

415 South Pine Street - Walhalla, SC



TEL (864) 638-4218 FAX (864) 638-4168

AGENDA

6:00 PM, MONDAY, JANUARY 22, 2018
COUNCIL CHAMBERS
OCONEE COUNTY ADMINISTRATIVE COMPLEX

- ITEM 1- Call to Order**
- ITEM 2- Approval of Minutes from November 27, 2017**
- ITEM 3- Election of Board Officers**
- ITEM 3- Public Comment (Non-Agenda)**
- ITEM 4- Staff Update**
- 1. General Items**
 - 2. Update on ad hoc committee to discuss BZA notification process**
- ITEM 5- Special Exception Request for Application SE18-000001- Request for the construction of a 225' self-support communication tower (266 Whitmire Church Rd., Tamassee, SC. Tax Parcel ID# 053-00-01-052) (see support material)**
- ITEM 8- Old Business** [*to include Vote and/or Action on matters brought up for discussion, if required*]
- ITEM 9- New Business** [*to include Vote and/or Action on matters brought up for discussion, if required*]
- ITEM 10- Adjourn**

OCONEE COUNTY BOARD OF ZONING APPEALS

415 South Pine Street - Walhalla, SC



TEL (864) 638-4218 FAX (864) 638-4168

MINUTES BOARD OF ZONING APPEALS 6:00 PM, MONDAY, NOVEMBER 27, 2017 COUNTY COUNCIL CHAMBERS OCONEE COUNTY ADMINISTRATIVE COMPLEX

The Oconee County Board of Zoning Appeals held a meeting on November 27, 2017, at 6:00 PM in Council Chambers at the Oconee County Administrative Building, 415 S. Pine St., Walhalla, SC 29691.

Members Present: Mrs. Fowler
Mr. Gilster
Mr. Medford
Mr. Morgan

Staff Present: Bill Huggins, Planner

Media present: None

ITEM 1- Call to Order

Mr. Gilster, Acting Chairman, called the meeting to order at 6:00 p.m. Mr. Gilster requested that Item #6 be heard before Item #5, Mr. Medford made a motion to allow the change, Mr. Morgan seconded the request it was approved unanimously.

ITEM 2- Approval of Minutes from October 23, 2017

Mr. Medford made a motion to approve the minutes. Mr. Morgan seconded the motion. The motion was passed 3-0

ITEM 3- Consideration of 2018 Board of Zoning Appeals Meeting Schedule

Mr. Gilster asked for a motion to approve the calendar for the year 2018. Mr. Medford made a motion to approve the calendar for 2018. Mr. Morgan seconded the motion. The motion carried unanimously.

ITEM 4- Public Comment (Non-Agenda)

No one from the public signed up to address the Board or make comments.

ITEM 5- Staff Update

Notification Process

Mr. Huggins stated that he emailed the correspondence regarding the notification process for special exception cases and completed the other notification requirements of the Zoning Ordinance. Some concerns were expressed by a number of the board members about whether we should have an extended notification period. Mr. Huggins stated that Mr. Codner suggested that the notification needs to be 30 days notification instead of the 15 day notification that we enforce now and also that the notification requirement for nearby property owners should be addressed.

Mr. Huggins stated that the County actually exceeds the notification requirement imposed by the S. C. Comprehensive Planning Enabling Act of 1994. County Attorney David Root had concurred with that determination. There is not anything in the state statute or the code that addresses a time frame for notifying adjoining or nearby owners or for notifying them at all unless they have specifically requested notification of upcoming cases. It was also suggested by some present that the applicants for cell towers should meet with staff about optional sites. In addition, there was some discussion about a study that was done some years ago by a consultant to identify ideal acceptable sites in the County. Mr. Huggins stated that he has been unable to locate the study, but that the County Attorney had suggested such a study might become problematic for the County, since it could prejudice a case that might come before the Board.

Mr. Huggins asked if the board wanted to produce such a document to identify sites acceptable to the County and to telecommunication companies. Mr. Huggins suggested that this would need to be discussed with County Council or passed along to them to decide whether or not to research the issue and send it to the Planning Commission for review. Mr. Gilster asked if the board feels that some the notification process should be strengthened. Mr. Huggins stated that the only requirement presently is that a notice be placed in a local newspaper at least 15 days prior to the hearing. He also noted that the current Ordinance, in keeping with state statutory requirements, only requires the posting of at least one sign along each road frontage of the subject property. There are not specific requirements about how many signs are required. Mr. Gilster suggested that the question of how much notification should be brought before the Council for their input.

Mr. Codner added that in the past the public had raised questions about timely notification. Mr. Codner also stated that in the past it was brought before the Planning Commission and they wanted everyone within a quarter

mile notified. He opined that the board is obligated to inform the public about any cases that would affect them and surrounding property. Mr. Codner also stated that County Council should work with the Planning Commission about coming up with some guidelines to be adopted into the code. Mr. Huggins asked for clarification about whether the intention would be to apply new standards for Variance requests as well as for Special Exceptions.

Mr. Gilster stated that there are two actions that are being requested: (1) Do we want to change the notification process. Mr. Medford stated he would like the Planning Commission's input. Mr. Morgan stated that the board needs public input but it's not this board that should make that decision. He felt that the Board needs to act within the parameters set forth by County code and State law. He added that this board needs additional input from other members of Council and Planning Commission. Mrs. Fowler stated we need guidelines and that if sending out letters is not in the guidelines it doesn't need to be done. Mr. Gilster asked how this should be handled. Mr. Huggins stated that a motion to appeal to the Council to explore this subject might be in order. Mr. Medford made a motion to appeal to the Council and Planning Commission to explore the subject. Mr. Morgan seconded the motion. The motion carried unanimously.

Updates

Mr. Huggins updated that Board on the continuing progress to update the Comprehensive Plan.

ITEM 6- Setback Variance Request for Application VA17-000010 (348 N. Port Bass Drive, Fairplay, SC), Tax Parcel ID# 334-02-02-009

Staff Presentation

Mr. Huggins presented the request to the Board. The request is for a variance of 2.5 feet from the side property line. The property is zoned CFD and the subdivision doesn't have an HOA. There is also a 16 inch overhang on the structure. The request was brought to the Planning staff by a complaint from Mr. Shippen whose property is at 342 N Port Bass Drive. The applicant had not obtained a building permit, and a stop work order was issued. That was when it was discovered that the structure didn't meet the side yard setback of 5 feet. A letter of opposition was submitted by Mr. Daab, who's property is at 352 N Port Bass Drive. A letter of approval was sent in by Mr. & Mrs. Eddie Maddox whose property is located at 332 N Port Bass Drive. Mr. Shippen sent an email stating he wanted to withdraw his complaint.

Applicant Presentation

The applicant, Mr. Grebenyuk, stated that when he started construction, he referenced a gate post with an orange ribbon, believing that was the property line. When the inspector came out that line was determined to be incorrect.

The corner of the structure was too close to the actual property line. Mr. Grebenyuk stated that his structure would not interfere with the neighbors (Mr. Shippen) at all. Mr. Grebenyuk went to the register of deeds and researched the property and could not find anything about setbacks. The applicant said a stop work order was not posted. Mr. Gilster asked if a stop work order would have prevented this request. The applicant stated that he would have been able to fix the problem.

Mr. Huggins stated that the applicant has been very cooperative with trying to get the issue resolved. Mrs. Fowler asked if a new survey is required when a permit is obtained. Mr. Huggins stated that a new survey is not required when a permit is obtained unless a new lot is being created. A site plan is required, and while dimensions should be accurate, that is not always the case. Mr. Gilster asked that when the subdivision was planned in the 60's would this have been an issue. Mr. Huggins stated that when it was developed that the restrictions that we enforce now were not in place. Mr. Morgan asked the applicant why he put the structure at that particular location. The applicant stated that he placed it there for parking issues. Mr. Huggins added that the 16" overhang actually resulted in the 2.5 foot variance situation. The applicant agreed with the comments that staff presented.

Mr. Gilster recommended that the Board consider the criteria for approval of a variance under one motion and action by the Board. Mr. Gilster read the criteria. The criteria under Section 38-7.1 of the County Zoning Ordinance:

- (1) There are extraordinary and exceptional conditions pertaining to the particular piece of property;
- (2) These conditions do not generally apply to other property in the vicinity;
- (3) Because of these conditions, the application of this chapter to the particular piece of property would effectively prohibit or unreasonably restrict the utilization of the property; and
- (4) The authorization of a variance will not be of substantial detriment to adjacent uses or to the public good, and the character of the district will not be harmed by the granting of the variance.
 - a. The board of zoning appeals may not grant a variance the effect of which would be to allow the establishment of a use not otherwise permitted. The fact that the property may be utilized more profitably, should a variance be granted, may not be considered grounds for a variance.
 - b. The board of zoning appeals may grant a variance to extend physically an existing nonconforming use provided that the expansion does not adversely affect the character of the

community and is designed so as to minimize any negative secondary impacts.

- c. In granting a variance, the board of zoning appeals may attach to it such conditions regarding the location, character, or other features of the proposed building, structure, or use as the board of zoning appeals may consider advisable to protect established property values in the surrounding area, or to promote the public health, safety, or general welfare.

Mr. Gilster asked for a motion on items in the variance criteria. Mr. Morgan made a motion to approve the request for **item (1)** because of where the applicant placed the structure made it qualify for the request. Mr. Medford seconded the request. The motion carried unanimously. Mr. Gilster asked for a motion on **item (2)** of the criteria, Mr. Morgan made a motion to approve the request for item (2) because due to the placement of the structure and condition of the lot as previously mentioned. Vote passed unanimously. Mr. Gilster asked for a motion on **item (3)** of the criteria. Mr. Morgan made a motion to approve the request for item (3) based on the lot restrictions, size and his ability to build. Mr. Medford seconded the request. The motion carried unanimously. Mr. Gilster asked for a motion on **item (4)** of the criteria. Mr. Morgan made a motion to approve the request for item (4) on a finding that the request will not be of substantial detriment to adjacent uses or the public good, and the character of the district will not be harmed by the granting of the variance. Mr. Medford seconded the request. The motion carried unanimously. Mr. Gilster asked for a motion to approve the request as presented. Mr. Morgan made a motion to approve the request based on meeting all four of the criteria required for a variance. Mr. Medford seconded the motion. The motion carried unanimously. Mr. Huggins asked that the board take a moment to sign the order for approval of the request.

ITEM 7- Old Business

None

ITEM 8- New Business

Mr. Gilster has concerns about not requiring a survey when a new construction permit is issued. Mrs. Fowler stated that a new survey showing the structure and correct setbacks should be required and that the County should come up with regulations requiring a survey with new construction permits.

ITEM 9- Adjourn

A motion was made by Mr. Medford to adjourn and seconded by Mr. Morgan. The motion was approved unanimously. The Board adjourned at approximately 7: 25 p.m.

DRAFT



RF Affidavit

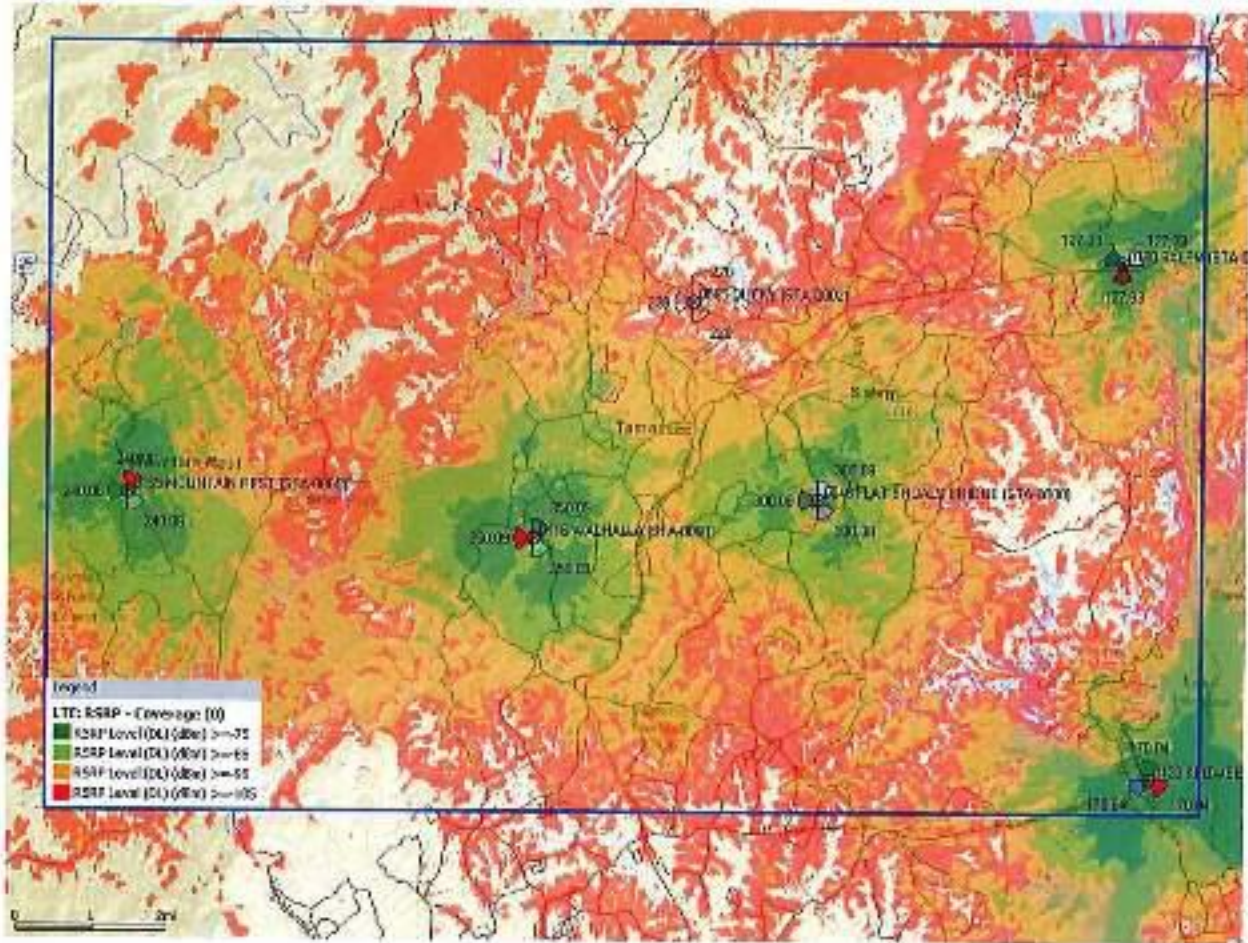
To: Whom it may concern
From: Verizon Wireless RF
Date: 1/8/2018
Re: Verizon site: Ducky

Verizon Wireless is requesting permission to provide a wireless telecommunication location at 266 Whitmire Church Road, Tamassee, SC 29686 as part of a plan to improve wireless, voice and data service to the Oconee County area.

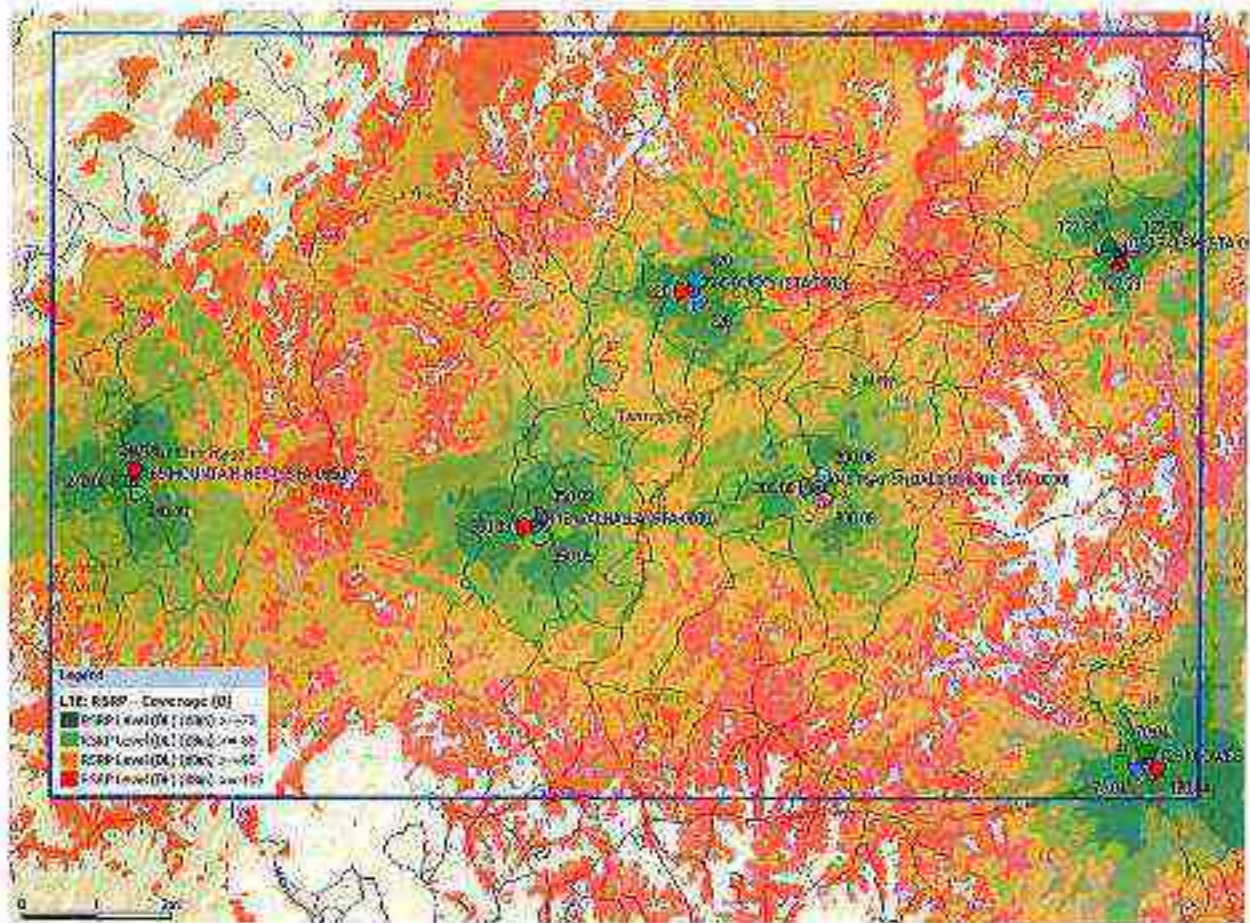
RF Propagation plots are shown below with the predicted before and after coverage levels for the spectrum bands that will be impacted by this initiative. Extensive site acquisition efforts were conducted to determine if collocation on an existing tower or other structures would be possible, and no adequate structure could be found. There are no structures in the area that could provide the required mounting height of 220 or more and support the load of the antennas, lines, and related apparatus needed for Verizon to deploy its needed equipment, thus no alternative to the construction of a new tower exists if applicable.

The proposed location for the new tower was selected based upon a comprehensive analysis of the search ring. Factors included: aesthetic impact, compatibility with existing land use, constructability, suitability to meet RF propagation objectives, willingness of landowner to lease land, etc. The closest existing Verizon sites that would hand off to this proposed site are on average over 2-3 miles away from the needed coverage zone, and there are NO existing towers within the proposed tower location that are viable to still meet the objectives of this preferred location.

- CURRENT DUCKY PROPAGATION



PROPOSED DUCKY PROPAGATION

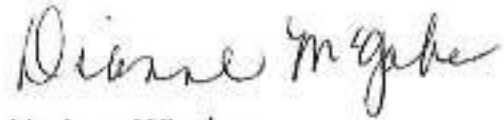


Verizon Wireless certifies that all of its equipment will be installed and operated in keeping with applicable FAA and FCC rules and regulations and appropriate industry standards to include rules regarding human exposure to RF energy as well as RF interference. The construction of this tower, including Verizon'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.

Verizon further certifies that the proposed telecommunications facility shall be maintained in a safe manner, and in compliance with all conditions of the telecommunications permit, without exception, unless specifically granted relief by Oconee County, as well as all applicable and permissible local codes,

ordinances and regulations, including any and all applicable county, state and federal laws, rules and regulations.

Respectfully,
Dianne McGaha

A handwritten signature in cursive script that reads "Dianne McGaha". The signature is written in black ink and is positioned below the typed name.

Verizon Wireless
Engr IV Cslt-RF



9221 Lyndon B. Johnson Freeway, #204, Dallas, TX 75243 ★ PHONE 972-231-8893 ★ FAX 1-866-364-8375
www.allprocgi.com ★ e-mail: info@allprocgi.com

January 02, 2018

Oconee County Community Development
415 S Pine St,
Walhalla, SC 29691

Ref: *Site Name –Ducky– 225’ Self-Support Tower*
ACGI# 18-0019
Jurisdiction: Oconee County, SC
Site Address: 266 Whitmire Church Road, Tamassee, SC 29686
Scope of Work: Engineering Specification Letter
Applicable Code:
IBC 2015 & ASCE 7–10, ANSI/TIA-222-G, Risk Category II,
Wind Speed: IBC2015 (115 mph ultimate wind speed), ANSI/TIA-222-G (Equivalent 89 mph nominal wind speed), Exposure “B”

This letter is provided in reference to the above mentioned site for the following specifications:

1. The purpose of this tower is to support telecommunication antenna equipment for cellular coverage of the affected area.
2. Above reference tower to be designed to meet or exceed industry standards defined by ANSI/TIA-222-G, “Structural Standard for Antenna Supporting Structures and Antennas” (ANSI/TIA-222-G Standard).
3. The total height of tower is 225’ with highest appurtenance to 229’. All site location data to be re-verified by survey.
4. The tower must be designed and certified by an Engineer to be structurally sound and as a minimum in conformance with the adopted Building code. This tower to be designed using the following minimum wind speed as defined by ANSI/TIA-222-G for Oconee County, SC:
 - i) 89 mph 3-second-gust nominal wind speed with no ice.
 - ii) 30 mph 3-second-gust wind speed with 0.75” ice.
 - iii) $S_s=0.293$ g & $S_1= 0.108$ g, seismic loading as per TIA-222-G Code.

The “3-second-gust wind speed refers to a wind measured at 33 ft. above the ground. Equations in ANSI/TIA-222-G Standard take into account that the wind speed escalates with the increasing height of the tower.

5. Construction of the tower must be in compliance with all the requirements of South Carolina State Building Codes and permitting process in addition to the requirements of this section.

If you have any other questions or concerns regarding our recommendations, please contact us.

Sincerely,
Binod Paudel, EIT
01/02/2018



Approved By:
Joji M. George, P.E.
SC PE # 26840

Network Operations



Verizon Wireless
8921 Research Drive
Charlotte, North Carolina 28262

Phone 704 510-8500

December 20, 2017

Greg Gordos, Senior Planner
Oconee County Community Development Department
Planning and Zoning Division
415 South Pine Street
Walhalla, SC 29691

Re: Proposed Verizon Wireless Tower at 266 Whitmire Church Road
Verizon Site Name: DUCKY

To whom it may concern:

Verizon Wireless agrees to and shall indemnify and hold Oconee County, South Carolina harmless from and against any and all actions, cause of actions, demands, damages, injuries, judgments, liabilities, liens, losses, obligations, orders, proceedings, rights, and suits and any and all costs and expenses, including reasonable attorney's fees, litigation expenses, and interest) arising out of damage to real or personal property or injury to any person or in any way connected with the construction of, erection of, and/or maintenance of the communication tower and antenna, including the removal of said communication tower and antenna, as set forth in Chapter 32, Article IV, Section 32-138 (7) of the Oconee County Zoning Ordinance.

Very truly yours,

A handwritten signature in black ink that reads "Michael Haven".

Michael Haven
Verizon Wireless Manager
RE/ Regulatory

Network Operations



Verizon Wireless
8921 Research Drive
Charlotte, North Carolina 28262
Phone 704 510-8500

December 20, 2017

Greg Gordos, Senior Planner
Oconee County Community Development Department
Planning and Zoning Division
415 South Pine Street
Walhalla, SC 29691

Re: Proposed Verizon Wireless Tower at 266 Whitmire Church Road
Verizon Site Name: DUCKY

To whom it may concern:

I am providing this Letter to comply with Zoning Code Section 32-133 (b).

Verizon Wireless engineers have determined that the Verizon Wireless network requires that the tower that we are referring as "DUCKY" be located within a certain portion of Oconee County.

Verizon Wireless has done a review of this area to locate any existing sites that could serve as an alternative to constructing a new tower. After doing a thorough review of the search area, Verizon Wireless was not able to locate any existing cell towers or buildings that are of adequate height to provide a co-location option for these antennas (220'). Verizon's evaluation included reviewing the possibility of co-locating on existing towers or structures, including electric utility company transmission line towers; and/or reconstruction of, or new construction within the footprints of existing electric utility company transmission line towers.

We also inquired and were informed by Oconee County that there were no sites near this proposed site that were preselected in the county-wide communication tower site study.

Very truly yours,

A handwritten signature in cursive script that reads "Michael Haven".

Michael Haven
Verizon Wireless Manager
RE/ Regulatory



Faulk & Foster

LETTER OF AUTHORIZATION

APPLICATION FOR ZONING/LAND USE/BUILDING PERMITS

Site Name: **DUCKY**

Dianna Hiller, the owner of the real property located at Whitmire Church Road, Tamassee, South Carolina which is identified as being in Oconee County Parcel number 053-00-01-052; DB 1671, PG 85, authorizes Faulk and Foster Real Estate Services, Inc. including its employees and agents, to act as an agent on my/our behalf for the purpose of performing all and every act that is required, necessary or appropriate to prepare, sign, submit, file and present on my/our behalf building, permitting, zoning, and /or land use applications to obtain land use changes, special exceptions, zoning variances, zoning permits, conditional use permits, special use permits, administrative permits, construction permits, operational permits, building permits, and other approvals or permits that may be required for the construction of a communications facility at the above described real property.

The undersigned hereby certifies to being the fee owner(s) of the real property described above and that to the best of my/our knowledge the information contained within this authorization is true and correct.



DIANNA HILLER



OCONEE COUNTY COMMUNITY DEVELOPMENT

Addressing | Codes | Permitting | Planning & Zoning

Staff Report

To: Members, Board of Zoning Appeals

From: Bill Huggins, AICP, CFM
Planner and Zoning Administrator

Re: Item - Application SE18-000001, Special Exception request for a 225' communication tower

Summary

Property Owner: Dianna L. Hiller

Applicant: Verizon Wireless

Property Location: The parcel where the tower is proposed to be located consists of 45.86 vacant acres with frontage on Whitmire Church Road and Whitewater Point Road. The area is located in a Control Free District (CFD), but even in CFD a special exception review is required for communication tower approval. The lease area for the proposed tower location is sited relatively close to Whitmire Church. The proposed tower site is located 225 ft. 4 inches from the road right-of-way. That is approximately the minimum distance required from a road or other property line, or from a habitable structure. The property is located in the mountainous foothills of Oconee County above Walhalla and approximately 2/3 mile from Whitewater Lake. The area contains scattered single family residential development and manufactured housing. The site is located on a vacant tract of land across Whitmire Church Road from two homes, and the proposed tower fall zone appears to meet the minimum standards contained herein. Residential uses are also located along the primary access road on either side of the subject parcel. However, the proposed site is heavily wooded and presently provided considerable screening from those properties.

Parcel Id# 053-00-01-052

Lot Area: 45.86 acres

Zoning: CFD, Control Free District

County Code References: Article IV. – Communication Towers
Section 32-131 through Section 32-142
Section 38-7.2 – Special Exceptions

Proposed Project

The applicant proposes to site a 225 ft. high communication tower in the southwestern area of the subject property. No stealth feature is proposed for this tower based on the material submitted for review.

Review Standards/ Sections 32 and 38

Section 32-133 permits administrative approval of certain colocations and placement of towers that do not exceed 75', along with sites that may have been preselected by the Board based on a county-wide tower site study. However, the current case involves the location of a new installation at 225' in height, a situation that requires Board review and approval under the Special Exception criteria contained in Section 38-7.2 of the Zoning Ordinance as well as the general requirements for placement and engineering addressed in Section 32. Should the Board approve this request, the applicant will still need to submit the relevant data and construction drawings for building permit review by County building staff.

Tower Height Issues Commonly Cited

Please note that one of the principle standards which is commonly noted by residents and applicants concerns height limitations based upon siting of the structure. Section 32-134 (m), states:

- “*Minimum setbacks.* A communication tower (not including guy anchors) over 75 feet must be, at a minimum, setback as follows:
 - (1) A distance equal to the total height of the communication tower from all property lot lines.
 - (2) A distance equal to the total height of the communication tower from the nearest point of any structure meeting minimum standards for human occupation as put forth in applicable building codes adopted by the county.
 - (3) A distance equal to the total height of the communication tower from any properties containing churches, schools, colleges, children's homes and shelters, hospitals and nursing homes; except that communication towers which meet the definition of stealth tower in [section 32-132](#) may be permitted by special exception on these properties.
 - (4) A distance equal to the total height of the communication tower from the right-of-way of all streets and roads.
 - (5) A communication tower may not be sited (1) within a distance equal to 250 feet of the boundary of a historic district; (2) on or within 250 feet of a structure that is a designated a National Historic Landmark or that is listed in, or eligible for listing in, the National Register of Historic Places; or (3) on or within property that is the subject of a pending complaint alleging an adverse effect on a historic property.

All guy cables and anchors must be set back at a minimum of 20 feet from all lot lines and habitable structures.”

Applicant Submittals

The applicant has submitted the required engineering, site and appearance data required for staff and Board review. Note that in addition to the requirements that must be considered under Section 32-134,

the generic Special Exception criteria must be considered by the Board in making its decision, as mentioned in the Review Standards section. The relevant language under Section 38-7.2 is as follows:

Sec. 38-7.2. - Special exceptions. “The board of zoning appeals may grant a special exception only if it finds adequate evidence that any proposed development will meet all of the following general requirements as well as any specific requirements and standards listed for the proposed use. The board of zoning appeals shall among other things require that any proposed use and location be:

- (1) *In accordance with the comprehensive plan and is consistent with the spirit, purposes, and the intent and specific requirements of this chapter, to include the definition and intent of the district in which the special exception is being requested;*
- (2) *In the best interests of the county, the convenience of the community and the public welfare;*
- (3) *Suitable for the property in question, and designed, constructed, operated, and maintained so as to be in harmony with and appropriate in appearance to the existing or intended character of the general vicinity;*
- (4) *Suitable in terms of effects on highway traffic, parking and safety with adequate access arrangements to protect streets from undue congestion and hazards.*








The developer shall have the burden of providing evidence to the county of compliance with the general requirements of this chapter and the specific requirements of the applicable section. The board of zoning appeals may impose whatever reasonable conditions it deems necessary to ensure that any proposed development will comply substantially with the objectives in this chapter”.

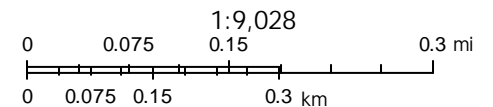
Note that this last paragraph infers that the Board may require more intensive standards for appearance screening, limited access, signage, illumination, security, etc.

ArcGIS Web Map

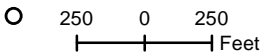
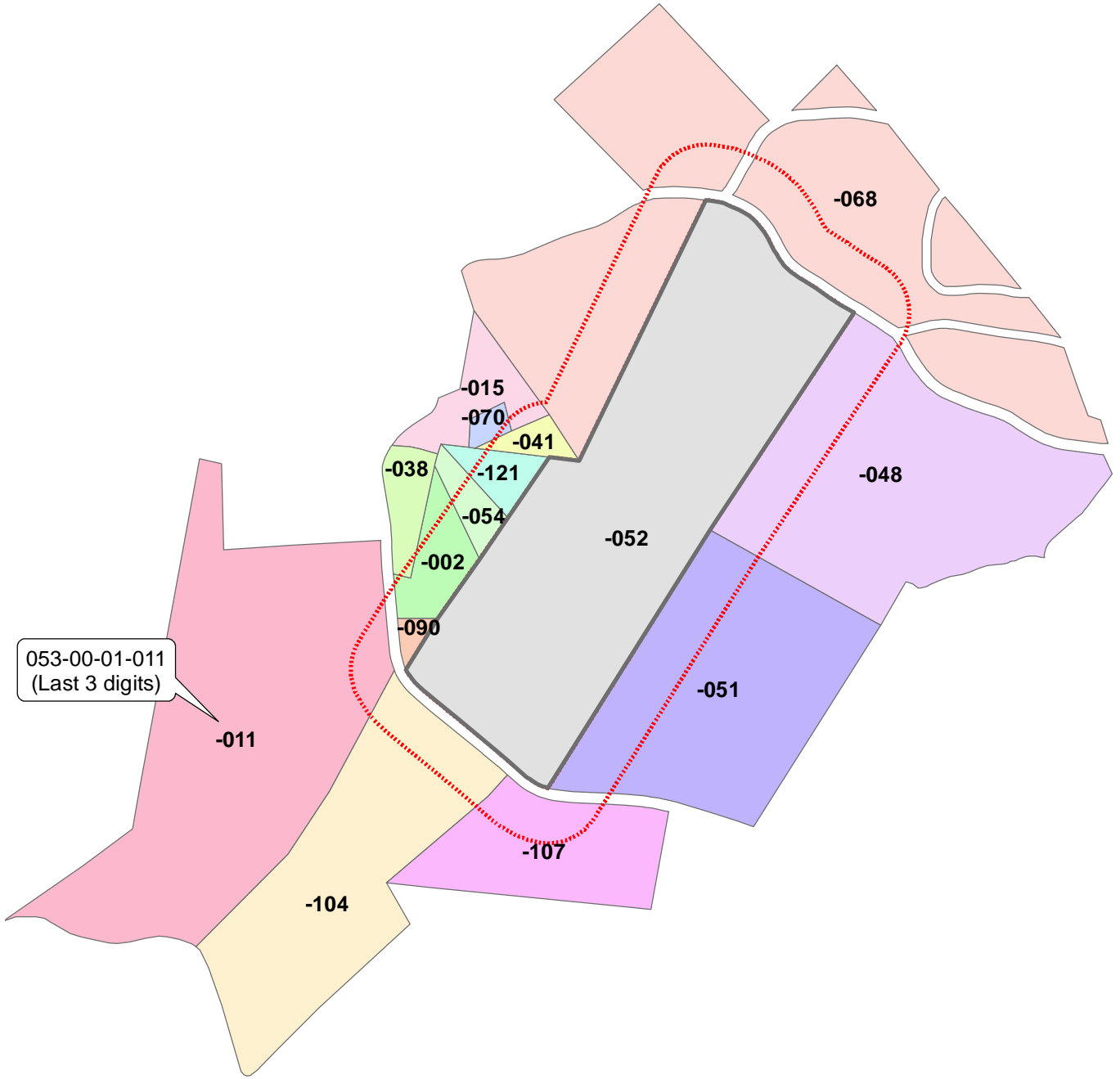


1 / 10 / 2018 8 : 58 : 19 AM

- | | | |
|--|--|---|
|  Parcels (labels 5,000 scale) | Overlay Regions |  Fair Play Village |
|  Land Hooks |  Carolina Gateway |  Fair Play Village Center |
|  Roads (appear 24,000) |  Cleveland Creek |  Keowee Jocassee 750 Overlay |



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Communication Tower 266 Whitmire Church Road			
Parcel: 053-00-01-052 Acres: 45.86			
Name:	HILLER DIANNA L	Land Value:	98470
Site:	266 WHITMIRE CHURCH RD	Improvement Value:	0
Sale:	\$1 on 2008-07-11 Reason=1 Qual=U	Accessory Value:	0
Mail:	301 WILLIAMSBURG RD	Total Value:	98470
	STERLING, VA 20164		



Oconee County makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use or interpretation. The maps on this site are not surveys. The assessment information is from the last certified taxroll. All data is subject to change before the next certified tax roll.
 Date printed: 01/05/18 : 11:36:34



8921 RESEARCH DRIVE
 CHARLOTTE, NC 28262
 ATTN: SCOTT McPHERSON (704) 510-8531

SITE NAME

DUCKY

**266 WHITMIRE CHURCH ROAD
 TAMASSEE, SC 29686
 RAWLAND
 225' SELF-SUPPORT TOWER**

VICINITY MAP



LOCATION MAP



DRIVING DIRECTIONS FROM VERIZON MTSO:

- Take I-85 S 79.8 mi
- Use the right 2 lanes to take exit 70 to merge onto I-26 W toward Asheville 12.8 mi
- Take exit 5 for Carolina 11 toward Chesnee/Campobelle 0.2 mi
- Turn left onto SC-11 S 26.1 mi
- Turn right onto US-276 N 5.4 mi
- Continue straight onto SC-11 S/SC-8 E 26.4 mi
- Continue to follow SC-11 S
- Turn right onto N Little River Rd/State Rd S-37-57 0.4 mi
- Turn left onto W H 7 and site will be on the right 1.5 mi

PROJECT SUMMARY

SITE ADDRESS: 266 WHITMIRE CHURCH ROAD
 TAMASSEE, SC 29686

JURISDICTION: OCONEE COUNTY

COUNTY: OCONEE

LAND OWNER: DIANNA L. HILLER
 301 WILLIAMSBURG ROAD
 STERLING, VA 20164

DISTURBED AREA: 20,909 SQ FT/0.48 ACRES

APPLICANT: VERIZON WIRELESS
 NORTH CAROLINA PARTNERSHIP
 8921 RESEARCH DRIVE
 CHARLOTTE, NC 28262
 ATTN: SCOTT McPHERSON (704) 510-8531

ENGINEER: TOWERSOURCE
 1875 OLD ALABAMA ROAD,
 ROSWELL, GA 30076
 678-990-2338
 ELIZABETH B. USHER

PROJECT NUMBER: 20161498104

SITE LOCATION CODE: 431212

CONTACT: SCOTT McPHERSON
 (704) 510-8531

SITE COORDINATES: 2C/1A
 LATITUDE: 34° 54' 19.157" (NAD 83)
 LONGITUDE: -83° 01' 20.135" (NAD 83)
 ELEVATION: 1,095.5' (NAVD 88)

OCCUPANCY: UNMANNED

CONSTRUCTION TYPE: RAWLAND

FIBER COMPANY: TBD

POWER COMPANY: BLUE RIDGE ELECTRIC
 864-944-8320

FIRE DEPARTMENT: OCONEE COUNTY RURAL FIRE CONTROL
 864-638-4220

POLICE DEPARTMENT: OCONEE COUNTY SHERIFF'S DEPT.
 864-638-4111

E911 ADDRESSING: 266 WHITMIRE CHURCH ROAD
 TAMASSEE, SC 29686

ZONING PROCESS: YES

BUILDING PERMIT PROCESS: YES

SHEET INDEX

NO.	DESCRIPTION
T-1	TITLE SHEET
--	SURVEY (BY OTHERS)
GN-1	GENERAL NOTES
C-1	SITE PLAN
C-2	DETAILED SITE PLAN
C-3	DETAILED CABINET LAYOUT
C-4	FOUNDATION DETAILS
C-5	TOWER ELEVATION & ANTENNA SCHEDULE
C-6	GRADING & SEDIMENT CONTROL PLAN
C-6A	GRADING & SEDIMENT CONTROL DETAILS
C-6B	ACCESS ROAD DETAIL
C-6C	GRADING & EROSION CONTROL NOTES
C-7	ICE BRIDGE DETAILS
C-8	CONDUIT TO CABINET ELEVATION
C-9	FENCE DETAIL
C-10	SIGN DETAILS
L-1	LANDSCAPE PLAN
E-1	ELECTRICAL NOTES & ONELINE DIAGRAM
E-1A	PANEL SCHEDULE
E-2	ELECTRICAL SITE PLAN
E-3	DETAILED ELECTRICAL PLAN
E-3A	CONDUIT STUB-UP DETAIL
E-4	GROUNDING SITE NOTES
E-5	GROUNDING SITE PLAN
E-6	GROUNDING DETAILS
E-7	GROUNDING DETAILS
E-8	H-FRAME ELEVATION (FRONT)
E-9	H-FRAME ELEVATION (BACK)
E-10	METER FRAME DETAIL
M-1	MICROWAVE DETAIL OPTION

PREPARED FOR:



8921 RESEARCH DRIVE
 CHARLOTTE, NC 28262
 ATTN: SCOTT McPHERSON (704) 510-8531



1875 OLD ALABAMA ROAD, SUITE 1008
 ROSWELL, GA 30076
 TEL: 678-990-2338 FAX: 678-990-2342

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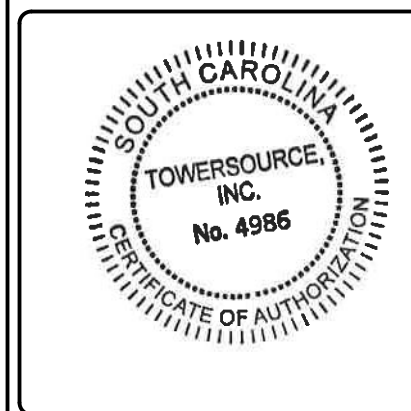
A&E PROJECT #: 20161498104

DRAWN BY: JBE

CHECKED BY: EBU

REVISIONS

NO.	DATE	DESCRIPTION
A	06/27/17	ISSUED FOR REVIEW
0	07/28/17	ISSUED FOR CONSTRUCTION
1	10/10/17	REVISED GENERATOR PER COMMENTS



VERIZON WIRELESS SITE NAME:

DUCKY

DESIGN TYPE: RAWLAND

SHEET TITLE: TITLE SHEET

DRAWING NO. T-1

REVISION: 1



Know what's below.
 Call before you dig.



CURVE TABLE						
CURVE	RADIUS	LENGTH	BEARING	CHORD	DELTA	TANGENT
C1	311.40'	124.45'	N60°39'06"W	123.62'	22°53'53"	63.07
C2	325.43'	99.83'	N36°35'33"W	99.44'	17°34'33"	50.31
C3	328.98'	340.93'	S58°49'44"E	325.88'	59°22'39"	187.56
C4	277.00'	148.99'	S42°30'12"E	147.20'	30°49'02"	76.34

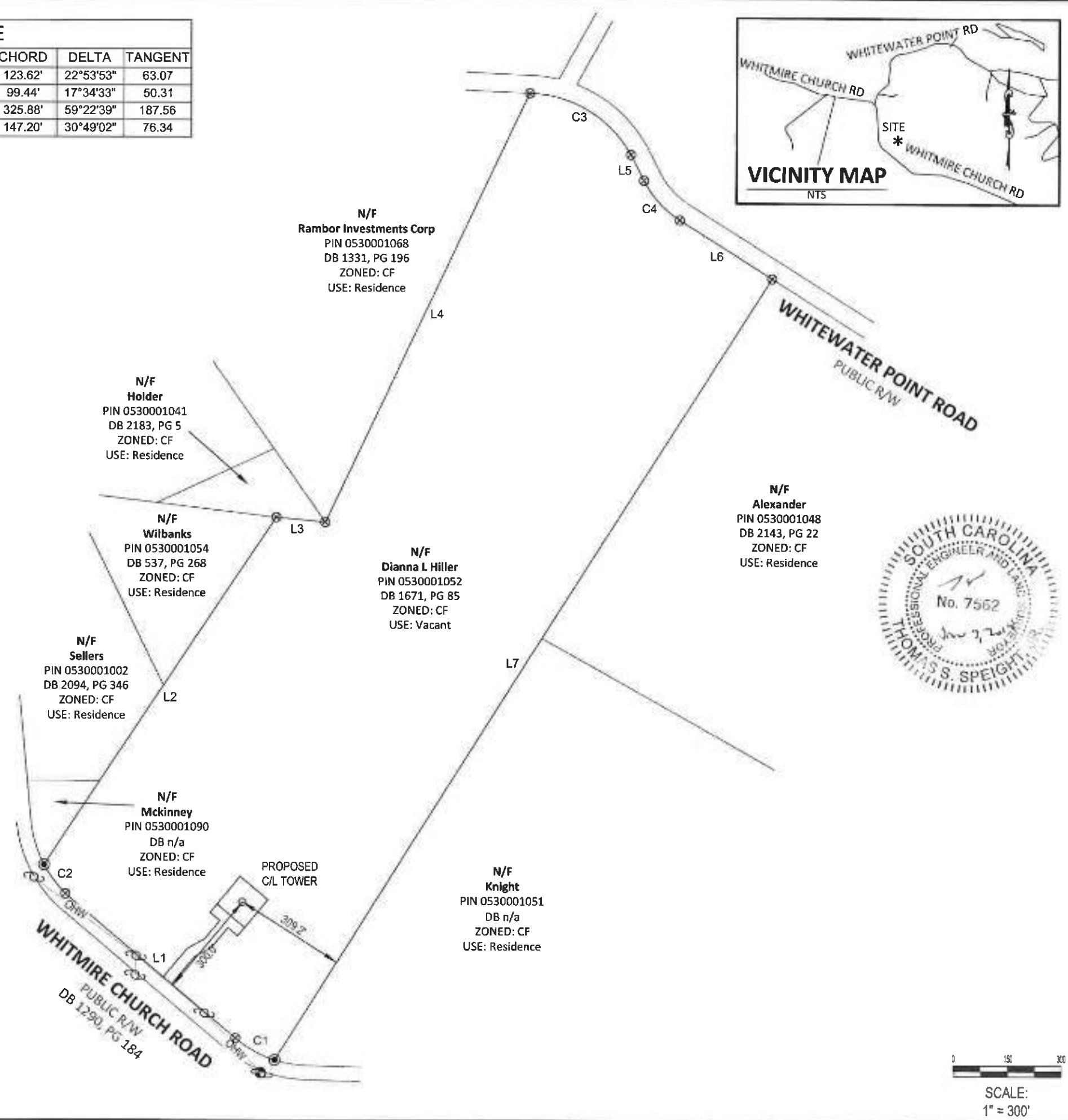
LINE TABLE		
LINE	BEARING	LENGTH
L1	N49°56'44"W	618.81'
L2	N33°49'54"E	1158.67'
L3	S84°27'38"E	136.24'
L4	N25°24'56"E	1315.23'
L5	S27°05'41"E	80.54'
L6	S57°54'43"E	301.65'
L7	S32°23'56"W	2566.24'

LEGEND

- EXIST. UTILITY POLE
- EXIST. TELE PED
- RR SPIKE FOUND
- IRON PIPE FOUND
- COMPUTED POINT
- PK NAIL FOUND
- OHW OVERHEAD WIRE

GENERAL NOTES

- THIS SURVEY WAS PREPARED BY BATEMAN CIVIL SURVEY CO., UNDER THE SUPERVISION OF JEFFREY L. BATEMAN, PLS.
- THIS PLAN HAS BEEN PREPARED FOR LAYOUT AND PERMITTING PURPOSES ONLY.
- 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
- VERTICAL DATUM IS (NAVD88), THE LATITUDE, LONGITUDE AND STATE PLANE COORDINATES, IF SHOWN, ARE GIVEN IN NORTH AMERICAN DATUM OF 1983 (NAD83).
- FIELD EQUIPMENT USED: TOPCON TOTAL STATION, EPOCH 35.
- ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES AND ALL BEARINGS ARE SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM UNLESS OTHERWISE SHOWN.
- PROPERTY OWNER: DIANNA L. HILLER
(DB 1671, PG 85)
301 WILLIAMSBURG ROAD
STERLING, VA, 20164
- 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.
- ALL EQUIPMENT AND IMPROVEMENTS ARE LOCATED WITHIN THE LEASE AREA.
- THE PROPERTY LIES IN ZONE "X", PER NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE PANEL 0095, RATE MAP 45073C0095C, DATED SEPTEMBER 11, 2009.
- PROPERTY INFORMATION DERIVED FROM INFORMATION OBTAINED FROM OCONEE COUNTY GIS



BCSC
BATEMAN CIVIL SURVEY COMPANY

Bateman Civil Survey Co, PC
2524 Reliance Ave Apex, NC 27539
Phone: 919 577.1080 Fax: 919 577 1081
SCBS FIRM # 3006

verizon

NORTH CAROLINA PARTNERSHIP
8921 RESEARCH DRIVE
CHARLOTTE, NC 28262

TOWERSOURCE

1875 Old Alabama Road
Suite 1008
Roswell, GA 30076
Office: 678-990-2338
www.TowersourceInc.com

DRAWN BY: JCH
CHECKED BY: JWb
DRAWING DATE: 03/21/2017

I, THOMAS S. SPEIGHT, Jr., HEREBY CERTIFY TO Celco Partnership d/b/a Verizon Wireless and Clark Law, P.C. THIS MAP IS A CORRECT REPRESENTATION OF THE LAND PLATTED AND HAS BEEN PREPARED IN CONFORMITY WITH THE MINIMUM STANDARDS AND REQUIREMENTS OF LAW. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 3 DAY OF JANUARY 2018

THOMAS S. SPEIGHT, Jr.
SC PLS7562

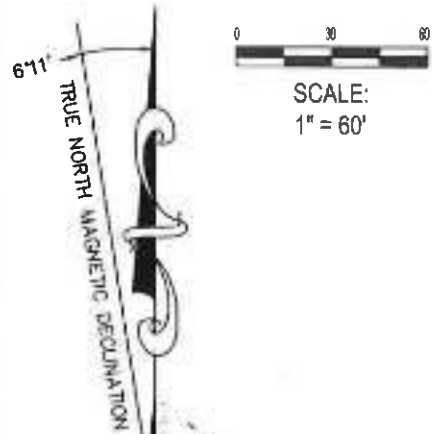
NO.	DATE	DESCRIPTION
1.	5/12/17	Address Title Report
2.	5/31/17	Revise Vicinity Map
3.	1/3/18	Update Zoning

Ducky

Whitmire Church Road
Tamassee, SC, 29686
Oconee County

SURVEY DATE: 03/21/2017
BCSC JOB#: 170212
SHEET TITLE: SURVEY
SHEET NUMBER 1 OF 3





CURVE TABLE						
CURVE	RADIUS	LENGTH	BEARING	CHORD	DELTA	TANGENT
C1	311.40'	124.45'	N60°39'06"W	123.62'	22°53'53"	63.07'

CENTER OF PROPOSED TOWER

LATITUDE N 34° 54' 19.230" (NAD83)
 LONGITUDE W-83° 01' 18.746" (NAD83)
 GROUND ELEVATION 1,185.5' (NAVD88)

LEGEND

- EXIST. UTILITY POLE
- EXIST. TELE PED
- RR SPIKE FOUND
- IRON PIPE FOUND
- COMPUTED POINT
- PK NAIL FOUND
- OHW

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DRAWN BY: JCH
 CHECKED BY: JWB
 DRAWING DATE: 03/21/2017

I, THOMAS S. SPEIGHT, JR. HEREBY CERTIFY TO
 Cellco Partnership d/b/a Verizon Wireless
 and Clark Law, P.C.

THIS MAP IS A CORRECT REPRESENTATION OF THE
 LAND PLATTED AND HAS BEEN PREPARED IN
 CONFORMITY WITH THE MINIMUM STANDARDS AND
 REQUIREMENTS OF LAW. WITNESS MY ORIGINAL
 SIGNATURE, REGISTRATION NUMBER AND SEAL
 THIS 21st DAY OF MARCH 2017.

THOMAS S. SPEIGHT, JR.
 SC PLS7562

NO.	DATE	DESCRIPTION
1.	5/12/17	Address Title Report
2.	5/31/17	Revise Vicinity Map
3.	1/3/18	Update Zoning

Ducky

Whitmire Church Road
 Tamassee, SC, 29686
 Oconee County

SURVEY DATE: 03/21/2017
BCSC JOB#: 170212
SHEET TITLE: SURVEY
SHEET NUMBER 2 OF 3

100' x 100'
 Lessee Land Space
 10,000 SF
 0.229 AC
 Northing = 1123687.01
 Easting = 1393697.87

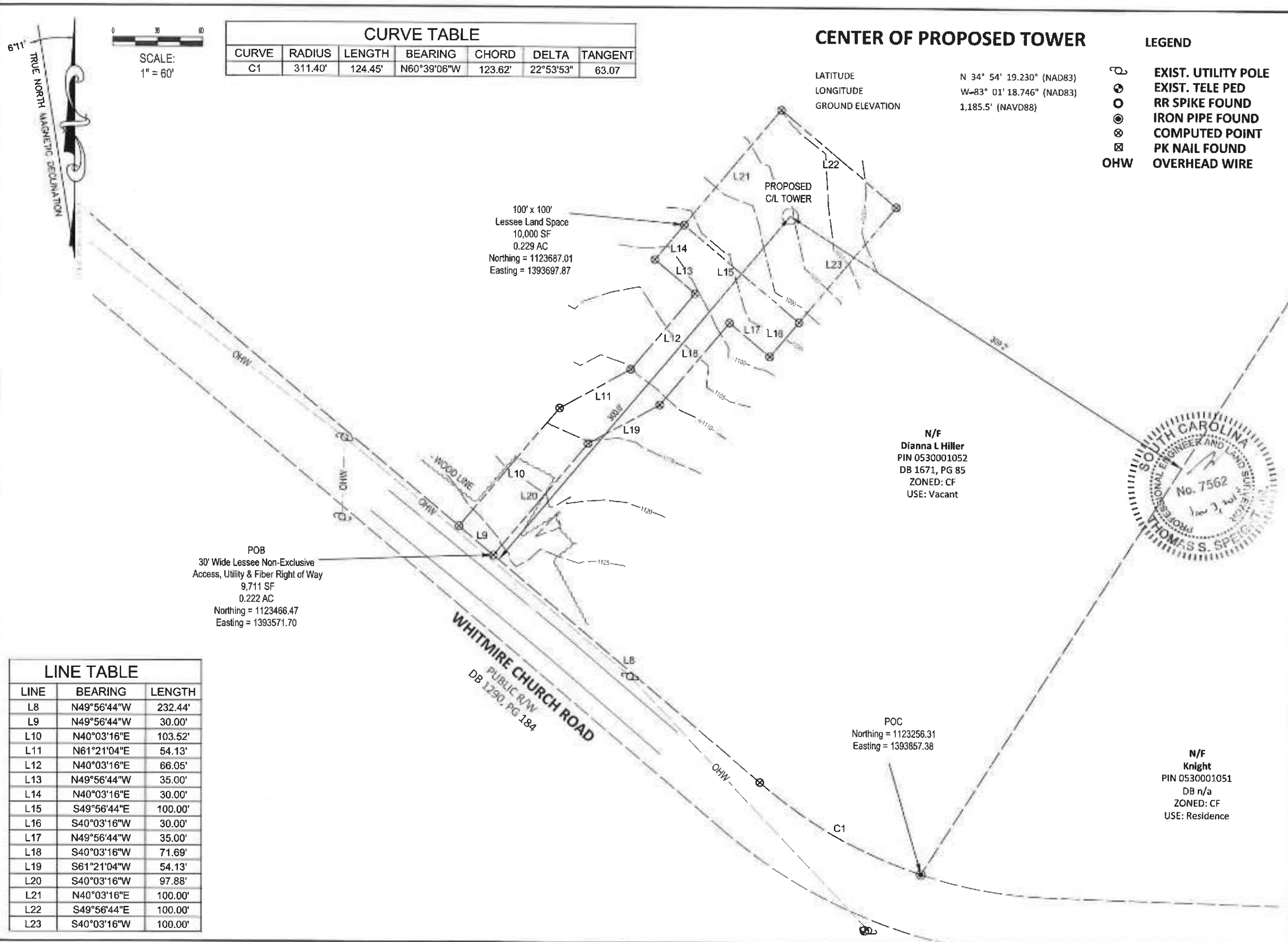
POB
 30' Wide Lessee Non-Exclusive
 Access, Utility & Fiber Right of Way
 9,711 SF
 0.222 AC
 Northing = 1123466.47
 Easting = 1393571.70

N/F
 Dianna L Hiller
 PIN 0530001052
 DB 1671, PG 85
 ZONED: CF
 USE: Vacant

POC
 Northing = 1123256.31
 Easting = 1393857.38

N/F
 Knight
 PIN 0530001051
 DB n/a
 ZONED: CF
 USE: Residence

LINE TABLE		
LINE	BEARING	LENGTH
L8	N49°56'44"W	232.44'
L9	N49°56'44"W	30.00'
L10	N40°03'16"E	103.52'
L11	N61°21'04"E	54.13'
L12	N40°03'16"E	66.05'
L13	N49°56'44"W	35.00'
L14	N40°03'16"E	30.00'
L15	S49°56'44"E	100.00'
L16	S40°03'16"W	30.00'
L17	N49°56'44"W	35.00'
L18	S40°03'16"W	71.69'
L19	S61°21'04"W	54.13'
L20	S40°03'16"W	97.88'
L21	N40°03'16"E	100.00'
L22	S49°56'44"E	100.00'
L23	S40°03'16"W	100.00'



1. Taxes for the year 2016 in the amount of \$53.75 to Oconee County Parcel ID #053-00-01-052.
 (Does Not Affect Verizon Wireless Land Space or Access, Utility & Fiber Right of Way)
2. Plat recorded in Book P-46, Page 8.
 (Does Not Affect Verizon Wireless Land Space or Access, Utility & Fiber Right of Way)
3. Mortgage from Dianna L. Hiller & Andrea L. Kea in favor of Community First Bank dated 11/24/1997,
 recorded 11/25/1997 in Book 953, Page 323.
 (Does Not Affect Verizon Wireless Land Space or Access, Utility & Fiber Right of Way)
2. Deed to Right of Way recorded 07/21/2003 in Book 1290, Page 184.
 (Does Not Affect Verizon Wireless Land Space or Access, Utility & Fiber Right of Way)

30' WIDE LESSEE NON-EXCLUSIVE ACCESS, UTILITY & FIBER RIGHT OF WAY DESCRIPTION

All that certain parcel of land, situated in Tamassee, Oconee County, South Carolina, being on the lands of Dianna L. Hiller as described in Deed Book 1671 at Page 85, Oconee County Records, and being more particularly described as follows:
 Commencing at an Iron Rebar Found on the Northern Right of Way of Whitmire Church Road and South Western Property Corner of Knight and South Eastern Property Corner of Dianna L. Hiller, Oconee County Records, having State Plane Coordinates N:1123256.31, E:1393857.38, thence along a curve to the Right having a radius of 311.40', a length of 124.45' and a chord of N60°39'06"W, 123.62' to a point; thence N49°56'44"W, 232.44' to the Point of Beginning having State Plane Coordinates N:1123466.47, E:1393571.70, thence N49°56'44"W, 30.00' to a point; thence N40°03'16"E, 103.52' to a point; thence N61°21'04"E, 54.13' to a point; thence N40°03'16"E, 66.05' to a point; thence N49°56'44"W, 35.00' to a point; thence N40°03'16"E, 30.00' to a point; thence S49°56'44"E, 100.00' to a point; thence S40°03'16"W, 30.00' to a point; thence N49°56'44"W, 35.00' to a point; thence S40°03'16"W, 71.69' to a point; thence S61°21'04"W, 54.13' to a point; thence S40°03'16"W, 97.88' to a point; said point being the Point of Beginning of the 30' Wide Lessee Non-Exclusive Access, Utility & Fiber Right of Way. Said 30' Wide Lessee Non-Exclusive Access, Utility & Fiber Right of Way contains 9,711 square feet, more or less.

100'x100' LESSEE LAND SPACE DESCRIPTION

All that certain parcel of land, situated in Tamassee, Oconee County, South Carolina, being on the lands of Dianna L. Hiller as described in Deed Book 1671 at Page 85, Oconee County Records, and being more particularly described as follows:
 Commencing at an Iron Rebar Found on the Northern Right of Way of Whitmire Church Road and South Western Property Corner of Knight and South Eastern Property Corner of Dianna L. Hiller, Oconee County Records, having State Plane Coordinates N:1123256.31, E:1393857.38, thence along a curve to the Right having a radius of 311.40', a length of 124.45' and a chord of N60°39'06"W, 123.62' to a point; thence N49°56'44"W, 232.44'; thence N49°56'44"W, 30.00' to a point; thence N40°03'16"E, 103.52' to a point; thence N61°21'04"E, 54.13' to a point; thence N40°03'16"E, 66.05' to a point; thence N49°56'44"W, 35.00' to a point; thence N40°03'16"E, 30.00' to a point; the Point of Beginning having State Plane Coordinates N:1123687.01, E:1393697.87; thence N40°03'16"E, 100.00' to a point; thence S49°56'44"E, 100.00' to a point; thence S40°03'16"W, 100.00' to a point; thence N49°56'44"W, 100.00' to a point; said point being the Point of Beginning of the Lessee Land Space, Said Lessee Land Space contains 10,000 square feet more or less.



BCSC
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 SCBLS FIRM # 3006

verizon
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 Roswell, GA 30076
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DRAWN BY: JCH
 CHECKED BY: JWB
 DRAWING DATE: 03/21/2017

I, THOMAS S. SPEIGHT, JR., HEREBY CERTIFY TO Cellco Partnership d/b/a Verizon Wireless and Clark Law, P.C.
 THIS MAP IS A CORRECT REPRESENTATION OF THE LAND PLATTED AND HAS BEEN PREPARED IN CONFORMITY WITH THE MINIMUM STANDARDS AND REQUIREMENTS OF LAW. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 3 DAY OF JANUARY, 2016
 THOMAS S. SPEIGHT, JR.
 SC PLS7562

REVISIONS	NO.	DATE	DESCRIPTION
	1.	5/12/17	Address Title Report
	2.	5/31/17	Revise Vicinity Map
	3.	1/3/18	Update Zoning

Ducky
 Whitmire Church Road
 Tamassee, SC, 29686
 Oconee County

SURVEY DATE: 03/21/2017
 BCSC JOB#: 170212
 SHEET TITLE: SURVEY
 SHEET NUMBER 3 OF 3

GENERAL NOTES:

- CONTRACTOR IS TO COMPLY WITH THE REQUEST FOR QUOTATION (RFQ) AND CONSTRUCTION SPECIFICATIONS (LATEST REVISION) & SHELTER/CABINET MANUFACTURER'S DRAWINGS, ALL PREVIOUSLY PROVIDED BY VERIZON WIRELESS.
- DIMENSIONS TO ALL EXISTING SITE FEATURES SHALL BE FIELD VERIFIED BY THE CONTRACTOR & ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES, PIPES, OR ANY OTHER SUBSURFACE STRUCTURES PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL CONTACT THE LOCAL UTILITY LOCATING SERVICE 72 HRS PRIOR TO DIGGING, DRILLING, OR BLASTING.
- VERIZON'S CONSTRUCTION PROJECT MANAGER OR VERIZON'S REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED WRITTEN APPROVAL OF VERIZON'S CONSTRUCTION PROJECT MANAGER OR VERIZON'S REPRESENTATIVE.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL DRAWINGS & SPECIFICATIONS AND TO COORDINATE HIS WORK WITH THE WORK OF ALL OTHERS TO ENSURE THAT WORK PROGRESSION IS NOT INTERRUPTED.
- CONTRACTOR SHALL COORDINATE THE CONSTRUCTION SCHEDULE WITH THE PROPERTY OWNER AS TO AVOID ANY INTERRUPTIONS WITH THE PROPERTY OWNER'S OPERATIONS.
- CONTRACTOR SHALL KEEP THE PROJECT SITE FREE FROM ACCUMULATION OF WASTE MATERIALS & RUBBISH AT ALL TIMES DURING THE CONSTRUCTION PERIOD, & SHALL REMOVE ALL WASTE MATERIALS & RUBBISH FROM THE PROJECT SITE AT THE COMPLETION OF WORK, EXCEPT THOSE SPECIFICALLY REQUIRED BY THE CONTRACT DOCUMENTS TO BE LEFT FOR THE OWNER'S MAINTENANCE.
- THE CONTRACTOR SHALL RESTORE ALL PROPERTY TO IT'S PRE-CONSTRUCTION CONDITION TO THE OWNER'S SATISFACTION.
- THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY DISTURBED, DAMAGED, OR REMOVAL OF MONUMENTATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A REGISTERED LAND SURVEYOR.
- DAMAGE TO EXISTING STRUCTURES & UTILITIES SHALL BE REPAIRED OR REPLACED TO OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE. MAINTAIN FLOW FOR ALL UTILITIES.
- ALL UTILITY CONNECTIONS TO EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER OR OWNER'S REPRESENTATIVE AND THE UTILITY COMPANY PRIOR TO EACH CONNECTION.
- UNLESS OTHERWISE INDICATED, VERIZON SHALL OBTAIN & PROVIDE CONSTRUCTION PERMITS. THE CONTRACTOR SHALL OBTAIN, AT HIS OWN EXPENSE, ALL REQUIRED LOCAL, CITY, STATE AND/OR COUNTY CONSTRUCTION LICENSES. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL APPLY FOR & PROVIDE A CERTIFICATE OF OCCUPANCY AND ELECTRICAL PERMIT.
- THE CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES. DO NOT ALLOW WATER TO STAND OR POND. ANY DAMAGE TO STRUCTURES OR WORK ON THE SITE CAUSE BY INADEQUATE MAINTENANCE OF DRAINAGE PROVISIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND ANY COST ASSOCIATED WITH REPAIRS FOR SUCH DAMAGE WILL BE AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS.
- CONSTRUCTION WASTE MAY NEITHER BE BURNED NOR BURIED AND MUST BE TAKEN TO AN APPROVED LANDFILL.
- SECURITY TO THE SITE SHALL BE MAINTAINED AT ALL TIMES.
- FOR GREENFIELD/NEW TOWERS SITES, CONTRACTOR IS RESPONSIBLE FOR ENSURING THE TOWER LIGHTS ARE MONITORED MORNING AND NIGHT EACH 24 HRS FROM THE TIME THE TOWER IS TOPPED OUT UNTIL SITE HAS ALARMS CONNECTED TO THE OPERATIONS SWITCH OR NOC. CONTRACTOR TO NOTIFY PROJECT MANAGER AT THE TIME THE TOWER IS TOPPED OUT TO FORWARD NOTIFICATION TO VERIZON REGULATORY AND FCC/FAA.
- NOTIFY THE LESSEE'S REPRESENTATIVES TWENTY-FOUR HOURS PRIOR TO CONSTRUCTION TO ALLOW THE LESSEE'S REPRESENTATIVES TO LOOK AT THE SITE PRIOR TO EXCAVATION.
- THE CONTRACTOR SHALL INCLUDE ALL WORK REQUIRED TO CO-LOCATE ON THE EXISTING TOWER INCLUDING ALL NECESSARY SITE IMPROVEMENTS, FOUNDATIONS, ELECTRICAL IMPROVEMENTS, SNAP INS, H-FRAME, AND OTHER ACCESSORIES FOR COMPLETE INSTALLATION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF THE FOLLOWING EQUIPMENT THAT WILL BE SUPPLIED BY THE LESSEE: ANTENNAS, COAX CABLES, AND EQUIPMENT CABINETS/SHELTER. THE EQUIPMENT CABINETS SHALL BE TRANSPORTED TO THE SITE BY THE CONTRACTOR.
- CONTRACTOR TO NOTIFY THE LESSEE'S TESTING REPRESENTATIVE FORTY-EIGHT HOURS BEFORE CONCRETE POURS.
- COMPOUND AND PARKING/TURNAROUND AREA SHOULD CONSIST OF GEOTECH FABRIC COVERED BY 4" OF CRUSH & RUN WITH 2" OF #57 STONE ON TOP. ROLLER COMPACTED.

STRUCTURAL STEEL NOTES:

- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION & ERECTION OF STRUCTURAL STEEL FOR SHELTER/CABINETS".
- ALL INTERIOR STRUCTURAL STEEL SHALL BE FINISHED WITH ONE COAT FABRICATOR'S NON-LEAD, RED OXIDE PRIMER. PRIMING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, MARS, & WELDS IN THE PRIMED AREAS SHALL BE REPAIRED BY FIELD TOUCH-UP PRIOR TO COMPLETION OF THE WORK.
- ALL EXTERIOR STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATION ASTM A123 UNLESS OTHERWISE NOTED. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, MARS, & WELDS SHALL BE REPAIRED BY FIELD TOUCH-UP PRIOR TO COMPLETION OF THE WORK.
- HOLES SHALL NOT BE PLACED THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON THE DRAWINGS.
- CONNECTIONS:
 - ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 13th EDITION. AT THE COMPLETION OF WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.
 - BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 BOLTS (3/4") AND SHALL HAVE A MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
 - NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA GALVANIZED ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
 - CONNECTION DESIGN BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER.

ANTENNA NOTES:

- AFTER ANTENNA INSTALLATION, LABEL EACH COAXIAL CABLE LINE WITH STRIPS OF COLORED, UV RESISTANT TAPE AT BOTH ENDS OF EVERY LINE. IDENTIFICATION TAPE AS SHOWN ON TOWER ELEVATION PAGE.
- TEST ALL COMPONENTS UPON COMPLETION OF INSTALLATION TO ENSURE THAT ALL ITEMS HAVE BEEN PROPERLY INSTALLED AND ARE OPERATIONAL AS INTENDED.
- TEST CRITERIA:
 - ALL CABLES SHALL BE TESTED BETWEEN 700-1900 MHZ.
 - ALL ANTENNAS MUST MEET A RETURN LOSS OF 16dB OR BETTER.
 - ALL INSERTION LOSS SHALL MEET OR BE LESS THAN THAT SPECIFIED ON THE EBTS WORKSHEET.
- EQUIPMENT REQUIRED - MINIMUM TEST EQUIPMENT SHALL INCLUDE:
 - SWEPT-FREQUENCY SCALAR NETWORK ANALYZER SYSTEM.
 - SIGNAL SEPARATION DEVICE WITH A DIRECTIVITY OF AT LEAST 40dB BETTER THAN THE HIGHEST RETURN LOSS IT IS REQUIRED TO MEASURE.
 - PRINTER OR PLOTTER CAPABLE OF PRODUCING 8.5"x11" COPIES (DIGITAL PRINTERS UNACCEPTABLE) FOR RECORDING PERMANENT RECORD OF MEASURED RETURN LOSS & INSERTION LOSS AND INSERTION CHARACTERISTICS. A TIME DOMAIN REFLECTOMETER (TDR) FOR FAULT LOCATION.
- TESTS REQUIRED:
 - CABLE RETURN LOSS (INCLUDES TOP & BOTTOM JUMPERS).
 - LOAD TEST; SHOULD BE -40dB OR BETTER.
 - CABLE INSERTION LOSS - MUST MEET OR BE LESS THAN THE MANUFACTURER'S PUBLISHED SPECIFICATIONS.
 - SYSTEM RETURN LOSS - IF SYSTEM SWEEPS BETTER THAN LOAD, THERE IS A PROBLEM IN THE SYSTEM.
- TEST DOCUMENTATION:
 - THE FOLLOWING DATA MUST BE INCLUDED FOR EACH ANTENNA TESTED:
 - INSERTION LOSS DATA.
 - RETURN LOSS INTO 50ohm LOAD, SWEEP MEASUREMENTS.
 - RETURN LOSS INTO ANTENNA SWEEP MEASUREMENTS.
 - DOCUMENTATION FORMAT:
 - COPIES OF ALL TEST DATA MUST BE PLACED IN BINDERS.
 - PROVIDE TWO (2) COPIES OF ALL TEST DATA, ONE COPY TO REMAIN AT SITE & ONE COPY FOR THE VERIZON PROJECT MANAGER.
 - ALL TESTS MUST BE LOGGED AND DATED.
 - SWEEP MEASUREMENTS MUST BE CHART RECORDED & DATED.

LEGEND			
EXISTING		NEW	
X 100.5	SPOT ELEVATION	712.9	— OHT — OVERHEAD TELEPHONE
~ -276 ~	CONTOUR LINE	— 98 —	— UGT — UNDERGROUND FIBER
- - SD - -	STORM DRAIN	— SD —	— OE/OT — OVERHEAD POWER
[Grid]	CATCH BASIN		— UGP — UNDERGROUND POWER
R/W	RIGHT OF WAY		⊘ UTILITY POLE
— — — —	IRON PIN SET (IPS) 5/8"		⊙ LIGHT POLE
●	REBAR		— WL — WATER LINE
⊙	IRON PIN FOUND (IRP)		⊗ WATER VALVE
⊙	BENCHMARK		— NG — NATURAL GAS LINE
□	CONCRETE MON. FOUND		⊗ GAS VALVE
[Grid]	CONCRETE MON. SET		— SAN — SANITARY SEWER
- - - -	CENTERLINE		Ⓜ MANHOLE

NOTE: THIS IS A GENERAL LEGEND. SOME ITEMS MAY NOT APPLY TO THIS SITE.

CONCRETE NOTES:

- DESIGN & CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING APPLICABLE CODES: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR SHELTER/CABINETS"; ACI 318 "SHELTER/CABINET CODE REQUIREMENTS FOR REINFORCED CONCRETE".
- MIX DESIGN SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO PLACING CONCRETE.
- CONCRETE SHALL BE NORMAL WEIGHT, 6% AIR ENTRAINED (±1.5%) WITH A MAXIMUM 4" SLUMP AND A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI UNLESS NOTED OTHERWISE.
- CONCRETE MATERIALS:

PORTLAND CEMENT	ASTM C 150, TYPE I
REINFORCEMENT	ASTM A 185
NORMAL WEIGHT AGGREGATE	ATSM C 33
WATER	POTABLE
ADMIXTURES	NON-CHLORIDE
- REINFORCING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 315.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED, UNLESS NOTED OTHERWISE. WWF SHALL CONFORM TO ASTM A185 UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND HOOKS SHALL BE ASTM STANDARD UNLESS NOTED OTHERWISE.
- MINIMUM COVER FOR REINFORCING STEEL:

CONCRETE CAST AGAINST EARTH	3 IN
EXPOSED CONCRETE	#6 & LARGER - 2 IN, #5 & SMALLER - 1 1/2 IN
NON-EXPOSED SLAB & WALL	3/4 IN
- A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH ACI 301, SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. NO REINFORCING SHALL BE CUT WITHOUT ENGINEER'S APPROVAL.
- CURING COMPOUNDS SHALL CONFORM TO ASTM C 309.
- ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN ACI 301.
- DO NOT WELD OR TACK WELD REINFORCING STEEL.
- ALL PENETRATIONS SHALL BE IN PLACE PRIOR TO CONCRETE PLACEMENT.
- REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
- CONCRETE SHALL NOT BE PLACED IN WATER, ICE, OR ON FROZEN GROUND.
- DO NOT ALLOW CONCRETE SUBBASE TO FREEZE DURING CONCRETE CURING AND SETTING PERIOD.
- FOR COLD WEATHER & HOT WEATHER PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS.
- CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE STATE REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.
- FOUNDATION DESIGN ASSUMES STRUCTURAL BACKFILL TO BE COMPACTED IN 8 INCH MAXIMUM LAYERS TO 95% OF MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D698. ADDITIONALLY, STRUCTURAL BACKFILL MUST HAVE A MINIMUM COMPACTED UNIT WEIGHT OF 100 POUNDS PER CUBIC FOOT.
- FOUNDATION DESIGN ASSUMES FIELD INSPECTIONS WILL BE PERFORMED TO VERIFY THAT CONSTRUCTION MATERIALS, INSTALLATION METHODS, AND ASSUMED DESIGN PARAMETERS ARE ACCEPTABLE BASED ON CONDITIONS EXISTING AT THE SITE.
- LOOSE MATERIAL SHALL BE REMOVED FROM THE BOTTOM OF EXCAVATION PRIOR TO CONCRETE PLACEMENT.
- CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS, INFILTRATION OF WATER OR SOIL, AND OTHER OCCURRENCES WHICH MAY DECREASE THE STRENGTH OR DURABILITY OF FOUNDATION.
- CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL. WHEN FORMS ARE NECESSARY, THEY SHALL BE REMOVED PRIOR TO PLACING STRUCTURAL BACKFILL.
- FOUNDATION DESIGN ASSUMES CONTINUOUS CONCRETE PLACEMENT WITHOUT CONSTRUCTION JOINTS.
- WELDED WIRE FABRIC SHALL BE SUPPLIED IN FLAT SHEETS. (NOT ROLLED).
- TEST CYLINDERS SHALL BE MOLDED AND LABORATORY CURED IN ACCORDANCE WITH ASTM C31. THREE CYLINDERS SHALL BE TAKEN FOR EACH DAY'S CONCRETE PLACEMENT. CYLINDERS SHALL BE TESTED IN ACCORDANCE WITH ASTM C39.
- TOPS OF CONCRETE FOUNDATION MUST BE WITHIN 0.02" OF ELEVATION SPECIFIED BY THE CUSTOMER.

GENERATOR, DIESEL & LPG TANK NOTES:

- INSTALLATION OF ALL GENERATORS AND DIESEL/LPG TANK INSIDE OR OUTSIDE MUST MEET ALL APPLICABLE NFPA CURRENT CODES.
- ALL FUEL PIPING CONNECTION INSTALLED AT THE SITE MUST BE PRESSURE TESTED PER LOCAL CODE REQUIREMENTS BEFORE STARTING OF GENERATOR.
- IN FLOOD ZONES LPG TANK FOUNDATION MUST BE INCREASED FROM A DEPTH OF 4" TO 20" TO PREVENT TANK FROM FLOATING AWAY IN A FLOOD.

PREPARED FOR:



8921 RESEARCH DRIVE
CHARLOTTE, NC 28262
ATTN: SCOTT McPHERSON (704) 510-8531



1875 OLD ALABAMA ROAD, SUITE 1008
ROSWELL, GA 30076
TEL: 678-990-2338 FAX: 678-990-2342

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A&E PROJECT #:	20161498104
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REVISIONS

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A	06/27/17	ISSUED FOR REVIEW
0	07/28/17	ISSUED FOR CONSTRUCTION
1	10/10/17	REVISED GENERATOR PER COMMENTS



VERIZON WIRELESS SITE NAME:	DUCKY
DESIGN TYPE:	RAWLAND

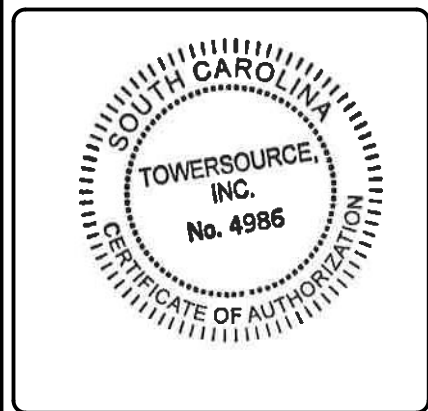
SHEET TITLE:	GENERAL NOTES
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DRAWING NO.	GN-1	REVISION:	1
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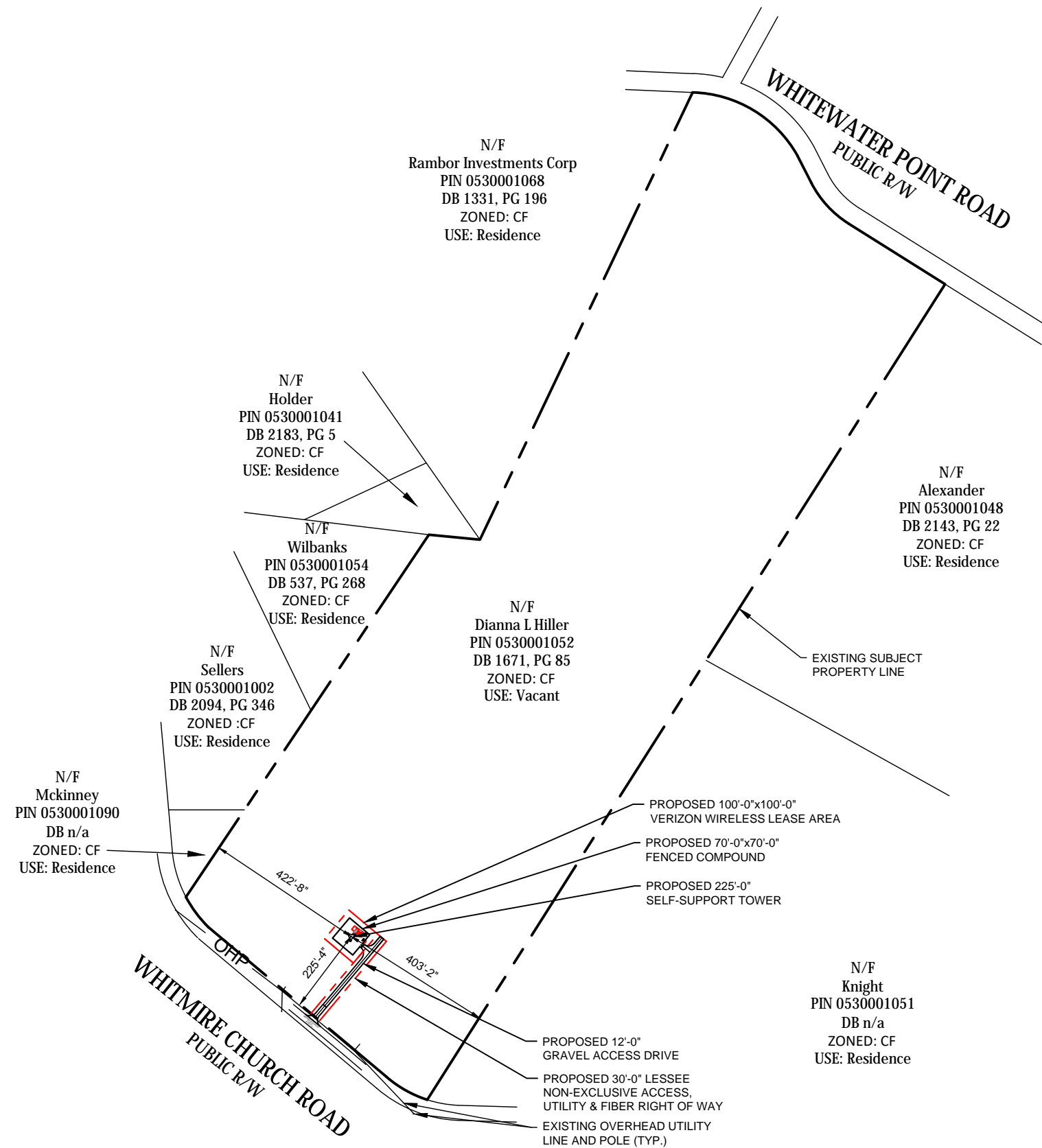


VERIZON WIRELESS SITE NAME:
DUCKY

DESIGN TYPE:
 RAWLAND

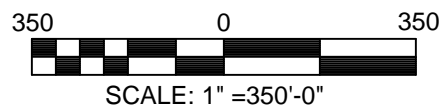
SHEET TITLE:
 OVERALL SITE PLAN

DRAWING NO. **C-1** REVISION: **1**



OVERALL SITE PLAN
 SCALE 11"x17": 1" = 350'-0"

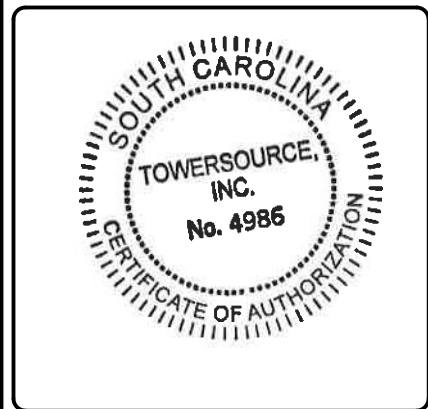
GRAPHIC SCALES



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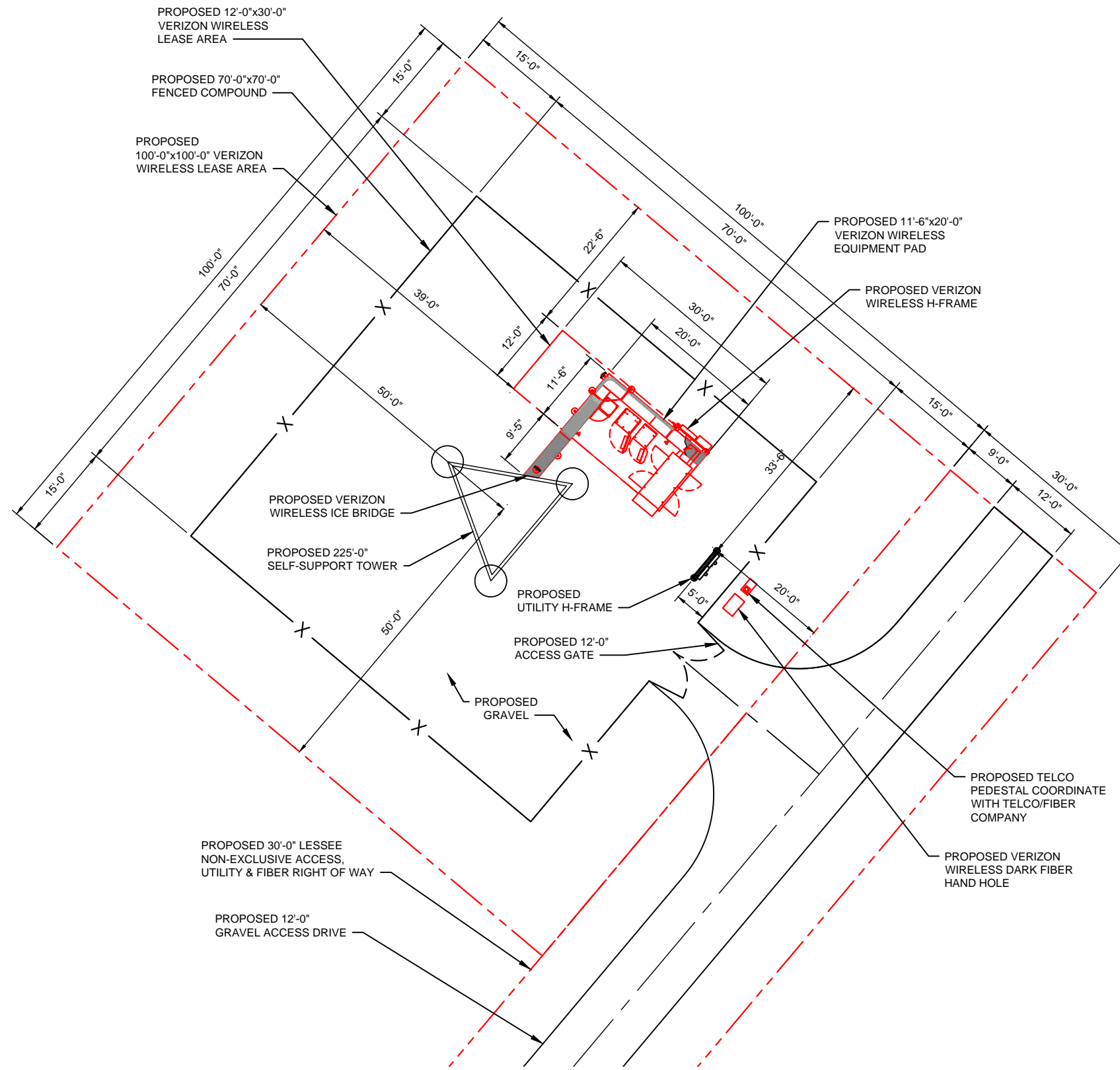


VERIZON WIRELESS SITE NAME:
DUCKY

DESIGN TYPE:
 RAWLAND

SHEET TITLE:
 DETAILED SITE PLAN

DRAWING NO. C-2	REVISION: 1
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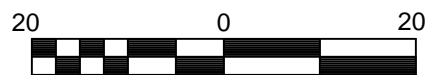


DETAILED SITE PLAN

SCALE 11"x17": 1" = 20'-0"



GRAPHIC SCALES

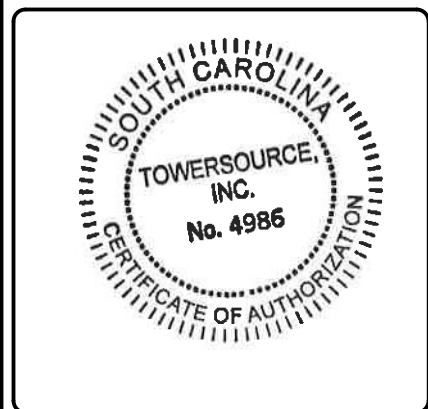


SCALE: 1" = 20'-0"

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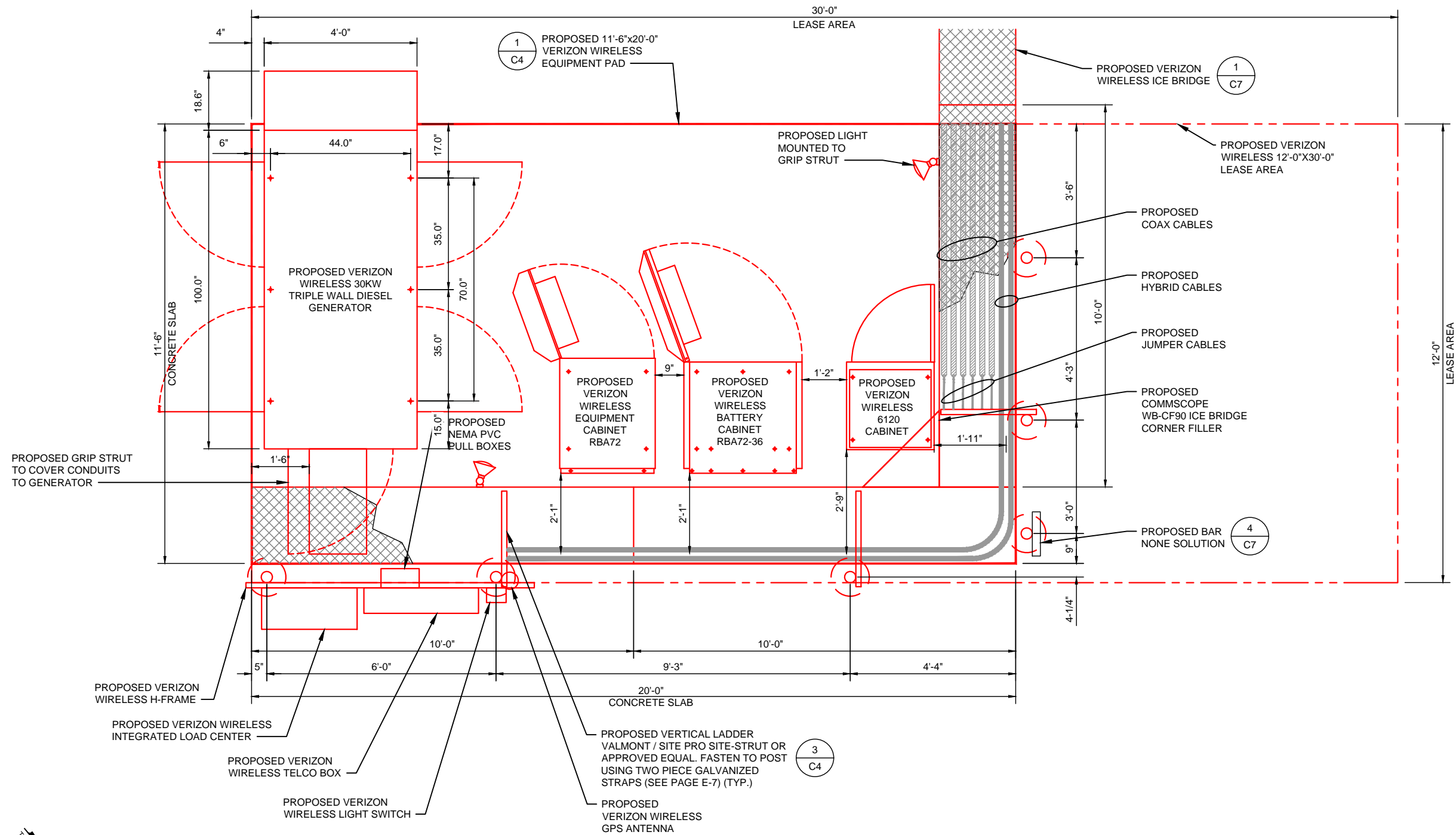
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NO.	DATE	DESCRIPTION
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1	10/10/17	REVISED GENERATOR PER COMMENTS



VERIZON WIRELESS SITE NAME:
DUCKY
 DESIGN TYPE:
 RAWLAND

SHEET TITLE:
 DETAILED CABINET LAYOUT

DRAWING NO. **C-3** REVISION: **1**



NOTE: SEE SHEET E-3 FOR ELECTRICAL CONDUIT RUN

NOTE: CONTRACTOR IS TO PROVIDE COMBINATION LOCKS TO SECURE ALL CABINETS AND THE ILC.

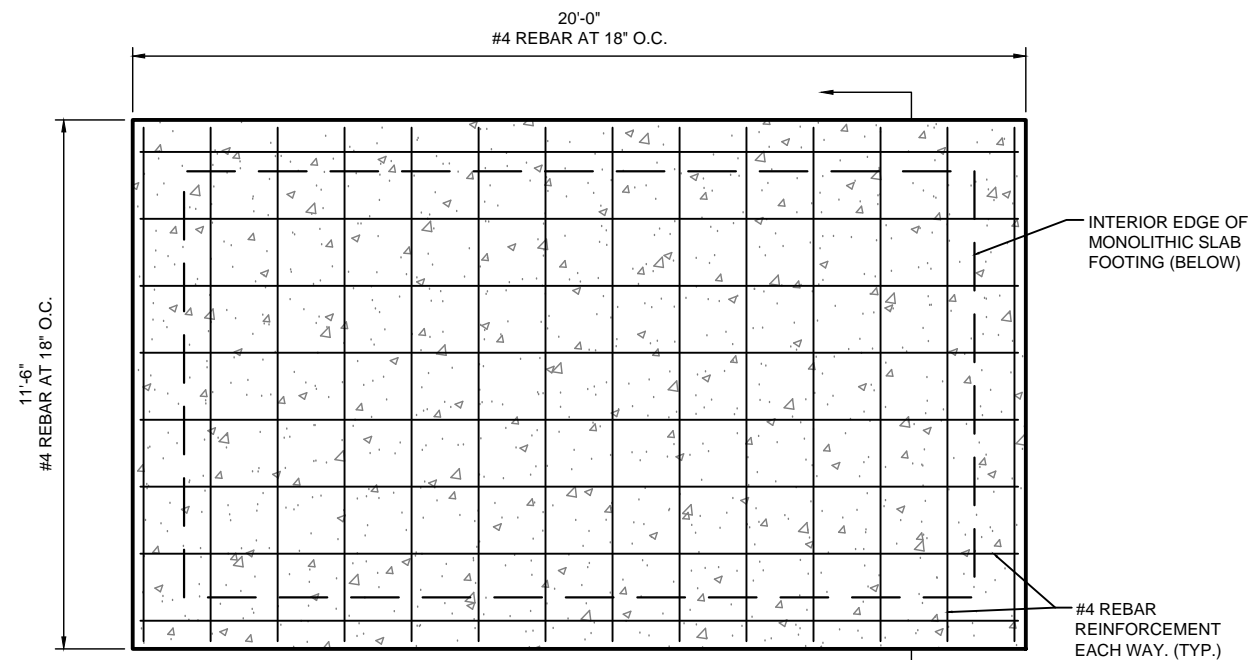
GRAPHIC SCALES



DETAILED CABINET LAYOUT
 SCALE 11"x17": 1" = 3'-0"

GENERAL NOTES-CONCRETE

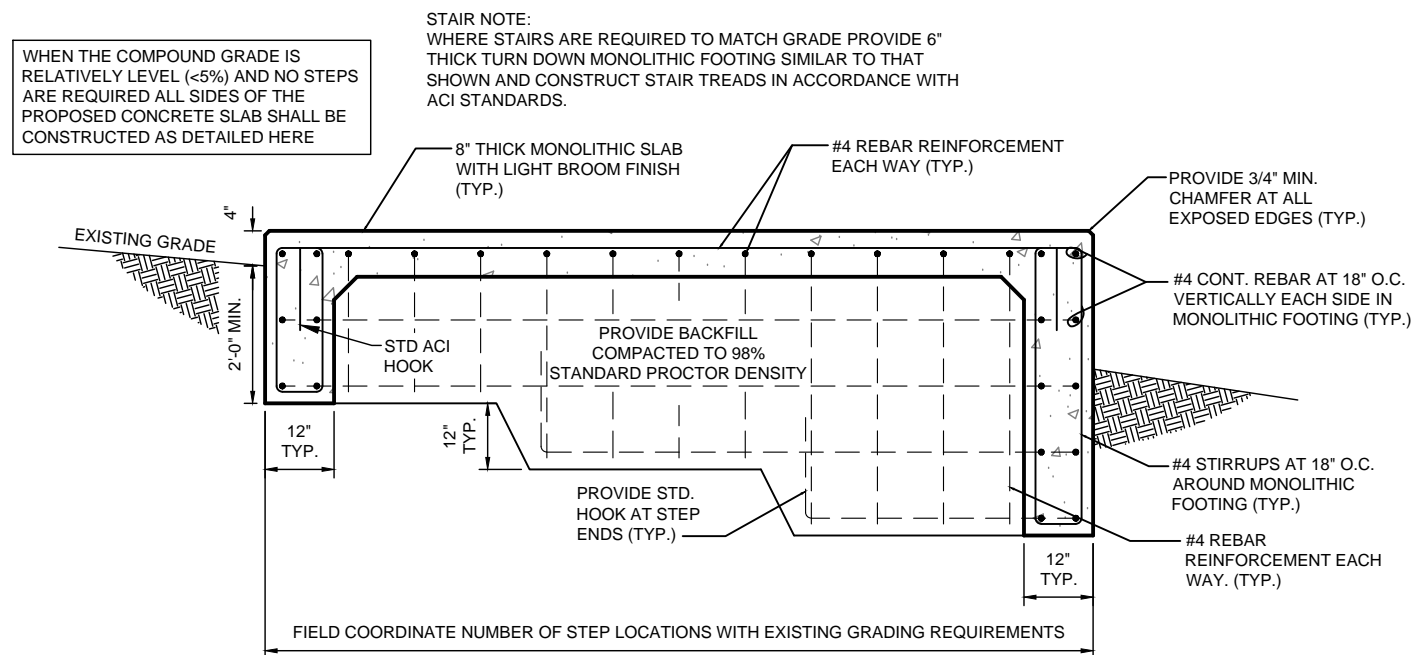
- UNLESS OTHERWISE NOTED, ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS (2000 PSI MIN. BEFORE STEEL ERECTION) & HAVE 4" NOMINAL SLUMP, WITH 4.5-6.5% AIR CONTENT.
- UNLESS OTHERWISE NOTED, ALL REINFORCING STEEL SHALL BE NEW BILLET STEEL, CONFORMING TO ASTM A-615, GRADE 60, DEFORMED.
- UNLESS OTHERWISE NOTED, ALL DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL CONFORM TO THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES. (A.C.I. 315).
- ALL BAR SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS OTHERWISE SHOWN.
- CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 3/4" X 45 DEGREES CHAMFER, UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING & PROTECTING ALL SERVICE & UTILITY LINES IN VICINITY OF THE WORK SITE. ALL EXCAVATIONS NEAR THESE LINES TO BE CARRIED OUT WITH EXTREME CAUTION.
- THE CONCRETE PAD MUST BE LEVEL. THE TOP SURFACE MUST BE FLAT WITHIN ±1/4 INCH TOTAL VARIATION.



CONCRETE SLAB DETAIL
NTS

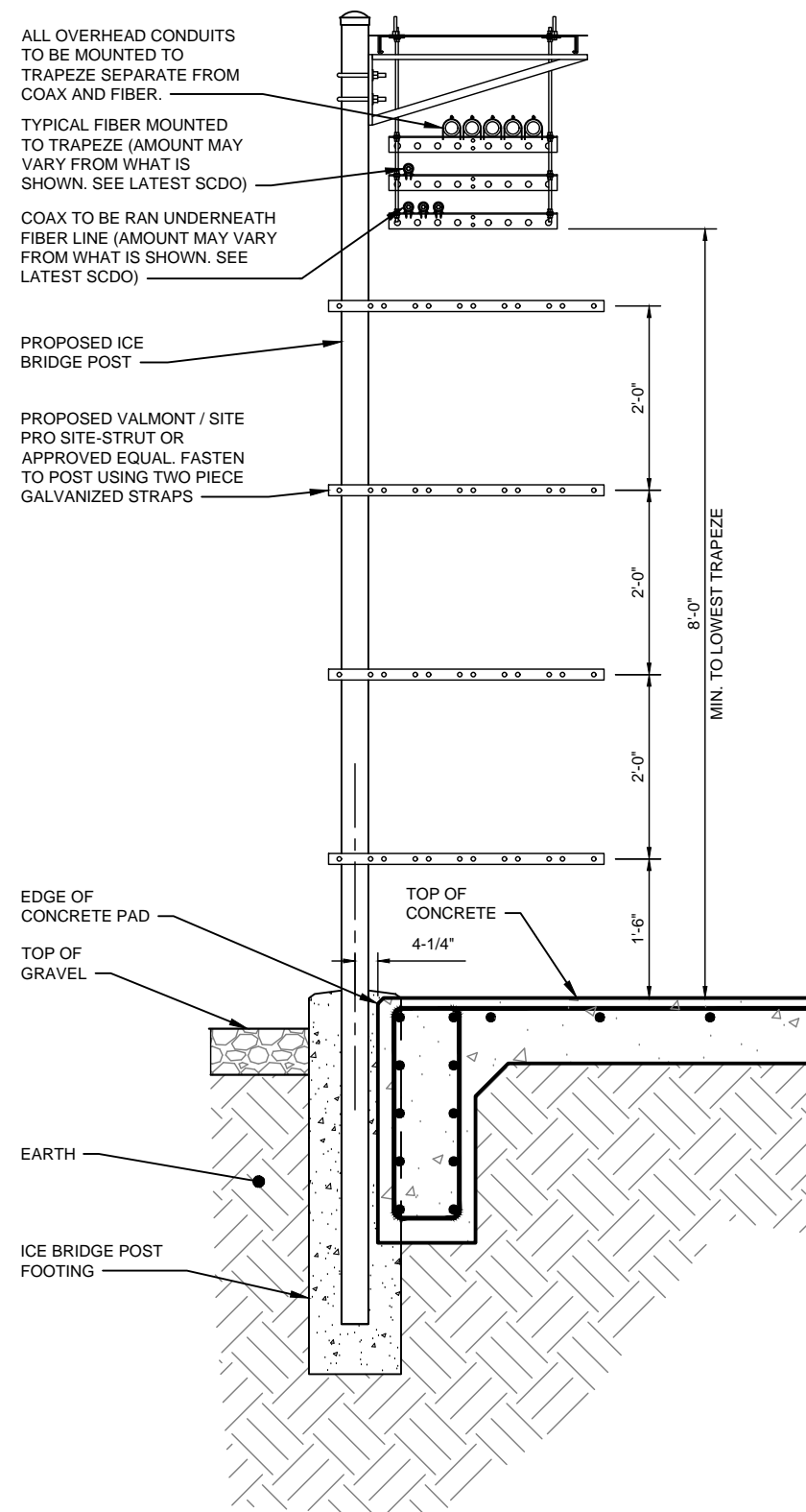
A
C4

1
C4



SECTION AA
NTS

2
C4



CONDUIT LADDER SUPPORT DETAIL
NTS

3
C4

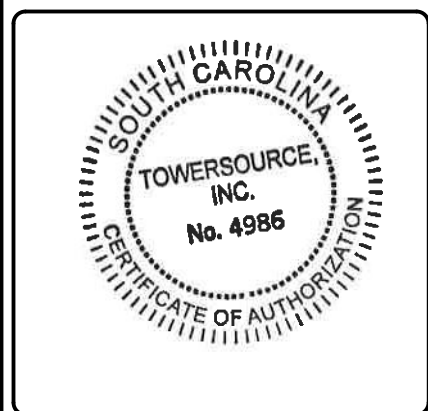
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verizon
8921 RESEARCH DRIVE
CHARLOTTE, NC 28262
ATTN: SCOTT McPHERSON (704) 510-8531

A&E FIRM:
towersource
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ROSWELL, GA 30076
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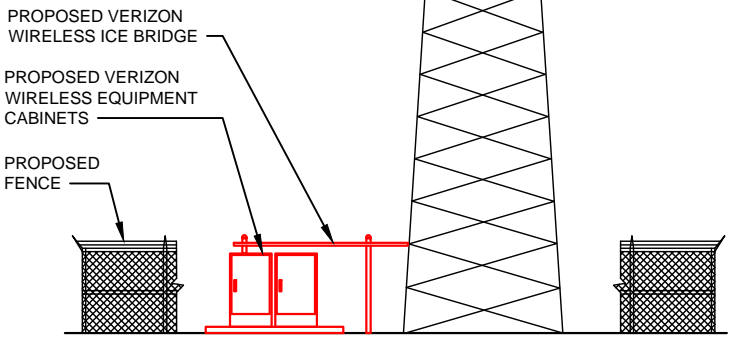
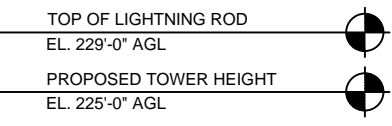
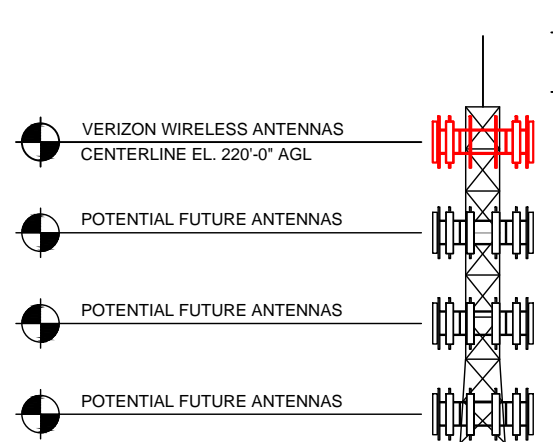
REVISIONS		
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VERIZON WIRELESS SITE NAME:
DUCKY
DESIGN TYPE:
RAWLAND

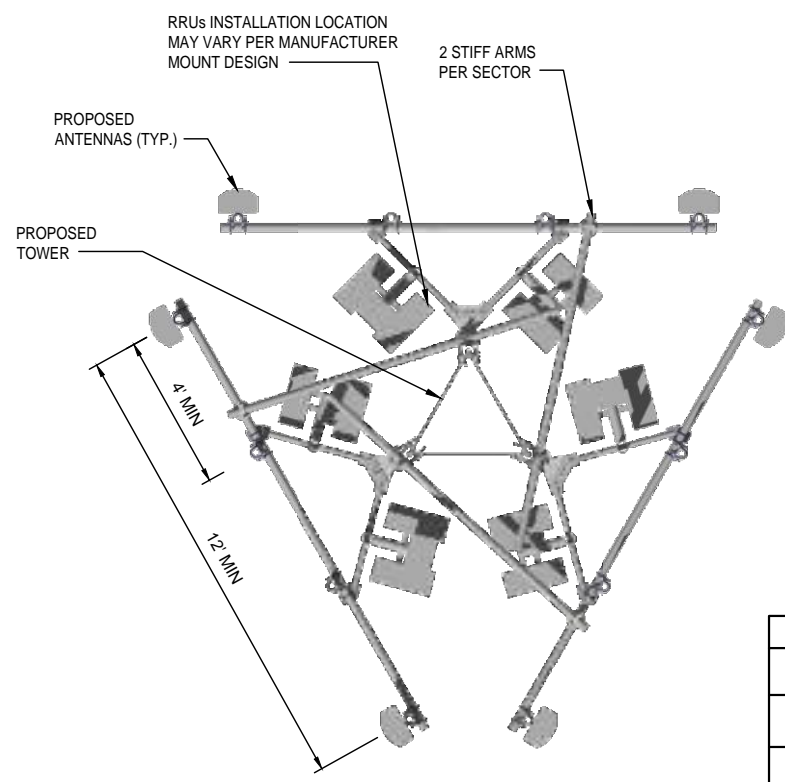
SHEET TITLE:
FOUNDATION DETAILS

DRAWING NO.: **C-4** REVISION: **1**



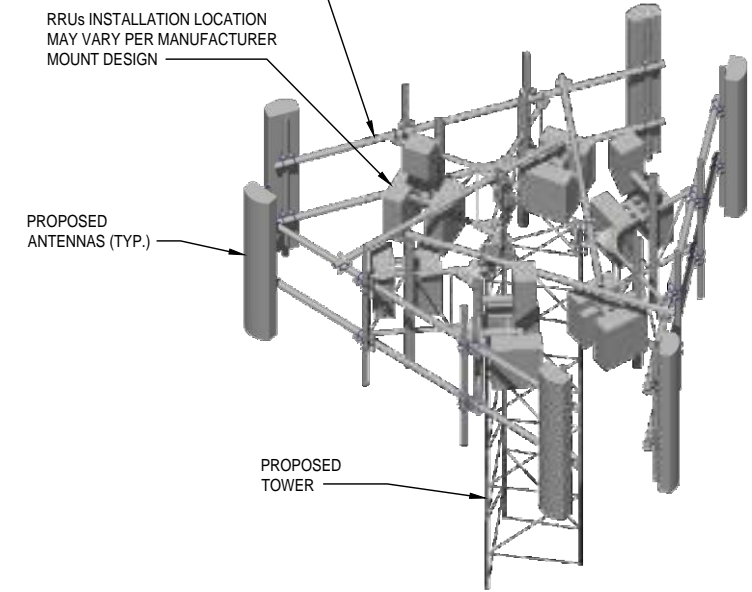
TOWER ELEVATION
NOT TO SCALE

- NOTES:**
- CONTRACTOR SHALL INSTALL A MOUNT SPECIFIED BELOW, OR RECEIVE APPROVAL FROM THE EOR FOR SUBSTITUTION.
 - SITE PRO VFA12-RRU (IF MONOPOLE, USE FMA2 AND LWRM SECTOR FRAME ADAPTORS) OR
 - COMMSCOPE SFG23HD-12-4-96 (IF MONOPOLE, MCG23HD-12M-12-96)
 - ALL MOUNTS MUST HAVE TWO TIE BACKS.
 - CONTRACTOR SHALL INSTALL THE MOUNT, TIE-BACKS, AND OTHER ASSOCIATED HARDWARE ACCORDING TO THE MOUNT MANUFACTURER'S SPECIFICATIONS.
 - CONTRACTOR SHALL NOT SUBSTITUTE ALUMINUM, UNITSTRUT, OR OTHER MATERIALS IN PLACE OF A PRE-ENGINEERED MOUNT.
 - ANTENNAS, RRUS, ETC., SHALL BE PLACED SO THAT THE CENTER OF ANTENNA AND THE CENTER OF THE MOUNT ARE THE SAME, UNLESS SPECIFICALLY ALLOWED BY THE MANUFACTURER.

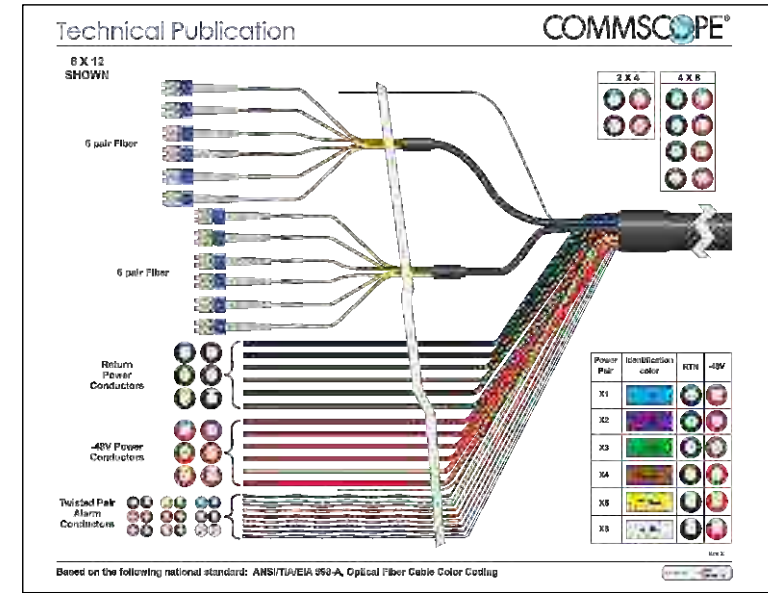


ANTENNA ORIENTATION DETAIL
NOT TO SCALE

PROPOSED ANTENNA MOUNT MUST MEET MINIMUM LOAD REQUIREMENTS PER VERIZON NSTD-445: BARE M1400R-4[6] AND ICED M1000R(i)-4[6]



ANTENNA ORIENTATION DETAIL
NOT TO SCALE



HYBRID FIBER MAIN CABLE COLOR CODE
NTS

HYBRID FIBER JUMPER CABLE COLOR CODE								
FREQUENCY	700 MAIN	700 SPARE	850 MAIN	850 SPARE	1900 MAIN	1900 SPARE	2100 MAIN	2100 SPARE
ALPHA	RED	RED	RED	RED	RED	RED	RED	RED
	YELLOW	YELLOW x2	GREEN	GREEN x2	BROWN	BROWN x2	ORANGE	ORANGE x2
BETA	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	YELLOW	YELLOW x2	GREEN	GREEN x2	BROWN	BROWN x2	ORANGE	ORANGE x2
GAMMA	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE
	YELLOW	YELLOW x2	GREEN	GREEN x2	BROWN	BROWN x2	ORANGE	ORANGE x2

HYBRID = ERICSSON COLOR CODE

COAX COLOR CODE								
ANTENNA POSITION		1	2	3	4			
FREQUENCY		700 DIVERSITY	850	1900 MAIN	1900 DIVERSITY	2100 MAIN	2100 DIVERSITY	700 MAIN
ALPHA	SECTOR CODE	RED	RED	RED	RED	RED	RED	RED
	PRIMARY Tx/Rx	YELLOW x3	GREEN	BROWN	BROWN x3	ORANGE	ORANGE x3	YELLOW
	SECONDARY Rx	YELLOW x4	GREEN x2	BROWN x2	BROWN x4	ORANGE x2	ORANGE x4	YELLOW x2
BETA	SECTOR CODE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	PRIMARY Tx/Rx	YELLOW x3	GREEN	BROWN	BROWN x3	ORANGE	ORANGE x3	YELLOW
	SECONDARY Rx	YELLOW x4	GREEN x2	BROWN x2	BROWN x4	ORANGE x2	ORANGE x4	YELLOW x2
GAMMA	SECTOR CODE	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE
	PRIMARY Tx/Rx	YELLOW x3	GREEN	BROWN	BROWN x3	ORANGE	ORANGE x3	YELLOW
	SECONDARY Rx	YELLOW x4	GREEN x2	BROWN x2	BROWN x4	ORANGE x2	ORANGE x4	YELLOW x2

HYBRID = ERICSSON COLOR CODE

CABLE COLOR CODE
NTS

- NOTE:**
- VERIFY AZIMUTH BEFORE INSTALLATION WITH RF WORKSHEET
 - ALL COAX SHALL BE LABELED AT TOP OF TOWER AND AT JUMPER CONNECTION AT BOTTOM OF THE TOWER WITH COLOR CODED TAPE.
 - BRASS TAGS REQUIRED ON COAX AT TOP & BOTTOM OF RUN.
 - REFER TO STRUCTURAL ANALYSIS OF TOWER FOR COAX ROUTING.

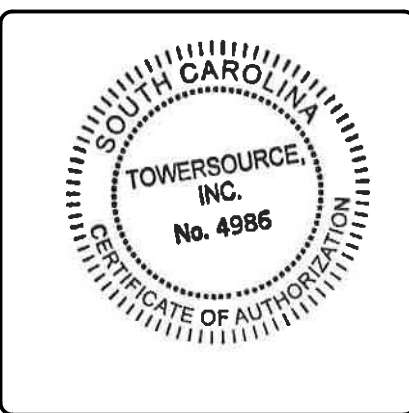
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verizon
8921 RESEARCH DRIVE
CHARLOTTE, NC 28262
ATTN: SCOTT McPHERSON (704) 510-8531

A&E FIRM:
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1875 OLD ALABAMA ROAD, SUITE 1008
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CHECKED BY:	EBU

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1	10/10/17	REVISED GENERATOR PER COMMENTS

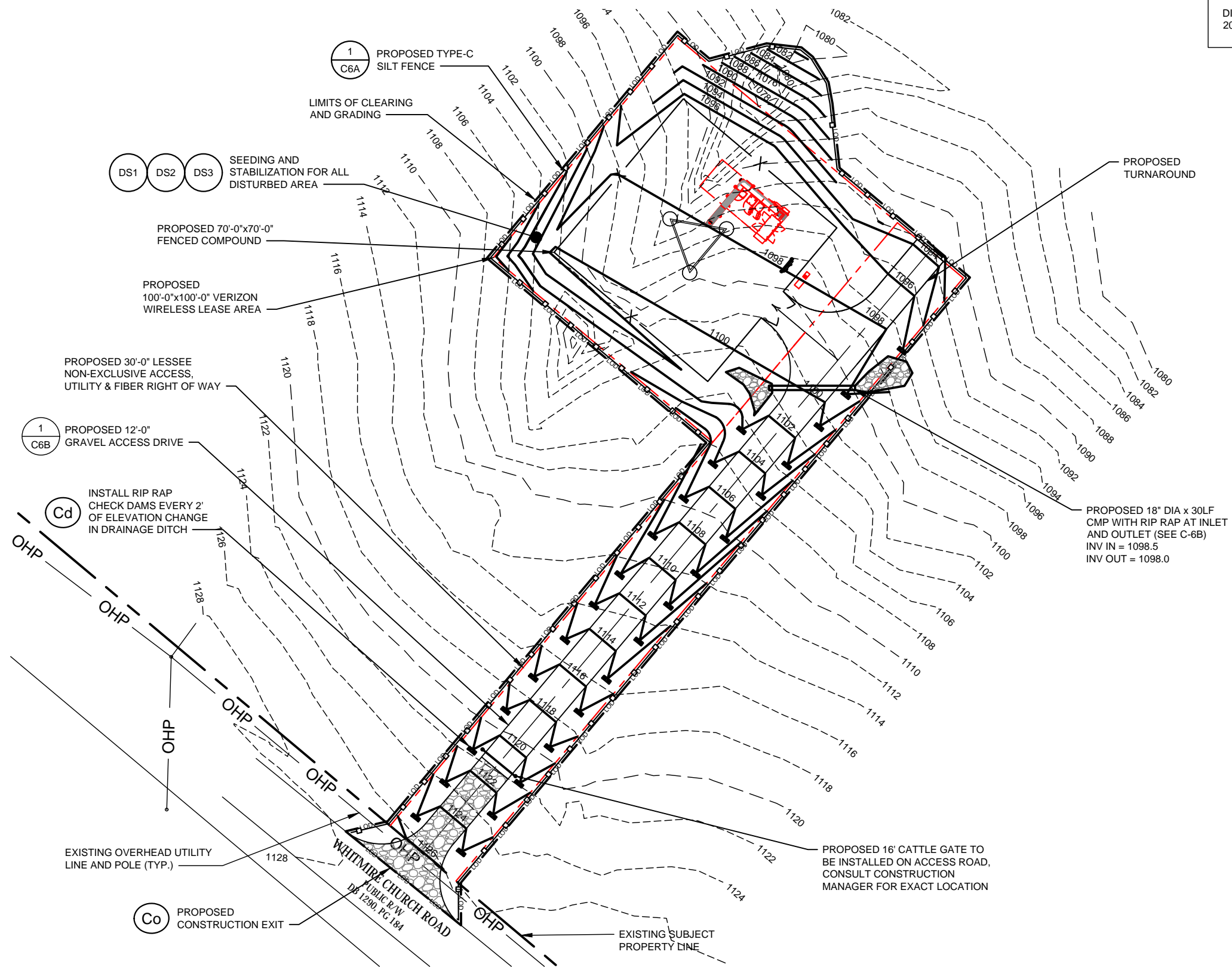


VERIZON WIRELESS SITE NAME:
DUCKY

DESIGN TYPE:
RAWLAND

SHEET TITLE:
TOWER ELEVATION & ANTENNA SCHEDULE

DRAWING NO. C-5	REVISION: 1
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DISTURBED AREA:
20,909 SQ. FT./0.48 ACRES

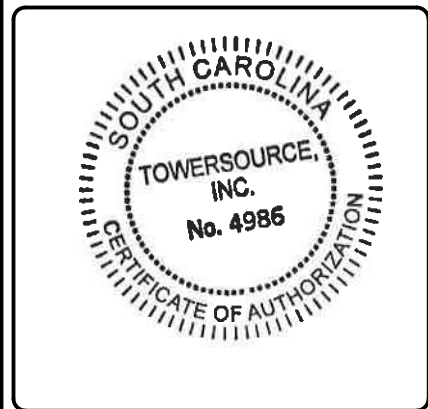
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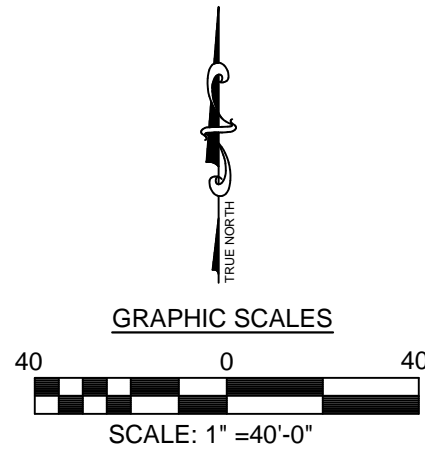


VERIZON WIRELESS SITE NAME:
DUCKY
DESIGN TYPE:
RAWLAND

SHEET TITLE:
GRADING & SEDIMENT CONTROL PLAN

DRAWING NO. **C-6** REVISION: **1**

GRADING & SEDIMENT CONTROL PLAN
SCALE: 1" = 40'-0"

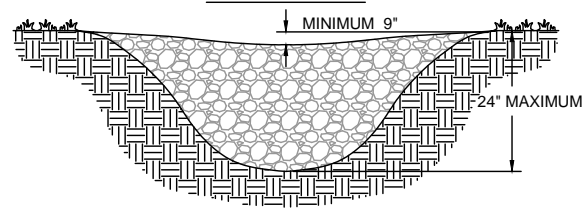


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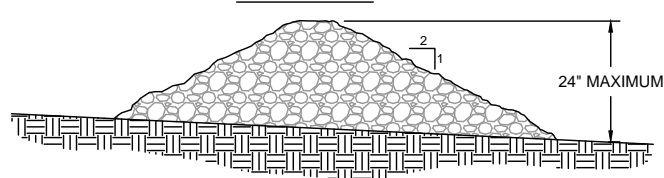
STONE CHECK DAM

SCALE: NOT TO SCALE

CROSS SECTION



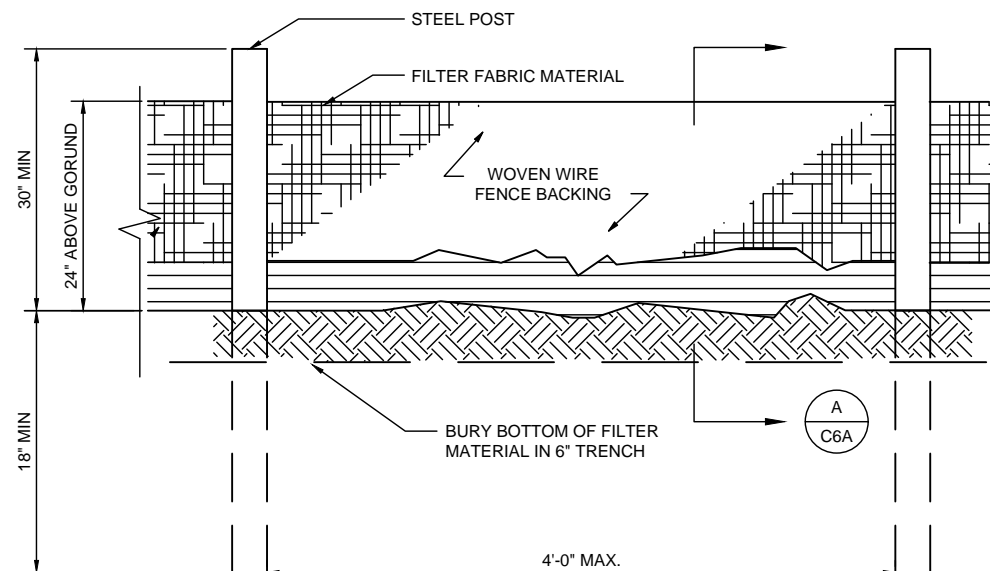
PROFILE VIEW



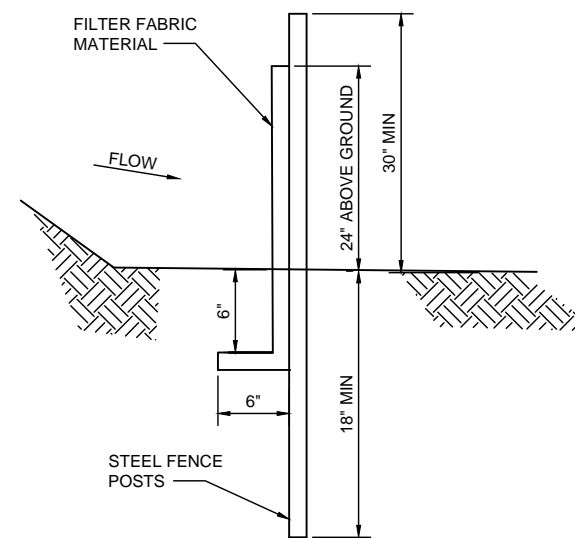
- NOTES:**
- CHECK DAMS ARE TO BE USED ONLY IN SMALL OPEN CHANNELS (THEY ARE NOT TO BE USED IN LIVE STREAMS).
 - THE DRAINAGE AREA FOR STONE CHECK DAMS SHALL NOT EXCEED TWO ACRES.
 - THE CENTER OF THE CHECK DAM MUST BE AT LEAST 9 INCHES LOWER THAN THE OUTER EDGES.
 - THE DAM HEIGHT SHOULD BE A MAXIMUM OF 2 FEET FROM CENTER TO RIM EDGE.
 - THE SIDE SLOPES OF THE CHECK DAM SHALL NOT EXCEED A 2:1 SLOPE.
 - GEOTEXTILE SHALL BE USED TO PREVENT THE MITIGATION OF SUBGRADE SOIL PARTICLES INTO THE STONES (REFER TO AASHTO M288-96, SECTION 7.3, TABLE 3).

SPACING BETWEEN CHECK DAMS

A = THE TOE OF THE UPSTREAM CHECK DAM.
B = TOP OF THE DOWNSTREAM CHECK DAM.
L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION.



NOTE: USE 36" DOT APPROVED FABRIC USE STEEL POSTS



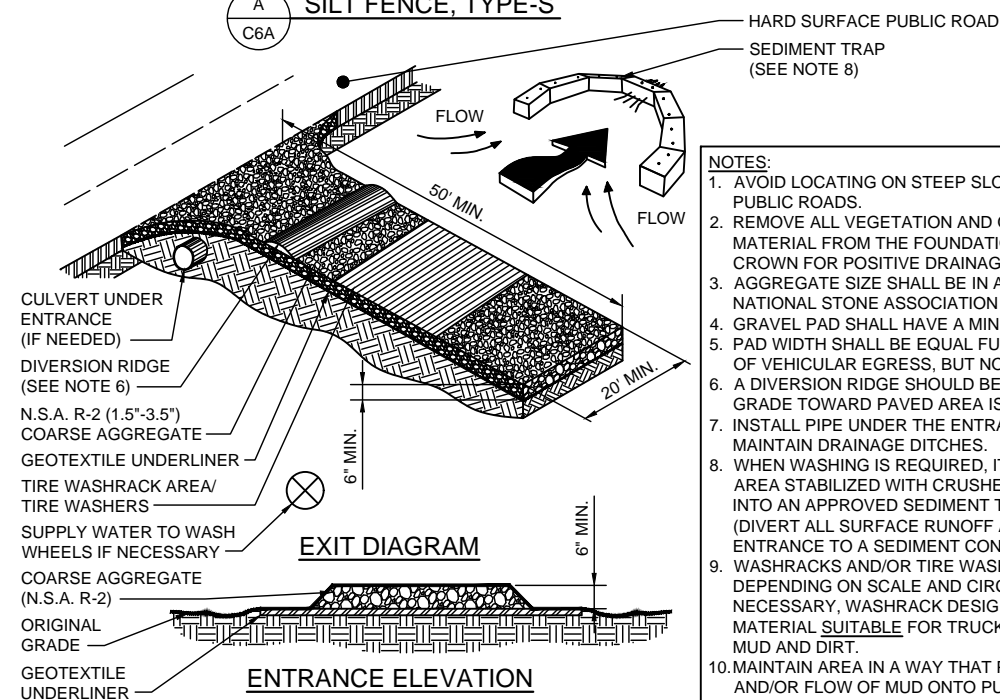
SILT FENCE SHALL MEET THE REQUIREMENTS OF SECTION 815, SILT FENCE SYSTEMS, OF THE SCDOT STANDARD SPECIFICATIONS, 2007 EDITION

DISTURBED AREAS LEFT IDLE SHALL BE STABILIZED WITH TEMPORARY VEGETATION AFTER 14 DAYS; AFTER 30 DAYS PERMANENT VEGETATION SHALL BE ESTABLISHED.

MAINTENANCE STATEMENT: EROSION CONTROL MEASURES WILL BE INSPECTED AT LEAST WEEKLY, AFTER EACH RAIN AND REPAIRED BY THE GENERAL CONTRACTOR.

ADDITIONAL EROSION CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.

SILT FENCE, TYPE-S



- NOTES:**
- AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
 - REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
 - AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
 - GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
 - PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
 - A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
 - INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
 - WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
 - WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
 - MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

Crushed Stone Construction Exit

PREPARED FOR:

verizon

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A&E PROJECT #: 20161498104

DRAWN BY: JBE

CHECKED BY: EBU

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1	10/10/17	REVISED GENERATOR PER COMMENTS



VERIZON WIRELESS SITE NAME:

DUCKY

DESIGN TYPE: RAWLAND

SHEET TITLE: SEDIMENT CONTROL DETAILS

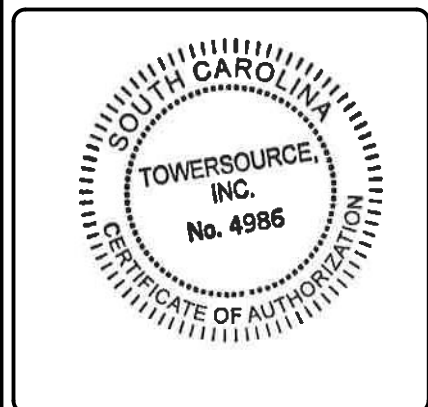
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REVISION: 1

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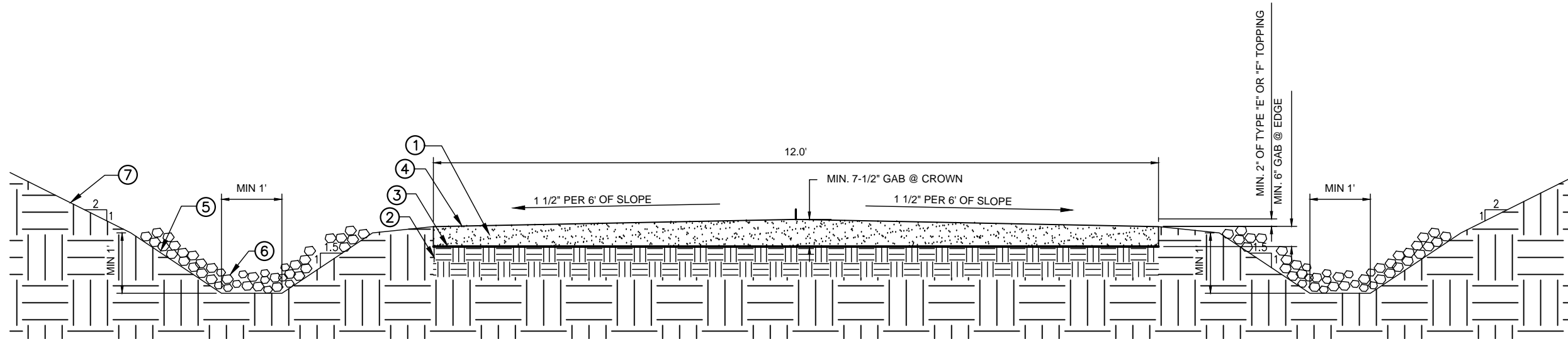


VERIZON WIRELESS SITE NAME:
DUCKY

DESIGN TYPE:
 RAWLAND

SHEET TITLE:
 ACCESS ROAD DETAIL

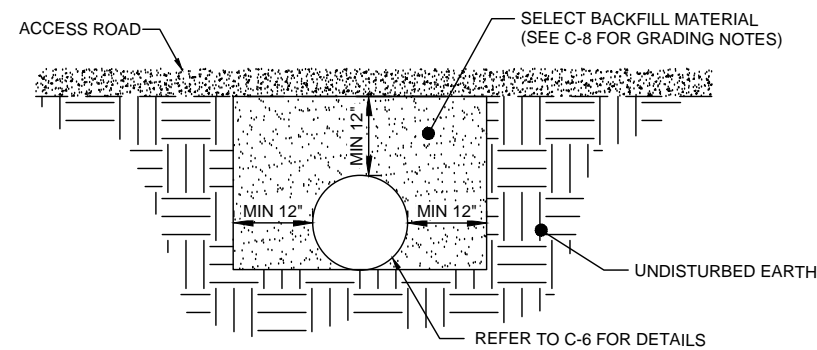
DRAWING NO. **C-6B** REVISION: **1**



TYPICAL GRAVEL ROAD SECTION WITH CROWN

** CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING & GRUBBING THE CONSTRUCTION SITE AND ROADWAY AREAS. THE CONTRACTOR SHALL COMPLY, WHEN NECESSARY, WITH THE RECOMMENDATIONS CONTAINED WITHIN THE GEOTECHNICAL REPORT PREPARED FOR THIS SITE FOR SITE WORK PREPARATION & FOUNDATION WORK. **

1. REMOVE ALL ORGANIC MATERIAL. (STUMPS, ROOTS, LEAVES, ETC.) A MIN 3" OF SOIL TO BE REMOVED.
2. LEVEL AND COMPACT SUBGRADE TO A 95% COMPACTION.
3. INSTALL GEOTEXTILE FABRIC (AND/OR OTHER STABILIZATION METHOD) OVER SUBGRADE ON ALL ROADS.
4. INSTALL MIN. 4" OF GRADED AGGREGATE BASE (GAB/CRUSHER RUN). GAB SHALL HAVE A 1-1/2" TO 6" SLOPE. ALL GAB SHALL BE COMPACTED TO A 95% COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 OR WITHIN PLUS OR MINUS 3% OF OPTIMUM MOISTURE CONTENT.
5. DRAINAGE DITCH DEPTH TO BE A MIN. OF 1' BELOW ROAD SURFACE.
6. A RIP RAP (DOT GRADE) CHECK DAM TO BE INSTALLED IN DRAINAGE DITCH AT EVERY 2' OF ELEVATION CHANGE.
7. ALL CUT AND FILL SLOPES SHALL BE 2 HORIZONTAL TO 1 VERTICAL MAXIMUM. SLOPES SHALL BE STABILIZED WITH SEED (SEE NOTE DS2 & DS3).

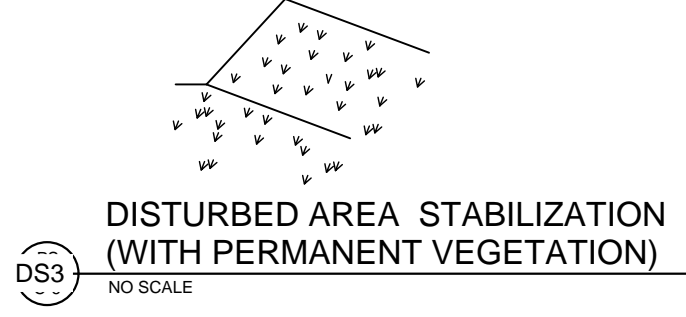


CULVERT DETAIL

SCALE: NOT TO SCALE

EXCAVATION & GRADING NOTES:

- ALL EXCAVATIONS ON WHICH CONCRETE IS TO BE PLACED SHALL BE SUBSTANTIALLY HORIZONTAL ON UNDISTURBED AND UNFROZEN SOIL AND BE FREE FROM LOOSE MATERIAL AND EXCESS GROUNDWATER. DEWATERING FOR EXCESS GROUNDWATER SHALL BE PROVIDED IF REQUIRED.
- CONCRETE FOUNDATIONS SHALL NOT BE PLACED ON ORGANIC MATERIAL. IF SOUND SOIL IS NOT REACHED AT THE DESIGNATED EXCAVATION DEPTH, THE UNSATISFACTORY SOIL SHALL BE EXCAVATED TO ITS FULL DEPTH AND EITHER BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL OR THE EXCAVATION BE FILLED WITH CONCRETE OF THE SAME QUALITY SPECIFIED FOR THE FOUNDATION.
- ANY EXCAVATION OVER THE REQUIRED DEPTH SHALL BE FILLED WITH EITHER MECHANICALLY COMPACTED GRANULAR MATERIAL OR CONCRETE OF THE SAME QUALITY SPECIFIED FOR THE FOUNDATION. CRUSHED STONE MAY BE USED TO STABILIZE THE BOTTOM OF THE EXCAVATION. STONE, IF USED, SHALL NOT BE USED AS COMPILING CONCRETE THICKNESS.
- AFTER COMPLETION OF THE FOUNDATION AND OTHER CONSTRUCTION BELOW GRADE, AND BEFORE BACKFILLING, ALL EXCAVATIONS SHALL BE CLEAN OF UNSUITABLE MATERIAL SUCH AS VEGETATION, TRASH, DEBRIS, AND SO FORTH.
- BACKFILLING SHALL:
 - USE APPROVED MATERIALS CONSISTING OF EARTH, LOAM, SANDY CLAY, SAND AND GRAVEL, OR SOFT SHALE;
 - BE FREE FROM CLODS OR STONES OVER 2-1/2" MAXIMUM DIMENSIONS
 - BE PLACED IN 6" LAYERS AND COMPACTED TO 95% STANDARD PROCTOR EXCEPT IN GRASSED/LANDSCAPED AREAS, WHERE 90% STANDARD PROCTOR IS REQUIRED.
- FILL PREPARATION:
 - REMOVE ALL VEGETATION, TOPSOIL, DEBRIS, WET AND UNSATISFACTORY SOIL MATERIALS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE PRIOR TO PLACING FILLS. PLOW, STRIP, OR BREAK UP SLOPED SURFACES STEEPER THAN THAN 1 VERTICAL TO 4 HORIZONTAL SO FILL MATERIAL WILL BOND WITH EXISTING SURFACE. WHEN SUBGRADE OR EXISTING GROUND SURFACE TO RECEIVE FILL HAS A DENSITY LESS THAN THAT REQUIRED FOR FILL, BREAK UP GROUND SURFACE TO DEPTH REQUIRED, PULVERIZE, MOISTURE-CONDITION OR AERATE SOIL AND RECOMPACT TO REQUIRED DENSITY.
- PROTECT EXISTING GRAVEL SURFACING AND SUBGRADE IN AREAS WHERE EQUIPMENT LOADS WILL OPERATE. USE PLANKING OR OTHER SUITABLE MATERIALS DESIGNED TO SPREAD EQUIPMENT LOADS. REPAIR DAMAGE TO EXISTING GRAVEL SURFACING OR SUBGRADE WHERE SUCH DAMAGE IS DUE TO THE CONTRACTOR'S OPERATIONS. DAMAGED GRAVEL SURFACING SHALL BE RESTORED TO MATCH THE ADJACENT UNDAMAGED GRAVEL SURFACING AND SHALL BE OF THE SAME THICKNESS.
- REPLACE EXISTING GRAVEL SURFACING ON AREAS FROM WHICH GRAVEL SURFACING IS REMOVED DURING CONSTRUCTION OPERATIONS. GRAVEL SURFACING SHALL BE REPLACED TO MATCH EXISTING ADJACENT GRAVEL SURFACING AND SHALL BE OF THE SAME THICKNESS. SURFACES OF GRAVEL SURFACING SHALL BE FREE FROM CORRUGATIONS AND WAVES. EXISTING GRAVEL SURFACING MAY BE EXCAVATED SEPARATELY AND REUSED IF INJURIOUS AMOUNTS OF EARTH, ORGANIC MATTER, OR OTHER DELETERIOUS MATERIALS ARE REMOVED PRIOR TO REUSE. FURNISH ALL ADDITIONAL GRAVEL RESURFACING MATERIAL AS REQUIRED. BEFORE GRAVEL SURFACING IS REPLACED, SUBGRADE SHALL BE GRADED TO CONFORM TO REQUIRED SUBGRADE ELEVATIONS, AND LOOSE OR DISTURBED MATERIALS SHALL BE THOROUGHLY COMPACTED. DEPRESSIONS IN THE SUBGRADE SHALL BE FILLED AND COMPACTED WITH APPROVED SELECTED MATERIAL. GRAVEL SURFACING MATERIAL MAY BE USED FOR FILLING DEPRESSIONS IN THE SUBGRADE, SUBJECT TO ENGINEER'S APPROVAL.
- DAMAGE TO EXISTING STRUCTURES AND UTILITIES RESULTING FROM CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED / REPLACED TO OWNER'S SATISFACTION AT CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL COORDINATE THE CONSTRUCTION SCHEDULE WITH PROPERTY OWNER SO AS TO AVOID INTERRUPTIONS TO PROPERTY OWNER'S OPERATIONS.
- ENSURE POSITIVE DRAINAGE DURING AND AFTER COMPLETION OF CONSTRUCTION.
- ALL CUT AND FILL SLOPES SHALL BE 2 HORIZONTAL TO 1 VERTICAL MAXIMUM.
- REMOVE ALL ORGANICS, ROCKS GREATER THAN 3", UNUSED FILL AND OTHER DEBRIS TO AN AREA OFF SITE IN A LEGAL MANNER.



ACTIVITY SCHEDULE	
WORK DESCRIPTION	WORKING DAYS
INSTALLATION OF EROSION CONTROL MEASURES	1-2
CLEARING, GRUBBING, AND GRADING	3-5
MAINTAINING EROSION CONTROL MEASURES	6-8
TEMPORARY GRASSING	9-12
BUILDING CONSTRUCTION	13-19
FINAL LANDSCAPING, GRASSING	20-23
REMOVING EROSION CONTROL MEASURES	24-26

THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES SHALL TAKE PLACE PRIOR TO OR CONCURRENT WITH LAND DISTURBING ACTIVITIES.

GENERAL EROSION & SEDIMENT CONTROL NOTES:

- ADDITIONAL EROSION CONTROL MEASURES WILL BE EMPLOYED WHERE DETERMINED NECESSARY BY ACTUAL SITE CONDITIONS.
- PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS, OR OTHER APPROPRIATE MEANS.
- THE CONSTRUCTION OF THE SITE WILL INITIATE WITH THE INSTALLATION OF EROSION CONTROL MEASURES SUFFICIENT TO CONTROL SEDIMENT DEPOSITS AND EROSION. CONTRACTOR SHALL CALL APPROPRIATE COUNTY FOR AN INSPECTION OF SOIL EROSION CONTROL MEASURES PRIOR TO BEGINNING GRADING ACTIVITY. ALL SEDIMENT CONTROL WILL BE MAINTAINED UNTIL ALL UPSTREAM GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED.
- THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR ELECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
- THE CONTRACTOR SHALL REMOVE ACCUMULATED SILT WHEN THE SILT IS WITHIN 12" OF THE TOP OF THE SILT FENCE AND REMOVE SEDIMENT FROM CHECK DAMS WHEN THEY HAVE REACHED 50% CAPACITY.
- FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED.
- SILT BARRIERS TO BE PLACED AT DOWNSTREAM TOE OF ALL CUT AND FILL SLOPES.
- ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 7 DAYS SHALL BE STABILIZED WITH SEEDING.

- SEEDING:
 - SEEDING WITH MULCH (CONVENTIONAL SEEDING ON SLOPES LESS THAN 3:1) (HYDRAULIC SEEDING EQUIPMENT ON SLOPES 3:1 AND STEEPER)

AGRICULTURAL LIMESTONE	4000 LBS./acre
FERTILIZER . 5-10-15	1500 lbs./acre
MULCH STRAW OR HAY	5000 lbs./arce

SEED SPECIES	APPLICATION RATE/ACRE	PLANNING DATES
HULLED COMMON BERMUDA GRASS	10lbs.	3/1 - 6/15
FESCUE	50lbs.	9/1 -10/31
FESCUE RYE GRASS	50lbs. 50lbs.	11/1 -2/28
HAY MULCH FOR TEMPORARY COVER	5000lbs.	6/15 -8/31

- TOPDRESSING: APPLY WHEN PLANTS ARE 2 TO 4 INCHES TALL
FERTILIZER (AMMONIUM NITRATE 33.5%) 300 lbs./acre
- SECOND-YEAR-FERTILIZER: (5-10-15 OR EQUIVALENT) 800 lbs./acre

HYDRAULIC SEEDING EQUIPMENT
WHEN HYDRAULIC SEEDING AND FERTILIZING EQUIPMENT IS USED, NO GRADING AND SHAPING OR SEEDBED PREPARATION WILL BE REQUIRED. THE FERTILIZER, SEED AND WOOD CELLULOSE FIBER MULCH WILL BE MIXED WITH WATER AND APPLIED IN A SLURRY. ALL SLURRY INGREDIENTS MUST BE COMBINED TO FORM A HOMOGENEOUS MIXTURE, AND SPREAD UNIFORMLY OVER THE AREA WITHIN ONE HOUR AFTER MIXTURE IS MADE. STRAW OR HAY MULCH AND ASPHALT EMULSION WILL BE APPLIED WITH BLOWER-TYPE MULCH SPREADING EQUIPMENT WITHIN 24 HOURS AFTER SEEDING. THE MULCH WILL BE SPREAD UNIFORMLY OVER THE AREA, LEAVING ABOUT 25 PERCENT OF THE GROUND SURFACE EXPOSED.

CONVENTIONAL SEEDING EQUIPMENT
GRADE, SHAPE AND SMOOTH WHERE NEEDED TO PROVIDE FOR SAFE EQUIPMENT OPERATION AT SEEDING TIME AND FOR MAINTENANCE PURPOSES. THE LIME AND FERTILIZER IN DRY FORM WILL BE SPREAD UNIFORMLY OVER THE AREA IMMEDIATELY BEFORE SEEDBED PREPARATION. A SEEDBED WILL BE PREPARED BY SCARIFYING TO A DEPTH OF 1 TO 4 INCHES AS DETERMINED ON SITE. THE SEEDBED MUST BE WELL PULVERIZED, SMOOTHED AND FIRMED. SEEDING WILL BE DONE WITH CULTIPACKER-SEEDER, DRILL, ROTARY SEEDER OR OTHER MECHANICAL OR HAND SEEDER. SEED WILL BE DISTRIBUTED UNIFORMLY OVER A FRESHLY PREPARED SEEDBED AND COVERED LIGHTLY. WITHIN 24 HOURS AFTER SEEDING, STRAW OR HAY MULCH WILL BE SPREAD UNIFORMLY OVER THE AREA, LEAVING ABOUT 25 PERCENT OF THE GROUND SURFACE EXPOSED. MULCH WILL BE SPREAD WITH BLOWER-TYPE MULCH EQUIPMENT OR BY HAND AND ANCHORED IMMEDIATELY AFTER IT IS SPREAD. A DISK HARROW WITH THE DISK SET STRAIGHT OR A SPECIAL PACKER DISK MAY BE USED TO PRESS THE MULCH INTO THE SOIL.

- CONTRACTOR SHALL REMOVE ALL EROSION & SEDIMENT CONTROL MEASURES AFTER COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER.
- THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES.
- ALL CUT AND FILL SLOPES MUST BE SURFACED ROUGHENED AND VEGETATED WITHIN SEVEN (7) DAYS OF THEIR CONSTRUCTION.
- ALL FILL SLOPES WILL HAVE SILT FENCE AT TOE OF SLOPES.
- ALL SEDIMENT AND EROSION CONTROL MEASURES WILL BE CHECKED DAILY AND ANY DEFICIENCIES NOTED WILL BE CORRECTED BY THE END OF EACH DAY. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY AFTER ON-SITE INSPECTION BY THE ISSUING AUTHORITY.
- THE ONLY MATERIAL TO BE BURIED ON-SITE IS VEGETATIVE MATERIAL. CONSTRUCTION WASTE MAY NEITHER BE BURNED NOR BURIED AND MUST BE TAKEN TO A STATE APPROVED LANDFILL.
- A 25' MIN UNDISTURBED VEGETATIVE BUFFER ADJACENT TO ALL RUNNING STREAMS AND CREEKS WILL BE LEFT AND MAINTAINED.
- CONTRACTOR SHALL OBTAIN APPLICABLE EROSION AND SEDIMENT CONTROL PERMIT(S) AND COMPLY WITH ALL LOCAL AND STATE LAWS. SEDIMENT SHALL NOT BE ALLOWED TO WASH INTO STORM DRAINS OR ONTO ADJACENT PROPERTIES. CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR CLEANUP OF ANY AND ALL DAMAGES RESULTING FROM SILTATION FROM THE CONSTRUCTION SITE.
- IF FINES OR PENALTIES ARE LEVIED AGAINST THE PROPERTY OR PROPERTY OWNER BECAUSE OF LACK OF EROSION AND/OR SEDIMENTATION CONTROL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF SUCH FINES OR PENALTIES OR THE COSTS OF ANY FINES OR PENALTIES SHALL BE DEDUCTED FROM THE CONTRACT AMOUNT.

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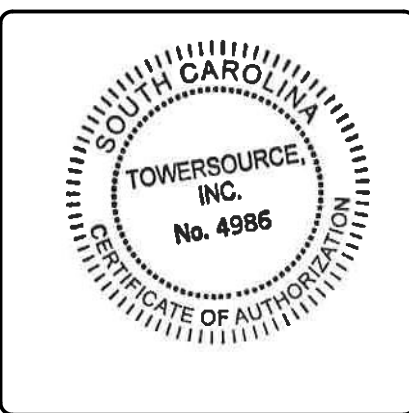
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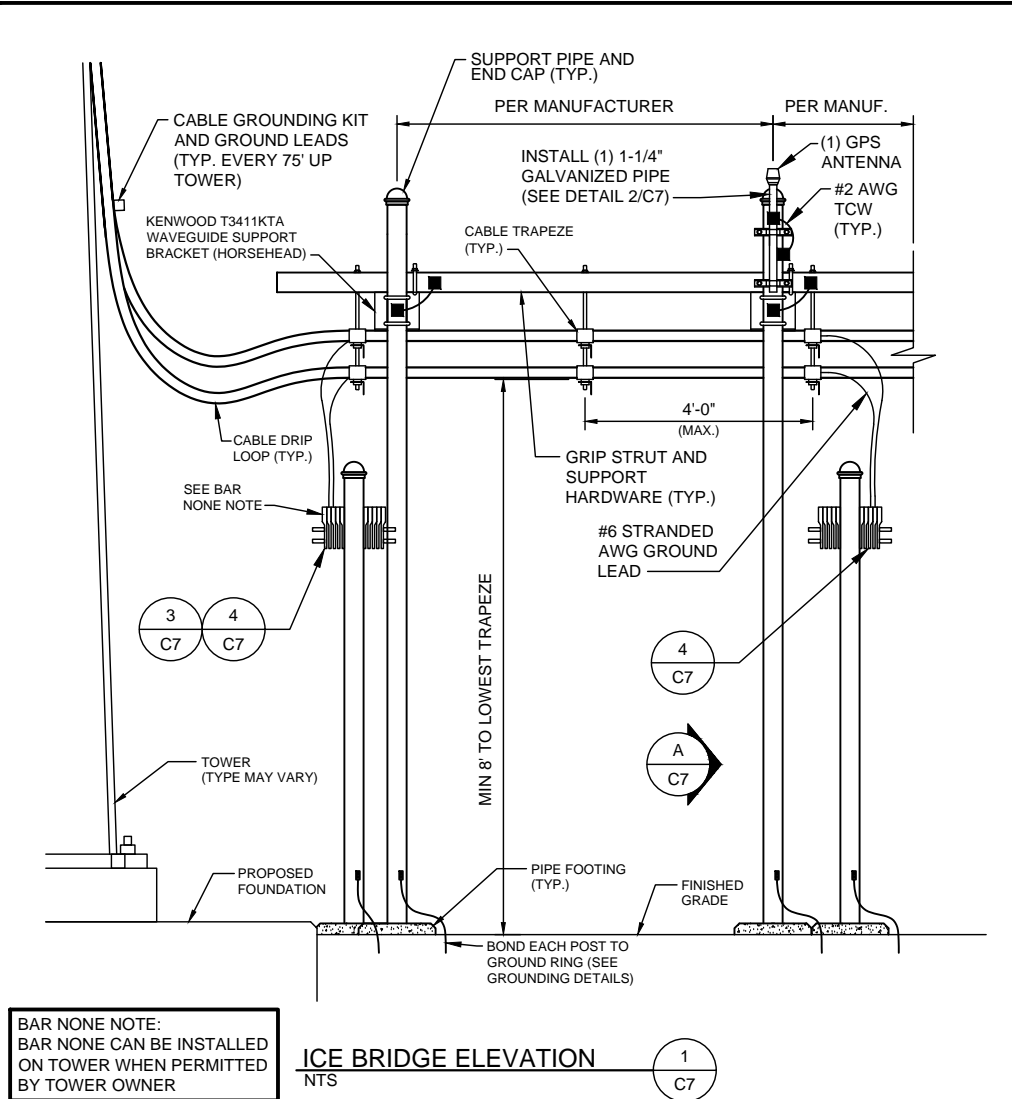
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VERIZON WIRELESS SITE NAME:
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RAWLAND

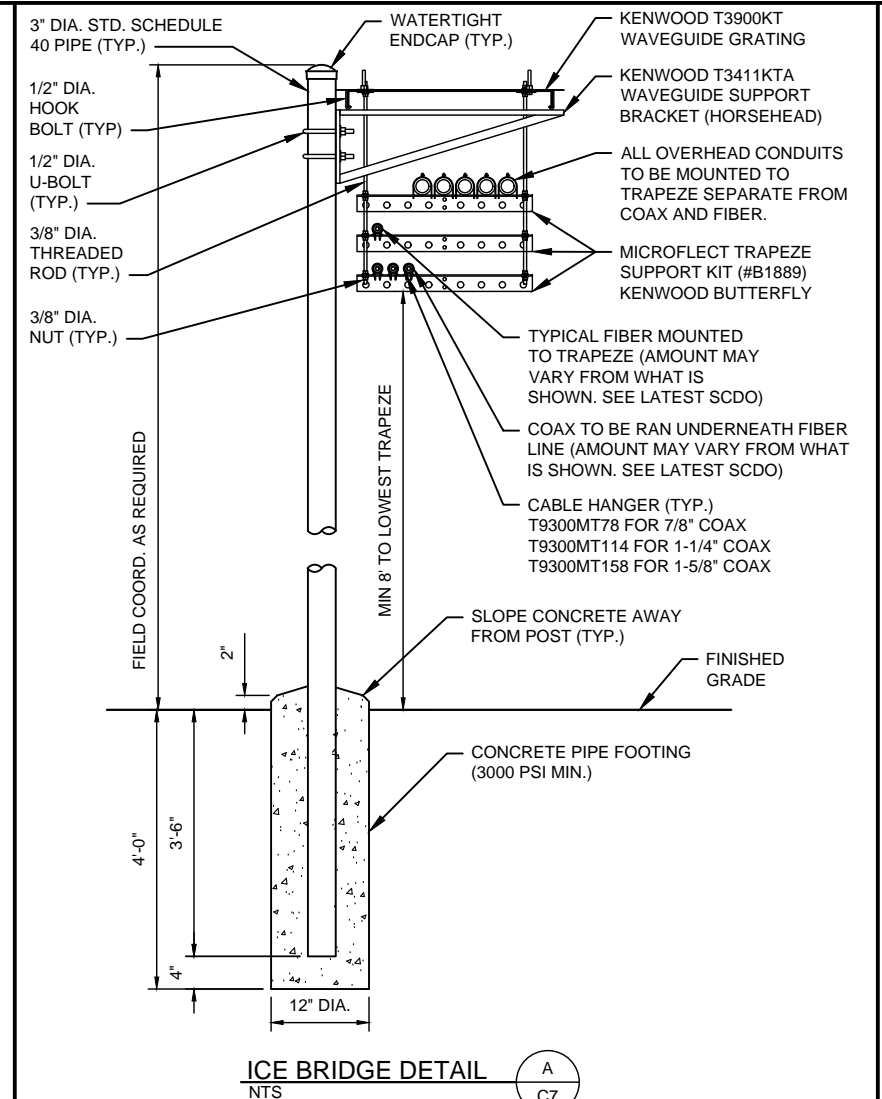
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GRADING & EROSION CONTROL NOTES

DRAWING NO. **C-6C** REVISION: **1**

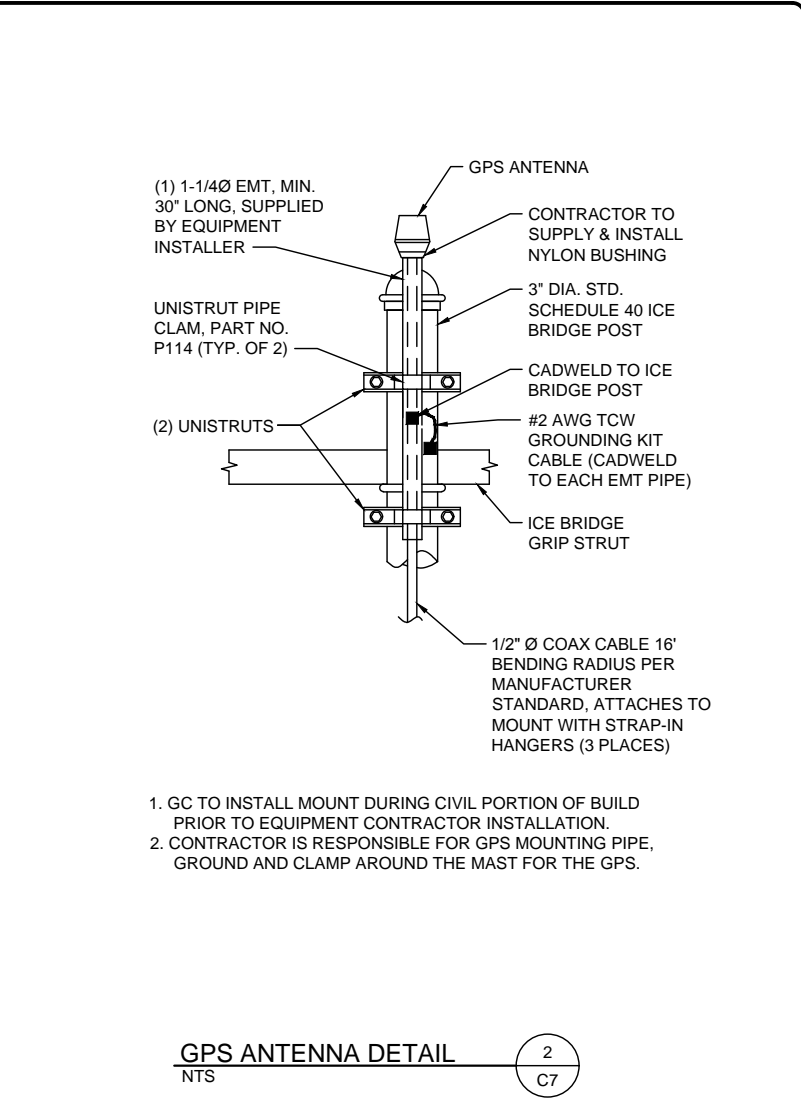


BAR NONE NOTE:
BAR NONE CAN BE INSTALLED
ON TOWER WHEN PERMITTED
BY TOWER OWNER

ICE BRIDGE ELEVATION (1) C7
NTS

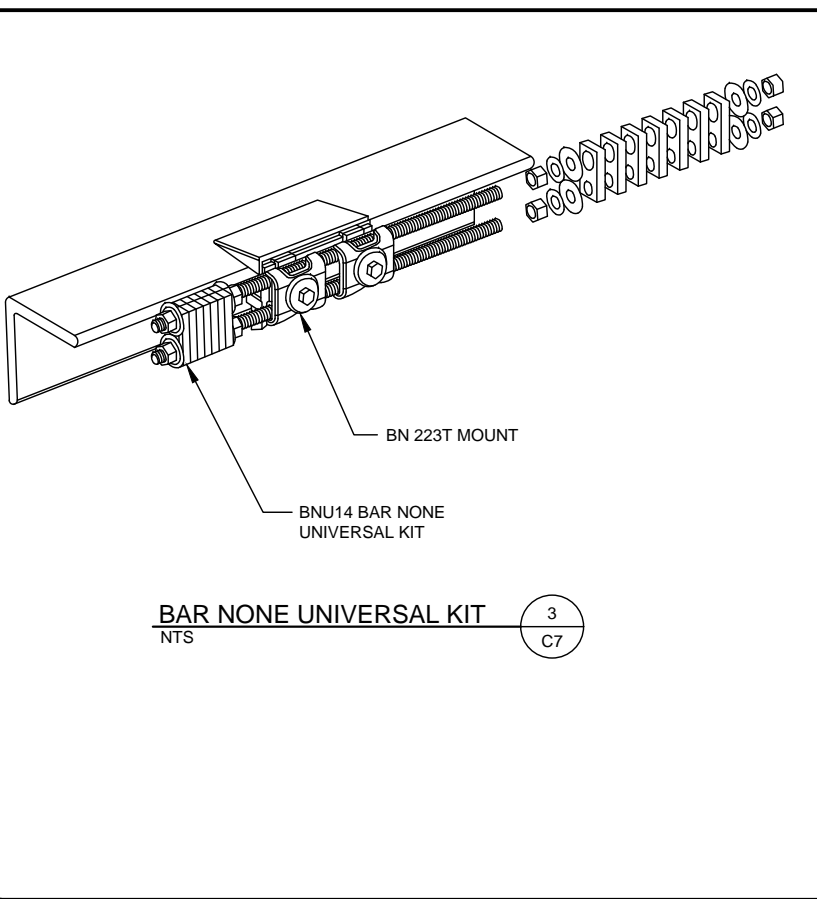


ICE BRIDGE DETAIL (A) C7
NTS

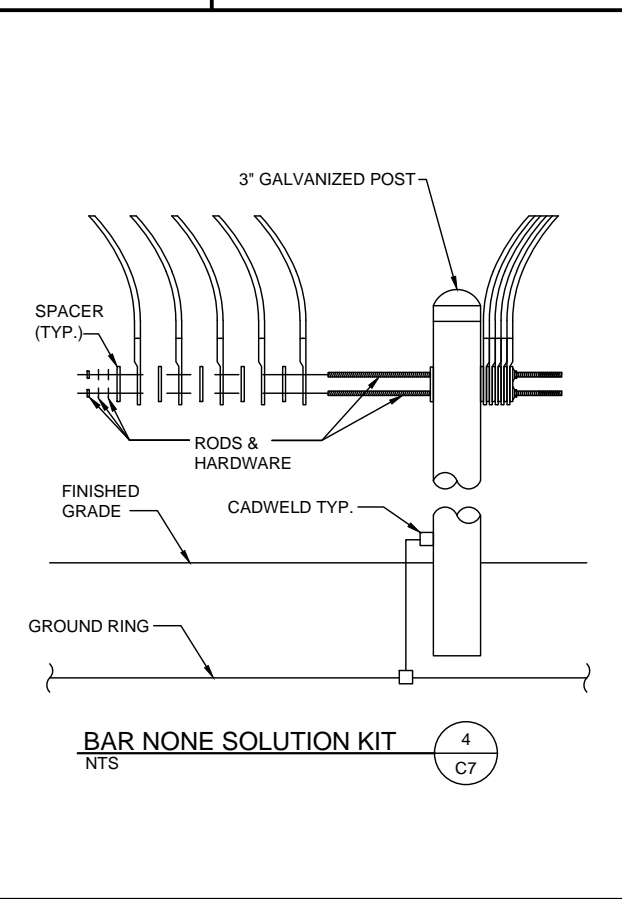


- GC TO INSTALL MOUNT DURING CIVIL PORTION OF BUILD PRIOR TO EQUIPMENT CONTRACTOR INSTALLATION.
- CONTRACTOR IS RESPONSIBLE FOR GPS MOUNTING PIPE, GROUND AND CLAMP AROUND THE MAST FOR THE GPS.

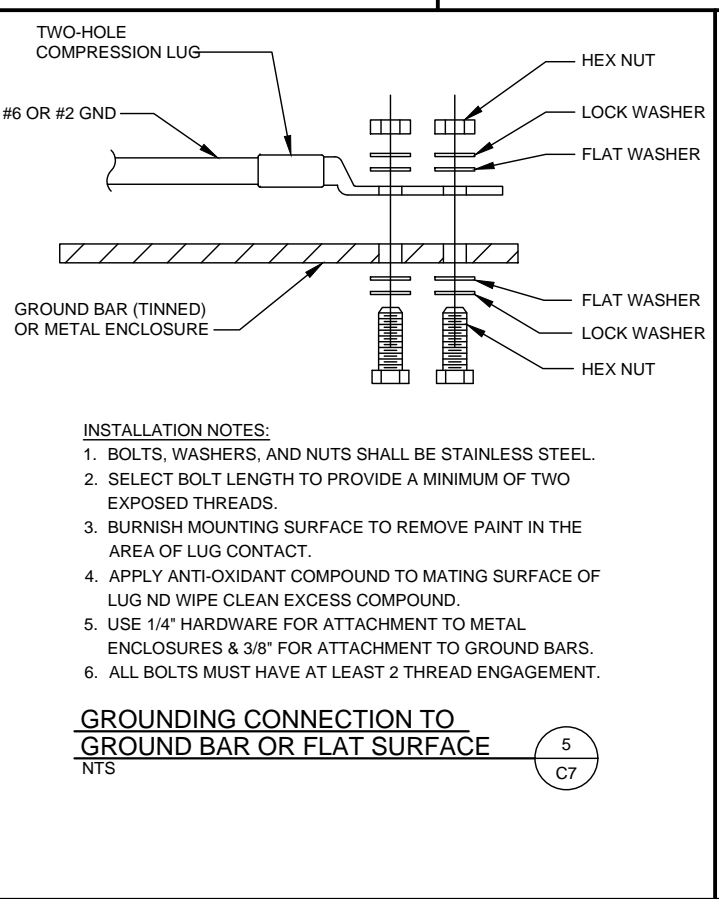
GPS ANTENNA DETAIL (2) C7
NTS



BAR NONE UNIVERSAL KIT (3) C7
NTS

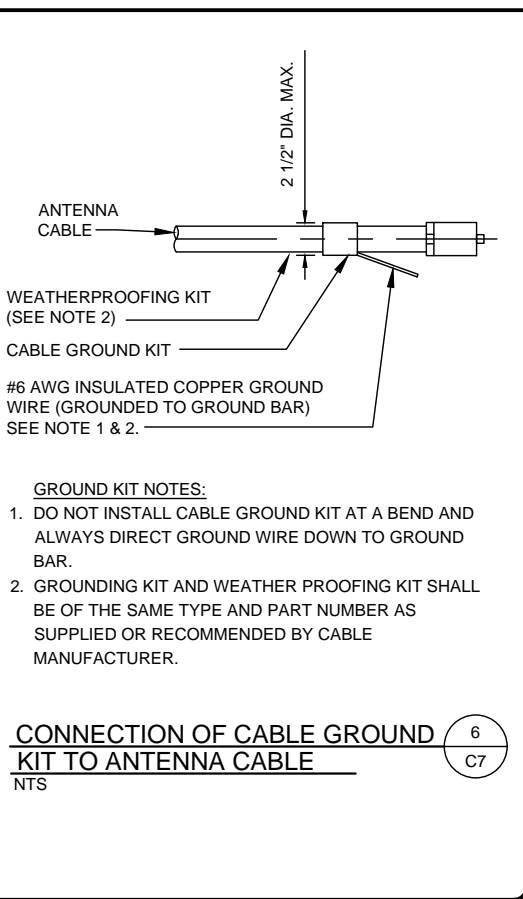


BAR NONE SOLUTION KIT (4) C7
NTS



- INSTALLATION NOTES:**
- BOLTS, WASHERS, AND NUTS SHALL BE STAINLESS STEEL.
 - SELECT BOLT LENGTH TO PROVIDE A MINIMUM OF TWO EXPOSED THREADS.
 - BURNISH MOUNTING SURFACE TO REMOVE PAINT IN THE AREA OF LUG CONTACT.
 - APPLY ANTI-OXIDANT COMPOUND TO MATING SURFACE OF LUG AND WIPE CLEAN EXCESS COMPOUND.
 - USE 1/4" HARDWARE FOR ATTACHMENT TO METAL ENCLOSURES & 3/8" FOR ATTACHMENT TO GROUND BARS.
 - ALL BOLTS MUST HAVE AT LEAST 2 THREAD ENGAGEMENT.

GROUNDING CONNECTION TO GROUND BAR OR FLAT SURFACE (5) C7
NTS



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

CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE (6) C7
NTS

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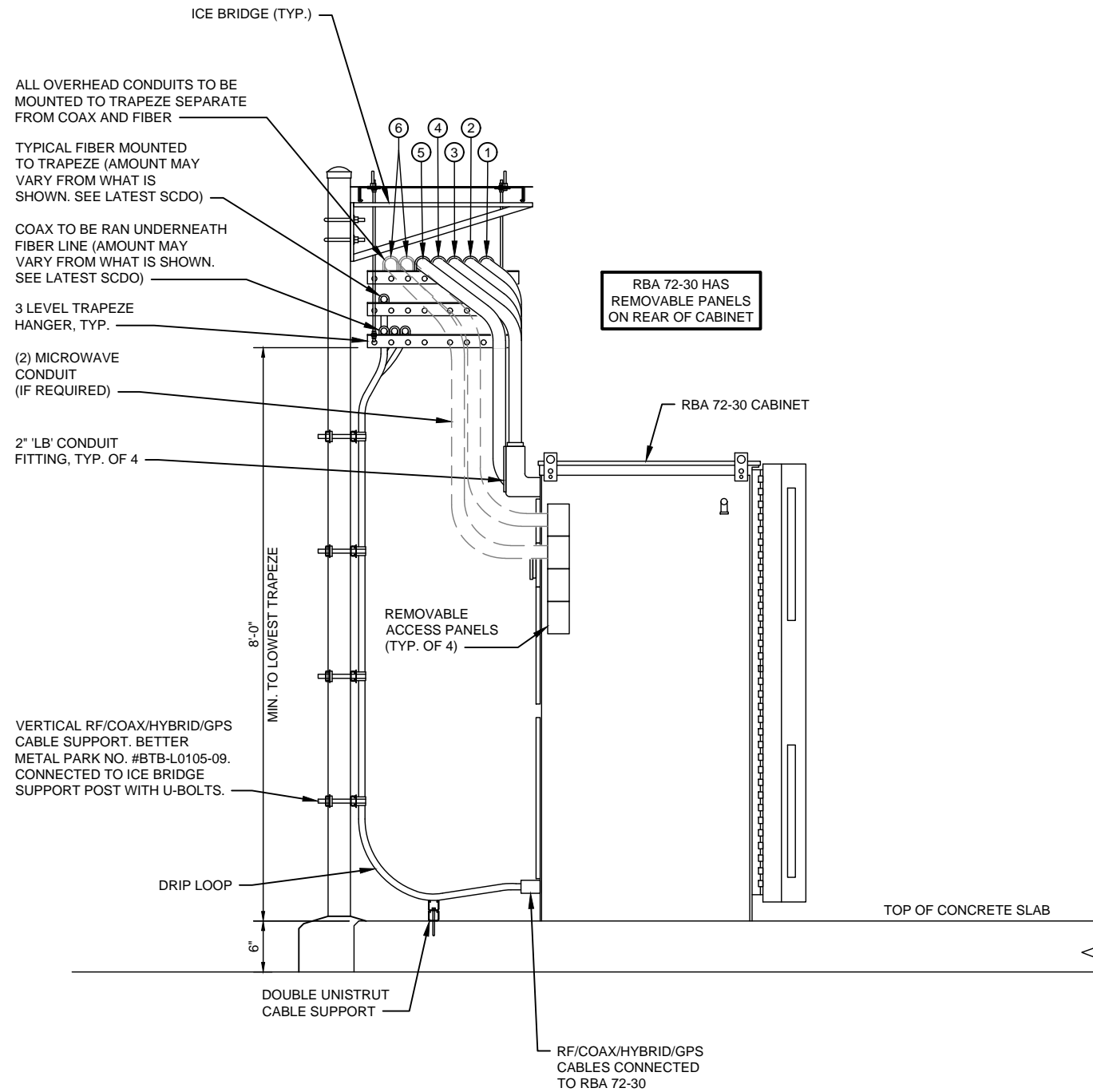
VERIZON WIRELESS SITE NAME:
DUCKY
DESIGN TYPE:
RAWLAND

SHEET TITLE:
ICE BRIDGE DETAILS

DRAWING NO.: **C-7** REVISION: **1**

CONTRACTOR NOTES:

- ① 2" PVC CONDUIT TERMINATING WITH AN 'LB' CONDUIT FITTING, ACCESS COVER FACING DOWN. 2" PVC CONDUIT TO AN 'LB' CONDUIT FITTING CONNECTED TO THE RADIO CABINET. CONDUIT FOR GENERATOR, AC POWER FAIL, AND TVSS ALARM CONDUCTORS.
- ② 2" PVC CONDUIT TERMINATING WITH AN 'LB' CONDUIT FITTING, ACCESS COVER FACING DOWN. 2" PVC CONDUIT TO AN 'LB' CONDUIT FITTING CONNECTED TO THE RADIO CABINET. CONDUIT FOR 2-2P 40 AMP CIRCUITS AND 1-1P 20 AMP GFCI CIRCUIT.
- ③ 2" PVC CONDUIT TERMINATING WITH AN 'LB' CONDUIT FITTING, ACCESS COVER FACING DOWN. 2" PVC CONDUIT TO AN 'LB' CONDUIT FITTING CONNECTED TO THE RADIO CABINET. CONDUIT FOR 2-2P 40 AMP CIRCUIT.
- ④ 2" PVC CONDUIT TERMINATING WITH AN 'LB' CONDUIT FITTING, ACCESS COVER FACING DOWN. 2" PVC CONDUIT TO A 90° PVC CONNECTOR TERMINATING INTO THE RBA 72-30 RF CABINET. CONDUIT FOR DARK FIBER, FUTURE.
- ⑤ 2" PVC CONDUIT TERMINATING WITH AN 'LB' CONDUIT FITTING, ACCESS COVER FACING DOWN. INSTALL A 2" TO 1" REDUCING FITTING AND CONNECT A 1" 45° PVC CONNECTOR TO A 1" PVC CONDUIT TERMINATING INTO RBA 72-30.
- ⑥ 2" PVC CONDUIT TERMINATING WITH AN 'LB' CONDUIT FITTING, ACCESS COVER FACING DOWN. INSTALL (2) 2" 45° PVC CONDUITS TO THE ACCESS PANELS OF THE RBA 72-30. (IF MICROWAVE CABINET IS REQUIRED)



RBA 72-30 SIDE ELEVATION DETAIL

NTS

1
C8

PREPARED FOR:



8921 RESEARCH DRIVE
CHARLOTTE, NC 28262
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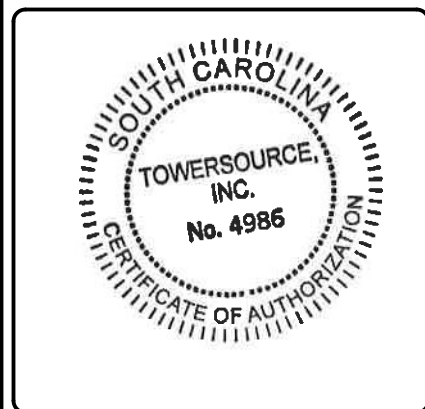


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VERIZON WIRELESS SITE NAME:	DUCKY
DESIGN TYPE:	RAWLAND

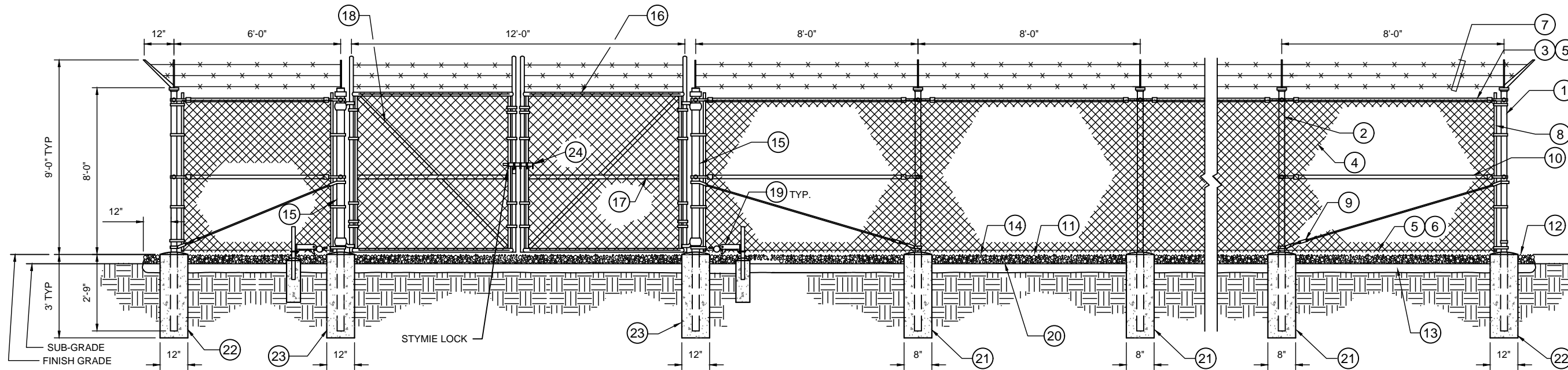
SHEET TITLE:
CONDUIT TO CABINET ELEVATION

DRAWING NO.	REVISION:
C-8	1

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A&E PROJECT #:	20161498104
DRAWN BY:	JBE
CHECKED BY:	EBU

REVISIONS		
NO.	DATE	DESCRIPTION
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0	07/28/17	ISSUED FOR CONSTRUCTION
1	10/10/17	REVISED GENERATOR PER COMMENTS



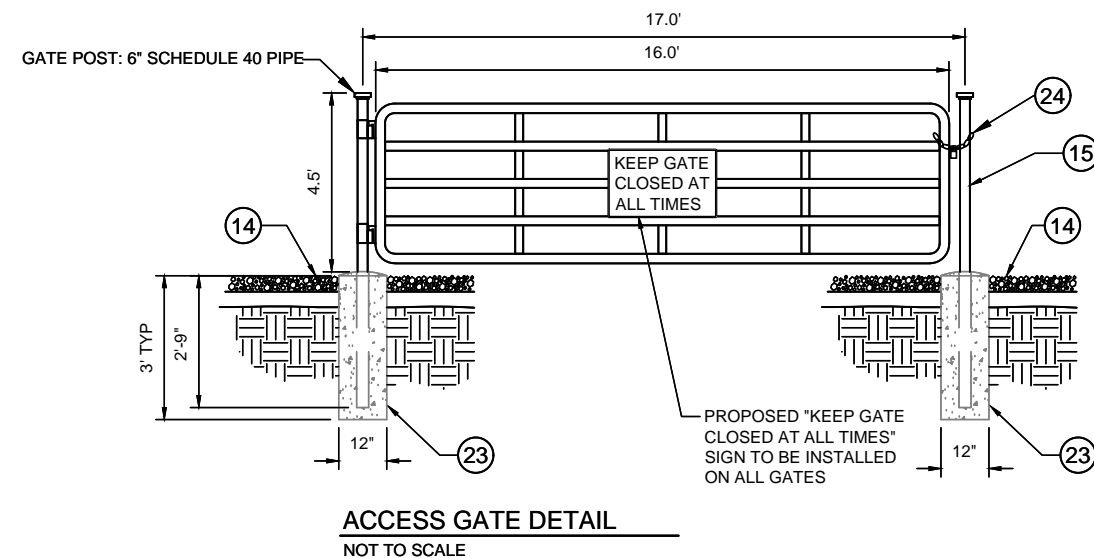
REFERENCE NOTES:

- ① CORNER, END OR PULL POST 3" NOMINAL SCHEDULE 40 PIPE.
- ② LINE POST: 2-1/2" SCHEDULE 40 PIPE, PER ASTM-F1083. LINE POSTS SHALL BE EQUALLY SPACED AT MAXIMUM 8'-0" O.C.
- ③ TOP RAIL & BRACE RAIL: 1-1/2" PIPE, PER ASTM-F1083.
- ④ FABRIC: 9 GA CORE WIRE SIZE 2" MESH, CONFORMING TO ASTM-A392.
- ⑤ TIE WIRE: MINIMUM 11 GA GALVANIZED STEEL AT POSTS AND RAILS A SINGLE WRAP OF FABRIC TIE AND AT TENSION WIRE BY HOG RINGS SPACED MAX. 24" INTERVALS.
- ⑥ TENSION WIRE: 9 GA. GALVANIZED STEEL.
- ⑦ BARBED WIRE: DOUBLE STRAND 1/2" O.D. TWISTED WIRE TO MATCH WITH FABRIC 14 GA, 4 PT. BARBS SPACED ON APPROXIMATELY 5" CENTERS.
- ⑧ STRETCHER BAR.
- ⑨ 3/8" DIAGONAL ROD WITH GALVANIZED STEEL TURNBUCKLE OR DIAGONAL THREADED ROD.
- ⑩ FENCE CORNER POST BRACE: 1-5/8" DIA. EACH CORNER EACH WAY.
- ⑪ 1-1/2" MAXIMUM CLEARANCE FROM GRADE.
- ⑫ COMPOUND SHOULD CONSIST OF GEO TECH FABRIC COVERED BY 4" OF ROLLER COMPACTED CRUSH AND RUN WITH 2" OF #57 STONE ON TOP. THROUGHOUT COMPOUND AND 12" TO 18" OUTSIDE FENCE.
- ⑬ 4" COMPACTED 95% BASE MATERIAL OR SOIL AS DETERMINED BY CONSTRUCTION MANAGER DURING BID WALK.
- ⑭ FINISH GRADE SHALL BE UNIFORM AND LEVEL.
- ⑮ GATE POST 4" SCHEDULE 40 PIPE, FOR GATE WIDTHS UP THRU 7 FEET OR 14 FEET FOR DOUBLE SWING GATE, PER ASTM-F1083.
- ⑯ GATE FRAME: 1-1/2" PIPE, PER ASTM-F1083.
- ⑰ GATE FRAME; 1-5/8" DIAMETER PIPE, PER ASTM-F1083.
- ⑱ GATE DIAGONAL GALVANIZED STEEL 1-1/2" PIPE.
- ⑲ DUCK BILL OPEN GATE HOLDER. VERIFY LOCATION IN FIELD PRIOR TO INSTALLATION.
- ⑳ GEOTEXTILE FABRIC.
- ㉑ LINE POST: CONCRETE FOUNDATION (3000 PSI).
- ㉒ CORNER POST: CONCRETE FOUNDATION (3000 PSI).
- ㉓ GATE POST: CONCRETE FOUNDATION (3000 PSI).
- ㉔ CONTRACTOR TO PROVIDE PROGRAMMABLE 4 DIGIT COMBINATION LOCK AND 3/8" MIN STYMI LOCK. CONSULT CM FOR CORRECT VZM COMBINATION.

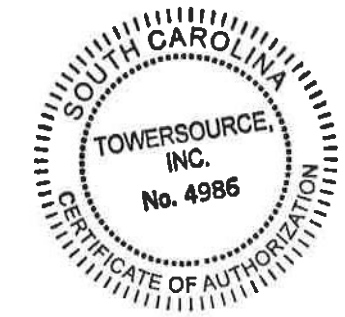
GENERAL NOTES:

1. INSTALL FENCING PER ASTM F-567
2. INSTALL SWING GATES PER ASTM F- 900
3. LOCAL ORDINANCE OF BARBED WIRE PERMIT REQUIREMENT SHALL BE COMPLIED IF REQUIRED.
4. POST & GATE PIPE SIZES ARE INDUSTRY STANDARDS. ALL PIPE TO BE 1-1/2" GALV. (UNLESS NOTED OTHERWISE) (HOT DIP, ASTM A120 GRADE "A" STEEL). ALL GATE FRAMES SHALL BE WELDED. ALL WELDING SHALL BE COATED WITH (3) COATS OF COLD GALV. (OR EQUAL).
5. ALL OPEN POSTS SHALL HAVE END-CAPS.
6. USE GALVANIZED HOG-RING WIRE TO MOUNT ALL SIGNS.
7. ALL SIGNS MUST BE MOUNTED ON INSIDE OF FENCE FABRIC.

FENCE DETAIL 1/C9



ACCESS GATE DETAIL NOT TO SCALE



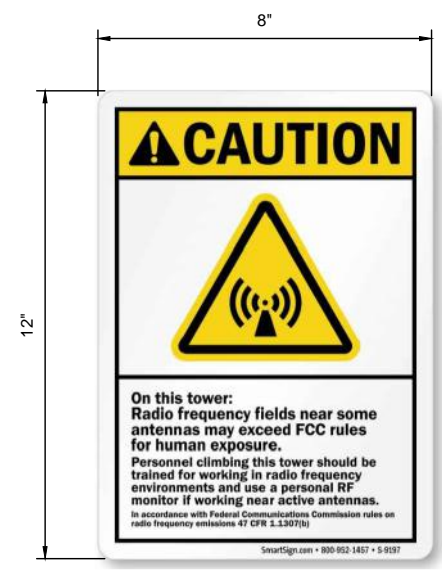
VERIZON WIRELESS SITE NAME:
DUCKY
 DESIGN TYPE:
 RAWLAND

SHEET TITLE:
FENCE DETAIL

DRAWING NO. **C-9** REVISION: **1**

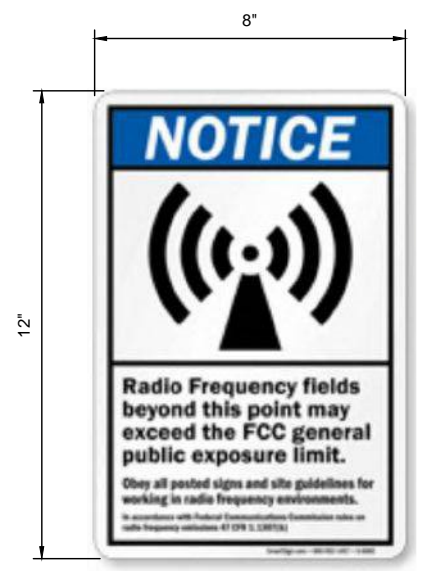


SITE ID SIGN - 24" X 18"
NTS



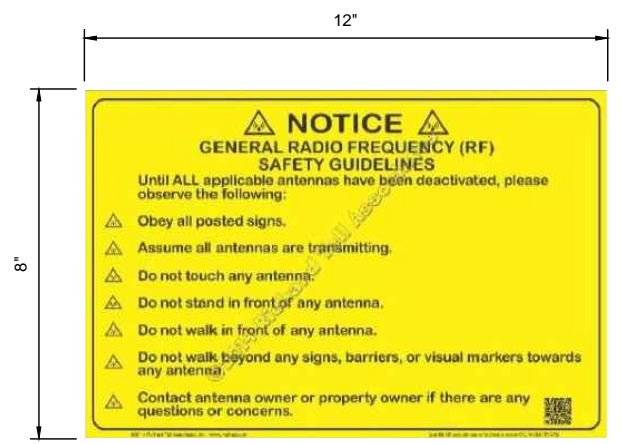
CAUTION SIGN - 8" X 12"
NTS

- PLACED ON TOWER
- USE A DECAL ON MONOPOLE AND METAL SIGN ON SELF-SUPPORT TOWER OR GUYED TOWER



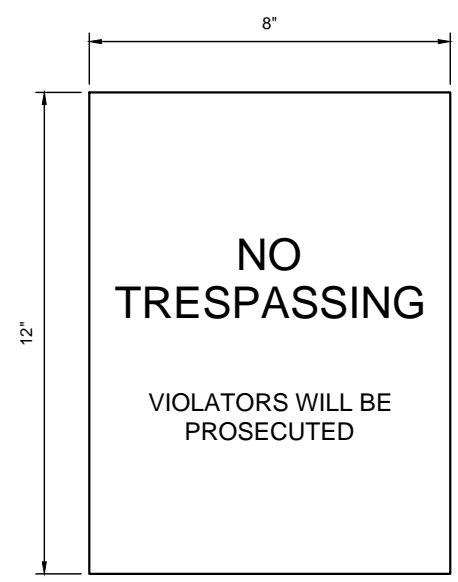
NOTICE SIGN - 8" X 12"
NTS

- PLACED ON FENCE



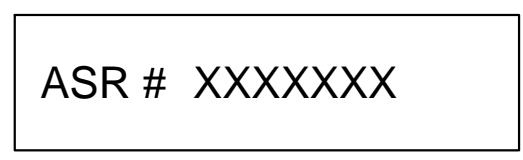
RF GUIDELINES - 12" X 8"
NTS

- PLACED ON FENCE



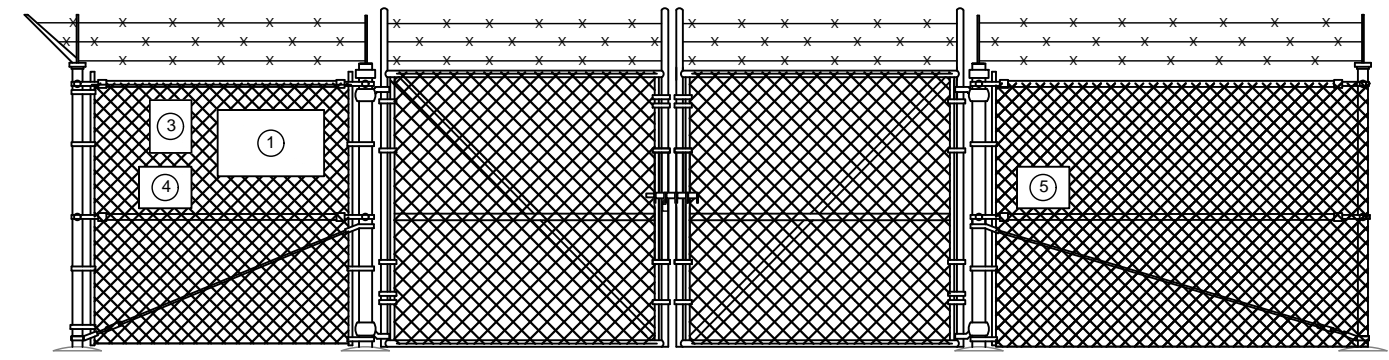
NO TRESPASSING - 8" X 12"
NTS

- PLACED ON ALL FOUR SIDES OF THE COMPOUND

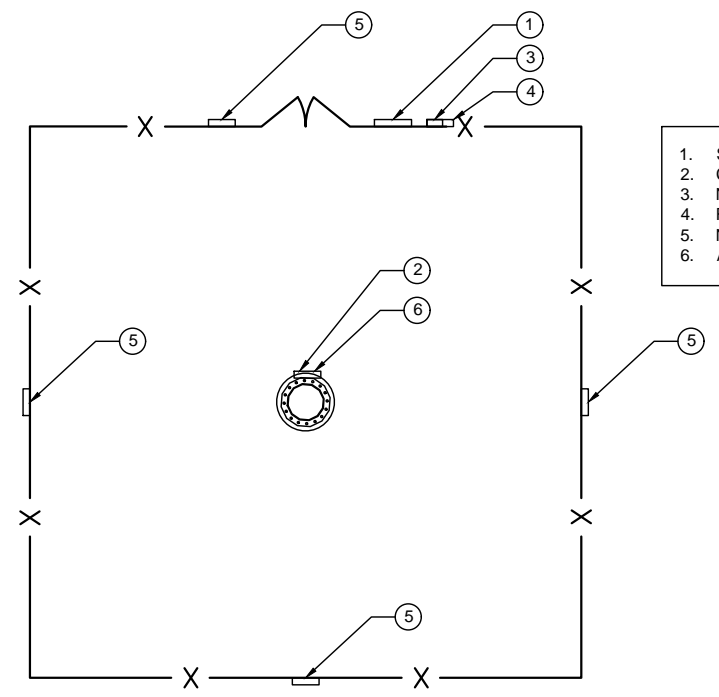


ASR#
NTS

- WHEN REQUIRED, PLACE ON TOWER
- USE A DECAL ON MONOPOLE AND METAL SIGN ON SELF-SUPPORT TOWER OR GUYED TOWER
- LETTERS TO BE 3" MIN.



FENCE DETAIL (ELEVATION)
NTS



FENCE DETAIL (OVERHEAD)
NTS

1. SITE ID (18" X 24")
2. CAUTION (8" X 12")
3. NOTICE (8" X 12")
4. RF GUIDELINES (12" X 8")
5. NO TRESPASSING (8" X 12")
6. ASR# (3" NUMBERS)

PREPARED FOR:
verizon
8921 RESEARCH DRIVE
CHARLOTTE, NC 28262
ATTN: SCOTT McPHERSON (704) 510-8531

A&E FIRM:
towersource
1875 OLD ALABAMA ROAD, SUITE 1008
ROSWELL, GA 30076
TEL: 678-990-2338 FAX: 678-990-2342

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DRAWN BY:	JBE
CHECKED BY:	EBU

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VERIZON WIRELESS SITE NAME:
DUCKY

DESIGN TYPE:
RAWLAND

SHEET TITLE:
SIGN DETAILS

DRAWING NO. **C-10** REVISION: **1**

LANDSCAPE NOTES

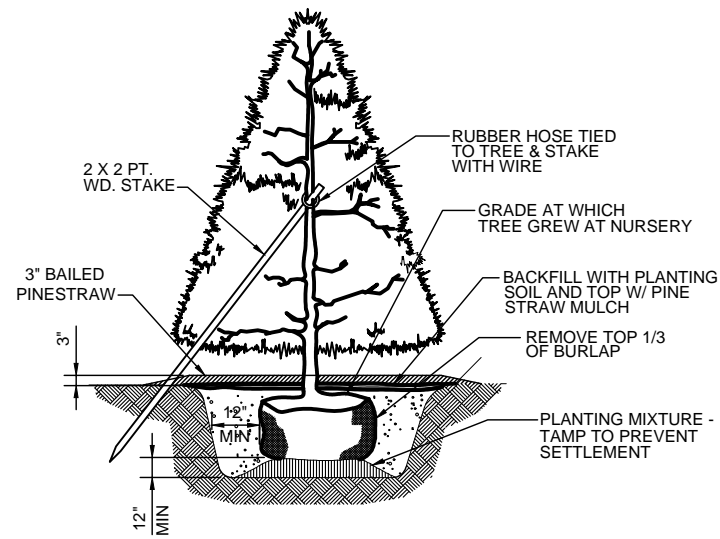
1. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL, FREE OF PESTS AND DISEASE.
2. ALL PLANTS MUST BE CONTAINER-GROWN OR BALLED AND BURLAPPED AS SPECIFIED.
3. ALL TREES MUST BE STRAIGHT TRUNKED, FULL HEADED AND MEET ALL REQUIREMENTS SPECIFIED.
4. ALL PLANTS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER'S REPRESENTATIVE BEFORE, DURING, AND AFTER INSTALLATION.
5. ALL TREES MUST BE GUYED OR STAKED AS SHOWN.
6. ALL PLANTS AND PLANTING AREAS MUST BE COMPLETELY MULCHED AS SPECIFIED.
7. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING COURSE OF THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTING (INCLUDING, BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZATION, ETC.) OF PLANTING AREAS UNTIL THE WORK IS ACCEPTED IN TOTAL BY THE ENGINEER'S REPRESENTATIVE.
9. THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR BEGINNING AT THE DATE OF TOTAL ACCEPTANCE. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE OR AT THE END OF THE GUARANTEE PERIOD.
10. THE ENGINEER'S REPRESENTATIVE WILL APPROVE THE STAKED LOCATION OF ALL PLANT MATERIAL PRIOR TO INSTALLATION.
11. AFTER BEING DUG AT THE NURSERY SOURCE, ALL TREES IN LEAF SHALL BE ACCLIMATED FOR TWO (2) WEEKS UNDER A MIST SYSTEM PRIOR TO INSTALLATION.
12. ANY PLANT MATERIAL THAT DIES, TURNS BROWN OR DEFOLIATES (PRIOR TO TOTAL ACCEPTANCE OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, SIZE AND MEETING ALL SPECIFICATIONS.
13. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK", LATEST EDITION, REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.

TOTAL AREA OF LANDSCAPE BUFFER: 4,900 SF - 0.1124 ACRES

PLANT LIST:

QTY.	COMMON NAME	BOTANICAL NAME	SIZE/REMARKS
34	LEYLAND CYPRESS	CUPRESSOCYPARIS LEYLANDII	8' MIN. HEIGHT AT PLANTING

4,900 SF PINESTRAW MULCH - 3" SETTLED LAYER OF CLEAN STRAW



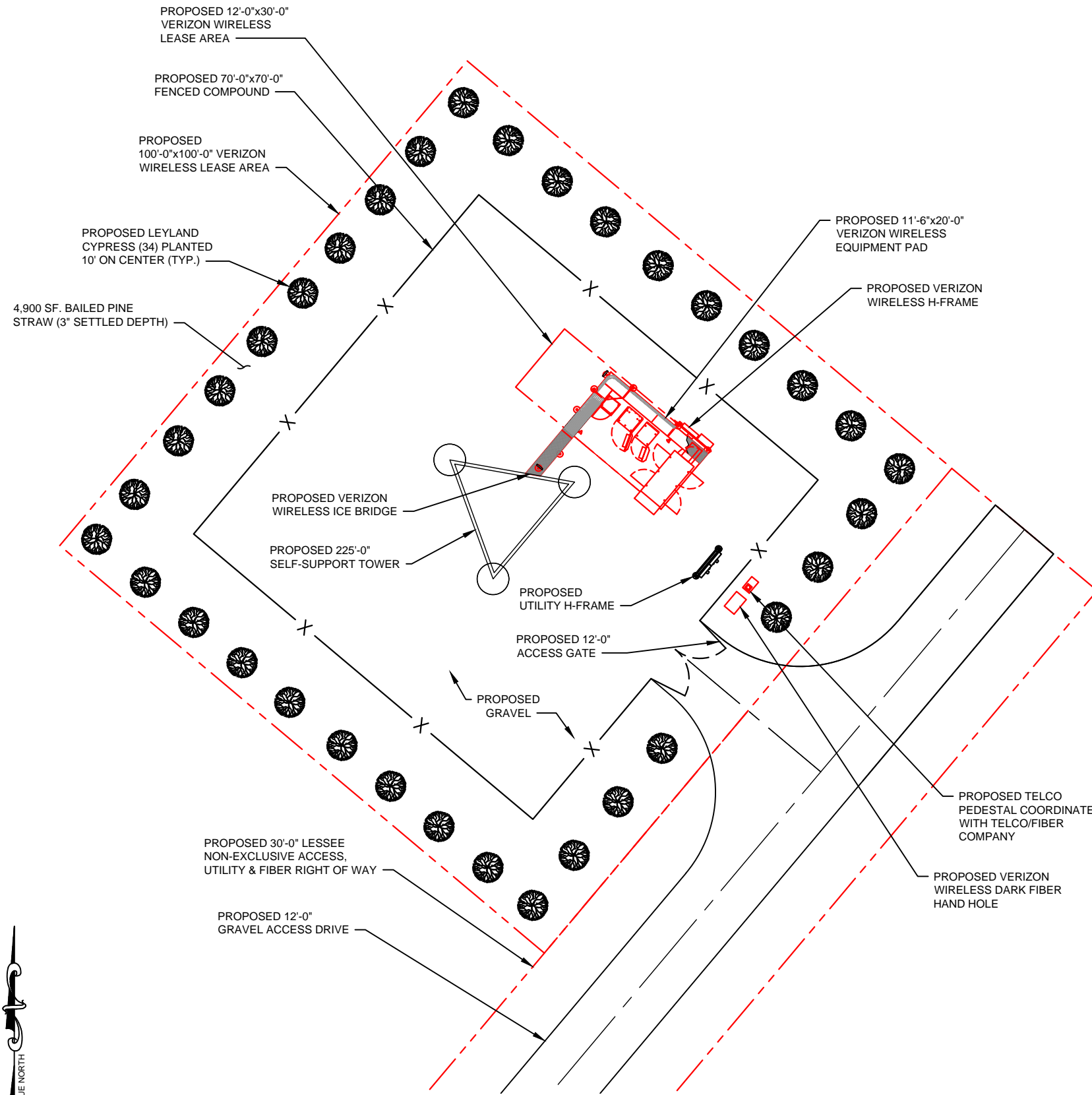
TREE PLANTING DETAIL
NOT TO SCALE



GRAPHIC SCALES



SCALE: 1" = 20'-0"



LANDSCAPE PLAN

SCALE 11"x17": 1" = 20'-0"

PREPARED FOR:



8921 RESEARCH DRIVE
CHARLOTTE, NC 28262
ATTN: SCOTT McPHERSON (704) 510-8531



1875 OLD ALABAMA ROAD, SUITE 1008
ROSWELL, GA 30076
TEL: 678-990-2338 FAX: 678-990-2342

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DRAWN BY: JBE

CHECKED BY: EBU

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VERIZON WIRELESS SITE NAME:

DUCKY

DESIGN TYPE: RAWLAND

SHEET TITLE: LANDSCAPE PLAN

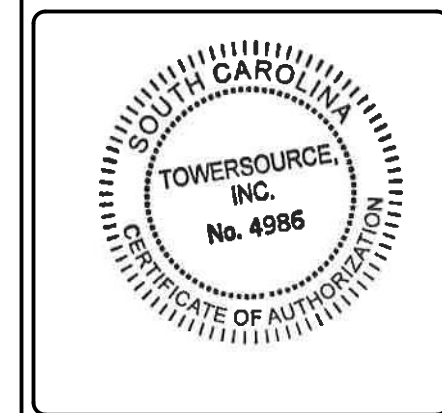
DRAWING NO. L-1

REVISION: 1

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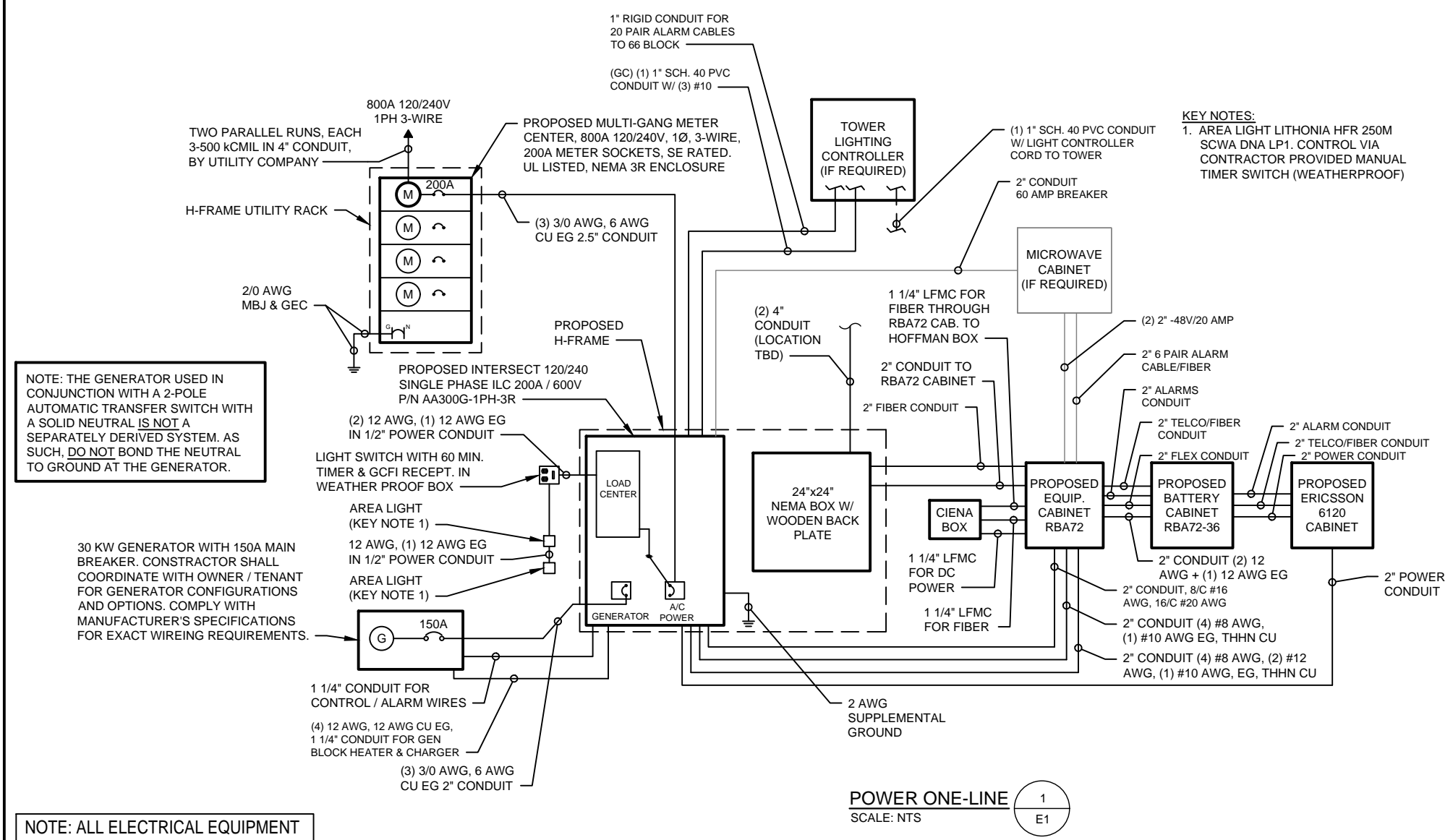
REVISIONS		
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VERIZON WIRELESS SITE NAME:
DUCKY
 DESIGN TYPE:
 RAWLAND

SHEET TITLE:
ELECTRICAL NOTES & ONE LINE DIAGRAM

DRAWING NO.
E-1
 REVISION:
1



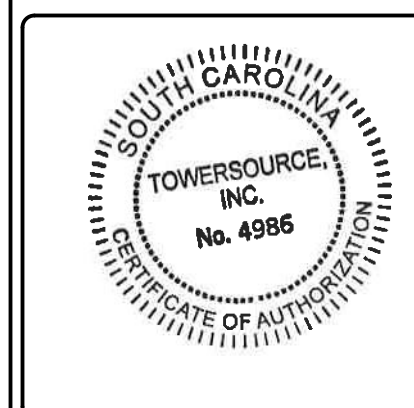
KEY NOTES:
 1. AREA LIGHT LITHONIA HFR 250M SCWA DNA LP1. CONTROL VIA CONTRACTOR PROVIDED MANUAL TIMER SWITCH (WEATHERPROOF)

- NOTES:
- ELECTRICAL UTILITY WILL PROVIDE METER AND INCOMING SERVICE LATERAL CONDUCTORS.
 - ALL ELECTRICAL WORK SHALL COMPLY WITH NEC, STATE, AND LOCAL CODES.
 - CONTRACTOR SHALL OBTAIN OWNER/TENANT EQUIPMENT DRAWINGS AND REVIEW FOR ADDITIONAL DETAILS AND REQUIREMENTS THAT MAY NOT BE SHOWN IN THESE DRAWINGS. CONTRACTOR SHALL COMPLY WITH ANY ADDITIONAL OWNER/TENANT SPECIFICATIONS AND REQUIREMENTS THAT MAY BE ADDRESSED IN THE EQUIPMENT DRAWINGS.
 - PRIOR TO PURCHASING EQUIPMENT, THE CONTRACTOR SHALL CONTACT THE ELECTRIC UTILITY AND OBTAIN IN WRITING THE MAXIMUM AVAILABLE FAULT CURRENT AT THE UTILITY SERVICE POINT. PROVIDE MAX AFC SIGNAGE AS REQUIRED PER NEC 110.24. THE CONTRACTOR SHALL ENSURE ALL ELECTRICAL EQUIPMENT. CIRCUIT BREAKERS, DISCONNECTS, FUSES, AND PANELBOARDS HAVE A FAULT CURRENT INTERRUPTING RATING GREATER THAN THE AVAILABLE FAULT CURRENT. IN NO CASE SHALL THE FAULT CURRENT INTERRUPTING RATING BE LESS THAN 10,000 AMPS.
 - THE GROUNDING SERVICE CONDUCTOR (NEUTRAL CONDUCTOR) SHALL BE GROUNDED AT THE SERVICE DISCONNECT ONLY.
 - ALL POWER CIRCUITS SHALL USE COPPER CONDUCTORS WITH THHN/THWN INSULATION. ALL TERMINATIONS SHALL BE RATED FOR AT LEAST 75 DEGREES C.
 - CONTRACTOR SHALL PROVIDE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE RECEPTACLES.
 - CONTRACTOR SHALL ENSURE ALL NEUTRAL CONDUCTORS HAVE WHITE INSULATION AND EQUIPMENT GROUND CONDUCTORS HAVE GREEN INSULATION. COLOR TAPE IDENTIFICATION OF THESE CONDUCTORS IS NOT ALLOWED.
 - PER NEC ART. 702 PROVIDE SIGNAGE AS FOLLOWS:
 A) AT PANEL PP1 AND DISCONNECT: "EMERGENCY POWER IS SUPPLIED BY STAND-BY GENERATOR LOCATED ON OTHER SIDE OF PAD."
 B) AT SERVICE DISCONNECT:
- WARNING - SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER CONNECTION IN THIS EQUIPMENT IS REMOVED WHILE ALTERNATE SOURCE(S) IS ENERGIZED. OPENING THE EQUIPMENT DISCONNECT WILL CAUSE THE EMERGENCY GENERATOR TO START. TO REMOVE POWER ENTIRELY FROM THE EQUIPMENT, THE GENERATOR MUST BE TURNED OFF AND THE GENERATOR BREAKER MUST BE OPENED.
- PROVIDE PANEL WITH TVSS, ALL MODES PROTECTION, 80KA USING 2-10 AWG, 1-10 AWG EG IN 3/4" CONDUIT.

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VERIZON WIRELESS SITE NAME:
DUCKY
 DESIGN TYPE:
 RAWLAND

SHEET TITLE:
PANEL SCHEDULE

DRAWING NO. **E-1A** REVISION: **1**

LOAD SERVED	KVA / PHASE		LOAD TYPE	CKT BRKR	CKT NO	NEUTRAL A B	CKT NO	CKT BRKR	LOAD TYPE	KVA / PHASE		LOAD SERVED		
	A	B								A	B			
GENERATOR BLOCK HEATER	0.50	--	C	1P-20	1		2		C	2.88	--	RBA 72-36 RECTIFIER #1		
GENERATOR BATTERY CHARGER	--	0.10	C	1P-20	3		4	2P-40	C	--	2.88			
GFCI RECEPTACLE H-FRAME	0.18	--	NC	1P-20	5		6		C	2.88	--	RBA 72-36 RECTIFIER #2		
GFCI RECEPTACLE RBS 72-30	--	0.18	NC	1P-20	7		8	2P-40	C	--	2.88			
AREA FLOODLIGHTS	0.60	--	NC	1P-20	9		10		C	2.88	--	RBA 72-36 RECTIFIER #3		
GFCI RECEPTACLE RBA 72	--	0.18	NC	1P-20	11		12	2P-40	C	--	2.88			
ERICSSON 6120	2.34	--	C	2P-80	13		14		C	2.88	--	RBA 72-36 RECTIFIER #4 (SPARE)		
	--	2.34	C		15		16	2P-40	C	--	2.88			
GFCI MICROWAVE CABINET (FUT.)	0.18	--			17		18			0.00	--	SPARE		
MICROWAVE CABINET HVAC (FUT.)	--	0.80			19		20			--	0.00	SPARE		
SPARE	0.00	--			21		22			0.00	--	SPARE		
SPARE	--	0.00			23		24			--	0.00	SPARE		
SPARE	0.00	--			25		26			0.00	--	SPARE		
TVSS	--	0.00	NC	2P-30	27		28			--	0.00	SPARE		
	0.00	--			29		30				0.00	--	SPARE	
SUB TOTAL	3.62	2.80					SUB TOTAL			11.36	11.36	TOTAL	14.98	14.16

PANEL RATING:	240/120 VOLT	1 PHASE	3 WIRE	LOAD DESCRIPTION	CONN. KVA		NEC DEM FACTOR	DEMAND KVA	
	SURFACE	NEMA 3R	OUTDOOR		A	B		A	B
TERMINATIONS:	75° C			GENERAL LIGHTING	0.00	0.00	125%	0.00	0.00
ISOLATED GROUND BUS:	NO			GENERAL USE RECEPTACLES	0.18	0.36	≤10 KVA@100%	0.18	0.36
MAIN CIRCUIT BREAKER:	NO						>10 KVA@50%	0.00	0.00
SERVICE ENTR. RATED:	NO			MOTORS AND EQUIPMENT			125%	0.00	0.00
NEUTRAL TO GROUND BOND:	NO			LARGEST	0.00	0.00	100%	0.00	0.00
MINIMUM AIC, (K AMPS):	14			ALL OTHERS	0.00	0.00	100%	0.00	0.00
MCB RATING:	MLO			EXTERIOR LIGHTING	0.60	0.00	125%	0.75	0.00
BUS RATING:	200A			AIR CONDITIONING	0.00	0.00	100%	0.00	0.00
NEUTRAL RATING:	100%			CABINET	2.34	2.34	100%	2.34	2.34
NUMBER OF BRANCH CIRCUITS:	30			RECTIFIERS	11.36	11.36	100%	11.36	11.36
				DEDICATED RECEPTACLE GENERATOR	0.50	0.10	100%	0.50	0.10

PANEL IS INSIDE AN INTEGRATED LOAD CENTER (ILC)	SUB TOTAL	14.98	14.16	TOTAL	15.13	14.16
	PANEL FEEDER (TOTAL DEMAND KVA)					29.83
	[(TOTAL KVA) / .24 = TOTAL AMPS FOR SERVICE FEEDER					124.3

PANEL SCHEDULE
 NTS



REFERENCE NOTES:

1. PROVIDE AND INSTALL WARNING TAPE FOR ELECTRIC SERVICE CONDUIT 12" BELOW GRADE. SEE CONDUIT SECTION ON SHEET E-5.
2. CONTRACTOR TO USE SCH. 80 PVC CONDUIT OR CONDUIT ENCASED IN CONCRETE WHERE CONDUITS CROSS ACCESS ROADS.
3. CONTRACTOR TO BE ADVISED THAT EXISTING UNDERGROUND CONDUITS, GROUND CABLES EXIST. DIG WITH CAUTION.
4. CONTRACTOR TO VERIFY POWER AND TELCO LB LOCATIONS, CONDUIT SIZE AND ROUTING TO THE EQUIPMENT CABINETS WITH MANUFACTURER'S DRAWINGS.
5. CONDUIT TO BE INSTALLED PER NEC REQUIREMENTS. MAX OF 4 90'S ALLOWED IN SINGLE RUN OF CONDUIT. IF MORE BENDS ARE REQUIRED INSTALL PULL BOX EVERY (4) 90'S. LABEL EACH PULL BOX WITH A BRASS TAG, AS VZW UTILITIES.

UTILITY NOTE:

1. ALL POWER CONDUITS ABOVE GRADE, SWEEPS, & ELBOWS TO BE RIGID CONDUIT. USE SCHEDULE 80 PVC WHERE CONDUIT IS EXPOSED AND SUBJECT TO DAMAGE FROM IMPACT.
2. INSTALL PULL STRING IN EACH TELCO CONDUIT AND EACH INNERDUCT.
3. CONTRACTOR OR THEIR SUB-CONTRACTOR SHALL PROVIDE PULL BOXES FOR POWER AND TELCO CONDUIT RUNS AS REQUIRED BY LOCAL, STATE, OR NATIONAL ELECTRICAL CODE, CURRENT VERSION.
4. ALL CONDUITS ARE TO BE SCHEDULE 40 UNDER GROUND. (WHEN NOT SCH. 80 PVC)

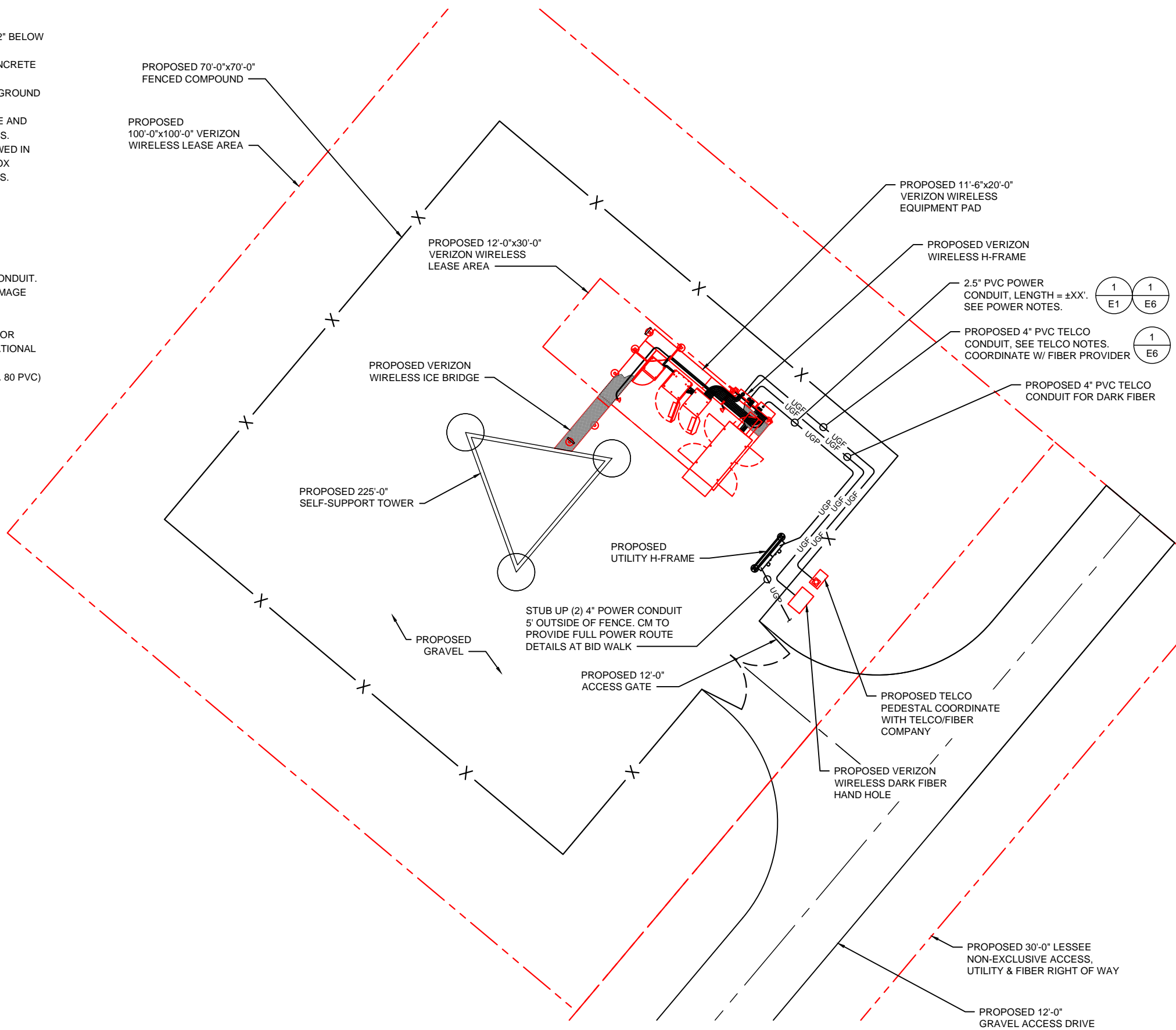
POWER NOTES:

1. UTILITY NOTES FOR POWER WILL BE PROVIDED AFTER UTILITY WALK.

TELCO NOTES:

1. FIBER SERVICES WILL BE COORDINATED ONCE VENDOR IS AWARDED.

ELECTRICAL LEGEND:	
TELEPHONE PEDESTAL	
OVERHEAD TELEPHONE	OHT
UNDERGROUND FIBER	UGF
OVERHEAD POWER	OHP
UNDERGROUND POWER	UGP



ELECTRICAL SITE PLAN
SCALE 11"x17": 1" = 15'-0"

ABBREVIATIONS	
AWG = AMERICAN WIRE GAUGE	RGS = RIGID GALVANIZED STEEL
C = CONDUIT	SS = STAINLESS STEEL
CAB = CABINET	TYP. = TYPICAL
DWG = DRAWING	U/E = UNDERGROUND ELECTRICAL CONDUIT
G = GROUND	U/G = UNDERGROUND GAS LINE
PVC = POLYVINYL CHLORIDE	U/T = UNDERGROUND TELCO CONDUIT

PREPARED FOR:

 8921 RESEARCH DRIVE
 CHARLOTTE, NC 28262
 ATTN: SCOTT McPHERSON (704) 510-8531

A&E FIRM:

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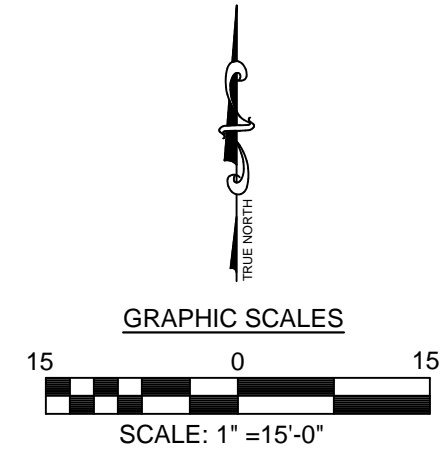


VERIZON WIRELESS SITE NAME:
DUCKY

DESIGN TYPE:
 RAWLAND

SHEET TITLE:
 ELECTRICAL SITE PLAN

DRAWING NO. E-2	REVISION: 1
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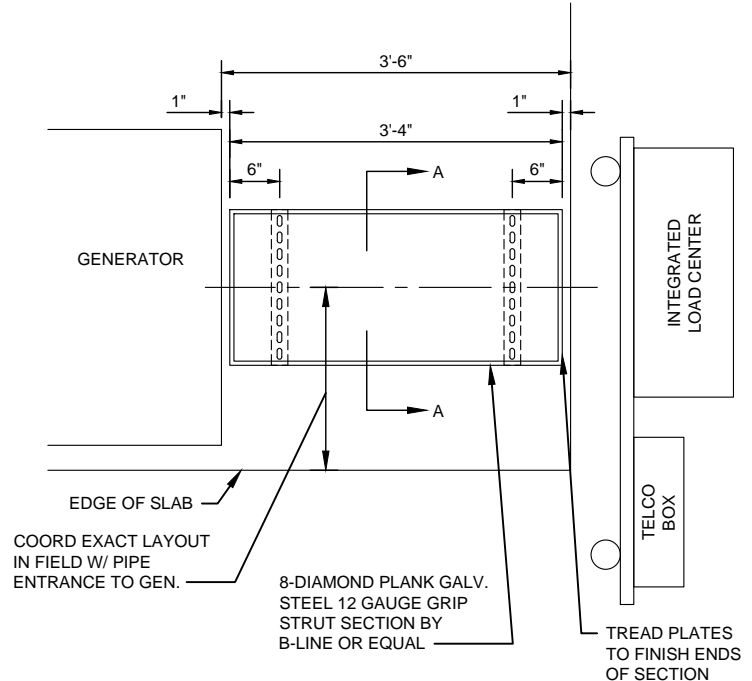
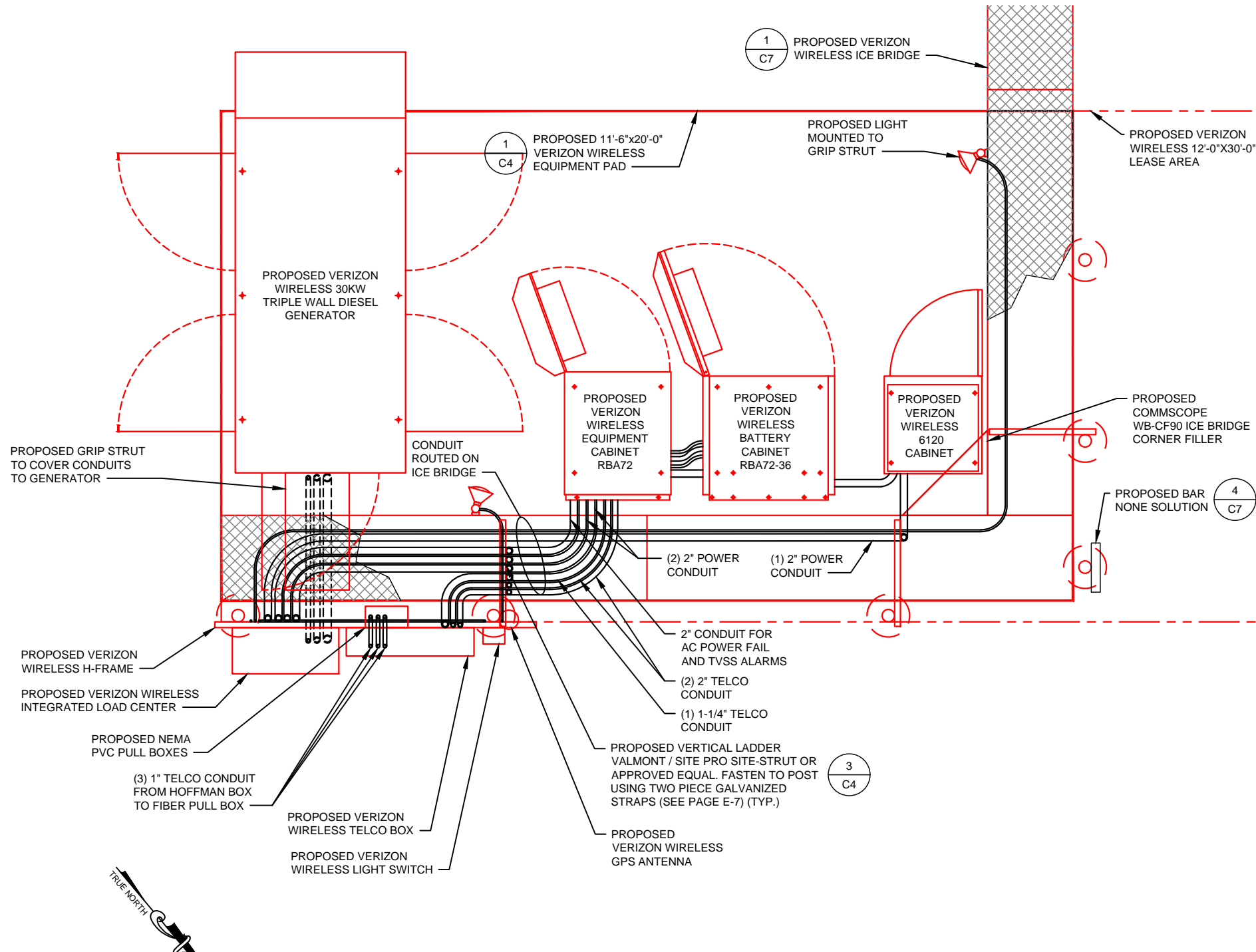


GENERATOR CONDUIT NOTE:
 DUE TO DIESEL RESTRICTIONS THE CONDUIT GOING TO THE GENERATOR SHALL STUB-UP ON THE OUTSIDE OF THE GENERATOR AND ROUTE UP THE SIDE AND "LB OR 90" INTO THE GENERATOR AREA ABOVE THE TANK. SEE SPEC SHEETS FOR THE MTU 30KW DIESEL DRE TRIPLE CONTAINMENT GENERATOR.

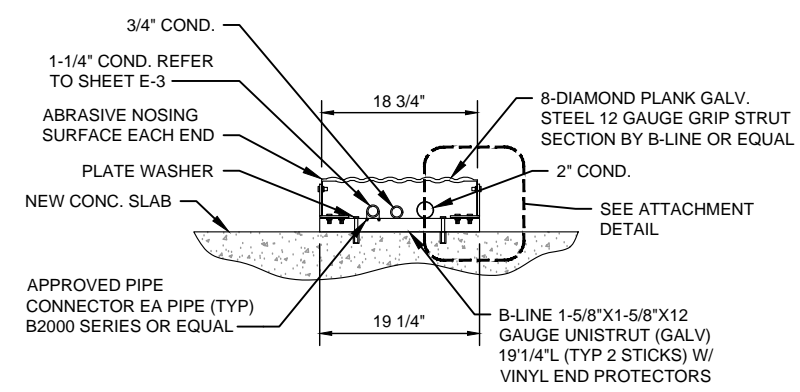
NOTE:
 FOR ALL CONDUIT AND WIRE SIZES SEE ONE-LINE DIAGRAM ON SHEET E-1

ROUTING NOTE:
 1. RUN 2" POWER CONDUIT OVERHEAD ON ICE BRIDGE, SWEEP DOWN CABLE LADDER THEN ELBOW OVER TO BACKSIDE OF RBA72 CABINET.
 3. FASTEN CONDUITS TO UNISTRUT ON ICE BRIDGE AND TO CABLE LADDER WITH TWO PIECE HOT DIP GALVANIZED CONDUIT STRAPS.

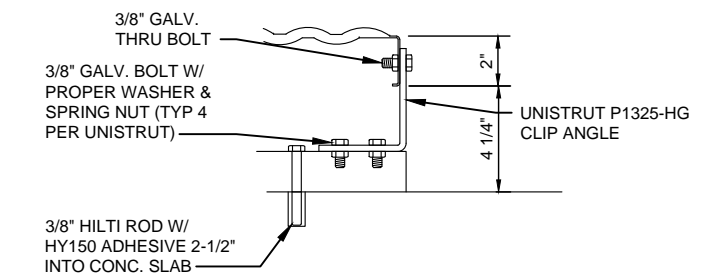
NOTE:
 RUN CONDUITS DOWN FROM H-FRAME, ACROSS SLAB ON CABLE TRAY AND INTO CONDUIT AREA OF GENERATOR. CUT OPENING IN BOLT-ON PANEL AT END OF GENERATOR TO ALLOW PASSAGE OF CONDUITS, BUT MAINTAIN CAPABILITY TO REMOVE & REPLACE PANEL, AND KEEP OUT INSECTS AND VERMIN. COORDINATE EXACT DETAILS OF OPENING WITH VZW CM.



2 E3 CONDUIT PROTECTION DETAIL NTS



SECTION VIEW AA NTS

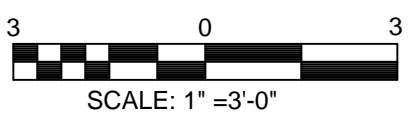


ATTACHMENT DETAIL NTS

1 E3 DETAILED CONDUIT LAYOUT SCALE: 1" = 3'-0"

- AWG = AMERICAN WIRE GAUGE
- C = CONDUIT
- CAB = CABINET
- DWG = DRAWING
- G = GROUND
- PVC = POLYVINYL CHLORIDE
- UGP = UNDERGROUND POWER CONDUIT
- RGS = RIGID GALVANIZED STEEL
- SS = STAINLESS STEEL
- TYP = TYPICAL
- U/E = UNDERGROUND ELECTRICAL CONDUIT
- U/G = UNDERGROUND GAS LINE
- U/T = UNDERGROUND TELCO CONDUIT
- UGF = UNDERGROUND FIBER CONDUIT

GRAPHIC SCALES



PREPARED FOR:
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A&E FIRM:
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1	10/10/17	REVISED GENERATOR PER COMMENTS



VERIZON WIRELESS SITE NAME:
DUCKY
 DESIGN TYPE:
 RAWLAND

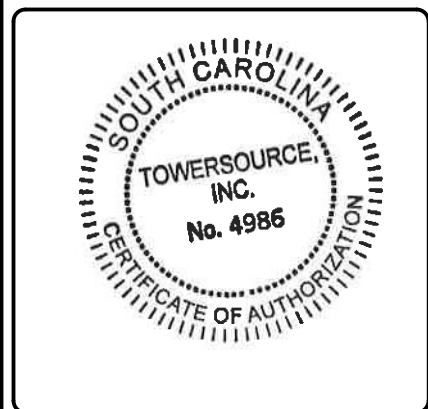
SHEET TITLE:
 DETAILED ELECTRICAL PLAN

DRAWING NO. **E-3** REVISION: **1**

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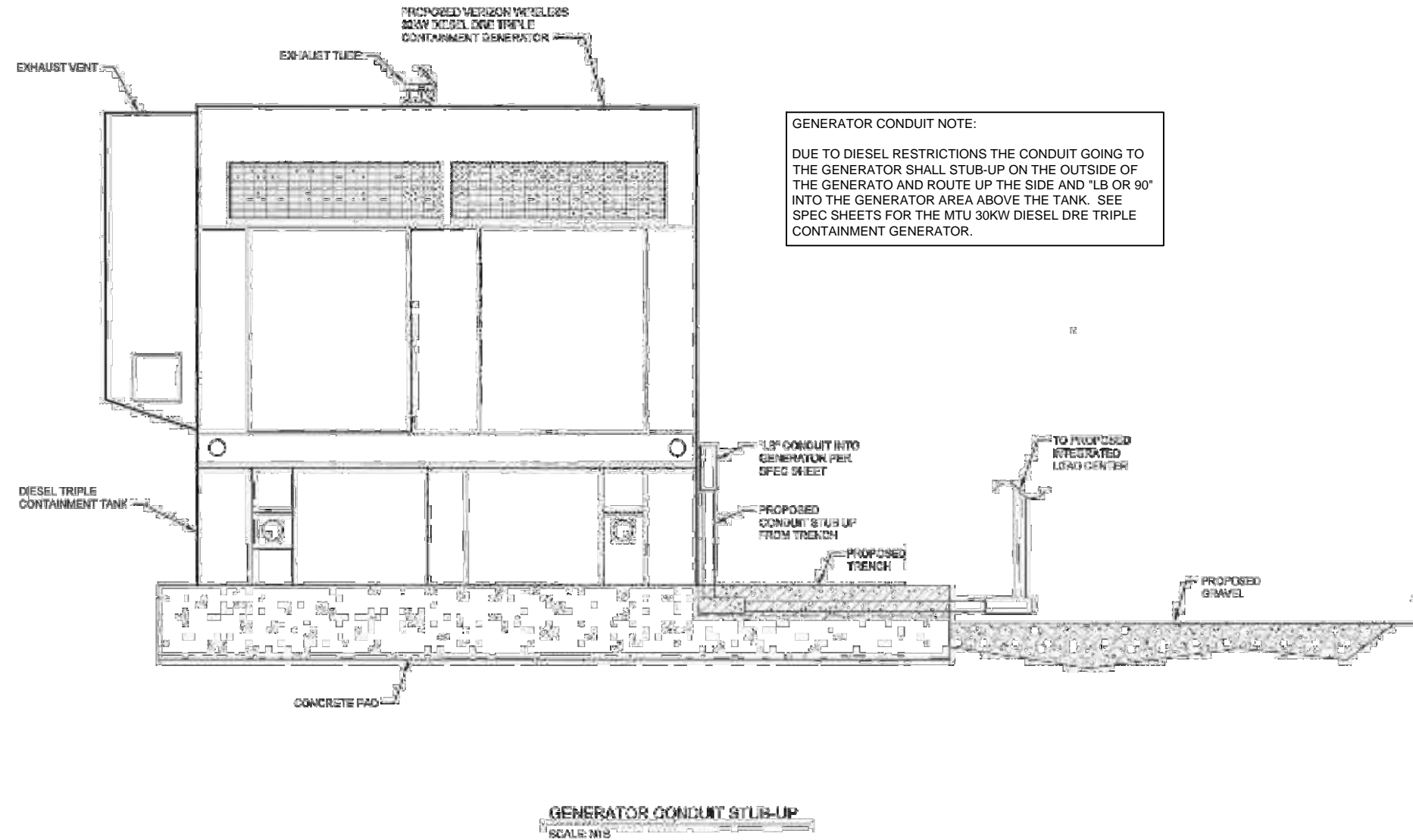
REVISIONS		
NO.	DATE	DESCRIPTION
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0	07/28/17	ISSUED FOR CONSTRUCTION
1	10/10/17	REVISED GENERATOR PER COMMENTS



VERIZON WIRELESS SITE NAME:	DUCKY
DESIGN TYPE:	RAWLAND

SHEET TITLE:	CONDUIT STUB-UP DETAIL
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DRAWING NO.	E-3A	REVISION:	1
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GENERATOR CONDUIT NOTE:
 DUE TO DIESEL RESTRICTIONS THE CONDUIT GOING TO THE GENERATOR SHALL STUB-UP ON THE OUTSIDE OF THE GENERATOR AND ROUTE UP THE SIDE AND "LB OR 90" INTO THE GENERATOR AREA ABOVE THE TANK. SEE SPEC SHEETS FOR THE MTU 30KW DIESEL DRE TRIPLE CONTAINMENT GENERATOR.

GROUNDING NOTES:

1. THE GROUND RING SHALL CONSIST OF #2 AWG TINNED SOLID BARE COPPER CONDUCTOR, UNLESS NOTED OTHERWISE, BURIED AT 30" BELOW FINISHED GRADE (OR BELOW FROST LINE). LOCATE 24" MINIMUM AND 36" MAXIMUM FROM EQUIPMENT PAD AND FROM TOWER FOUNDATION. ALL CONNECTIONS SHALL BE MADE USING A PARALLEL TYPE EXOTHERMIC WELD, UNLESS NOTED OTHERWISE.
2. INSTALL GROUND RODS AS SHOWN AND AS REQUIRED. GROUND RODS TO BE COPPER CLAD STEEL, 5/8" DIAMETER AND 10FT IN LENGTH. SPACING BETWEEN GROUND RODS SHALL BE 10FT MINIMUM AND 15FT MAXIMUM. TOP OF GROUND ROD TO BE 30" MINIMUM BELOW GRADE (OR BELOW FROST LINE).
3. EQUIPMENT GROUND RING SHALL HAVE A MINIMUM OF 4 GROUND RODS, INSTALLED AT THE CORNERS OF THE GROUND RING PLUS ADDITIONAL RODS AS REQUIRED TO COMPLY WITH THE SPACING REQUIREMENTS. TOWER GROUND RING SHALL HAVE A MINIMUM OF 3 GROUND RODS, EXCEPT USE 4 RODS AT A MONOPOLE TOWER.
4. EQUIPMENT GROUND RING AND TOWER GROUND RING SHALL BE BONDED TOGETHER WITH TWO #2 STC GROUND LEADS, TYPICALLY ONE ON EACH SIDE OF ICE BRIDGE.
5. BOND TOWER TO TOWER GROUND RING AT THREE LOCATIONS WITH #2 STC GROUND LEAD. SELF SUPPORT TOWERS SHALL HAVE EACH LEG BONDED TO GROUND RING, MONOPOLES AND GUYED TOWERS SHALL HAVE GROUND LEADS EQUALLY SPACED AROUND TOWER. EXOTHERMICALLY WELD GROUND LEADS TO TOP OF BASE PLATES, OR ATTACH TO TOWER USING TOWER MANUFACTURER PROVIDED DETAIL.
6. PROVIDE #2 STC RADIALS FROM THE TOWER GROUND RING TO EACH FENCE CORNER POST. RADIALS SHALL HAVE GROUND RODS AS PER THE REQUIRED SPACING. THE GROUND ROD AT THE END OF EACH RADIAL SHALL BE 24" MAXIMUM FROM FENCE CORNER POST.
7. MINIMUM BEND RADIUS FOR #2 AWG GROUND WIRE IS 12", EXCEPT USE 24" FOR TOWER GROUND RINGS AND EQUIPMENT PAD GROUND RINGS.
8. GROUND ALL EXTERIOR EXPOSED METAL OBJECTS. USE TWO HOLE LUGS FOR CONNECTION TO FLAT METAL SURFACES. USE ONLY STAINLESS STEEL HARDWARE ON ALL MECHANICAL CONNECTIONS. CLEAN ALL SURFACES (AND STRIP PAINTED SURFACES) TO BARE BRIGHT METAL PRIOR TO MAKING GROUND CONNECTIONS. APPLY ANTI-OXIDE COMPOUND TO ALL CONNECTIONS. APPLY ZINC RICH PAINT (COLD GALV.) TO ALL EXOTHERMIC WELDS, AND TO ANY METAL EXPOSED BY CLEANING, STRIPPING, GRINDING, CUTTING OR DRILLING.
9. ALL GROUNDING CONDUCTORS ABOVE GRADE SHALL BE RUN IN 3/4" FLEXIBLE PVC CONDUIT. CONDUIT SHALL BEGIN WITHIN 3/4" OF ABOVE GROUND CONNECTION POINT, SHALL EXTEND 24" BELOW GRADE MINIMUM, AND SHALL BE FILLED WITH SEALANT AT ABOVE GROUND CONNECTION POINT. SECURE CONDUIT EVERY 24" ON VERTICAL RUNS AND EVERY 36" ELSEWHERE WITH NON-METALLIC TIES.
10. WHERE POSSIBLE, MOUNT TDSCA-PA14 TOWER BOTTOM GROUND BAR ON DEDICATED POST BELOW COAX CABLES COMING OFF TOWER. WHERE INSTALLATION OF POST WOULD PUT TOWER BOTTOM GROUND BAR TOO FAR FROM COAX GROUND KITS, CLAMP TDSCA-BC14 TOWER BOTTOM GROUND BAR DIRECTLY TO TOWER STEEL (USUALLY OCCURS ON MONOPOLE TOWERS) AND BOND TO TOWER GROUND RING WITH TWO #2 STC LEADS LUGGED TO GROUND BAR AND EXOTHERMICALLY WELDED TO GROUND RING.
11. AT EQUIPMENT PAD, SUSPEND TDSCA-WB17 EXTERIOR GROUND BAR FROM ICE BRIDGE AND ISOLATE FROM ICE BRIDGE. BOND GROUND BAR TO EQUIPMENT GROUND RING WITH TWO #2 STC LEADS LUGGED TO GROUND BAR AND EXOTHERMICALLY WELDED TO GROUND RING. RUN LEADS DOWN NEAREST ICE BRIDGE POST AND SECURE TO POST WITH NON-METALLIC TIES EVERY 24 INCHES.
12. ALL ICE BRIDGE SECTIONS ARE TO BE JUMPERED TOGETHER WITH #2 WIRE, EITHER BARE TINNED COPPER OR GREEN INSULATED STRANDED. ICE BRIDGE SHALL BE GROUNDED AT EACH END WITH #2 STC WIRE LUGGED TO ICE BRIDGE AND EXOTHERMICALLY WELDED TO UPPER PORTION OF NEAREST ICE BRIDGE POST.
13. BOND EACH ICE BRIDGE POST TO GROUND RING WITH #2 STC LEAD. EXOTHERMICALLY WELD #2 TO ICE BRIDGE POST BELOW TOP OF GRAVEL. EACH POST TO HAVE SEPARATE GROUND LEAD - DO NOT DAISY CHAIN POSTS TOGETHER.
14. BOND EACH H-FRAME POST TO NEAREST PORTION OF GROUND SYSTEM WITH #2 STC LEAD. EXOTHERMICALLY WELD #2 TO H-FRAME POST BELOW TOP OF GRAVEL.
15. BOND SURFACE MOUNTED CABLE TRAY TO GROUND RING WITH #2 STC LEAD LUGGED TO SIDE OF GRIP STRUT CABLE TRAY COVER AND EXOTHERMICALLY WELDED TO GROUND RING.
16. BOND EACH COMMSCOPE RBA72 CABINET AND EACH ERICSSON 6120 CABINET TO GROUND RING WITH #2 AWG TINNED SOLID BARE COPPER CONDUCTOR LUGGED TO CABINET GROUND BAR AND EXOTHERMICALLY WELDED TO GROUND RING. RUN GROUND LEAD IN FLEX CONDUIT ACROSS CONCRETE PAD BELOW CABLE LADDER, THEN DOWN INTO GRAVEL AREA. CONNECT FLEX CONDUIT TO CABINET AT FACTORY KNOCKOUT (RBA72) OR PLINTH COVER PLATE (6120) WITH POSITIVE MECHANICAL FLEXIBLE CONDUIT FITTING.
17. BOND EACH COMMSCOPE RBA72-36 BATTERY CABINET TO GROUND RING WITH #2 AWG TINNED SOLID BARE COPPER CONDUCTOR LUGGED TO CABINET BODY AND EXOTHERMICALLY WELDED TO GROUND RING. RUN GROUND LEAD IN FLEX CONDUIT ALONG BACK OF RBA72 CABINET, ACROSS CONCRETE PAD BELOW CABLE LADDER, THEN DOWN INTO GRAVEL AREA. CONNECT TWO HOLE LUG TO BACK OF CABINET AT FACTORY PROVIDED GROUNDING STUDS.
18. BOND GENERATOR TO GROUND RING WITH #2 STC AT TWO DIAGONALLY OPPOSITE LOCATIONS BY DRILLING AND BOLTING TWO HOLE LUG TO FINS ON GENERATOR BASE STRUCTURE. GROUND LEADS SHOULD RUN ALONG BASE OF GENERATOR AND TAKE SHORTEST PATH ACROSS CONCRETE PAD TO GRAVEL AREA, THEN CONTINUE TO GROUND RING.
19. PROVIDE TWO GROUND RODS OUTSIDE GATES OF COMPOUND. DISTANCE BETWEEN GROUND RODS SHALL MATCH WIDTH OF GATE OPENING, AND DISTANCE FROM FENCE SHALL MATCH LENGTH OF LONGEST INDIVIDUAL GATE LEAF. BOND GATE POSTS TOGETHER WITH #2 STC LEAD WHICH RUNS PAST AND CONNECTS TO GROUND RODS OUTSIDE GATES.
20. BOND EACH GATE POST WITH #2 STC TO NEAREST PORTION OF GROUNDING SYSTEM INSIDE COMPOUND.
21. BOND EACH GATE TO GATE POST WITH FLEXIBLE INSULATED OR BRAIDED #4/0 COPPER STRAP. EXOTHERMICALLY WELD STRAP TO BOTH GATE AND GATE POST.
22. ANY FENCE POST WITHIN 6FT OF A GROUNDED METAL OBJECT SHALL BE BONDED TO THE NEAREST GROUND RING. ANY FENCE WITHIN 6FT OF A GROUND RING SHALL HAVE THE LINE POSTS BONDED TO THE GROUND RING AT 20FT MAXIMUM INTERVALS AS MEASURED ALONG THE LENGTH OF THE FENCE.
23. NOTIFY VZW CM TO INSPECT GROUND RING BEFORE BACKFILLING. CONTRACTOR SHALL HIRE A 3RD PARTY TO PERFORM AN IEEE81 FALL OF POTENTIAL METHOD GROUND TEST. MAXIMUM ALLOWABLE RESISTANCE TO GROUND IS 5 OHMS. PROVIDE ADDITIONAL GROUND SYSTEM COMPONENTS AS REQUIRED TO ACHIEVE THIS VALUE.
24. REFER TO TOWER GROUNDING DIAGRAM AND NOTES FOR GROUND SYSTEM REQUIREMENTS ON THE TOWER.
25. GROUNDING OF ALL ELECTRICAL EQUIPMENT SHALL BE AS PER NEC, MUNICIPAL AND UTILITY COMPANY REQUIREMENTS.
26. BOND METER TO ISOLATED GROUND ROD. (MULTI TENANT ONLY)

PREPARED FOR:

verizon

8921 RESEARCH DRIVE
CHARLOTTE, NC 28262
ATTN: SCOTT McPHERSON (704) 510-8531

A&E FIRM:
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1875 OLD ALABAMA ROAD, SUITE 1008
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VERIZON WIRELESS SITE NAME:

DUCKY

DESIGN TYPE: RAWLAND

SHEET TITLE:

GROUNDING SITE NOTES

DRAWING NO.

E-4

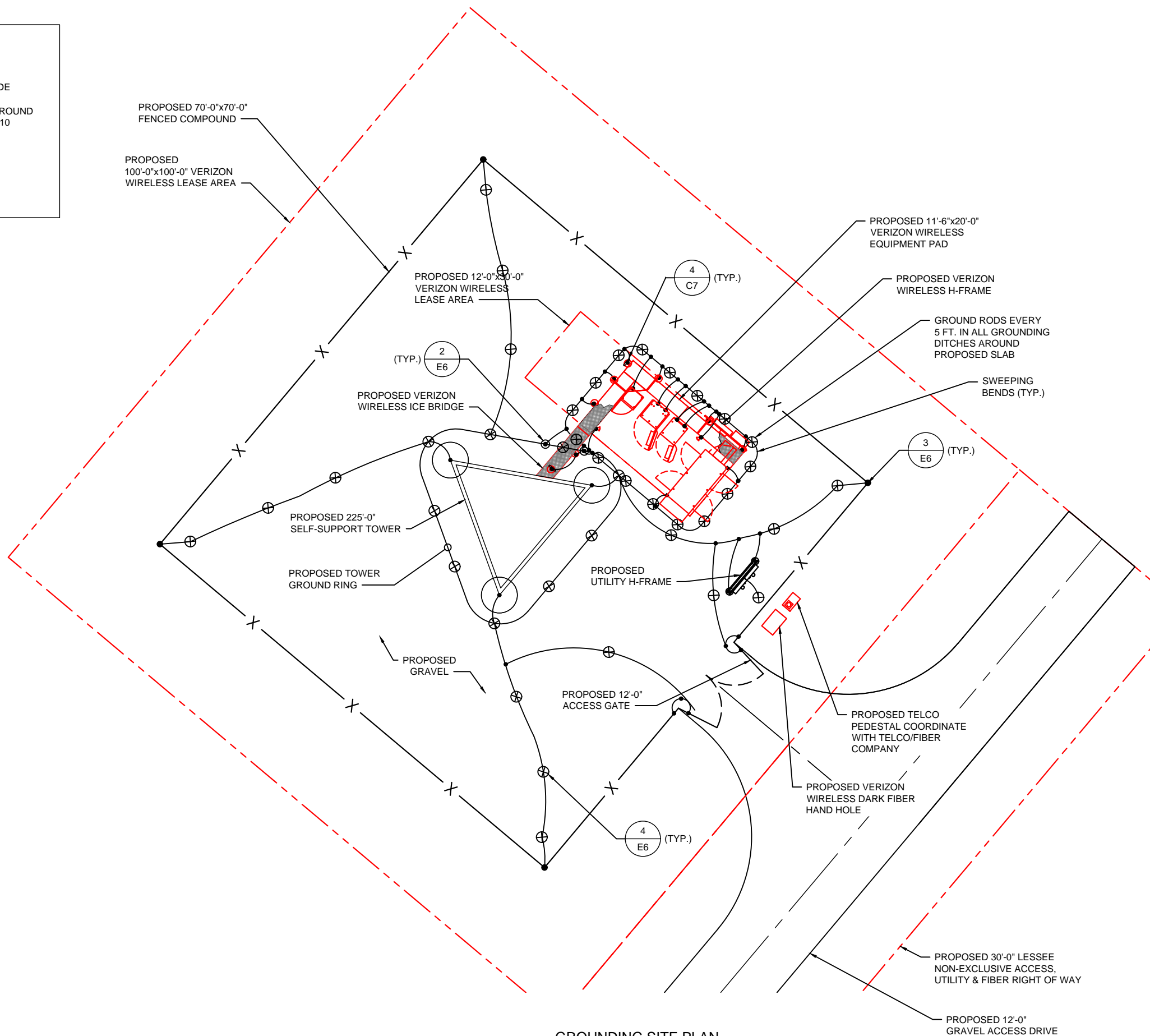
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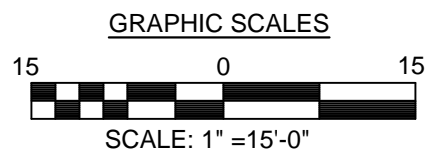
GROUNDING LEGEND:

- #2 AWG SOLID TINNED COPPER
GROUND CABLE 30" BELOW GRADE
- ⊗ 5/8" X 10' COPPER CLAD STEEL GROUND
ROD: ALLTEC PART #GR-CCS-5/8-10
- PARALLEL CADWELD
- ⊙ INSPECTION SLEEVE
- ⊙/### CHEMICAL GROUND ROD

NOTE:
PROVIDE #2 GROUND LEADS FROM
GRIP STRUT TO ICE BRIDGE POSTS.
USE LUG CONNECTION TO GRIP STRUT
AND CADWELD TO ICE BRIDGE POSTS.



GROUNDING SITE PLAN
SCALE: 1" = 15'-0"



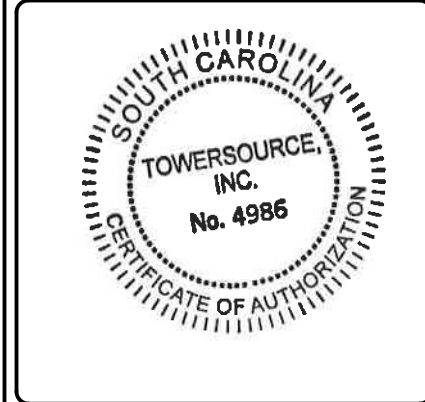
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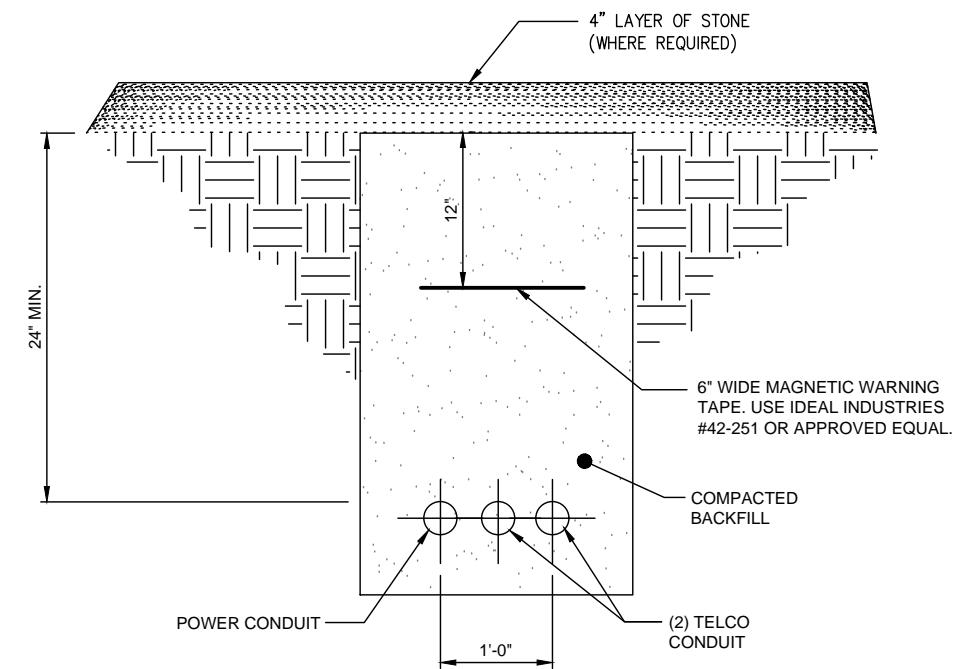


VERIZON WIRELESS SITE NAME:
DUCKY

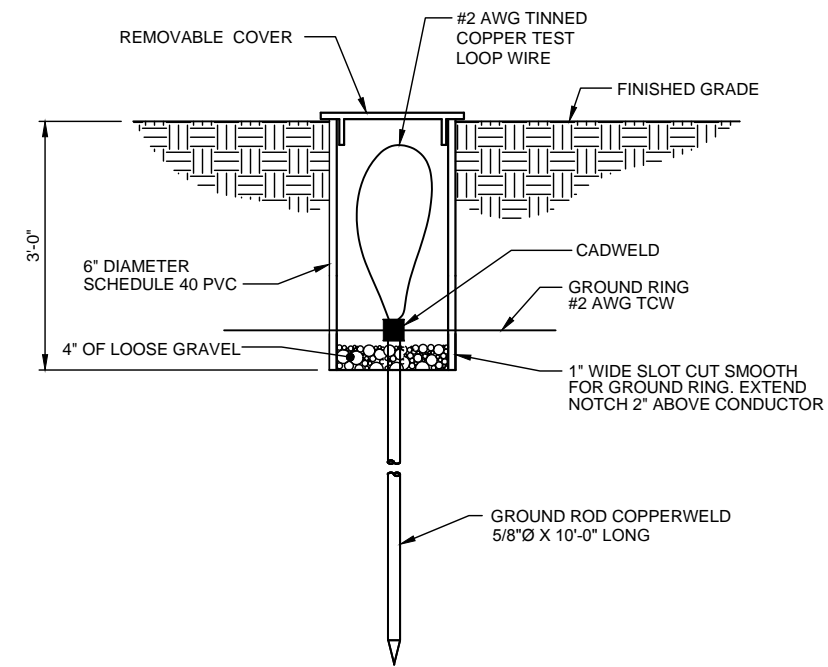
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SHEET TITLE:
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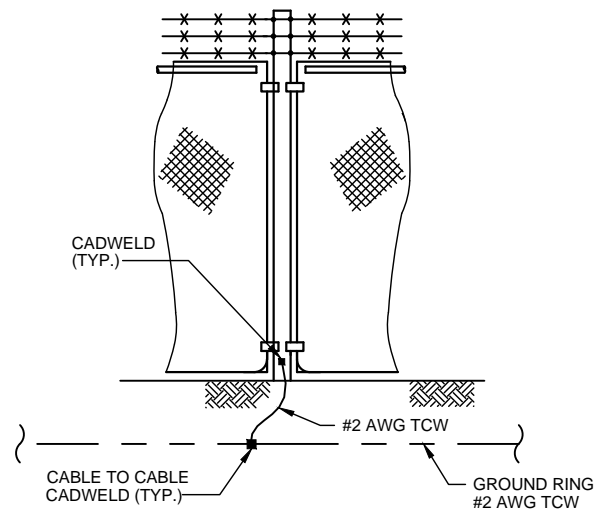
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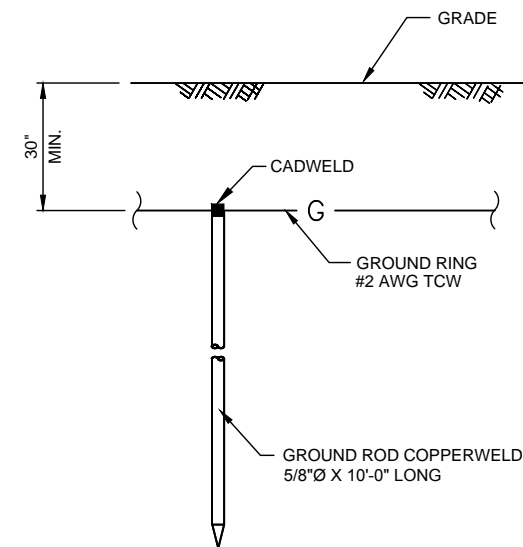
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E6



2
E6



3
E6



4
E6

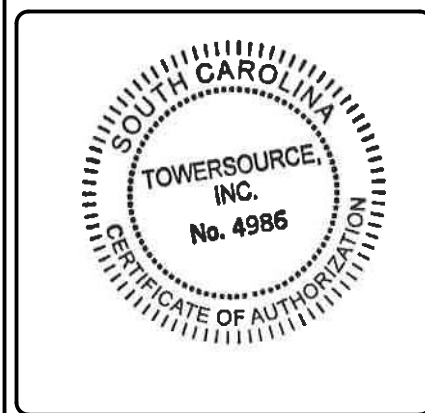
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DESIGN TYPE:
RAWLAND

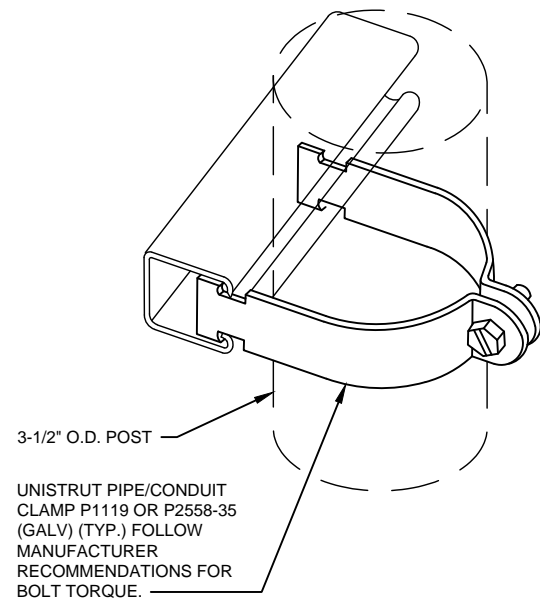
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GROUNDING DETAILS

DRAWING NO.:
E-6

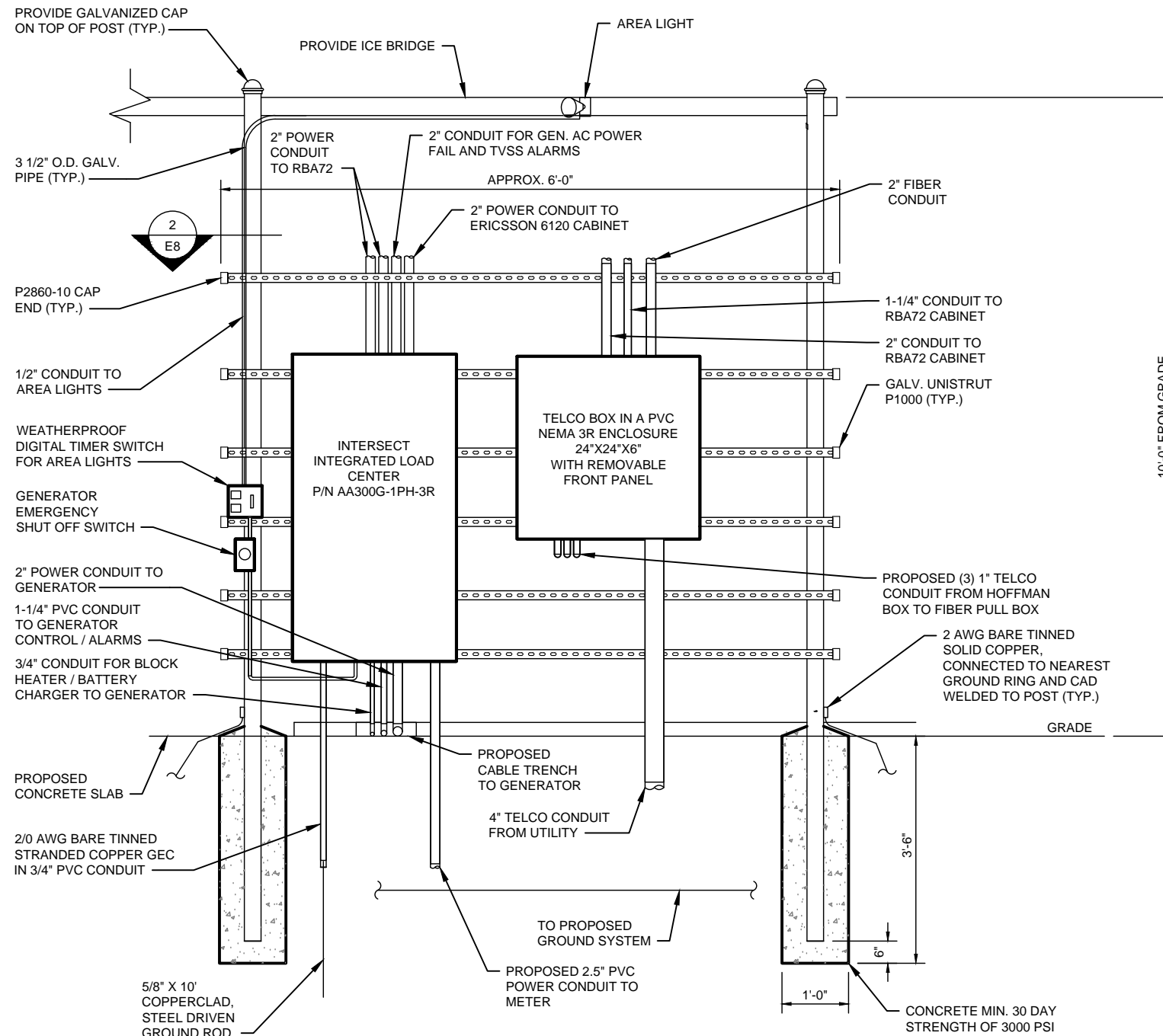
REVISION:
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GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE, STATE BUILDING CODES AND THE LOCAL BUILDING CODES. ALL COMPONENTS SHALL BE U.L. LISTED
2. REFER TO SITE LAYOUT PLAN FOR THE EXACT LOCATION OF H-FRAME.
3. CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY FOR METER.
4. CONTRACTOR TO PROVIDE AND INSTALL METER BASE IF REQUIRED.
5. RAWLAND ONLY-CONTRACTOR TO LOCATE METER RACK TO ENSURE WORKING SPACES REQUIRED BY THE NEC (ART. 110.26), STATE, OR LOCAL CODES ARE MAINTAINED BOTH ON THE FRONT SIDE AND THE BACK SIDE OF THE H-FRAME.
6. SHOW LOCATION (INCLUDING DIMENSIONS) OF ALL CAPPED UNDERGROUND CONDUIT ON FINAL AS-BUILT DRAWINGS SUBMITTED TO OWNER.
7. COORDINATE EXACT LOCATION OF UNDERGROUND FEEDERS AND CIRCUITRY WITH THE OWNER.
8. CONTRACTOR SHALL COORDINATE EFFORTS WITH (LOCAL ELECTRICAL AUTHORITY HAVING JURISDICTION (AHJ) AND OTHER TRADES TO DETERMINE "FROST" LINE, AND TYPE(S) OF RACEWAYS REQUIRED FOR INSTALLATION.
9. BOND ALL ELECTRICAL EQUIPMENT TO RACK.
10. DIMENSIONS SHOWN ARE APPROXIMATE AND MAY BE ALTERED IN THE FIELD AS APPROVED BY OWNER TO BETTER SUIT ACTUAL CONDITIONS OR EQUIPMENT RECEIVED.
11. FOR ANY METAL CONDUIT ENTERING AN ENCLOSURE WHERE A PRE-PUNCHED CONCENTRIC OR ECCENTRIC KNOCKOUT IS USED, THE CONTRACTION SHALL ENSURE ADEQUATE BONDING BETWEEN THE METAL CONDUIT AND ENCLOSURE BY INSTALLING A BONDING JUMPER AROUND THE CONCENTRIC OR ECCENTRIC KNOCKOUT.
12. CONTRACTOR SHALL INSURE THAT NO OPERABLE DEVICE SHALL EXCEED 6'-6" TO CENTER LINE OF DEVICE.



UNISTRUT SUPPORT
NTS



H-FRAME DETAIL (FRONT)
NTS



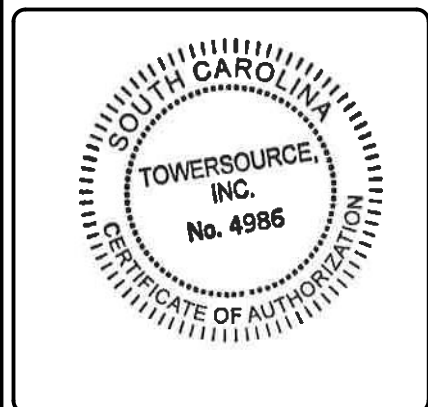
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DUCKY
DESIGN TYPE:
RAWLAND

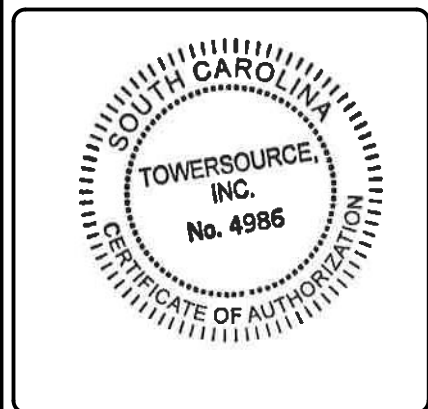
SHEET TITLE:
H-FRAME ELEVATION
(FRONT)

DRAWING NO.
E-8
REVISION:
1

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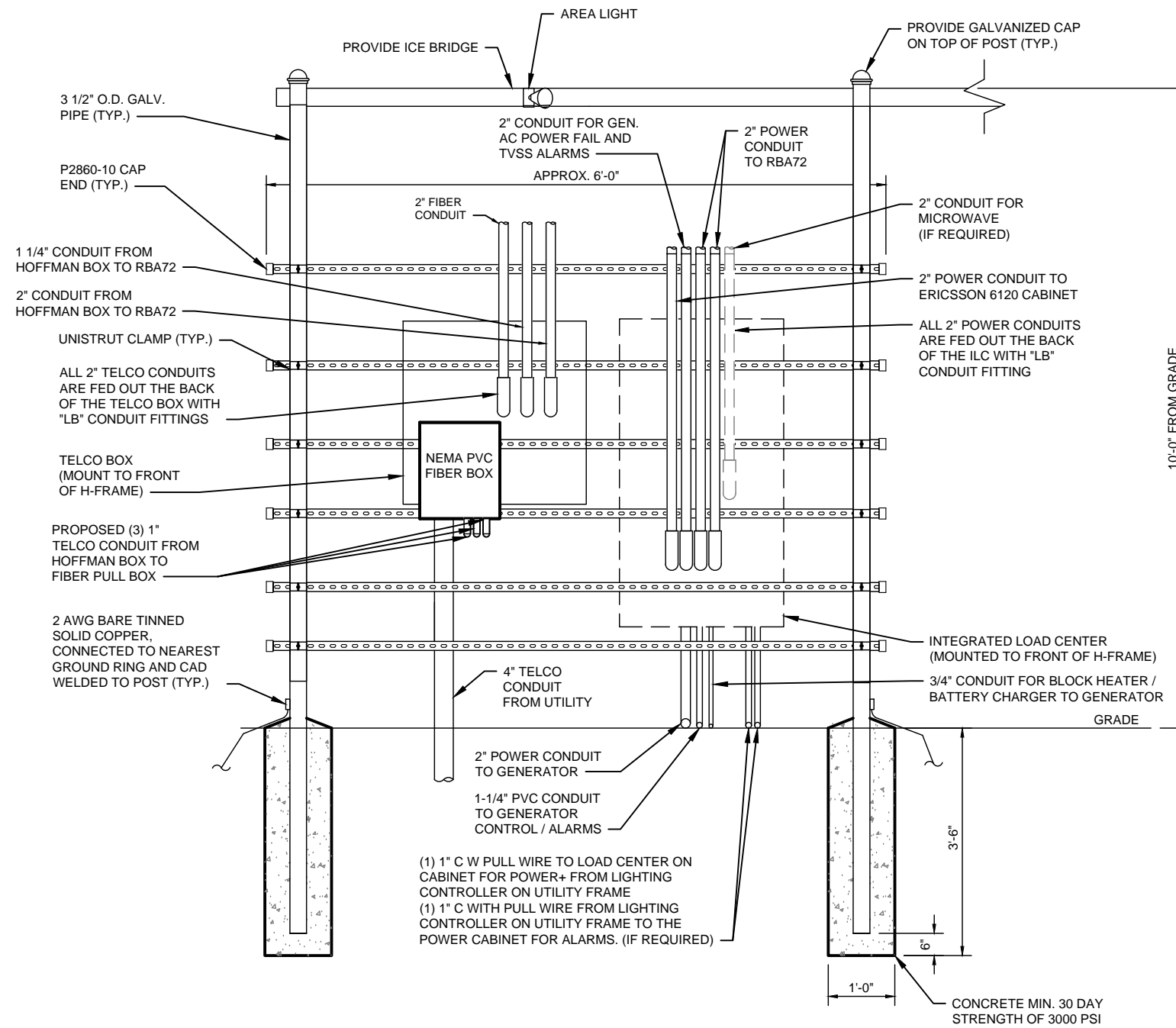
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VERIZON WIRELESS SITE NAME:
DUCKY
 DESIGN TYPE:
 RAWLAND

SHEET TITLE:
 H-FRAME ELEVATION
 (BACK)

DRAWING NO.
E-9
 REVISION:
1

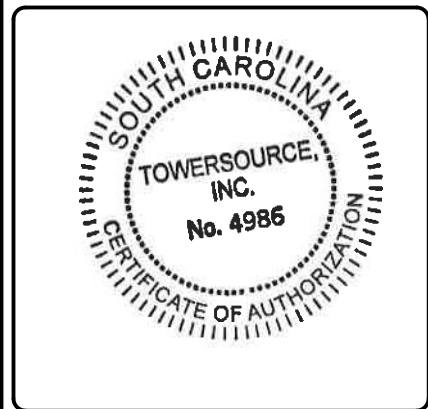


H-FRAME DETAIL (BACK) 1
 NTS E9

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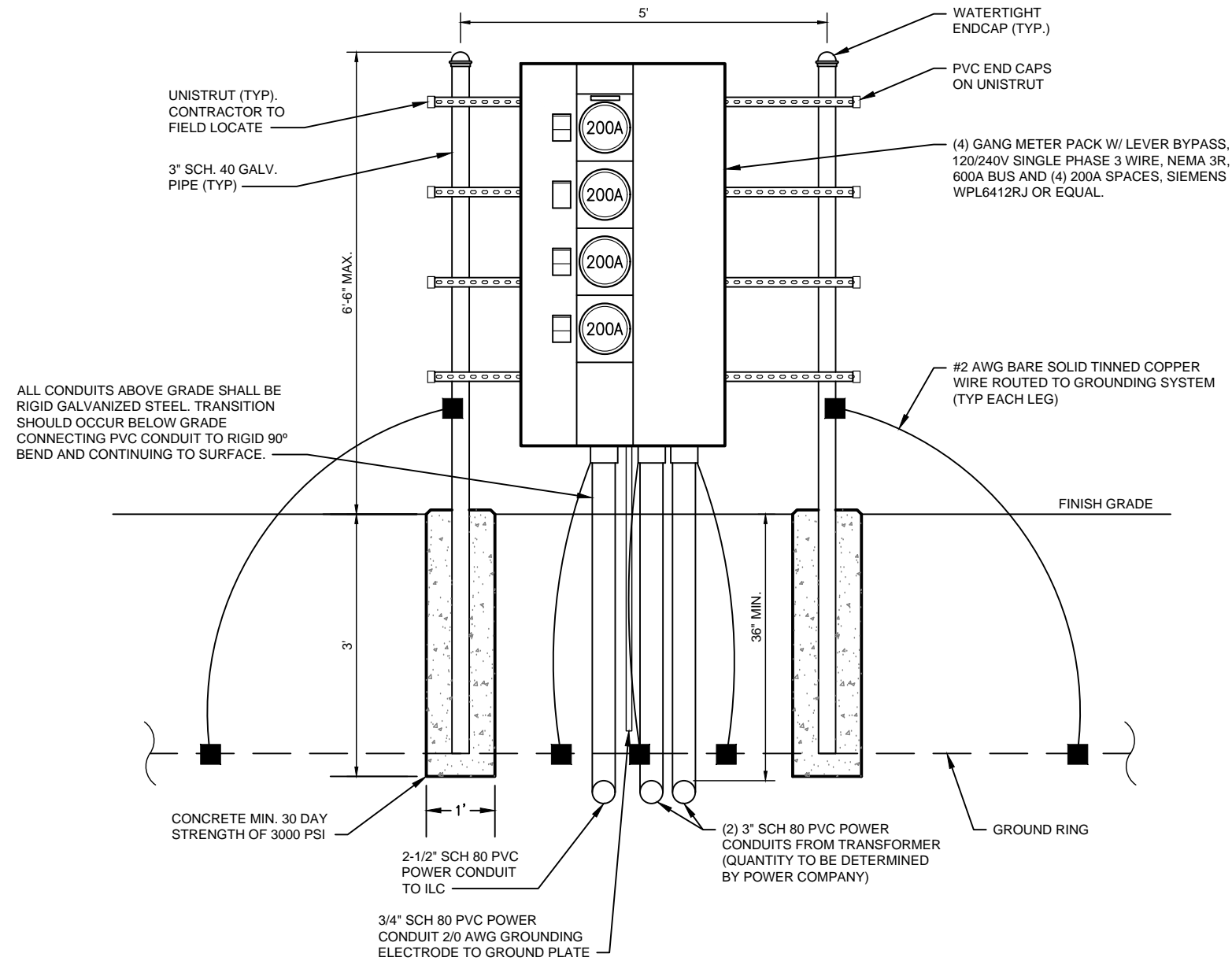


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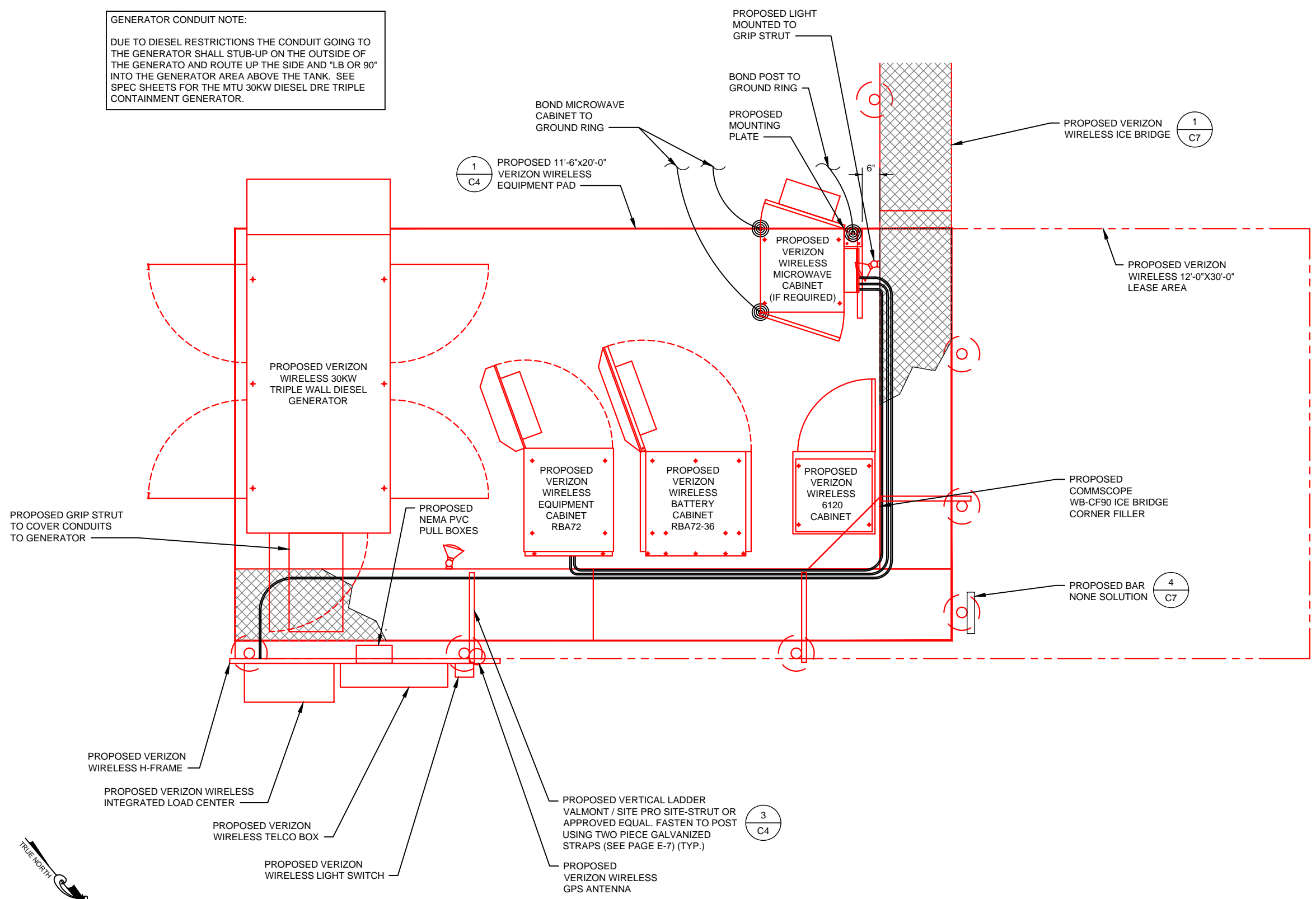
SHEET TITLE:
 METER FRAME
 DETAIL

DRAWING NO. **E-10** REVISION: **1**



UTILITY FRAME DETAIL (GANG METER) 1
 NTS E10

GENERATOR CONDUIT NOTE:
 DUE TO DIESEL RESTRICTIONS THE CONDUIT GOING TO THE GENERATOR SHALL STUB-UP ON THE OUTSIDE OF THE GENERATOR AND ROUTE UP THE SIDE AND "LB OR 90" INTO THE GENERATOR AREA ABOVE THE TANK. SEE SPEC SHEETS FOR THE MTU 30KW DIESEL DRE TRIPLE CONTAINMENT GENERATOR.



PREPARED FOR:
verizon
 8921 RESEARCH DRIVE
 CHARLOTTE, NC 28262
 ATTN: SCOTT McPHERSON (704) 510-8531

A&E FIRM:
towersource
 1875 OLD ALABAMA ROAD, SUITE 1008
 ROSWELL, GA 30076
 TEL: 678-990-2338 FAX: 678-990-2342

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A&E PROJECT #:	20161498104
DRAWN BY:	JBE
CHECKED BY:	EBU

REVISIONS		
NO.	DATE	DESCRIPTION
A	06/27/17	ISSUED FOR REVIEW
0	07/28/17	ISSUED FOR CONSTRUCTION
1	10/10/17	REVISED GENERATOR PER COMMENTS



VERIZON WIRELESS SITE NAME:
DUCKY

DESIGN TYPE:
 RAWLAND

SHEET TITLE:
 MICROWAVE
 DETAIL OPTION

DRAWING NO. **M-1** REVISION: **1**

GRAPHIC SCALES



MICROWAVE DETAIL OPTION
 SCALE 11"x17": 1" = 3'-0"

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**Federal Communications Commission
Wireless Telecommunications Bureau**

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign KNKQ351	File Number
Radio Service CL - Cellular	
Market Numer CMA625	Channel Block A
Sub-Market Designator 0	

FCC Registration Number (FRN): 0003290673

Market Name South Carolina 1 - Oconee

Grant Date 09-05-2012	Effective Date 11-01-2016	Expiration Date 10-01-2022	Five Yr Build-Out Date	Print Date
---------------------------------	-------------------------------------	--------------------------------------	-------------------------------	-------------------

Site Information:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
1	34-41-05.1 N	083-00-45.5 W	264.5	114.0	1049634

Address: 729 RICHLAND

City: Seneca **County:** OCONEE **State:** SC **Construction Deadline:**

Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	86.700	119.100	117.200	137.000	105.100	129.600	106.400	78.900
Transmitting ERP (watts)	78.980	78.980	78.980	78.980	78.980	78.980	78.980	78.980

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKQ351

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
2	34-51-33.0 N	083-03-30.0 W	347.5	153.6	1048804

Address: GEORGE TODD RD

City: TAMASSEE County: OCONEE State: SC Construction Deadline:

Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	-64.800	95.500	166.800	162.800	148.000	18.900	-64.400	-122.500
Transmitting ERP (watts)	103.590	103.590	103.590	103.590	103.590	103.590	103.590	103.590

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
3	34-47-53.0 N	083-14-34.0 W	1357.9	43.0	

Address: 197 Walters Mtn. Rd

City: MOUNTAIN REST County: OCONEE State: SC Construction Deadline:

Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	37.600	66.100	171.600	263.000	258.500	156.400	96.200	-48.600
Transmitting ERP (watts)	83.310	83.310	83.310	83.310	83.310	83.310	83.310	83.310

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
4	35-04-47.3 N	083-12-39.5 W	1255.9	45.7	

Address: #6 at Pine Circle

City: Highlands County: MACON State: NC Construction Deadline:

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	66.900	98.100	189.000	410.300	499.900	192.500	389.000	496.500
Transmitting ERP (watts)	4.250	10.960	41.840	50.130	47.880	50.130	29.380	5.880

Control Points:

Control Pt. No. 3

Address: 500 West Dove Rd.

City: Southlake County: TARRANT State: TX Telephone Number: (800)264-6620

Waivers/Conditions:

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
1120 SANCTUARY PKWY, #150 GASA5REG
ALPHARETTA, GA 30009-7630

Call Sign WQGA716	File Number
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date 11-29-2006	Effective Date 03-02-2016	Expiration Date 11-29-2021	Print Date
Market Number REA002	Channel Block F	Sub-Market Designator 19	
Market Name Southeast			
1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710-1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02-353, rel. April 20, 2006.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at <http://wireless.fcc.gov/uls/index.htm?job=home> and select "License Search". Follow the instructions on how to search for license information.

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Table with Call Sign (WQHI466), File Number, and Radio Service (AW - AWS) details.

FCC Registration Number (FRN): 0003290673

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, and Build-out Dates.

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users...

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof...

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign WPUD533	File Number
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003290673

Grant Date 02-06-2008	Effective Date 11-01-2016	Expiration Date 12-29-2017	Print Date
Market Number BTA016	Channel Block C	Sub-Market Designator 6	
Market Name Anderson, SC			
1st Build-out Date 12-29-2002	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
1120 SANCTUARY PKWY #150 - GASA5REG
ALPHARETTA, GA 30009

Call Sign WQVN946	File Number
Radio Service AT - AWS-3 (1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date 04-08-2015	Effective Date 04-16-2015	Expiration Date 04-08-2027	Print Date
Market Number BEA041	Channel Block I	Sub-Market Designator 0	
Market Name Greenville-Spartanburg-Anderso			
1st Build-out Date 04-08-2021	2nd Build-out Date 04-08-2027	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at <http://wireless.fcc.gov/uls/index.htm?job=home> and select "License Search". Follow the instructions on how to search for license information.

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
1120 SANCTUARY PKWY #150 - GASA5REG
ALPHARETTA, GA 30009

Call Sign WQVN945	File Number
Radio Service AT - AWS-3 (1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date 04-08-2015	Effective Date 04-16-2015	Expiration Date 04-08-2027	Print Date
Market Number BEA041	Channel Block H	Sub-Market Designator 0	
Market Name Greenville-Spartanburg-Anderso			
1st Build-out Date 04-08-2021	2nd Build-out Date 04-08-2027	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
1120 SANCTUARY PKWY, #150 GASA5REG
ALPHARETTA, GA 30009-7630

Table with Call Sign (WQJQ690), File Number, and Radio Service (WU - 700 MHz Upper Band (Block C)).

FCC Registration Number (FRN): 0003290673

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

If the facilities authorized herein are used to provide broadcast operations, whether exclusively or in combination with other services, the licensee must seek renewal of the license either within eight years from the commencement of the broadcast service or within the term of the license had the broadcast service not been provided, whichever period is shorter in length. See 47 CFR §27.13(b).

This authorization is conditioned upon compliance with section 27.16 of the Commission's rules

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQJQ690

File Number:

Print Date:

This authorization is subject to the condition that the station license limits the effective radiated power relative to a dipole (ERPd) antenna to 1238 watts per 10 MHz bandwidth at 333.7 degrees true azimuth bearing for all antennas associated with location no.1 (Lexington, VA) with coordinates of 37-47-19.5 N, 79-29-15.1 W. See Quiet Zone Notification authorized with grant of FN 0004834212.

This authorization is subject to the condition that the station license limits the effective radiated power to 196 watts per 10 MHz bandwidth at 7 degrees true azimuth bearing for all antennas associated with location no. 5 (Covington, VA) with coordinates of 37-47-35.1 N, 79-55-58.4 W. See Quiet Zone Notification authorized with grant of FN 0004880708.

This authorization is subject to the condition that the station license limits the effective radiated power to 856 watts per 10 MHz bandwidth at 320 degrees true azimuth bearing for all antennas associated with location no. 6 (Fairfield, VA) with coordinates of 37-53-48.4 N, 79-15-59.1 W. See Quiet Zone Notification authorized with grant of FN 0004880708.

This authorization is subject to the condition that the station license limits the effective radiated power to 9.8 watts per 10 MHz bandwidth at 359 degrees true azimuth bearing for all antennas associated with location no. 12 (Eagle Rock, VA) with coordinates of 37-37-55.8 N, 79-49-50.0 W. See Quiet Zone Notification authorized with grant of FN 0004880708.

This authorization is subject to the condition that the station license limits the effective radiated power relative to a dipole (ERPd) antenna to 918 watts per 10 MHz unit bandwidth at 29.6 degrees true azimuth bearing for all antennas associated with location no. 17 (White Sulphur Spring, WV) with coordinates of 37-47-19.6 N, 80-18-22.7 W. See Quiet Zone Notification authorized with grant of FN 0004880708.

This authorization is subject to the condition that the station license limits the effective radiated power relative to a dipole (ERPd) antenna to 264 watts per 10 MHz unit bandwidth at 352.4 degrees true azimuth bearing for all antennas associated with location no. 19 (Buchanan, VA) with coordinates of 37-33-45.0 N, 79-41-21.9 W. See Quiet Zone Notification authorized with grant of FN 0004908392.

This authorization is subject to the condition that the station license limits the effective radiated power relative to a dipole (ERPd) to 781 watts per 10 MHz unit bandwidth at 293.93 degrees true azimuth bearing for all antennas associated with location no. 21 (Waynesboro, VA) with coordinates of 38-06-55.6 N, 78-54-55.5 W. See Quiet Zone Notification authorized with grant of FN 0004970422.

This authorization is subject to the condition that the station license limits the effective radiated power to 20.23 dBW per 10 MHz bandwidth at 297.4 degrees true azimuth bearing for all antennas associated with location no. 24 (Waynesboro, VA) with coordinates of 38-02-29.4 N, 78-52-11.6 W. See Quiet Zone Notification authorized with grant of FN 0005104523.

This authorization is subject to the condition that the station license limits the effective radiated power (ERP) to 12.9 watts per 10 MHz bandwidth at 9.1 degrees true azimuth bearing for all antennas associated with location no. 31 (Covington, VA) with coordinates of 37-51-51.4 N, 79-57-22.4 W. See Quiet Zone Notification authorized with grant of FN 0005178701.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQJQ690

File Number:

Print Date:

This authorization is subject to the condition that the station license limits the effective radiated power to 1327 watts per 10 MHz bandwidth at 291.8 degrees true azimuth bearing for all antennas associated with location no. 30 (Staunton, VA) with coordinates of 38-09-23.7 N, 78-57-02.9 W. See Quiet Zone Notification authorized with grant of FN 0005168812.

This authorization is subject to the condition that the station license limits the effective radiated power to 712 watts per 10 MHz bandwidth at 37.5 degrees true azimuth bearing for all antennas associated with location no. 28 (Lewisburg, WV) with coordinates of 37-48-42.7 N, 80-26-54.5 W. See Quiet Zone Notification authorized with grant of FN 0005223750.

This authorization is subject to the condition that the station license limits the effective radiated power to 877 watts per 10 MHz bandwidth at 296.22 degrees true azimuth bearing for all antennas associated with location no. 29 (Waynesboro, VA) with coordinates of 38-05-37.6 N, 78-57-05.3 W. See Quiet Zone Notification authorized with grant of FN 0005223750.

This authorization is subject to the condition that the station license limits the effective radiated power to 126 watts per 10 MHz bandwidth at 29.7 degrees true azimuth bearing for all antennas associated with location no. 53 (White Sulphur Spring, WV) with coordinates of 37-48-05.7 N, 80-17-54.5 W. See Quiet Zone Notification authorized with grant of FN 0005271165.

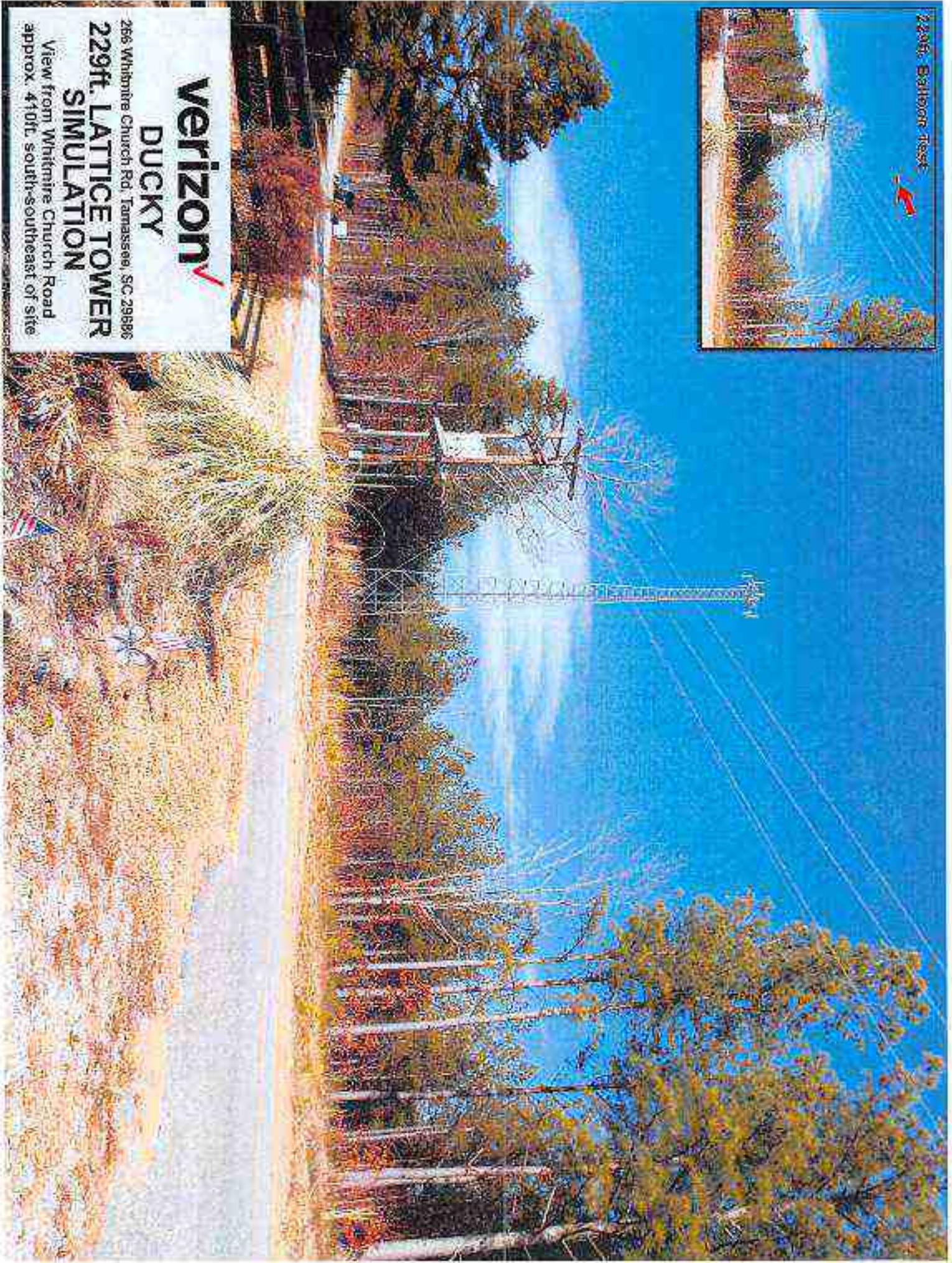
This authorization is subject to the condition that the station license limits the effective radiated power to 1129 watts per 10 MHz bandwidth at 35 degrees true azimuth bearing for all antennas associated with location no. 52 (Lewsburg, WV) with coordinates of 37-48-47.3 N, 80-23-33.9 W. See Quiet Zone Notification authorized with grant of FN 0005272906.

This authorization is subject to the condition that the station license limits the effective radiated power to 763 watts per 10 MHz bandwidth at 36.99 degrees true azimuth bearing for all antennas associated with location no. 52 (Fairlea, WV) with coordinates of 37-47-03.0 N, 80-27-55.6 W. See Quiet Zone Notification authorized with grant of FN 0005287264.

This authorization is subject to the condition that the station license limits the effective radiated power to 83 watts per 10 MHz bandwidth at 27.85 degrees true azimuth bearing for all antennas associated with location no. 53 (White Sulphur Springs, WV) with coordinates of 37-47-29.0 N, 80-16-23.30 W. See Quiet Zone Notification authorized with grant of FN 0005287264.

This authorization is subject to the condition that the station license limits the effective radiated power to 592 watts per 10 MHz bandwidth at 284.9 degrees true azimuth bearing for all antennas associated with location no. 62 (Mount Sidney, VA) with coordinates of 38-15-18.1 N, 78-58-22.3 W. See Quiet Zone Notification authorized with grant of FN 0005690131.

This authorization is subject to the condition that the station license limits the effective radiated power to 87 watts 700LTE at 298.03 degrees true azimuth bearing for all antennas associated with location no. 62 (Afton, VA) with coordinates of 38-01-43.5 N, 78-51-37.8 W. See Quiet Zone Notification authorized with grant of FN 0005669760.



Verizon

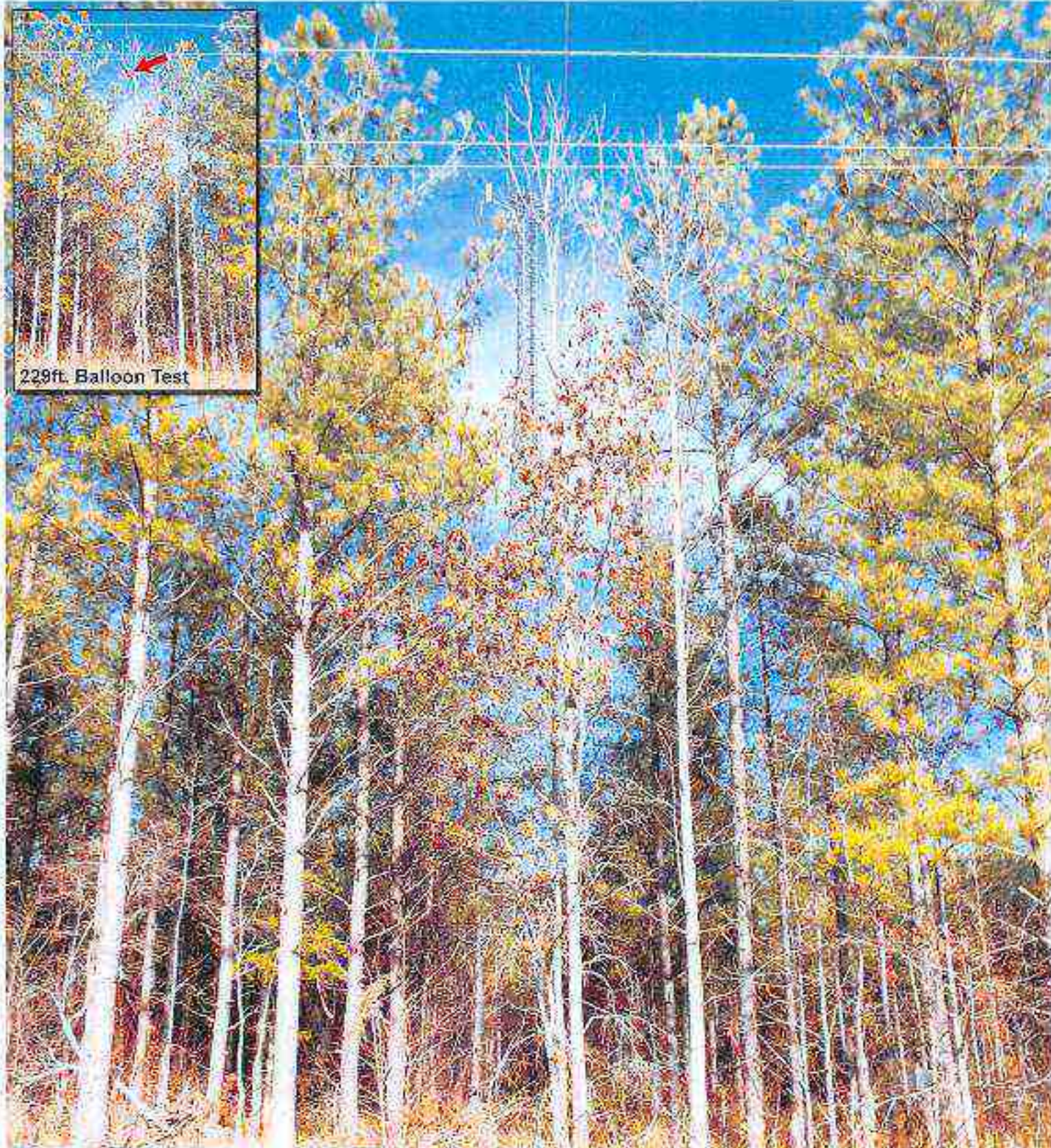
DUCKY

**229ft. LATTICE TOWER
SIMULATION**

266 Whitmire Church Rd, Tamassee, SC 29686
View from Whitmire Church Road
approx. 410ft. south-southeast of site



verizon ✓
DUCKY
266 Whitmire Church Rd, Tamassee, SC 29686
**229ft. LATTICE TOWER
SIMULATION**
View from Whitmire Church Road
approximately 760ft. northwest of site



verizon ✓
DUCKY

266 Whitmire Church Rd, Tamasee, SC 29886

**229ft. LATTICE TOWER
SIMULATION**

View from Whitmire Church Road
approximately 250ft. southwest of site