



October 28th, 2019

TO: County of Albemarle - Department of Community Development 401 McIntire Road, North Wing Charlottesville, VA 22902

**RE: Verizon / Yancey Mills (Patterson Property) Tier II Personal Wireless Service Facility
Special Exception Request for Modified Flush-mount Antenna Mounting**

To Whom It May Concern:

This letter is being submitted pursuant to Section 5.1.40.a(12) as a request for approval of a Special Exception to modify Section 5.1.40.b(2)(c) - Projection in order to allow Verizon's proposed antennas to be installed in a modified flush-mount array.

Please find information supporting Verizon's request in the sections provided below:

Section 5.1.40.a(12): "Special Exception. If the proposed facility does not comply with any provision of section 5.1.40, the applicant shall request a special exception in writing as part of the application. The request shall identify which regulation in section 5.1.40 for the special exception is requested and a justification for the special exception."

Verizon will address the requests and justifications for required Special Exceptions below:

Request to modify Section 5.1.40.b(2)(c) of the Zoning Ordinance: "Projection. No antenna shall project from the facility, structure or building beyond the minimum required by the mounting equipment, and in no case shall the closest point of the back of the antenna be more than twelve (12) inches from the facility, structure, or building, and in no case shall the farthest point of the back of the antenna be more than eighteen (18) inches from the facility, structure, or building." The proposed alternative mounts will allow all six of Verizon's antennas to be installed at the same mounting level on the proposed monopole, but they won't allow the antennas to meet the smaller maximum stand-off restriction of 12 inches. Therefore, Verizon is requesting approval of this Special Exception to allow a modification of the standard restrictions on antenna mounting distances. In this case, the closest point from the monopole bottom to top at the backs of the proposed antennas will be approximately 18". Therefore, the proposed mounts will allow antennas to comply with the larger of the standoff limitations by being 18" from the monopole's face at their tops and bottoms.

513 Stewart Street
Suite E
Charlottesville, VA 22902



Instead of requiring mechanical (physical) tilting, the proposed Commscope NHH-65C-R2B antennas are equipped with Remote Electrical Tilt (RET) capabilities that allow antenna elements and their beams to be tilted electronically from inside the panels and without changing the distance from the

monopole. Therefore, the greatest distance between the antennas and pole will actually be equal to or less than 18" which maximum that is allowed.

Approval of the proposed Special Exception will allow Verizon to better serve the surrounding areas in a more efficient way by allowing all six (6) of the antennas to clear the treetops and deploy the company's four licensed frequencies at the same mounting height. This is especially important, because in previous cases Verizon had been required to vertically stack two (2) separate antennas arrays, with parts of the lower antennas being situated below the tops of some surrounding trees. At the same time, the distance between the monopole and antennas within the proposed array will not greatly increase any perceived visual impacts because the antennas will still comply with the maximum distance that is normally allowed. Verizon also notes that the proposed configuration has been approved for other facilities within Albemarle County, so there should be no concerns about setting a design precedence with the approval of this request. Therefore, the requested Special Exception for the proposed mounting distance should be consistent with the criteria that are necessary for modification or waiving the requirements of Section 5.1.40.b(2)(c).

Please not hesitate to contact me at your earliest convenience if you should have any questions, comments or concerns, or will require any additional information for the review and approval of this request.

Sincerely,

A handwritten signature in blue ink, appearing to read "Nathan Holland".

Nathan Holland
Senior Site Development Manager
GDN Sites – Consultant to Verizon Wireless
Phone: 757-305-8420
nathan.holland@gdnsites.com



**SITE NAME: YANCEY MILLS
4XTX / 850**

191 PATTERSON MILL LN
CROZET, VA 22932
ALBEMARLE COUNTY

SITE INFORMATION

JECT DESCRIPTION:	PROJECT CONSISTS OF REMOVING (4) ANTENNAS, & (6) RRHS WHILE INSTALLING (6) ANTENNAS, (6) RRHS ON AN EXISTING MONOPOLE TOWER. FINAL CONFIGURATION WILL BE (8) ANTENNAS, (6) RRHS, (2) OVPS ON TOWER, (2) OVPS ON GROUND, (4) COAX CABLES, & (2) HYBRID CABLES.
ADDRESS:	191 PATTERSON MILL LN CROZET, VA 22932
ITUDE (NAD 83):	38° 02' 23.30"
IGITUDE (NAD 83):	-78° 42' 56.10"
OUND ELEVATION:	678.8' (AMSL)
ISDICTION:	ALBEMARLE COUNTY
ILING:	RA, EC
MAP NUMBER:	07100-00-00-037J0
CEL AREA:	13.38 ACRES
CEL OWNER:	ROGER W. & PATRICIA W. PATTERSON 191 PATTERSON MILL LN CROZET, VA 22932
VER OWNER:	VERIZON WIRELESS 1831 RADY CT RICHMOND, VA 23222
UCTURE TYPE:	MONOPOLE
SSIFICATION GROUP:	U
STRUCTION TYPE:	2B
UCTURE HEIGHT:	90.75' (AGL)
CENTER:	87.0' (AGL) & 77.0' (AGL)
RAIL STRUCTURE HEIGHT:	92.75' (AGL)
AL LEASE AREA:	30'x40' (1200 SQ FT)
VER PROVIDER:	DOMINION (866) 366-4357
CO PROVIDER:	CENTURY LINK (866) 768-1847

EMERGENCY INFORMATION:

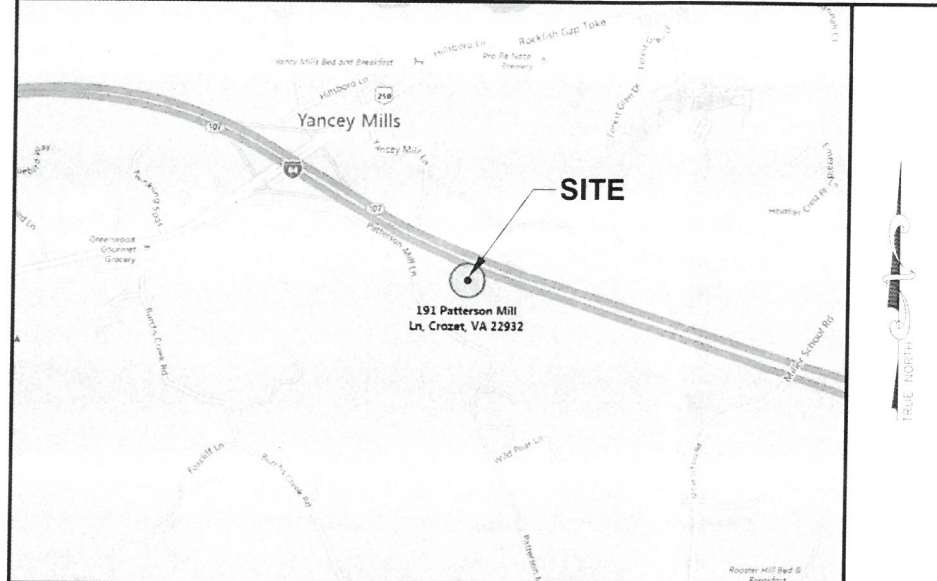
ERMARLE COUNTY FIRE DEPT:	(434) 296-5833
ERMARLE COUNTY POLICE DEPT:	(434) 977-9041

PROJECT TEAM

APPLICANT:	VERIZON WIRELESS 1831 RADY COURT RICHMOND, VA 23222
PROJECT MANAGEMENT FIRM:	GDN NATE HOLLAND (757) 305-8420
ENGINEERING FIRM:	NB+C ENGINEERING SERVICES, LLC. 4435 WATERFRONT DRIVE SUITE 100 GLEN ALLEN, VA 23060 (804) 548-4079 tsnarr@nbclic.com

VICINITY MAP

SCALE: 1" = 1000'



DIRECTIONS

FROM 2501 GOODES BRIDGE RD: DEPART GOODES BRIDGE RD TOWARD ELK RD. TURN RIGHT ONTO US-360 E / HULL ST RD. TAKE RAMP RIGHT FOR VA-150 NORTH TOWARD POWHITE PKWY. TAKE RAMP RIGHT AND FOLLOW SIGNS FOR VA-76-TOLL NORTH. KEEP LEFT TO STAY ON VA-76 N / BELTLINE EXPY. KEEP STRAIGHT ONTO I-195 N. TAKE RAMP FOR I-64 W. AT EXIT 107, TAKE RAMP RIGHT FOR US-250 TOWARD CROZET / YANCEY MILLS. TURN LEFT ONTO US-250 W / ROCKFISH GAP TPKE. MAKE A U-TURN AT TWINKLING SPGS. TURN RIGHT ONTO PATTERSON MILL LN. THE SITE WILL BE ON THE LEFT.

CODE COMPLIANCE

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

- 2012 INTERNATIONAL BUILDING CODE
- 2011 NATIONAL ELECTRICAL CODE
- 2009 NFPA 101, LIFE SAFETY CODE
- 2009 IFC
- AMERICAN CONCRETE INSTITUTE
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION
- MANUAL OF STEEL CONSTRUCTION 13TH EDITION
- ANSI/TIA-222-G
- TIA 607
- INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER 81
- IEEE C2 NATIONAL ELECTRIC SAFETY CODE LATEST EDITION
- TELECORDIA GR-1275
- ANSI/T 311

DRAWING INDEX

T-1	TITLE SHEET
C-1	COMPOUND PLAN
C-2	TOWER ELEVATION & MOUNT DETAILS
A-1	EQUIPMENT SCHEDULE & DETAILS
A-2	PLUMBING DIAGRAM & EQUIPMENT DETAILS
G-1	GROUNDING PLAN, DETAILS & NOTES

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED TO BE FULL-SIZE AT 24"x36". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE DESIGNER / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICE TO PREVENT STORM WATER POLLUTION DURING CONSTRUCTION.

APPLICANT

APPLICANT:	VERIZON WIRELESS 1831 RADY COURT RICHMOND, VA 23222
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YANCEY MILLS
NB+C PROJ. #100357
191 PATTERSON MILL LN
CROZET, VA 22932
ALBEMARLE COUNTY

REVISIONS

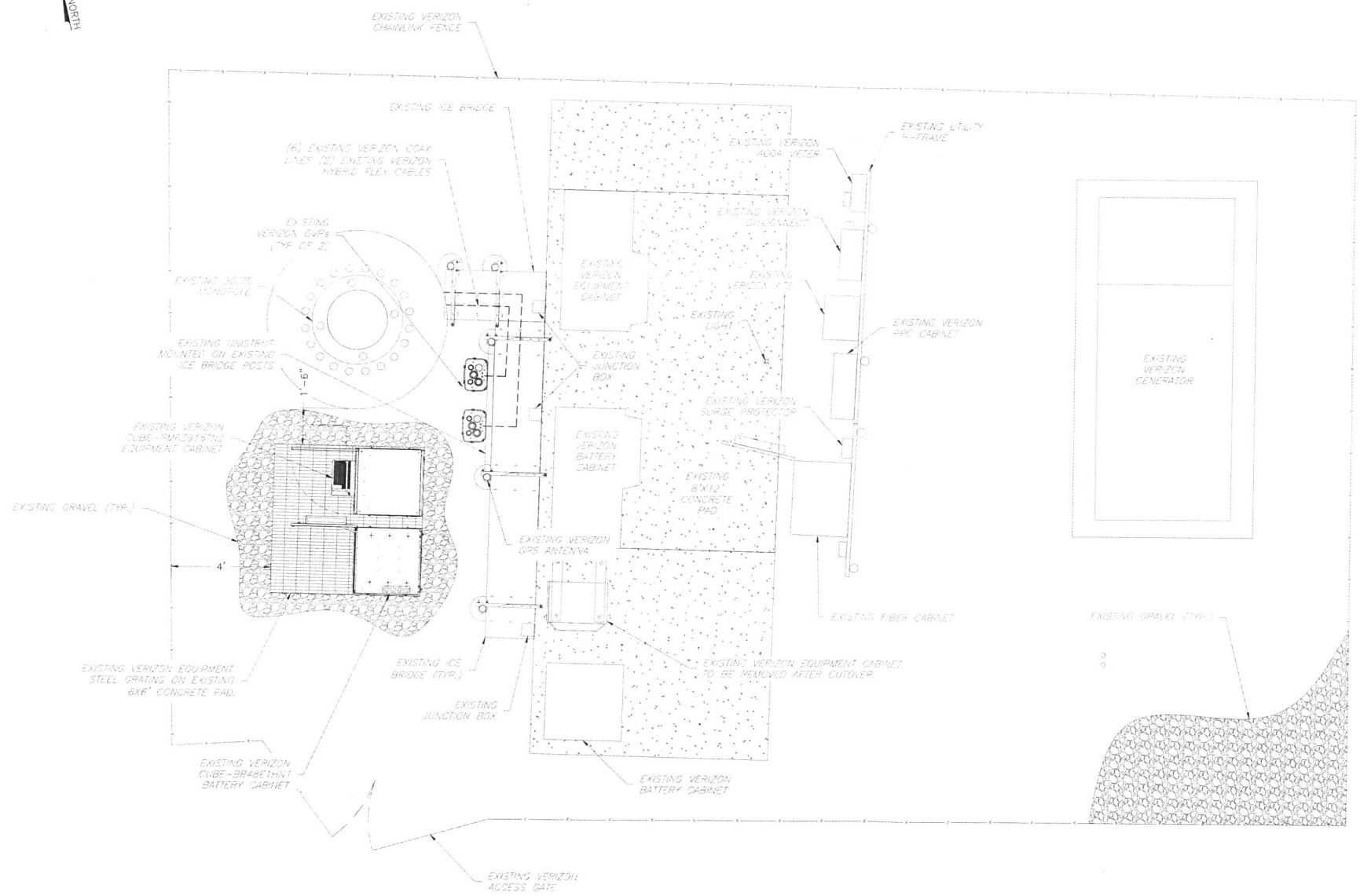
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1	10/25/19	REVISED	CCC
0	04/16/19	PRELIMINARY	CCC



TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

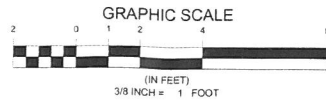
TITLE SHEET

T-1

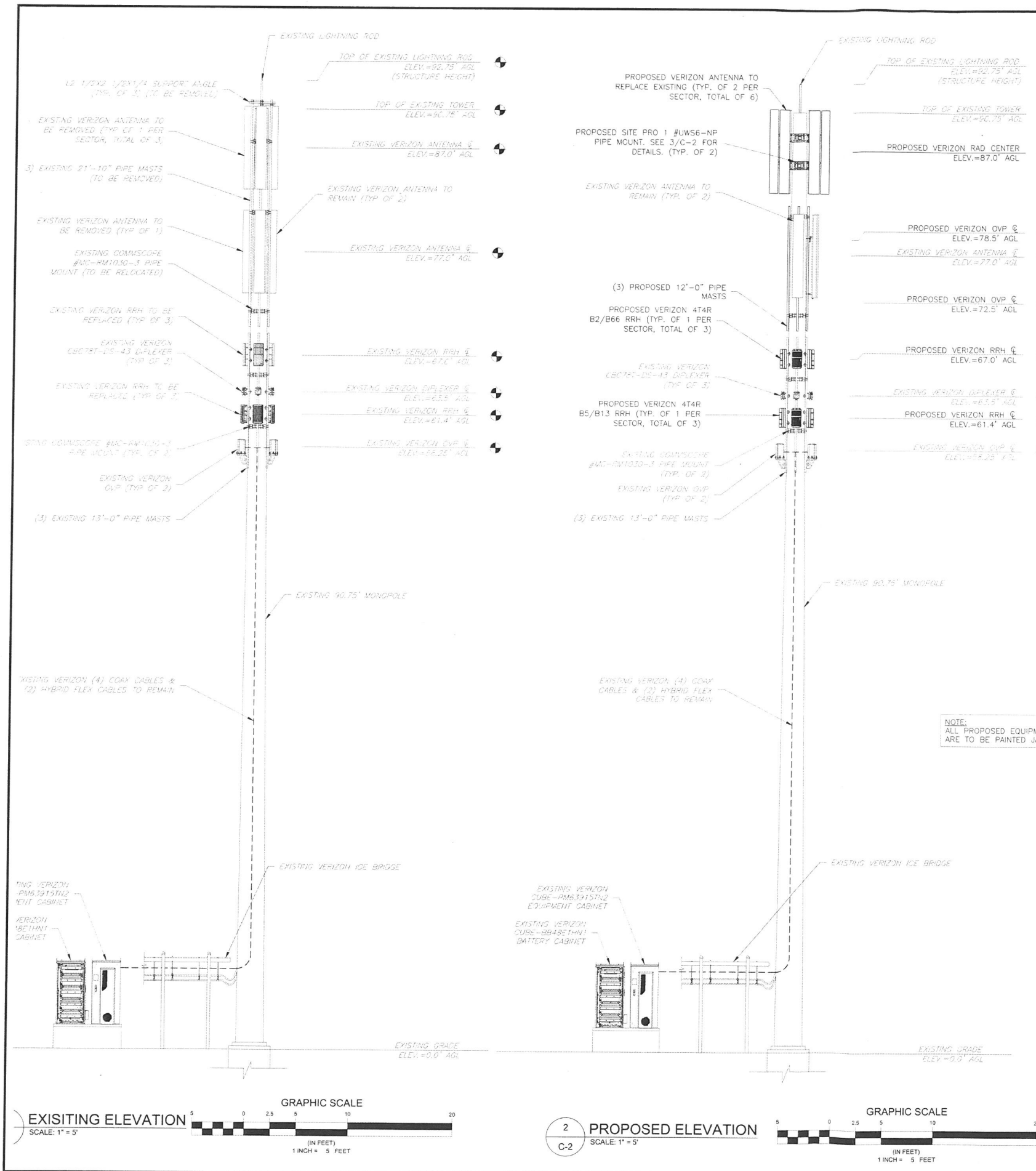


NOTE:
NO PROPOSED GROUND EQUIPMENT TO BE
INSTALLED AT THIS TIME.

1 COMPOUND PLAN
C-1 SCALE: 3/8" = 1'

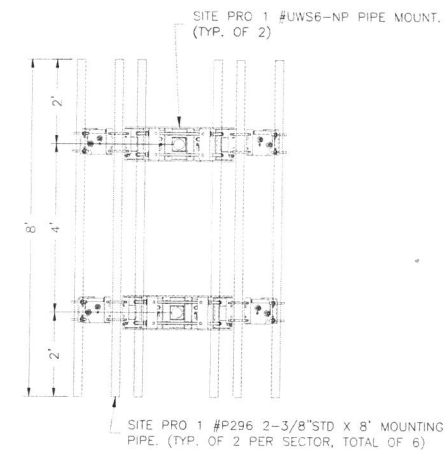


ENGINEER	<div>NB+CTM TOTALLY COMMITTED. NB+C ENGINEERING SERVICES, LLC. 4435 WATERFRONT DRIVE, SUITE 100 GLEN ALLEN, VA 23060 804-548-4079</div>																
APPLICANT	<div>verizon[✓] 1831 RADY COURT RICHMOND, VA 23222</div>																
SITE INFORMATION	<div>YANCEY MILLS NB+C PROJ. #100357 191 PATTERSON MILL LN CROZET, VA 22932 ALBEMARLE COUNTY</div>																
DESIGN RECORD	<div>REVISIONS</div> <table><tr><td>2</td><td>10/28/19</td><td>FINAL</td><td>CCC</td></tr><tr><td>1</td><td>10/25/19</td><td>REVISED</td><td>CCC</td></tr><tr><td>0</td><td>04/16/19</td><td>PRELIMINARY</td><td>CCC</td></tr><tr><td>REV</td><td>DATE</td><td>DESCRIPTION</td><td>BY</td></tr></table>	2	10/28/19	FINAL	CCC	1	10/25/19	REVISED	CCC	0	04/16/19	PRELIMINARY	CCC	REV	DATE	DESCRIPTION	BY
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PROFESSIONAL STAMP	<div> TRENT T. SNARR, P.E. VA PROFESSIONAL ENGINEER LIC. #49978</div>																
ENGINEER	TRENT T. SNARR, P.E. VA PROFESSIONAL ENGINEER LIC. #49978																
SHEET TITLE	COMPOUND PLAN																
SHEET NUMBER	C-1																

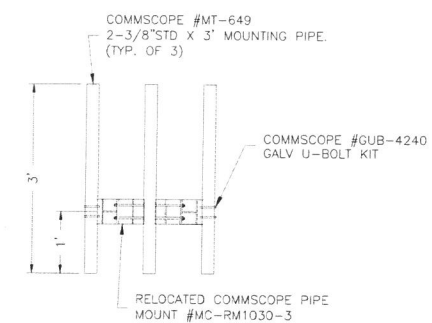


GENERAL NOTES

1. THE PROPOSED ANTENNAS, REMOTE RADIO HEADS WILL BE PAINTED THE COUNTY-APPROVED COLOR SHERWIN WILLIAMS JAVA BROWN (#6090).
2. NEW ANTENNAS IN THE HIGHEST ARRAY WILL BE INSTALLED USING A MODIFIED FLUSH-DESIGN WITH LOW-PROFILE MOUNTING BRACKETS SO THAT NO POINT ON THE BACK OF THE ANTENNAS SHALL BE MORE THAN 18 INCHES FROM THE FACE OF THE MONOPOLE, AS DETAILED IN THE ANTENNA PLAN VIEW PROVIDED ON SHEET A-1.
3. PROPOSED ANTENNAS: COMMSCOPE NHH-65C-R2B & DIMENSIONS: 96"(H) X 11.9"(W) X 7.1"(D) / EXISTING ANTENNAS: COMMSCOPE SBNHH-1D65C & DIMENSIONS: 96"(H) X 11.9"(W) X 7.1"(D).
4. ANTENNAS WILL BE CONNECTED TO EXISTING CABLES THAT RUN VERTICALLY INSIDE THE MONOPOLE STRUCTURE.
5. THERE WILL BE NO CHANGE TO THE EXISTING TOP HEIGHT OF THE TOWER OR ITS LIGHTNING ROD AS A RESULT OF THESE UPGRADES.



3 ANTENNA MOUNT DETAIL
NTS



4 EQUIPMENT MOUNT DETAIL
NTS

STRUCTURAL NOTE:
CONTRACTOR TO VERIFY ALL PROPOSED AND EXISTING
ANTENNAS AND CABLES WERE CONSIDERED AND PASSED A
STRUCTURAL ANALYSIS OF TOWER AND MOUNTS PERFORMED
BY A LICENSED ENGINEER PRIOR TO INSTALLATION.

ENGINEER

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 22060
804-548-4079

APPLICANT

verizon
1831 RADY COURT
RICHMOND, VA 23222

SITE INFORMATION

YANCEY MILLS
NB+C PROJ. #100357
191 PATTERSON MILL LN
CROZET, VA 22932
ALBEMARLE COUNTY

DESIGN RECORD

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PROFESSIONAL STAMP



ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

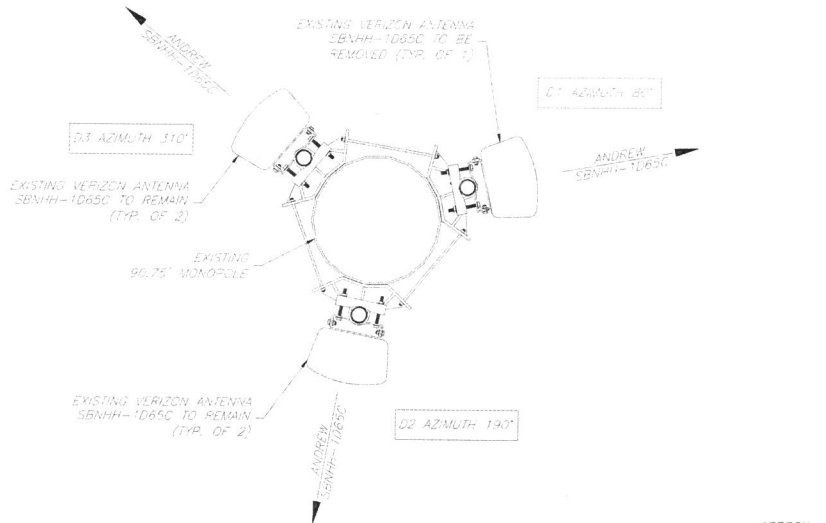
**TOWER
ELEVATION &
MOUNT DETAILS**

SHEET NUMBER

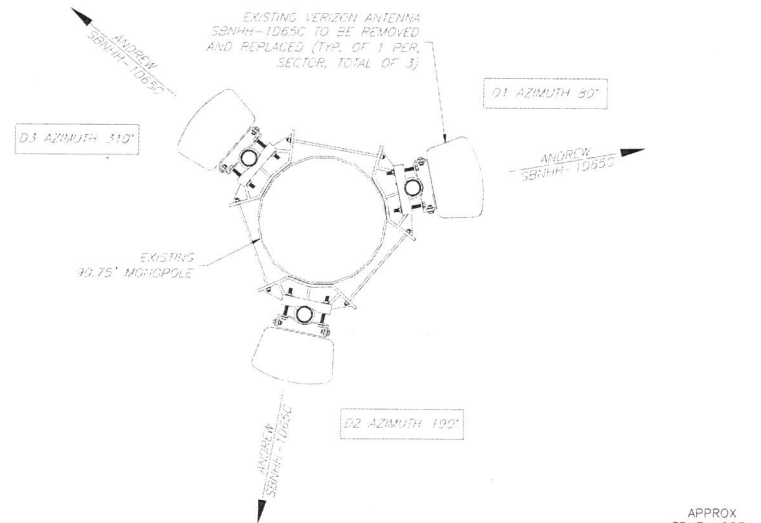
C-2

ANTENNA INFORMATION CHART								
SECTOR	STATUS	ANTENNA MANUFACTURER	ANTENNA MODEL	RAD CENTER	AZIMUTH	MECHANICAL DOWN TILT	ELECTRICAL DOWN TILT	RRH QUANTITY & MODEL
A1	PROPOSED	COMMSCOPE	NHH-65C-R2B	87.0'	80°	0°	2°	(1) NOKIA 4T4R B5/B13 RRH
A2	PROPOSED	COMMSCOPE	NHH-65C-R2B	87.0'	80°	0°	2°	(1) NOKIA 4T4R B2/B66 RRH
B1	PROPOSED	COMMSCOPE	NHH-65C-R2B	87.0'	190°	0°	2°	(1) NOKIA 4T4R B5/B13 RRH
B2	PROPOSED	COMMSCOPE	NHH-65C-R2B	87.0'	190°	0°	2°	(1) NOKIA 4T4R B2/B66 RRH
B3	EXISTING	ANDREW	SBNHH-1D65C	77.0'	190°	0°	0°	-
C1	PROPOSED	COMMSCOPE	NHH-65C-R2B	87.0'	310°	0°	2°	(1) NOKIA 4T4R B5/B13 RRH
C2	PROPOSED	COMMSCOPE	NHH-65C-R2B	87.0'	310°	0°	2°	(1) NOKIA 4T4R B2/B66 RRH
C3	EXISTING	ANDREW	SBNHH-1D65C	77.0'	310°	0°	0°	-

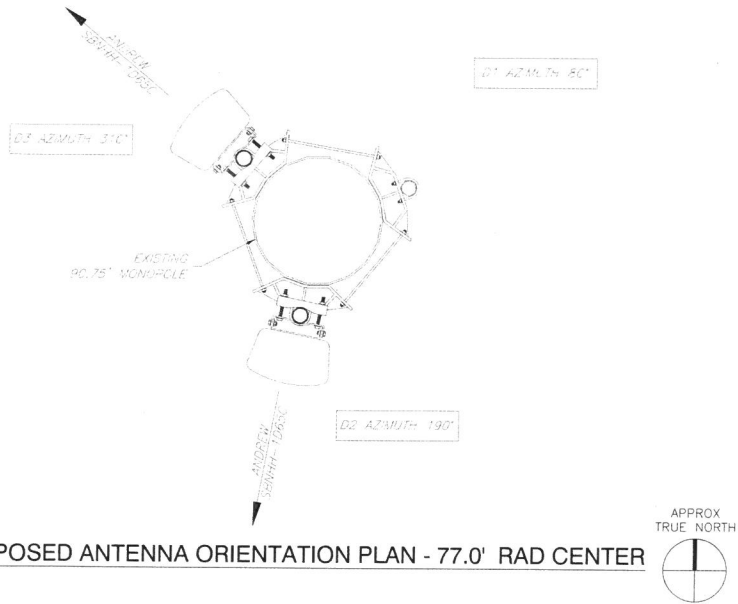
NOTES:
1. CONTRACTOR TO VERIFY PROPOSED ANTENNA INFORMATION IS THE MOST CURRENT DATA AT TIME OF CONSTRUCTION.
2. CONTRACTOR TO CONFIRM CABLE LENGTHS PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO VERIFY ALL PROPOSED AND EXISTING ANTENNA AND CABLES WERE CONSIDERED AND PASSED A STRUCTURAL ANALYSIS PERFORMED BY A LICENSED ENGINEER PRIOR TO INSTALLATION.



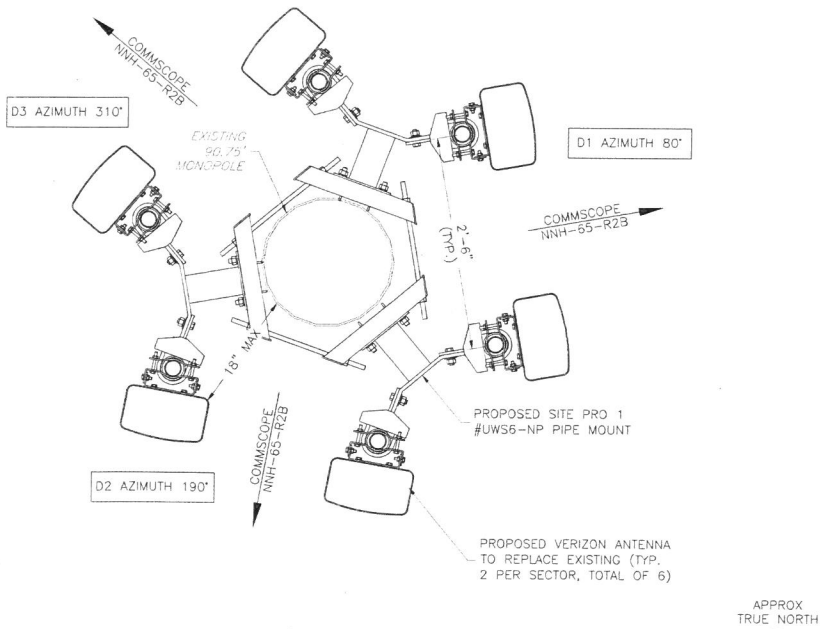
1
A-1
NTS
EXISTING ANTENNA ORIENTATION PLAN - 77.0' RAD CENTER



3
A-1
NTS
EXISTING ANTENNA ORIENTATION PLAN - 87.0' RAD CENTER



2
A-1
NTS
PROPOSED ANTENNA ORIENTATION PLAN - 77.0' RAD CENTER



4
A-1
NTS
PROPOSED ANTENNA ORIENTATION PLAN - 87.0' RAD CENTER

STRUCTURAL NOTE:
CONTRACTOR TO VERIFY ALL PROPOSED AND EXISTING ANTENNAS AND CABLES WERE CONSIDERED AND PASSED A STRUCTURAL ANALYSIS OF TOWER AND MOUNTS PERFORMED BY A LICENSED ENGINEER PRIOR TO INSTALLATION.

NOTE:
ALL PROPOSED EQUIPMENT AND CABLES ARE TO BE PAINTED JAVA BROWN.

ENGINEER

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4075

APPLICANT

verizon
1831 RADY COURT
RICHMOND, VA 23222

SITE INFORMATION

YANCEY MILLS
NB+C PROJ. #100357
191 PATTERSON MILL LN
CROZET, VA 22932
ALBEMARLE COUNTY

DESIGN RECORD

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PROFESSIONAL STAMP

RENTAL TRAVIS SNARR
Lic. No. 049978
DATE 10/28/19
PROFESSIONAL ENGINEER

ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

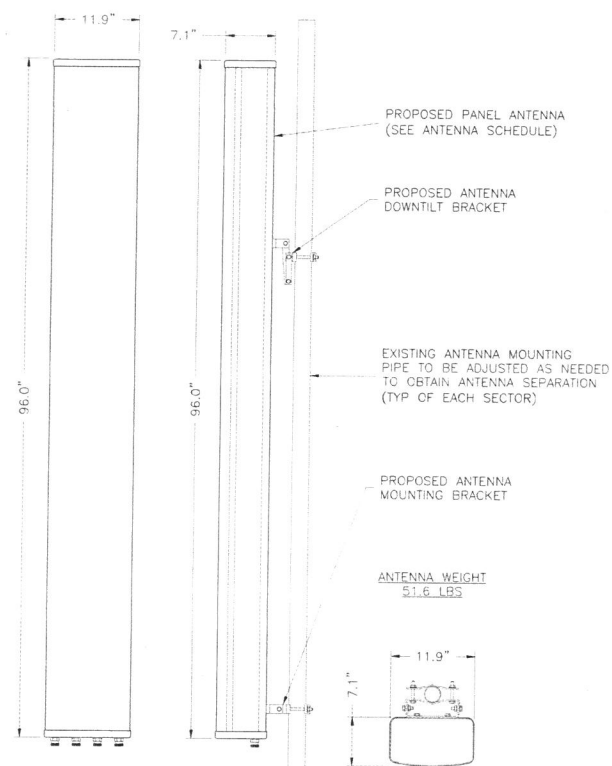
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EQUIPMENT
SCHEDULE &
DETAILS

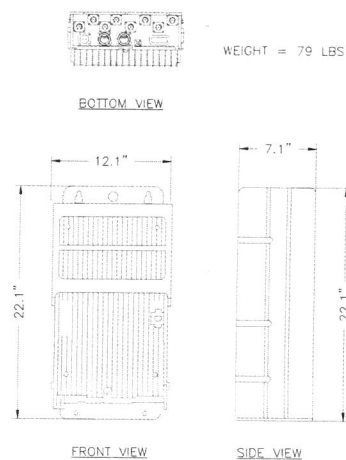
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A-1

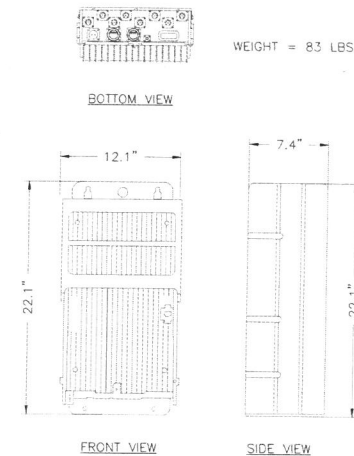
USED EQUIPMENT AND CABLES
ARE PAINTED JAVA BROWN



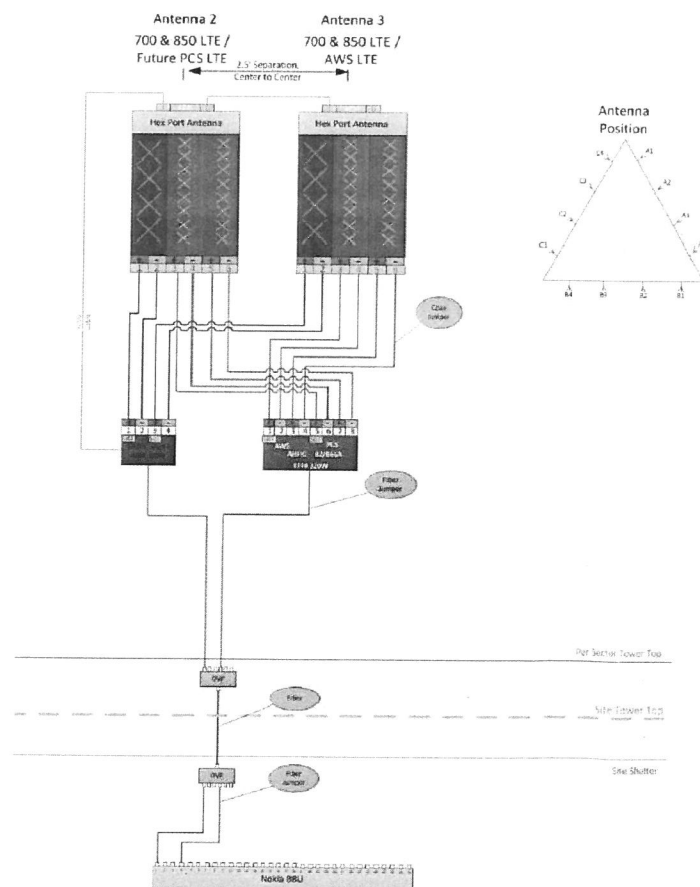
1 COMMSCOPE NHH-65C-R2B
A-2 NTS



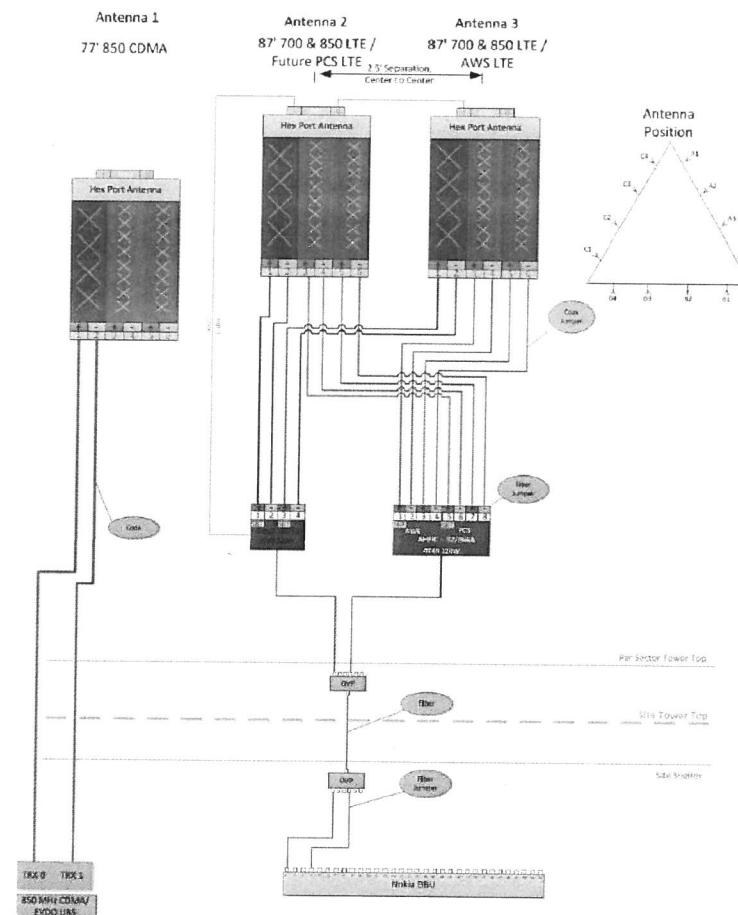
2 DUAL RRH 4T4R B2/B66a (REMOTE RADIO HEAD)
A-2 NTS



3 DUAL RRH 4T4R B5/B13 (REMOTE RADIO HEAD)
A-2 NTS



4 ALPHA PLUMBING DIAGRAM
A-2 NTS



5 BETA / GAMMA PLUMBING DIAGRAM
A-2 NTS

ENGINEER

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
4435 WATERBURY DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4279

APPLICANT

verizon
1831 RADY COURT
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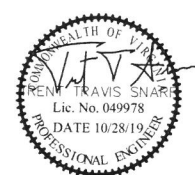
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PROFESSIONAL STAMP



ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

**PLUMBING
DIAGRAM &
EQUIPMENT
DETAILS**

SHEET NUMBER

A-2

GROUNDING NOTES

GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTING PROTECTION SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING WIRELESS GROUNDING STANDARDS.

GROUND CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURER'S PROVIDED GROUNDING KITS SUPPLIED BY PROJECT OWNER.

#6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.

POWER AND GROUND CONNECTIONS TO BE CRIMP-STYLE, COMPRESSION LUGS AND WIRE NUTS BY HARGER (OR APPROVED EQUAL) RATED FOR OPERATION AT NO LESS THAN 75°C OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.

GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHALL NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. DO NOT ALLOW ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT CABINET TO MASTER GROUND BAR OR GROUNDING RING.

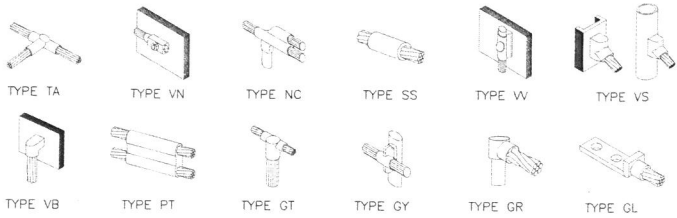
CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE PRECISION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL CONNECTIONS.

APPLY OXIDE INHIBITING COMPOUND TO ALL MECHANICAL GROUND CONNECTIONS.

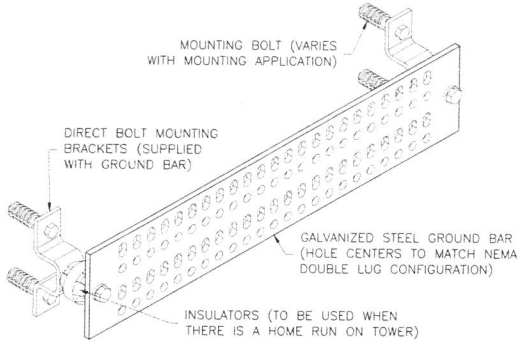
CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC INTERFERENCE SUPPRESSION (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXISTING TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.

CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD MEASUREMENTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.

CONTRACTOR SHALL CONDUCT ANTENNA, CABLE, AND LNA RETURN-LOSS MEASUREMENTS (SWEEP TESTS) AND RECORD MEASUREMENTS FOR PROJECT CLOSE-OUT.

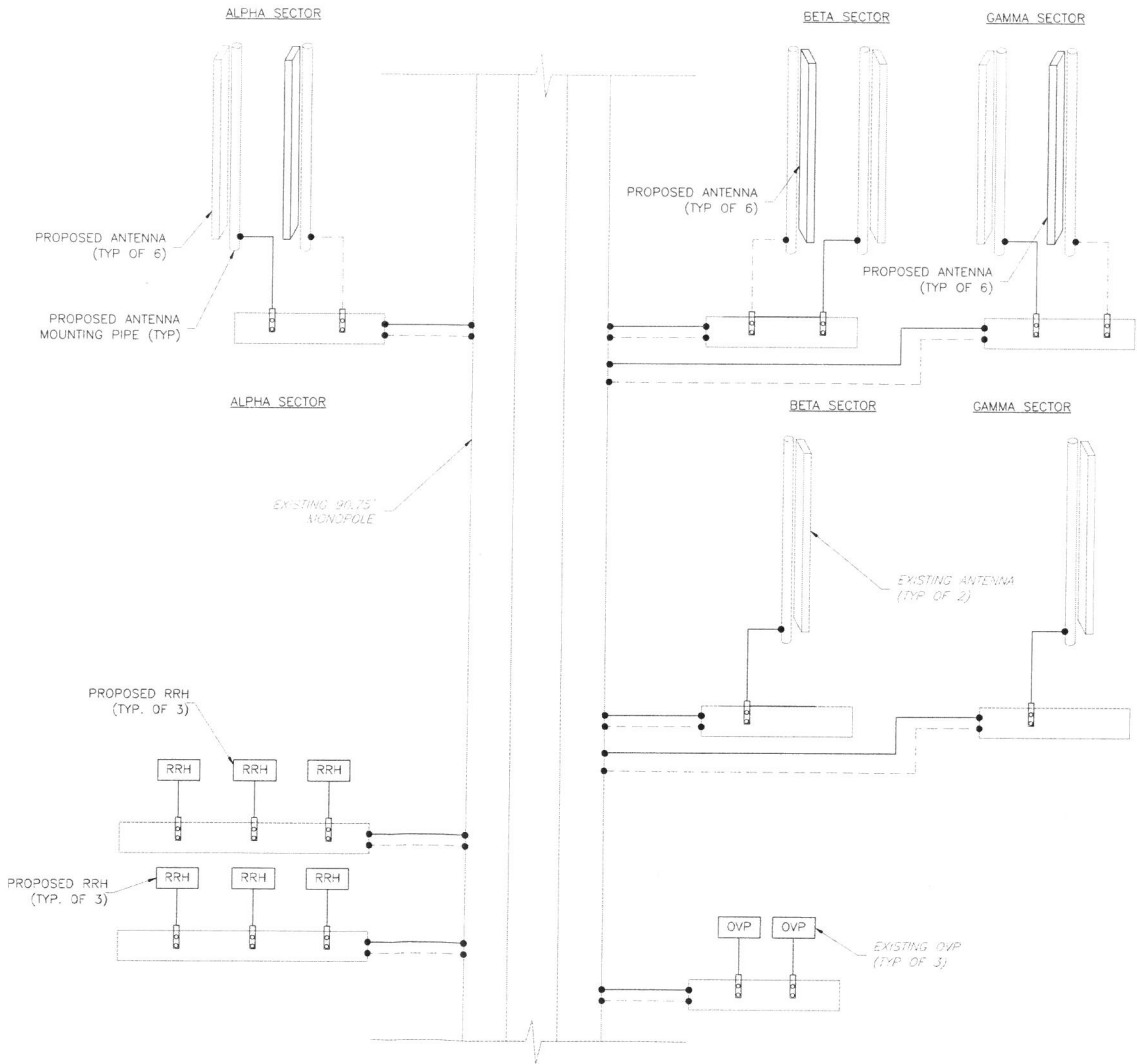


1 CADWELD GROUNDING CONNECTION DETAILS
G-1 NTS



NOTE: THE GROUND BAR SHOULD BE MADE OF GALVANIZED STEEL (ALLTEC CORP. PART #19-74 VZW-20 OR EQUIVALENT) INSTEAD OF COPPER TO DETER THEFT. AN ALTERNATIVE TO THE GALVANIZED STEEL GROUND BAR IS A BARNONE/ERICO "THEFT DETERRENT GROUND BAR ASSEMBLY."

2 GROUND BAR DETAIL
G-2 NTS



3 GROUNDING RISER DIAGRAM
G-1 NTS

ENGINEER

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 22060
(804) 448-4079

APPLICANT

verizon

1831 RADY COURT
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SHEET TITLE

**GROUNDING
PLAN, DETAILS
& NOTES**

SHEET NUMBER

G-1