0.50

**COMBUSTION AIR REQUIREMENTS**

	Standby
Flow at Rated Power cfm (m <sup>3</sup> /min)	86 (2.49)

**ENGINE**

		Standby
Rated Engine Speed	rpm	1800
Horsepower at Rated kW**	hp	33.5
Piston Speed	f/min	1220.47
BMEP	psi	96.5

**EXHAUST**

		Standby
Exhaust Flow (Rated Output)	cfm (m <sup>3</sup> /min)	193 (326)
Max. Backpressure (Post Silencer)	inHg (kPa)	1.38 (4.67)
Exhaust Temp (Rated Output - Post Silencer)	°F (°C)	928 (497.7)

\*\* Refer to "Emissions Data Sheet" for maximum b1P for EPA and SCAQMD permitting purposes

Deration — Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

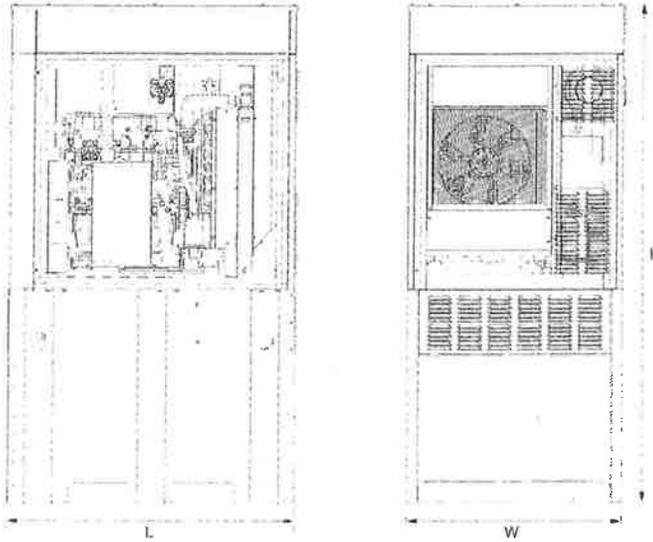
**SDC20 | 2.5L | 20 kW - AC**  
**INDUSTRIAL DIESEL GENERATOR SET**

EPA Certified Stationary Emergency

DIMENSIONS AND WEIGHTS\*

**GENERAC** | INDUSTRIAL

Model G007098-0 (Steel)



**Level 2 Sound Attenuation Enclosure**

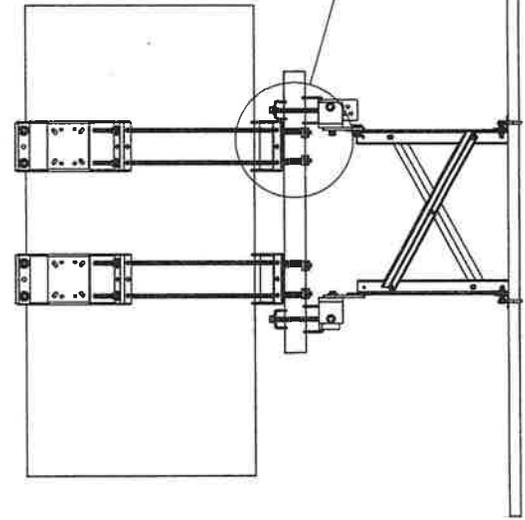
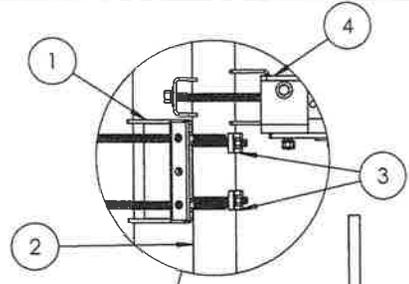
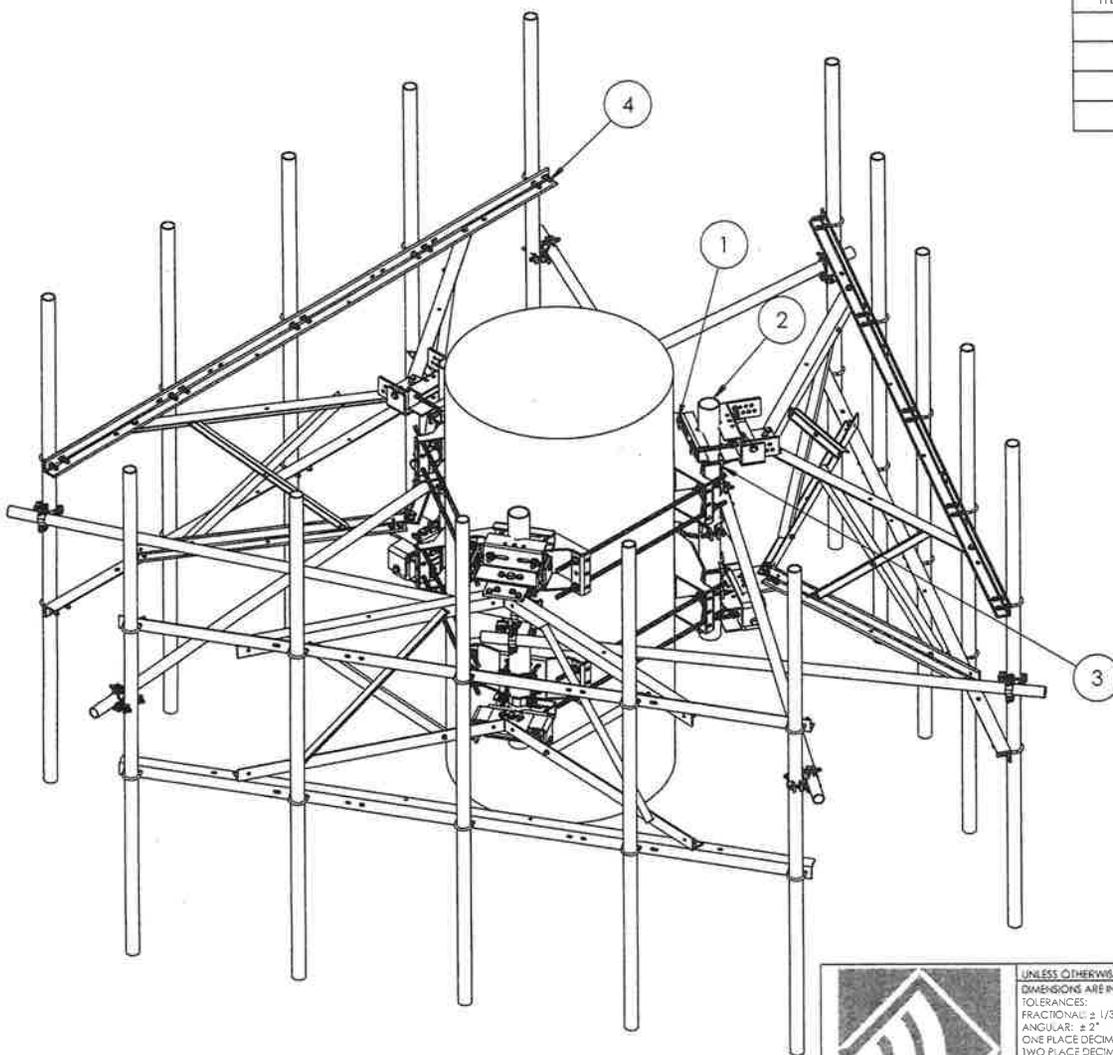
Run Time Hours	48
Usable Capacity Gal (L)	92 (348.2)
L x W x H in. (mm)	48 x 36 x 90 (1219.2 x 914.4 x 2286)
Weight lbs. (kg)	2400 (1089)
Sound Level	71 dBA

\* All measurements are approximate and for estimation purposes only.

**YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER**

Specifications characteristics may change without notice. Dimensions and weights are for estimation purposes only. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	T1503KT48A	Universal Ring Mount, 10" - 48"	2
2	P1500KT5	Pipe , 4.5" OD x5', HDG	3
3	T1004KT	Pipe mount kit for RM, 1-1/2"-5-1/2" OD	6
4	T1672KT12	Sector Frame, 12' Face (ATT WLL)	3



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN INCHES  
TOLERANCES:  
FRACTIONAL: ± 1/32  
ANGULAR: ± 2°  
ONE PLACE DECIMAL: ± .06  
TWO PLACE DECIMAL: ± .03  
THREE PLACE DECIMAL: ± .010

INTERPRET GEOMETRIC TOLERANCING PER

MATERIAL

FINISH

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	KAR	10/28/16
CHECKED		
ENG APPR.		
MFG APPR.		

**PROPRIETARY AND CONFIDENTIAL**

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF KENWOOD TELECOM. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF KENWOOD TELECOM IS PROHIBITED.

**KENWOOD TELECOM**

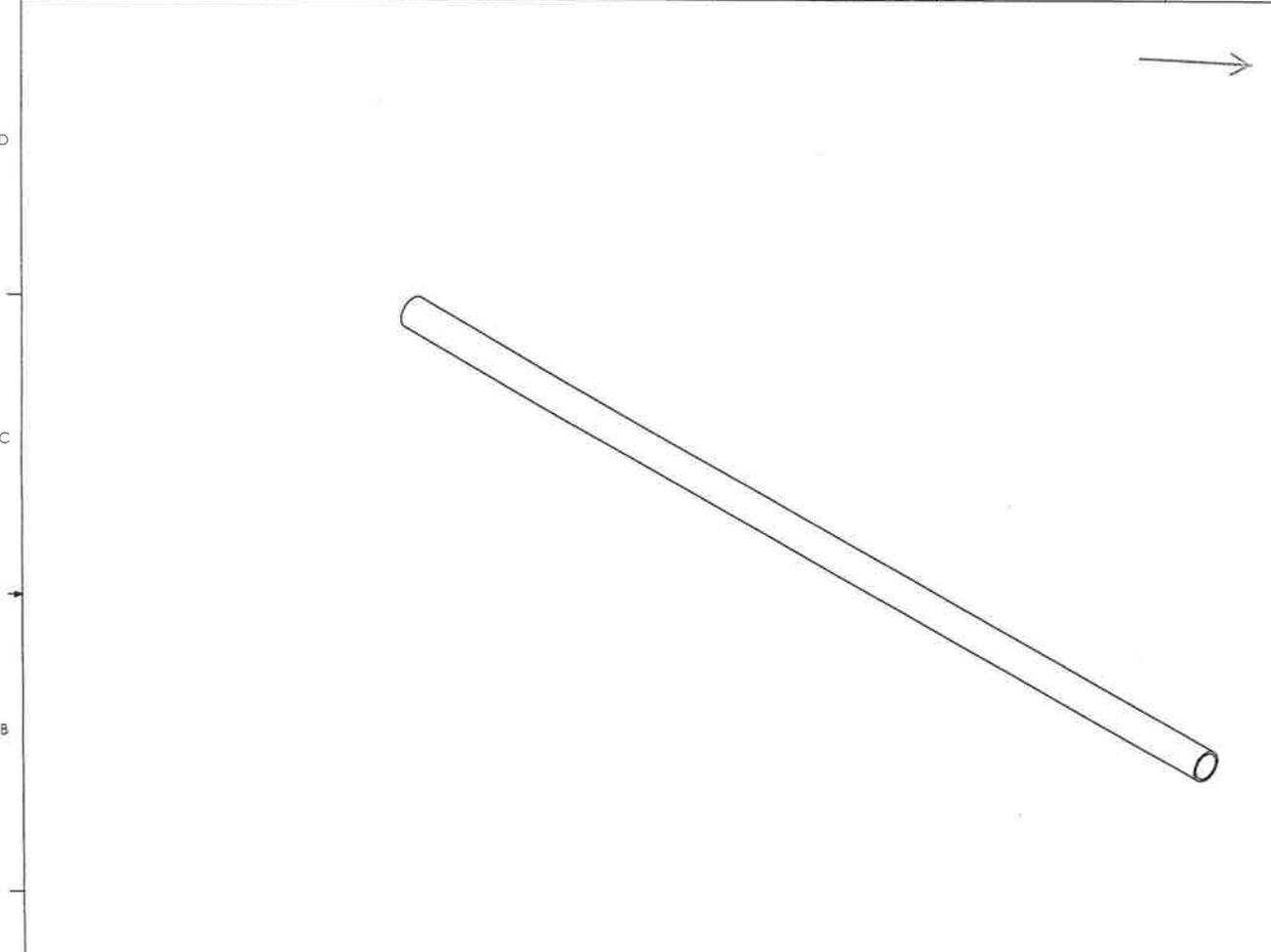
TITLE:  
**(3) T1671KT12 with monopole attachment ATT Heavy 10**

SIZE **B** DWG. NO. **T1672KT12-3SM** REV

SCALE: 1:25 FINISHED WEIGHT: 2707.68 SHEET 1 OF 1

3

8 7 6 5 4 3 2 1



2-1/2" Pipe Table	
Part Number	Description
P1090KT10	Pipe, 2-1/2" ID X 2-7/8" OD x10' L
P1090KT10.5	Pipe, 2-1/2" ID X 2-7/8" OD x10.5' L
P1090KT13	Pipe, 2-1/2" ID X 2-7/8" OD x13' L
P1090KT14	Pipe, 2-1/2" ID X 2-7/8" OD x14' L
P1090KT15	Pipe, 2-1/2" ID X 2-7/8" OD x15' L
P1090KT21	Pipe, 2-1/2" ID X 2-7/8" OD x21' L
P1090KT3	Pipe, 2-1/2" ID X 2-7/8" OD x3' L
P1090KT6	Pipe, 2-1/2" ID X 2-7/8" OD x6' L
P1090KT7	Pipe, 2-1/2" ID X 2-7/8" OD x7' L
P1090KT8	Pipe, 2-1/2" ID X 2-7/8" OD x8' L
P1090KT9	Pipe, 2-1/2" ID X 2-7/8" OD x9' L

 <p><b>KENWOOD TELECOM</b> 11111 11111 11111 11111 11111</p> <p>PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF KENWOOD TELECOM. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF KENWOOD TELECOM IS PROHIBITED.</p>			UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ± 1/32 ANGULAR: ± 2° ONE PLACE DECIMAL: ± .06 TWO PLACE DECIMAL: ± .03 THREE PLACE DECIMAL: ± .010	NAME	DATE	<b>KENWOOD TELECOM</b> TITLE: <b>2-1/2" Galv Pipe</b>		
			INTERPRET GEOMETRIC TOLERANCING PER:	DRAWN	PO		10/23/14	
			MATERIAL Hot Dipped Galvanized Pipe A323	ENG APPR.				SIZE DWG. NO.
			FINISH	MFG APPR.				<b>B</b> P1090KT PIPE
	NEXT ASSY	USED ON	COMMENTS:			REV		
	APPLICATION		DO NOT SCALE DRAWING			SCALE: 1:20		
						SHEET 1 OF 1		

8 7 6 5 4 3 2 1

*Impact Study - Cell Tower  
11979 McManus Road  
Midland, Cabarrus County, North  
Carolina 28107*

*Type Report: Impact Study*

*Effective Date  
July 26, 2019*

*Project ID CAB-004*



*(CAB-004)*

August 5, 2019

Mrs. Karen Kemerait  
Fox Rothchild LLP  
Partner  
434 Fayetteville Street  
Suite 2800  
Raleigh, NC 27601

**RE: Impact Study for Proposed Telecommunications Facility located at 11979 McManus Road, Cabarrus County, North Carolina.**

Dear Mrs. Kemerait:

I have completed a study of the proposed tower. The scope of the assignment is to provide an analysis and conclusions addressing whether the proposed development will maintain or enhance the value of contiguous properties.

The impact study is intended to conform to the Uniform Standards of Professional Appraisal Practice (USPAP), the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute. The impact study is not an appraisal as it does not report a value of any property or provide a numerical reference; however, the study employs appraisal methodology to reach our conclusions of the impact of the proposed development.

The proposed development is a communication tower to be located on a property owned by Nathaniel McManus. He is the owner of one parcel adjacent to the site of the proposed tower. The siting of the proposed tower is in the center of the site, which minimizes the visual impact in concert with the existing tree canopy. The surrounding land uses include low density residential and vacant land. The surrounding land uses are a contributing factor in the development of a conclusion regarding the potential impact of the tower.

The conclusions of this study are supported by the data and reasoning set forth in the attached narrative. Your attention is invited to the Assumptions and Limiting Conditions section of this report. The analysts certify that we have no present or contemplated future interest in the proposed development, and that our fee for this assignment is in no way contingent upon the conclusions of this study.

**EXTRAORDINARY ASSUMPTIONS AND HYPOTHETICAL CONDITIONS:**

It is an extraordinary assumption of this report that the proposed development will be constructed as detailed in the report. Further, it is an assumption of the study that the existing access will be used to access the proposed wireless facility.

The content and conclusions of this report are intended for our client and for the specified intended uses only. They are also subject to the assumptions and limiting conditions as well as the specific extraordinary assumption set forth in this report.

It is our opinion that the proposed development will enhance or maintain the value of contiguous properties and that it is located in an area where it does not substantially detract from the aesthetics and neighborhood character.

Thank you for the opportunity to be of service. If you have any questions or comments, please contact our office.

Sincerely yours,



**MICHAEL P. BERKOWITZ**  
**MPB REAL ESTATE, LLC**

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## SCOPE OF THE ASSIGNMENT

In accordance with our agreement with the client, this impact study is specific to the needs of our client as part of an application for a conditional use permit to be considered by Cabarrus County Officials. Our study and the reporting of our study is in agreement with our client as follows:

The proposed development requires a Conditional Use Permit. The report is intended to address some of the items to be considered for approval or denial of the permit. The following was extracted from Chapter 8-3 of the Cabarrus County Ordinance.

- a. Maintain or enhance the public health, safety and general welfare if located where proposed, developed and operated according to the plan as submitted;
- b. Maintain or enhance the value of contiguous property (unless the use is a public necessity, in which case the use need not do so);
- c. Assure the adequacy of:
  - o Sewage disposal facilities
  - o Solid waste and water facilities
  - o Police, fire and rescue squad protection
  - o Schools
  - o Transportation systems (within and around the site) and other public facilities
- d. Comply with the general plans for the physical development of the County as embodied in these regulations or in the Land Use Plans adopted by the Cabarrus County Board of Commissioners.

The impact study focuses on item (b) of the ordinance associated with the potential impact of the tower on value of contiguous property.

The scope of the assignment includes research of existing towers in the neighborhood. The neighborhoods and their surrounding developments are researched to determine whether the proposed development, referred to as the "McManus Site", is consistent with the location of other towers in this section of Cabarrus County and their impact, if any, on neighborhood development patterns and property values.

The impact study provides an analysis of the surrounding properties. The analysis includes existing improvements, zoning designations and likely development patterns. The existing uses as of the effective date of this report in concert with the market data provided are contributing factors to the conclusions of this study.

## PREMISES OF THE STUDY

### Identification of Subject

McManus Site

11979 McManus Road  
Midland, Cabarrus County, NC 28107  
Tax Parcel ID: 5554-89-1609

### Client, Purpose, and Intended Use and Intended Users

Mrs. Karen Kemerait  
Fox Rothchild LLP  
Partner  
434 Fayetteville Street  
Suite 2800  
Raleigh, NC 27601

The client and intended user is Mrs. Karen Kemerait. The intended use is as an aid to assist Cabarrus County officials in rendering a decision regarding the issuance of a conditional use permit for the proposed development. The study is not intended for any other use or users.

### Analyst

Michael P. Berkowitz

MPB Real Estate, LLC  
1100 Sundance Drive  
Concord, NC 28027

### Property Inspection

Michael Berkowitz inspected the property and neighborhood surrounding the proposed development. Details of surrounding land uses and observations are provided throughout the report. I also performed off site visual inspections of several towers located in Cabarrus County. I consider my observations in the context of the market data. They are a contributing factor to my conclusions.

Photographs of the property were taken during Mr. Berkowitz's inspection.

### **Extraordinary Assumptions of Report**

It is an extraordinary assumption of this report that the improvements as described within this report are compliant with the appropriate ordinance regarding items including but not necessarily limited to setbacks, landscaping, access and other items outside our field of expertise for this assignment. These items will be addressed as part of the application by others with expertise within the respective fields.

Should the extraordinary assumptions not exist, we reserve the right to amend this study.

### **Effective Date of Study**

July 26, 2019

### **Date of Report**

August 5, 2019

### **Type Report**

Impact Study Report

### **Study Development and Reporting Process**

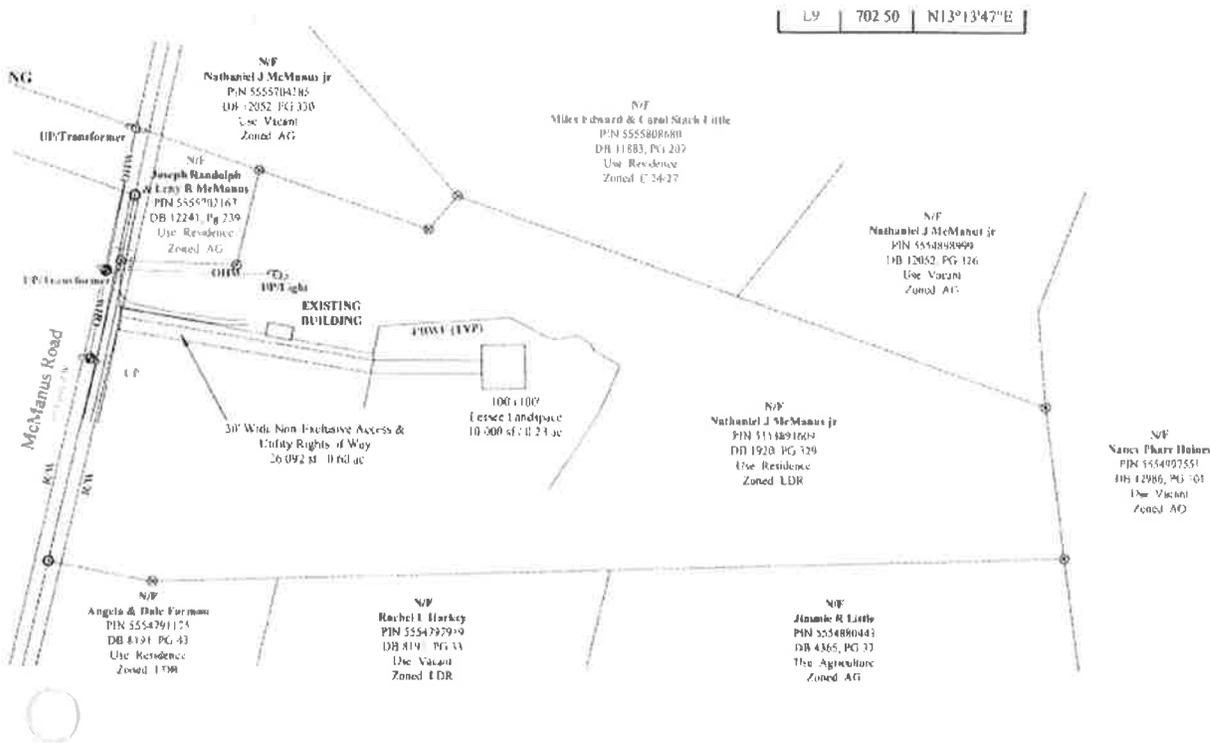
In preparing this study, the analyst:

- Analyzes physical affects, if any, of the proposed construction on properties in the immediate area as well as the neighborhood;
- Reviews plans for the proposed development to determine whether it is in compliance with the Cabarrus County Ordinance with respect to items within my field of expertise;
- Reviews site plan provided by our client with respect to the physical characteristics of the proposed development;
- Reviews Section 8.4.36 of the Cabarrus County Zoning Ordinance regarding the development of Wireless Telecommunication Services structures;
- Researches market data around existing cell towers in Cabarrus County to determine whether the proposed development is in accordance with the other similar developments in the area.

# PROPOSED FACILITY

## Tower

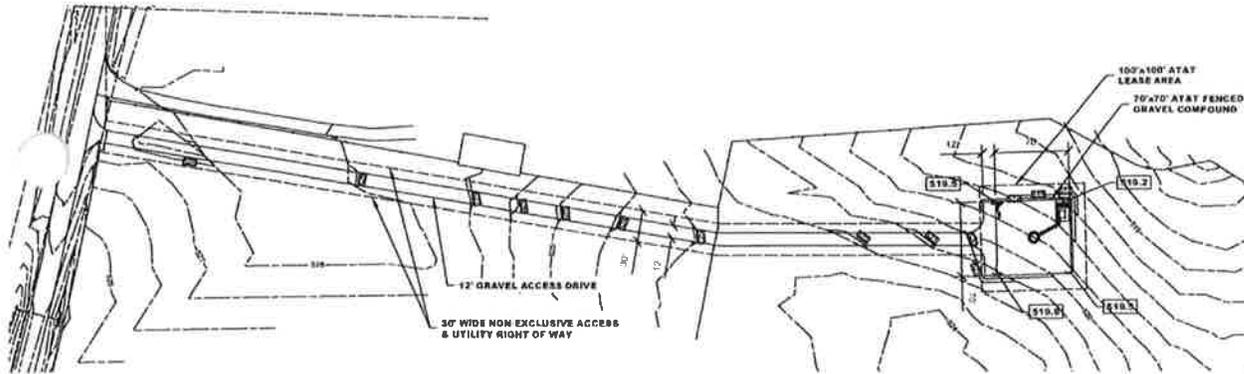
Based on information provided to the analyst, the proposed tower will consist of a 195-foot “monopole” communications tower. The following site plan shows the proposed site.



**SITE PLAN**

## Site Improvements

The site improvements include an eight-foot chain link fence with three strands of barbed wire. As we will detail throughout this report, the existing vegetation provides a buffer that will obscure a significant portion of the proposed development to the north and east. The size of the site property and siting of the proposed tower in the center of the site further reduces the visual impact of the tower.



**Access**

There is an existing graveled driveway that assumedly will be the access point for the proposed development. As shown on the exhibit provided, the access will be 30-foot wide and include the easement for utility extensions. We assume that the access for the proposed development is in accordance with all local and state regulations. Given the use of the current access, we consider the assumption reasonable.

**Location**

The proposed tower is located in the northwest corner of the site. The site consists of 35.35 acres. The siting of the tower and the size of the site provides significant distance between the contiguous properties. The existing tree line will provide a buffer between the proposed tower and the properties to the north and east.

The subject has a zoning designation of LDR, Low Density Residential District. The various zonings in the area reflect the transitional nature of the NC Highway 24/27 corridor. The zoning designations include commercial to the north and agricultural or residential in the other contiguous properties.



**ZONING MAP**

## SURROUNDING LAND USES

The proposed development is located on a 35.35-acre tract of land located just off the NC Highway 24/27 Highway corridor. Many of the parcels in the immediate area are vacant or used for agricultural purposes. The remaining parcels are improved with low density residential improvements. While NC 24/27 is a spoke emanating from Interstate 485 to the west, development along the corridor has been sparse. Contributing factors include access to municipal sanitary sewer service and the soil conditions in this part of Cabarrus County.

The following chart provides a summary of the contiguous properties. We note that two of the properties are under the same or related ownership. For such a large tract, there are few contiguous properties.

Contiguous Properties Summary					
Tax ID	Address	Owner	Land (Acres)	Improvements	Use
5554-79-7040	12161 MCMANUS RD	HARKEY RACHEL & TRENT	11.173	Barn	Agricultural
5554-79-7187	12167 MCMANUS RD	HARTSELL JORDAN	1.127	None	Residential
5554-79-1175	12151 MCMANUS RD	FARMAN ANGELA	2.46	SFD	Residential
5555-60-5070	12020 MCMANUS RD	MCMANUS NATHANIEL JAMES JR	20.83	SFD	Res./Ag
5554-89-8999	MCMANUS RD	MCMANUS NATHANIEL J JR	3.985	None	Vacant
5555-70-2167	11975 MCMANUS RD	MCMANUS JOSEPH RANDOLPH	1.57	SFD	Residential
5555-70-4385	MCMANUS RD	MCMANUS NATHANIEL J JR	3.963	None	Vacant
5555-80-8680	5540 NC HWY 24-27 E	LITTLE MILES EDWARD	56.1	SFD	Residential
5554-88-0440	12155 MCMANUS RD	LITTLE JIMMIE R	85.5	SFD & Ag	Res./Ag

For the purposes of the analysis, we do not include the four parcels under the same or related ownership as the proposed site. We have segregated the remaining adjacent properties based on their direction from the proposed development and potential visual impact of the proposed tower.



*Property North* – There is one property located north of the proposed development. This 56+ acre tract is improved with a single family dwelling. While the current use is residential, the zoning of this site is commercial. The commercial designation is consistent with the site’s significant frontage along NC Highway 24/27 to the north.

*Property East* – Rocky River serves as the eastern boundary for the subject parcel. Across the river, the land is owned by the Catawba Land Conservancy. The conservation land is not contiguous to the site of the proposed tower, but we consider it pertinent that the river and conserved land will provide additional buffering to the east.

*Properties South* – The properties to the south appear to be recently subdivided. The first property is the 85+ acre tract that is referred to as Riverbend Farm. The area of this large tract is used for agricultural purposes. The improvements on this property are located in the southwest portion of the property, the furthest area from the proposed tower.

The second contiguous property is an irregularly shaped parcel that appears to have been recently subdivided. This site is improved with a barn and is used for agricultural purposes. The site that was subdivided is not contiguous to the site of the proposed tower.

The third contiguous property to the south is improved with a single family dwelling. As with most low density residential properties, the dwelling includes trees between the dwelling and the surrounding agricultural uses.

*Property West* – The only property to the west is under the same ownership as the subject and is not included in the analysis.

As we will discuss in the following section, the scope of the assignment is to determine whether the proposed development is in accordance with the Cabarrus County zoning ordinance regarding the issuance of a conditional use permit. The items within our field of expertise are detailed in the following section.

## **CABARRUS COUNTY ZONING ORDINANCE**

The criteria from the ordinance are used in conjunction with the observations of the proposed development and nearby properties. In addition to the four findings of fact with respect to the conditional use, the Cabarrus County Ordinance provided the following physical characteristics to consider in the approval. The characteristics are as follows:

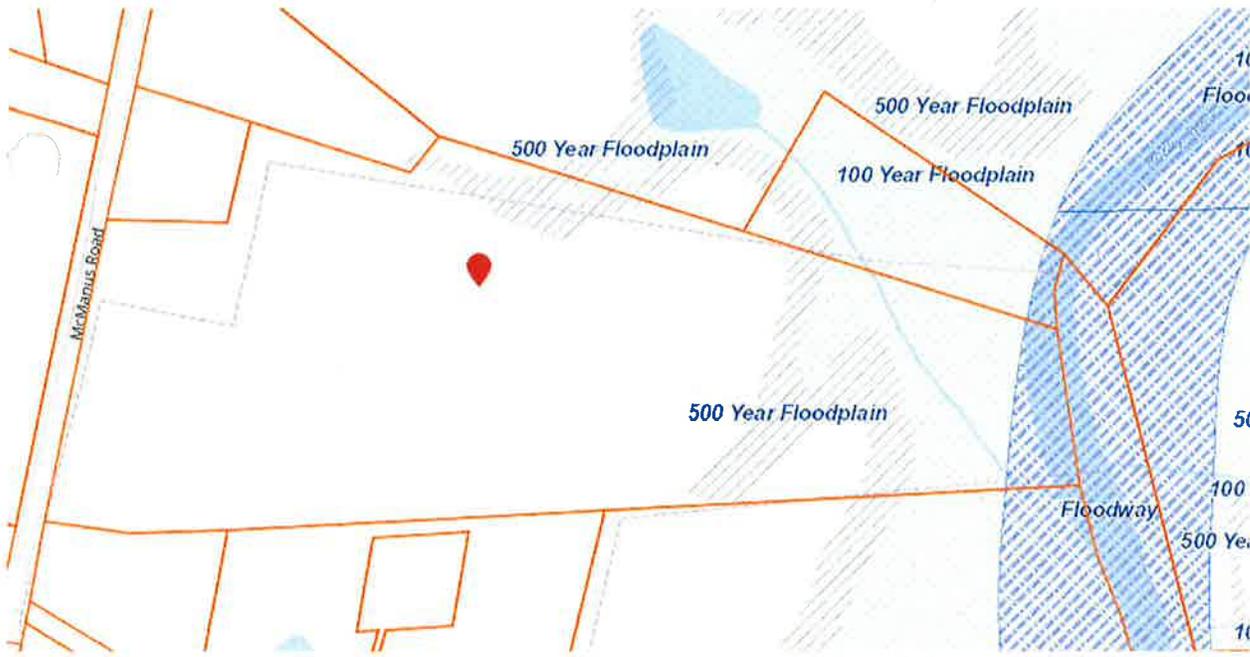
- a. Height of the proposed tower;
- b. Proximity of the tower to residential structures and residentially zoned district boundaries;
- c. Nature of uses on adjacent and nearby properties;
- d. Surrounding topography;
- e. Surrounding tree coverage and vegetation;
- f. Design of the tower, with particular reference to design characteristics that reduce or eliminate visual obtrusiveness;
- g. Proposed ingress and egress; and
- h. Availability of suitable existing towers, other structures, or alternative technologies not requiring the use of towers or structures, as discussed in Section 8 below.

The potential impact on property values of contiguous properties considers several of the factors listed in the ordinance. Therefore, we include a summary addressing each of the items that could potentially impact the value of contiguous properties.

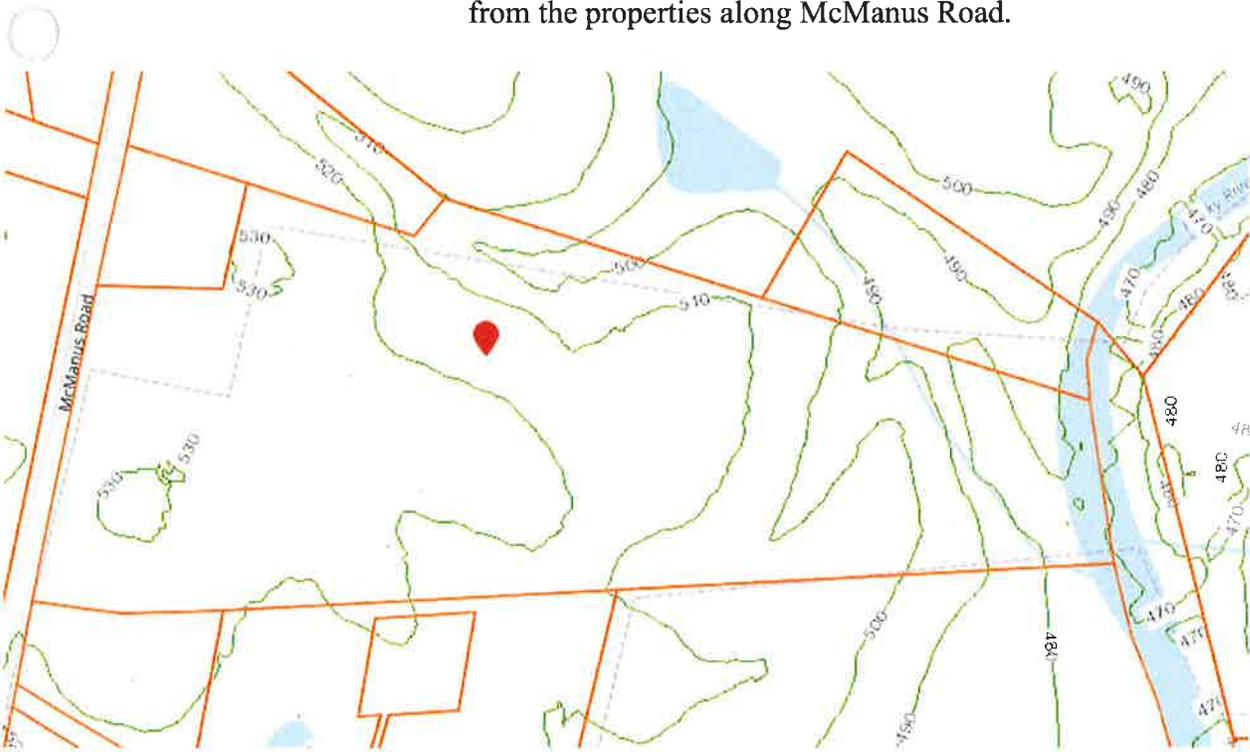
*Height* – The height of the proposed tower is 195 feet. The height of the tower will require a light because of its height. Based on research of the market, the height of the tower is on the upper end of the range for other towers in Cabarrus County. The height of the tower is considered in the potential visual impact on nearby properties.

*Residential Proximity* – The subject has a Low Density Residential zoning designation. As shown earlier, the zoning in the area consists of low density residential and agricultural designations along McManus Road with commercial designations along the highway. Based on research of towers provided later in the report, there are other towers located in rural areas with similar zoning designations.

*Uses* – As noted earlier, the contiguous properties are either low density residential and/or agricultural. Along the eastern boundary of the subject is Rocky River. This area is encumbered with floodplain. The following exhibit provides a depiction of the encumbered area around the creek.



*Topography* – The topography of the site slopes downward from McManus Road along the western boundary to Rocky River along the eastern boundary. The topography in concert with the creek provides a significant buffer between the properties to the east and north and the proposed tower. The elevations below street grade minimizes the visual impact from the properties along McManus Road.



*Trees and Vegetation* – As shown on the previous aerials, there is significant tree coverage between the proposed development and all of the surrounding properties. Many of the low density residential sites in the area include tree lines. The trees and vegetation on the subject and contiguous properties will reduce the visual impact of the tower.

*Design of the Tower* – The design of the tower is monopole construction. Many of the towers in Cabarrus County are monopole design. However, rural corridors typically include larger towers to minimize the need for additional towers. The tower will be located in the center of a larger site near an existing tree line. The location and significant tree cover will reduce or eliminate the visual impact of the proposed tower.

*Ingress/Egress* – The ingress and egress for the tower will be provided by the existing driveway and a shared access easement. It is an assumption of this study that the access will meet all local and state requirements.

*Alternate Locations* – This item is outside the scope of my expertise and is not addressed in the study.

The following shows the purpose of the ordinance with respect to the development of a telecommunications facility.

### **Section I Purpose**

The purpose of this Section 36 is to:

- Protect residential areas and land uses from potential adverse impacts of towers and antennas;
- Encourage the location of towers in non-residential and less developed areas;
- Strongly encourage joint use of new and existing tower sites as a primary option rather than construction of additional single-use towers;
- Encourage users of towers and antennas to locate them, to the extent possible, in areas where the adverse impact on the community is minimal;

### **Summary**

The purpose of the ordinance provides two factors that will be addressed in the following section of the study. The ordinance intends to protect residential areas and land uses from potential adverse characteristics and to locate the towers in areas to the extent possible to minimize impact on the neighborhood. As part of the scope of the assignment, I have

been asked to determine whether the tower as proposed would maintain or enhance the value of contiguous properties. Conversely, the study addresses whether the proposed tower will adversely impact values of contiguous properties.

## MARKET RESEARCH

A potential issue associated with the impact of the proposed development is on property values in the immediate vicinity and the neighborhood. The criteria for approval of the conditional use permit addresses many of the items that address the magnitude of the visual impact of a proposed tower. My expertise is in property valuation; therefore, we provide a test as to whether the market provides evidence of a diminution in value based on proximity of a cell tower.

We researched towers in Cabarrus County and identify the development patterns around these towers. After analyzing the market data, we compare this information to the proposed site and the physical characteristics and development patterns surrounding the proposed development.

### Cabarrus County Towers

During our research, we observed several towers in Cabarrus County. The cell towers selected for direct comparison were chosen for a variety of reasons including but not necessarily limited to:

- *Location* – The proposed location is in a rural area of Cabarrus County and includes low density residential developments and a large amount of vacant land.
- *Surrounding Developments* – The surrounding developments along McManus Road include agricultural, vacant land and low density residential uses.
- *Construction Type/Height* – The proposed tower is a monopole tower with a height of 195 feet.

For the research of towers, we rely on information from antennasearch.com and the Cabarrus County GIS, which we consider reliable sources of information. We excluded towers in commercial and industrial areas as they would not provide a credible comparison. Some towers were not visible from the public right-of-way and were excluded. Some of the towers were located in areas that are inconsistent with the neighborhood of the proposed tower. The following chart provides a summary of the towers considered with the most comparable tower highlighted in yellow.

<b>Tower Summary</b>					
<b>Construction</b>	<b>Year Built</b>	<b>Address</b>	<b>Tower Height (FT)</b>	<b>City (Mailing)</b>	<b>Zoning</b>
Monopole	N.A.	13935 Old Camden Road	N.A.	Midland	CR
Lattice	1998	13013 Rodney Rushing Dr.	245	Midland	IND
Lattice	1999	1800 NC Hwy 24/27	265	Midland	SFR
Lattice	2000	4313 Thermal Dr.	270	Midland	C
Lattice	2001	1419 Pembroke Rd.	250	Harrisburg	CR
Monopole	N.A.	3199 Concord Speedway Dr.	175	Concord	IND
Monopole	N.A.	1677 Simplicity Rd.	N.A.	Concord	LDR
Monopole	N.A.	9101 Reed Mine Rd	N.A.	Midland	AO
Guyed	1999	7130 Mission Rd.	400	Mt. Pleasant	AO
Monopole	N.A.	6120 Miami Church Rd.	N.A.	Concord	CR
Monopole	2003	3691 Barrier Store Rd.	199	Mt. Pleasant	AO
Lattice	1996	1751 Red Angus Dr.	300	Mt. Pleasant	AO
Monopole	N.A.	10600 Amsterdam Dr	N.A.	Mt. Pleasant	AO
Lattice	1999	2625 Bethlehem Church Rd.	256	Gold Hill	AO
Lattice	2007	391 NC Hwy 24/27	300	Midland	LI-SU
Monopole	2015	5129 NC Hwy 49 S	215	Harrisburg	C-2
Monopole	2015	6006 Zion Church Rd.	180	Concord	LDR
Monopole	2013	5281 Flowes Store Rd.	199	Concord	LDR
Lattice	1997	Mt. Pleasant High School	300	Mt. Pleasant	

Consistent with the ordinance for Cabarrus County, most of the towers in the area are either located on or adjacent to commercial and industrial areas. Influence from major transportation corridors was also considered in the selection of towers. In many cases there are several factors that contributed to the development patterns and values around the towers. Most of the towers in similar locations did not provide market data for contiguous properties to draw a comparison to

other sales in the area. The tower highlighted was the only tower in the subject's neighborhood that provided adequate data for comparison.

While the market rarely provides an exact match for a proposed development, the analysis of the market data around the following tower coupled with their similar location provides information regarding residential sales around telecommunication towers.



### Wyndham Estates Sales Summary

Address	Acres	Year Built	Size (SF)	Sale Date	Sale Price	Price/SF
348 ROYAL WINDSOR DR	0.9	2018	2,399	July-18	\$ 260,000	\$ 108.38
14 ROYAL WINDSOR DR	0.73	2016	2,508	November-16	\$ 252,500	\$ 100.68
340 ROYAL WINDSOR DR	0.55	2016	2,708	September-17	\$ 267,500	\$ 98.78
336 ROYAL WINDSOR DR	0.57	2015	2,748	June-15	\$ 230,000	\$ 83.70
345 ROYAL WINDSOR DR	0.8	2017	2,403	April-18	\$ 255,000	\$ 106.12
332 ROYAL WINDSOR DR	0.57	2014	2,772	May-19	\$ 285,000	\$ 102.81
328 ROYAL WINDSOR DR	0.56	2014	2,467	March-15	\$ 219,500	\$ 88.97
339 ROYAL WINDSOR DR	0.89	2017	2,745	December-17	\$ 280,000	\$ 102.00
324 ROYAL WINDSOR DR	0.55	2014	3,117	March-15	\$ 256,500	\$ 82.29
335 ROYAL WINDSOR DR	0.57	2015	2,201	November-15	\$ 240,000	\$ 109.04
320 ROYAL WINDSOR DR	0.54	2014	3,127	October-18	\$ 284,000	\$ 90.82
331 ROYAL WINDSOR DR	0.56	2016	2,274	August-16	\$ 244,000	\$ 107.30
327 ROYAL WINDSOR DR	0.55	2015	2,810	April-16	\$ 239,000	\$ 85.05
312 ROYAL WINDSOR DR	0.77	2013	2,464	March-18	\$ 260,000	\$ 105.52
323 ROYAL WINDSOR DR	0.54	2015	3,139	August-15	\$ 260,500	\$ 82.99
313 ROYAL WINDSOR DR	0.68	2010	2,298	June-15	\$ 212,000	\$ 92.25
309 ROYAL WINDSOR DR	0.73	2010	2,928	September-15	\$ 205,000	\$ 70.01
304 ROYAL WINDSOR DR	0.69	2014	3,103	May-15	\$ 250,000	\$ 80.57
304 ROYAL WINDSOR DR	0.69	2014	3,103	October-18	\$ 285,000	\$ 91.85
305 ROYAL WINDSOR DR	0.8	2015	2,484	June-15	\$ 233,000	\$ 93.80

13935 Old Camden Road

This tower was researched because of its similar location. The monopole construction is also comparable to the proposed tower. The previous chart provide sales data for the adjacent development with the most significant characteristics of the comparison listed in the chart. The sales in yellow are for the houses with the highest level of visual influence from the tower as shown in the photograph. The sales highlighted in green are for the properties located furthest from the tower and the lowest level of visual impact.

The sale of the house pictured earlier sold in 2015 and resold last year showing an appreciation of 14%. Further, the resale price of \$285,000 is the highest price point for the neighborhood. After analysis of the factors listed in the chart and other less influential items, the visual impact of the tower is concluded not to adversely impact the value of contiguous properties.

## Summary

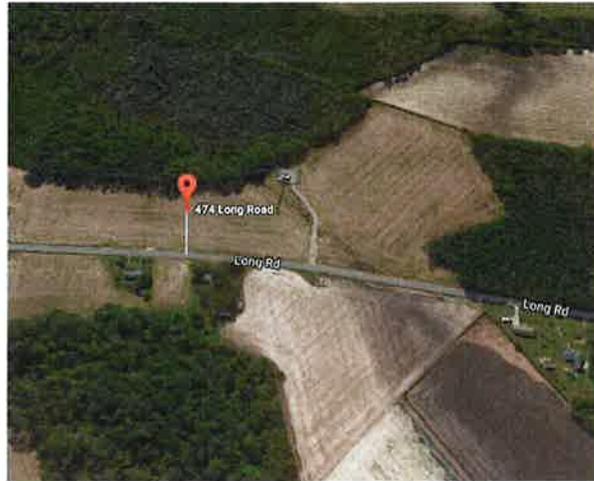
Based on the analysis of the data provided and development patterns around towers throughout Cabarrus County, we conclude that the presence of a wireless support structure does not impede the orderly development of the area. Further, the market does not recognize an adverse impact to property values for contiguous properties.

## Other Considerations

Other potential impacts to the surrounding area include noise, traffic and lighting. The operation of a cell tower is essentially silent and would not influence the surrounding developments. The additional traffic caused by the proposed development is nominal and would likely occur for routine maintenance. Any increases in traffic are considered nominal and does not impact contiguous properties.

Given the scarcity of market data in the neighborhood, we provide the results from a study for a tower in Robeson County. The scope of the impact study addressed the potential impact of value on properties in the neighborhood. The following provides market data for the towers found in Robeson County that are a similar market to the proposed development.

The following data is segregated into two categories: single family homes and vacant land. For all of the data sets, the properties highlighted in yellow are those properties along the same corridor as the tower. These properties are compared to properties highlighted in green, which are along similar streets without a tower. We include additional market data as background for the paired sales analyses.



474 Long Road

This tower is the most comparable to the proposed tower at 180 feet. As with the surrounding developments for the other towers selected for comparison in this study, the land uses in the area are primarily agricultural. The low density residential developments include homes constructed over a wide time span including some estate style homes. The market data for single family dwellings are summarized in the following chart.

SFD SALES						
Address	Sale Date	Sales Price	Year Built	SF	Acres	\$/SF
46 SURRY	5/25/2005	\$68,000	1986	1,152	2.34	\$ 59.03
121 SURRY	10/29/2007	\$93,000	1978	1,443	1	\$ 64.45
285 JUNE	5/15/2009	\$41,000	2000	1,632	1	\$ 25.12
992 LONG RD	8/20/2007	\$57,500	1978	972	1	\$ 59.16
867 LONG RD	11/5/2009	\$27,000	1962	800	1.52	\$ 33.75
719 LONG RD	6/8/2015	\$87,000	1989	1,437	4.37	\$ 60.54
1148 LONG RD	8/14/2015	\$227,500	2005	2,029	1.8	\$ 112.12

The analysis of these sales as well as other sales presented later in this section includes several factors including but not necessarily limited to size, age and lot size. The most compelling market data is the consistency in the prices paid per square foot for the highlighted properties. The comparison of the data shows some offsetting characteristics, but does provide evidence that the cell tower located along Long Road does not injure property values in the area.

The second data set is for land sales found in the area. The highlighted properties are for residential lots consistent with the low density development patterns in the neighborhood.

LAND SALES				
Address	Sale Date	Sales Price	Acres	\$/Acre
181 TROY DR	6/11/2010	\$150,000	19.63	\$ 7,641
WILKES RD	5/1/2013	\$20,000	7.39	\$ 2,706
859 LONG RD	8/22/2012	\$15,000	1.24	\$ 12,097
OFF LONG RD	3/24/2015	\$22,000	3.43	\$ 6,414

Contrary to the market data for single family dwellings, the most compelling information from this data set is the price point for the residential lots. The size of the lots is the most influential factor on price point. Again, the market data indicates that the tower has not impeded demand for land along the Long Road corridor nor has it injured land values in the area.



7746 E Hwy 211

This tower as well as all of the remaining tower have heights of 300-feet or higher. I have applied the same methodology with the previous analyses and segregated the data into single family dwellings and vacant land. The sales for single family dwellings are summarized in the following chart.

SFD SALES						
Address	Sale Date	Sales Price	Year Built	SF	Acres	\$/SF
913 HARRIS RD	1/31/2017	\$65,000	2005	1,443	1	\$ 45.05
4642 OLD ALLENTON	12/7/2015	\$64,000	1950	912	1	\$ 70.18
146 BEAR BAY	11/13/2014	\$48,000	1980	1,456	2.69	\$ 32.97
877 OLD ALLENTON	6/25/2013	\$46,500	1969	1,506	1.5	\$ 30.88
9697 NC 211	6/26/2012	\$61,000	1955	1,170	1.24	\$ 52.14
8355 E NC HWY 211	6/3/2015	\$75,000	1988	1,152	4.22	\$ 65.10

The physical variance in this data set would require a higher level of adjustment. Notwithstanding this fact, the sales along the 211 corridor provide a similar price point and price paid per square foot. The offsetting nature of the variances is reflected in the similar price point for the majority of sales with the property closest to the tower having the highest price point. The analysis of this data set provides further evidence to our conclusion.

The following chart provides a summary of land sales for the area. Again applying the same methodology as the previous analyses.

LAND SALES				
Address	Sale Date	Sales Price	Acres	\$/Acre
NC HWY 211	12/17/2014	\$17,500	0.59	\$ 29,661
699 BAY BEAR	6/18/2015	\$17,000	8.13	\$ 2,091
HARRIS RD	5/14/2015	\$8,500	1	\$ 8,500
HARRIS RD	8/17/2015	\$9,000	1.27	\$ 7,087
3 PITTMAN WILKES	4/4/2014	\$250,000	93.22	\$ 2,682
481 HARRIS RD	5/1/2013	\$20,000	7.39	\$ 2,706
538 DERWOOD	2/8/2013	\$25,500	0.92	\$ 27,717
DERWOOD	9/17/2012	\$45,000	17.74	\$ 2,537
PITTMAN	7/19/2012	\$80,000	24.84	\$ 3,221
	5/21/2012	\$15,000	14.08	\$ 1,065

The best matched pair in this data set is from the sales of two mobile home lots. While the price point was higher for the sale on Harris Road, the price per acre was higher for the lot on Highway 211. This indicates that size was a significant factor in the price paid. The size variance would be the most significant factor. The only other sale found lies on the lower end of the range of the data set, which is considered reasonable given its physical characteristics including some areas that appear to be undevelopable.



Kinlaw Road

The land sales in the area provide the most compelling evidence in the neighborhood for this tower. The following chart provides a summary of land sales in the area.

LAND SALES				
Address	Sale Date	Sales Price	Acres	\$/Acre
HOWELL RD	5/25/2012	\$98,000	47	\$ 2,085
TARHEEL RD	12/12/2012	\$13,000	3.37	\$ 3,858
346 BARNHILL	9/3/2013	\$28,500	8	\$ 3,563
5168 TARHEEL	1/3/2014	\$30,000	9.15	\$ 3,279
KINLAW RD	9/4/2014	\$27,000	6.87	\$ 3,930

The sale closest to the tower sold for the highest price per acre. Again, the market data for land around this cell tower indicates that the tower does not injure the prices paid for land in the neighborhood.

The following is a summary of single family dwelling sales found in the neighborhood.

SFD SALES						
Address	Sale Date	Sales Price	Year Built	SF	Acres	\$/SF
88 BARNHILL	4/30/2012	\$76,000	1995	1,458	2.01	\$ 52.13
6876 HOWELL	5/22/2012	\$55,000	1988	1,344	1.98	\$ 40.92
7889 HOWELL	12/17/2012	\$37,500	1950	1,454	1.86	\$ 19.23
5168 TARHEEL	5/9/2013	\$125,000	1958	1,980	5	\$ 63.84
6225 HOWELL	8/10/2016	\$200,000	1999	2,837	1.01	\$ 100.05
6257 HOWELL	2/10/2017	\$225,000	2007	3,303	1	\$ 112.11
306 TARHEEL	10/17/2013	\$177,500	1953	3,087	5.03	\$ 90.89
3647 TARHEEL	9/5/2014	\$46,000	1992	1,296	0.92	\$ 23.09
5478 TARHEEL	10/3/2014	\$125,000	2002	1,920	8.4	\$ 62.44
8191 HOWELL	11/10/2014	\$71,000	1980	1,032	1.02	\$ 35.86
470 KINLAW RD	12/31/2014	\$42,500	1982	1,338	1.5	\$ 21.44
KINLAW RD	6/15/2015	\$73,500	1962	1,485	0.89	\$ 37.46

The review of sales of single family dwellings reveals that age and condition of the improvements is the most significant factor in the prices paid. Development in the area is sparse and supply side pressures in the market and low number of transactions indicates that the neighborhood is in the stable phase of its economic development. This is similar to the subject's neighborhood. The sales price paid for the properties along the corridor of the tower and other corridors is consistent.



Gaston Drive



This tower is located in Bladen County. The surrounding developments are comparable to the subject and is included in this analysis. The tower is located off Gaston Drive. The single family dwelling sales in the neighborhood were insufficient quantity (two sales found), to provide a credible analysis. However, the sales of land as shown on the following chart provide a reflection of the market. The following chart is a summary of the sales. Note the two first sales in the chart are for mobile home lots.

LAND SALES				
Address	Sale Date	Sales Price	Acres	\$/Acre
2392 GUYTON	7/19/2012	\$10,000	1	\$ 10,000
300 GASTON DR	2/23/2015	\$19,000	1.7	\$ 11,176
MASSEY RD	10/16/2012	\$25,000	15.35	\$ 1,629
GUYTON ROAD	5/31/2013	\$9,000	0.98	\$ 9,184
GUYTON RD	10/18/2013	\$20,000	5.57	\$ 3,591
MASSEY RD	12/3/2013	\$6,000	0.9	\$ 6,667
MASSEY RD	4/23/2014	\$31,500	12.37	\$ 2,546
1023 STORMS RD	3/20/2015	\$9,000	2	\$ 4,500
303 GASTON DR	8/29/2015	\$11,000	0.89	\$ 12,360

The land sales for lots near the tower are consistent with other lot sales found with no visual influence from the tower. The two lots highlighted in yellow reflect the upper end of the range for vacant land. The market data indicates that development near the tower has not influenced the normal course of development for the immediate area. Further, the market data indicates that buyers are paying similar prices for lots within the visual sphere of influence of a cell tower.

The recent studies I have performed provide no empirical evidence that the proposed tower will injure property values for adjacent or abutting properties. The studies provided are for larger areas of potential influence than adjacent or abutting properties.

## Conclusions

The sparse market activity in rural areas of Cabarrus County indicates that the market is stable. The rural land uses for agriculture and low density residential are likely to continue for the foreseeable future. These uses are not impeded by the development of a cell tower. The results of studies including those included in this report show consistency between prices paid for land and single family dwellings in rural areas where cell towers are present. Therefore, I conclude that the proposed development of a cell tower will not substantially injure the value of contiguous properties. Consistent with the Cabarrus County Ordinance, the proposed development will either maintain or enhance values of contiguous properties.

## Subject Neighborhood

In addition to the market activity for existing towers, we also consider the surrounding developments for the subject. The

question posed for this study is “would the development of the telecommunications support structure warrant a downward adjustment to adjacent properties?”

When considering an adjustment in an appraisal, the appraiser must consider all factors that could contribute to an adjustment. The aesthetics and location of the proposed development as well as the existing developments are a factor in developing our opinion. The factors considered in developing our opinion include but are not necessarily limited to:

- The market has not shown a detrimental impact on development patterns in areas with visual influence from a tower.
- The existing infrastructure along Mc Manus Road includes above ground electrical transmission lines that pose a higher level of visual impact than the proposed.
- The proposed development is located in a wooded area that will screen a significant portion of the tower in all directions.

All of these factors would contribute to the aesthetic appeal and a hypothetical valuation of properties in the neighborhood. The multitude of factors would indicate that multicollinearity for aesthetics exists along the McManus Road corridor. Multicollinearity arises when multiple items correlate with each other. The multiple factors can cause a distortion of the impact of any of the factors individually without consideration for all of the factors that contribute to the common issue.

In the case of the proposed development, all of the properties along the McManus Road corridor have visual impact from other existing infrastructure. These factors contribute to our conclusion that the proposed developed is in harmony with

development patterns along McManus Road. To attribute any adjustment to the proposed development would be misleading and not result in a credible adjustment. In other words, any adjustment for the development of a tower in a wooded area along McManus Road without consideration of the numerous other aesthetic influences would not be credible.

Therefore, it is our opinion that the proposed development in accordance with the proposed conditions will either maintain or enhance the value of contiguous properties. We recognize that the aesthetics of the area certainly contribute to the overall appeal, the proposed development has siting and existing buffers to minimize to the extent possible the visual impact of the proposed tower. It is my opinion that the proposed development will not substantially detract from the aesthetics or character of the neighborhood because of its location and existing above ground infrastructure.



**Michael P. Berkowitz**

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**ADDENDA**

**Certifications**

**CERTIFICATION OF THE APPRAISER**

I, Michael P. Berkowitz, certify that, to the best of my knowledge and belief,

1. The statements of fact contained in this report are true and correct.
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
3. I have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved.
4. I have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
5. I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
6. My engagement in this assignment was not contingent upon developing or reporting predetermined results.
7. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
8. The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the *Uniform Standards of Professional Appraisal Practice*.
9. I have made a personal inspection of the property that is the subject of this report.
10. No one provided significant real property appraisal assistance to the person(s) signing this certification other than those individuals having signed the attached report.



A handwritten signature in black ink that reads "Michael P. Berkowitz".

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Michael P. Berkowitz  
 (NC State Certified General Real Estate Appraiser #A6169)  
 (SC State Certified General Real Estate Appraiser #CG6277)

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August 5, 2019

Date

(Rev: 06/18/12)

(CAB-004)

MPB REAL ESTATE, LLC

**ASSUMPTIONS AND LIMITING CONDITIONS**

## ASSUMPTIONS AND LIMITING CONDITIONS

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The bylaws and regulations of the Appraisal Institute require each member and candidate to control the use and distribution of each report signed by such member or candidate; except, however, the client may distribute copies of this report in its entirety to such third parties as he may select; however, selected portions of this report shall not be given to third parties without the prior written consent of the signatories of this report. Neither all nor any part of this report shall be disseminated to the general public by the use of advertising media, public relations, news, sales or other media for public communication without the prior written consent of MPB REAL ESTATE, LLC.

### Confidentiality

This report is to be used only in its entirety and no part is to be used without the whole report. All conclusions and opinions concerning the analysis as set forth in the report were prepared by MPB REAL ESTATE, LLC whose signatures appear on the report. No change of any item in the report shall be made by anyone other than MPB REAL ESTATE, LLC. MPB REAL ESTATE, LLC shall have no responsibility if any such unauthorized change is made.

MPB REAL ESTATE, LLC may not divulge the material contents of the report, analytical findings or conclusions, or give a copy of the report to anyone other than the client or his designee as specified in writing except as may be required by the Appraisal Institute as they may request in confidence for ethics enforcement, or by a court of law or body with the power of subpoena.

### Trade Secrets

This report was obtained from MPB REAL ESTATE, LLC and consists of "trade secrets and commercial or financial information" which is privileged and confidential and exempted from disclosure under 5 U.S.C. 552 (b) (4) of the Uniform Commercial Code. MPB REAL ESTATE, LLC shall be notified of any request to reproduce this report in whole or in part.

**Information Used**

No responsibility is assumed for accuracy of information furnished by or work of others, the client, his designee, or public records. We are not liable for such information or the work of subcontractors. The comparable data relied upon in this report has been confirmed with one or more parties familiar with the transaction or from affidavit or other sources thought reasonable; all are considered appropriate for inclusion to the best of our factual judgment and knowledge. An impractical and uneconomic expenditure of time would be required in attempting to furnish unimpeachable verification in all instances, particularly as to engineering and market-related information. It is suggested that the client consider independent verification as a prerequisite to any transaction involving sale, lease, or other significant commitment of funds for the subject property.

**Financial Information**

Our value opinion(s) have been based on unaudited financials, and other data provided to us by management and/or owners. If these reports are found to be inaccurate, we reserve the right to revise our value opinion(s). It is noted we are depending on these accounting statements as being accurate and our interpretation of these statements as being accurate as well. If these assumptions later prove to be false, we reserve the right to amend our opinions of value.

**Testimony, Consultation, Completion of Contract for Report Services**

The contract for report, consultation, or analytical service is fulfilled and the total fee payable upon completion of the report, unless otherwise specified. MPB REAL ESTATE, LLC or those assisting in preparation of the report will not be asked or required to give testimony in court or hearing because of having made the report, in full or in part, nor engage in post report consultation with client or third parties except under separate and special arrangement and at an additional fee. If testimony or deposition is required because of any subpoena, the client shall be responsible for all additional time, fees, and charges, regardless of issuing party.

**Exhibits**

The illustrations and maps in this report are included to assist the reader in visualizing the property and are not necessarily to scale. Various photographs, if any, are included for the same purpose as of the date of the photographs. Site plans are not surveys unless so designated.

**Legal, Engineering, Financial, Structural or Mechanical Nature, Hidden Components, Soil**

No responsibility is assumed for matters legal in character or nature, nor matters of survey, nor of any architectural, structural, mechanical, or engineering nature. No opinion is rendered as to the title, which is presumed to be good and marketable. The property is appraised as if free and clear, unless otherwise stated in particular parts of the report. The legal description is assumed to be correct as used in this report as furnished by the client, his designee, or as derived by MPB REAL ESTATE, LLC.

MPB REAL ESTATE, LLC has inspected as far as possible, by observation, the land and the improvements; however, it was not possible to personally observe conditions beneath the soil, or hidden structural, mechanical or other components, and MPB REAL ESTATE, LLC shall not be responsible for defects in the property which may be related.

The report is based on there being no hidden, unapparent, or apparent conditions of the property site, subsoil or structures or toxic materials which would render it more or less valuable. No

responsibility is assumed for any such conditions or for any expertise or engineering to discover them. All mechanical components are assumed to be in operable condition and status standard for properties of the subject type. Conditions of heating, cooling, ventilation, electrical, and plumbing equipment are considered to be commensurate with the condition of the balance of the improvements unless otherwise stated. We are not experts in this area, and it is recommended, if appropriate, the client obtain an inspection of this equipment by a qualified professional.

If MPB REAL ESTATE, LLC has not been supplied with a termite inspection, survey or occupancy permit, no responsibility or representation is assumed or made for any costs associated with obtaining same or for any deficiencies discovered before or after they are obtained. No representation or warranties are made concerning obtaining the above mentioned items.

MPB REAL ESTATE, LLC assumes no responsibility for any costs or consequences arising due to the need, or the lack of need, for flood hazard insurance. An agent for The Federal Flood Insurance Program should be contacted to determine the actual need for Flood Hazard Insurance.

### **Legality of Use**

The report is based on the premise that there is full compliance with all applicable federal, state and local environmental regulations and laws unless otherwise stated in the report; further, that all applicable zoning, building and use regulations, and restrictions of all types have been complied with unless otherwise stated in the report. Further, it is assumed that all required licenses, consents, permits, or other legislative or administrative authority, local, state, federal and/or private entity or organization have been or may be obtained or renewed for any use considered in the value estimate.

### **Component Values**

The distribution of the total valuation in this report between land and improvements applies only under the existing program of utilization. The separate valuations for land and building must not be used in conjunction with any other report and are invalid if so used.

### **Auxiliary and Related Studies**

No environmental or impact studies, special market study or analysis, highest and best use analysis, study or feasibility study has been required or made unless otherwise specified in an agreement for services or in the report.

### **Dollar Values, Purchasing Power**

The market value estimated and the costs used are as of the date of the estimate of value, unless otherwise indicated. All dollar amounts are based on the purchasing power and price of the dollar as of the date of the value estimate.

### **Inclusions**

Furnishings and equipment or personal property or business operations, except as specifically indicated and typically considered as a part of real estate, have been disregarded with only the real estate being considered in the value estimate, unless otherwise stated. In some property types, business and real estate interests and values are combined.

**Proposed Improvements, Conditional Value**

Improvements proposed, if any, onsite or offsite, as well as any repairs required, are considered for purposes of this report to be completed in a timely, good and workmanlike manner, according to information submitted and/or considered by MPB REAL ESTATE, LLC. In cases of proposed construction, the report is subject to change upon inspection of property after construction is completed.

**Value Change, Dynamic Market, Influences, Alteration of Estimate**

The estimated value, which is defined in the report, is subject to change with market changes over time. Value is highly related to exposure, time, promotional effort, terms, motivation, and conditions surrounding the offering. The value estimate considers the productivity and relative attractiveness of the property physically and economically in the marketplace.

In cases of reports involving the capitalization of income benefits, the estimate of market value or investment value or value in use is a reflection of such benefits and MPB REAL ESTATE, LLC' interpretation of income and yields and other factors derived from general and specific client and market information. Such estimates are as of the date of the estimate of value; thus, they are subject to change as the market and value is naturally dynamic.

The "estimate of market value" in the report is not based in whole or in part upon the race, color, or national origin of the present owners or occupants of the properties in the vicinity of the property appraised.

**Report and Value Estimate**

Report and value estimate are subject to change if physical or legal entity or financing differ from that envisioned in this report.

**Management of the Property**

It is assumed that the property which is the subject of this report will be under prudent and competent ownership and management.

**Hazardous Materials**

Unless otherwise stated in this report, the existence of hazardous substances, including without limitation, asbestos, polychlorinated biphenyls, petroleum leakage, or agricultural chemicals, which may or may not be present on the property, or other environmental conditions, were not called to the attention of nor did MPB REAL ESTATE, LLC become aware of such during their inspection. MPB REAL ESTATE, LLC had no knowledge of the existence of such materials on or in the property unless otherwise stated. MPB REAL ESTATE, LLC, however, is not qualified to test such substances or conditions. If the presence of such substances such as asbestos, urea formaldehyde foam insulation, or other hazardous substances or environmental conditions, may affect the value of the property, the value estimate is predicated on the assumption that there is no such condition on or in the property or in the proximity that it would cause a loss in value. No responsibility is assumed for any such conditions, nor for any expertise or engineering knowledge required to discover them.

**Soil and Subsoil Conditions**

Unless otherwise stated in this report, MPB REAL ESTATE, LLC does not warrant the soil or subsoil conditions for toxic or hazardous waste materials. Where any suspected materials might

be present, we have indicated in the report; however, MPB REAL ESTATE, LLC are not experts in this field and recommend appropriate engineering studies to monitor the presence or absence of these materials.

**A. Americans with Disabilities Act (ADA)**

“MPB REAL ESTATE, LLC has not made a specific compliance survey and analysis of this property to determine whether or not it is in conformity with the various detailed requirements of the Americans with Disabilities Act (ADA), which became effective January 26, 1992. It is possible that a compliance survey of the property together with a detailed analysis of the requirements of the ADA could reveal that the property is not in compliance with one or more of the requirements of the Act. If so, this fact could have a negative effect upon the value of the property. Since MPB REAL ESTATE, LLC has no direct evidence relating to this issue, we did not consider possible non-compliance with the requirements of ADA in estimating the value of the property.”

**Qualifications of the Analyst**

**QUALIFICATIONS OF THE ANALYST*****Michael P. Berkowitz***

**MPB Real Estate, LLC, Inc.**  
**1430 South Mint Street, Suite 102**  
**Charlotte, North Carolina 28203**  
**(704) 334-4686**  
**FAX (704) 334-2759**

**EDUCATION AND CREDENTIALS**

- **Duke University**  
Major: Economics 1985-1989
- **Central Piedmont Community College**
  - R-1 - Introduction to Real Estate Appraisal, 2002
  - R-2 - Valuation Principles and Procedures, 2002
  - R-3 - Applied Residential Property Valuation, 2002
  - G-1 - Introduction to Income Property Appraisal, 2003
- **Bob Ipock and Associates**
  - G-2 - Advanced Income Capitalization Procedures, 2003
  - G-3 - Applied Property Income Valuation 2004
- **Appraisal Institute**
  - 520 Seminar Highest and Best Use and Market Analysis, 2004
  - 530 Seminar Rates, Multipliers and Ratios 2005
  - Seminar Advanced Sales Comparison and Cost Approaches 2006
  - Seminar Apartment Appraisal, Concepts & Applications 2009
  - Seminar Appraising Distresses Commercial Real Estate 2009
  - Seminar Appraising Convenience Stores 2011
  - Seminar Analyzing Operating Expenses 2011

**AFFILIATIONS AND ACTIVITIES**

- **Association Memberships**  
North Carolina State Certified General Real Estate Appraiser, October 2006, Certificate No. A6169

**RELATED EXPERIENCE**

- Provided real estate consulting services for a variety of clients including real estate brokers, property owners and financial planners
- Performed financial feasibility studies for multiple property types including golf communities, and renovation projects.
- Developed plan for self-contained communities.
- Race Track expertise

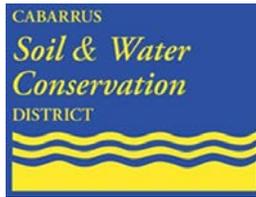
**APPRAISAL EXPERIENCE**

A partial list of types of properties appraised include:  
Retail Properties, Single and Multi-Tenant, Proposed and Existing  
Office Single and Multi-Tenant Proposed and Existing  
Mixed-Use Properties, Proposed and Existing  
Industrial Properties, Warehouse, Flex and Manufacturing  
Vacant Land  
Condemnation  
C-Stores  
Race Tracks

**CLIENTELE**

Bank of America  
Transylvania County  
Cabarrus County  
Mecklenburg County  
City of Statesville  
NC Department of Transportation  
Henry County, GA  
Town of Loudon, NH  
First Citizens Bank  
RBC Centura Bank  
City of Charlotte  
City of Concord  
Union County  
B & T  
Aegon USA Realty Advisors  
Sun Trust Bank  
First Charter Bank  
Regions Bank  
Charlotte Housing Authority  
Alliance Bank and Trust  
Broadway Bank  
Duke Energy Corporation  
Jim R. Funderburk, PLLC  
Hamilton, Fay, Moon, Stephens, Steele & Martin  
Senator Marshall A. Rauch  
Perry, Bundy, Plyler & Long, LLP  
Robinson, Bradshaw & Hinson  
CSX Real Property  
Baucom, Clayton, Burton, Morgan & Wood, PA  
City of Mount Holly  
Our Towns Habitat for Humanity  
Parker, Poe, Adams & Bernstein, LLP  
Central Carolina Bank

Southern Community Bank and Trust



Cabarrus Soil and Water Conservation District
715 Cabarrus Avenue, West
Concord, N. C. 28027-6214
(704) 920-3300

TO: Phil Collins

FROM: Tammi Remsburg

NAME/NUMBER OF PLAN: 2-2021 McManus Rd. Tower PLAN TYPE: Commercial JURISDICTION: County

LOCATION: 11979 McManus Road

ZONING: pending CU

OWNER: Nathaniel McManus Jr.

DATE SUBMITTED to CSWCD: 7/15/2020 DATE REVIEWED: 7/17/2020

PARCEL #: 5554-89-1609 ACRES: 10,000 sq. feet

RECEIVING WATERS: Rocky River

PERENNIAL OR INTERMITTENT STREAMS PRESENT: [X] Yes [ ] No

SOIL TYPE(S): BaB and BaD Badin channery silt loam; ChA Chewacla sandy loam; GoC Goldston very channery silt; TbB2 Tarrus silty clay l

PERCENTAGE OF SOIL LIMITED:

Table with 2 columns: Soil Limitation Category and Percentage. NOT LIMITED: 0.4%, SOMEWHAT LIMITED: 96.5%, VERY LIMITED: 3.1%

HYDRIC SOILS: [X] Yes [ ] No

PLAN COMMENTS:

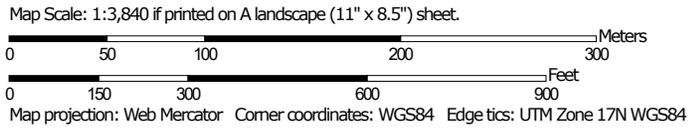
Our only concern with this property's conditional use is that it will take some prime farmland out of possible agricultural use. See attached soil survey which shows that most of the property is prime and/or farmland of state importance.

"Soil surveys can be used for general farm, local, and wider area planning. Onsite investigation is needed in some cases, such as soil quality assessments and certain conservation and engineering applications."-Web Soil Survey operated by the USDA Natural Resource Conservation Service.

Farmland Classification—Cabarrus County, North Carolina  
(2-2021 11979 McManus Rd Tower farmland)



Soil Map may not be valid at this scale.



Farmland Classification—Cabarrus County, North Carolina  
(2-2021 11979 McManus Rd Tower farmland)

**MAP LEGEND**

**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of statewide importance, if drained
-  Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated

-  Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated and drained
-  Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
-  Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

-  Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough
-  Farmland of statewide importance, if thawed
-  Farmland of local importance
-  Farmland of local importance, if irrigated

-  Farmland of unique importance
-  Not rated or not available

**Soil Rating Lines**

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Farmland Classification—Cabarrus County, North Carolina  
(2-2021 11979 McManus Rd Tower farmland)

	Prime farmland if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium		Farmland of unique importance		Prime farmland if subsoiled, completely removing the root inhibiting soil layer
	Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60		Farmland of statewide importance, if irrigated and drained		Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season		Not rated or not available		Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
	Prime farmland if irrigated and reclaimed of excess salts and sodium		Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season		<b>Soil Rating Points</b>		Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
	Farmland of statewide importance		Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if warm enough		Not prime farmland		Prime farmland if irrigated and reclaimed of excess salts and sodium
	Farmland of statewide importance, if drained		Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if thawed		Prime farmland if drained		Farmland of statewide importance
	Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60		Farmland of local importance		Prime farmland if protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if drained
	Farmland of statewide importance, if irrigated				Farmland of local importance, if irrigated		Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
							Prime farmland if irrigated and drained		Farmland of statewide importance, if irrigated
							Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season		

Farmland Classification—Cabarrus County, North Carolina  
(2-2021 11979 McManus Rd Tower farmland)

<ul style="list-style-type: none"> <li> Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season</li> <li> Farmland of statewide importance, if irrigated and drained</li> <li> Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season</li> <li> Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer</li> <li> Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60</li> </ul>	<ul style="list-style-type: none"> <li> Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium</li> <li> Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season</li> <li> Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season</li> <li> Farmland of statewide importance, if warm enough</li> <li> Farmland of statewide importance, if thawed</li> <li> Farmland of local importance</li> <li> Farmland of local importance, if irrigated</li> </ul>	<ul style="list-style-type: none"> <li> Farmland of unique importance</li> <li> Not rated or not available</li> </ul> <p><b>Water Features</b></p> <ul style="list-style-type: none"> <li> Streams and Canals</li> </ul> <p><b>Transportation</b></p> <ul style="list-style-type: none"> <li> Rails</li> <li> Interstate Highways</li> <li> US Routes</li> <li> Major Roads</li> <li> Local Roads</li> </ul> <p><b>Background</b></p> <ul style="list-style-type: none"> <li> Aerial Photography</li> </ul>	<p>The soil surveys that comprise your AOI were mapped at 1:24,000.</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Warning: Soil Map may not be valid at this scale.</p> <p>Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.</p> </div> <p>Please rely on the bar scale on each map sheet for map measurements.</p> <p>Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)</p> <p>Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.</p> <p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p> <p>Soil Survey Area: Cabarrus County, North Carolina Survey Area Data: Version 19, Jun 2, 2020</p> <p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p> <p>Date(s) aerial images were photographed: Oct 28, 2018—Oct 30, 2018</p> <p>The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.</p>
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## Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BaB	Badin channery silt loam, 2 to 8 percent slopes	Farmland of statewide importance	4.4	13.3%
BaD	Badin channery silt loam, 8 to 15 percent slopes	Farmland of statewide importance	9.4	28.3%
ChA	Chewacla sandy loam, 0 to 2 percent slopes, frequently flooded	Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season	0.1	0.3%
GoC	Goldston very channery silt loam, 4 to 15 percent slopes	Not prime farmland	0.9	2.8%
TbB2	Tarrus silty clay loam, 2 to 8 percent slopes, moderately eroded	All areas are prime farmland	18.2	54.9%
W	Water	Not prime farmland	0.1	0.4%
<b>Totals for Area of Interest</b>			<b>33.2</b>	<b>100.0%</b>

## Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

## Rating Options

*Aggregation Method:* No Aggregation Necessary

*Tie-break Rule:* Lower