



SITE NAME: WOODBURN

2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

SITE INFORMATION

PROJECT DESCRIPTION:	COLLOCATION: INSTALLATION OF ANTENNAS AND ASSOCIATED EQUIPMENT AT AN EXISTING TELECOMMUNICATIONS FACILITY.
SITE ADDRESS:	2226 WOODBURN ROAD CHARLOTTESVILLE, VA 22901
LATITUDE (NAD 83):	38° 05' 49.021"
LONGITUDE (NAD 83):	-78° 28' 12.573"
GROUND ELEVATION:	542.2' (AMSL)
JURISDICTION:	ALBEMARLE COUNTY
ZONING:	RURAL AREAS
TAX MAP NUMBER:	04500-00-00-07200
PARCEL AREA:	1.26 ACRES
PARCEL OWNER:	RIVANNA WATER & SEWER AUTHORITY 695 MOORES CREEK LN CHARLOTTESVILLE, VA 22902
TOWER OWNER:	RIVANNA WATER & SEWER AUTHORITY 695 MOORES CREEK LN CHARLOTTESVILLE, VA 22902
STRUCTURE TYPE:	WATER TANK
STRUCTURE HEIGHT:	123.0' (AGL)
RAD CENTER:	128.0' (AGL)
OVERALL STRUCTURE HEIGHT:	133.0' (AGL)
TOTAL LEASE AREA:	14'x28' (392 SQ FT)
POWER PROVIDER:	DOMINION (866) 366-4357
TELCO PROVIDER:	CENTURY LINK (434) 817-1881

EMERGENCY INFORMATION:

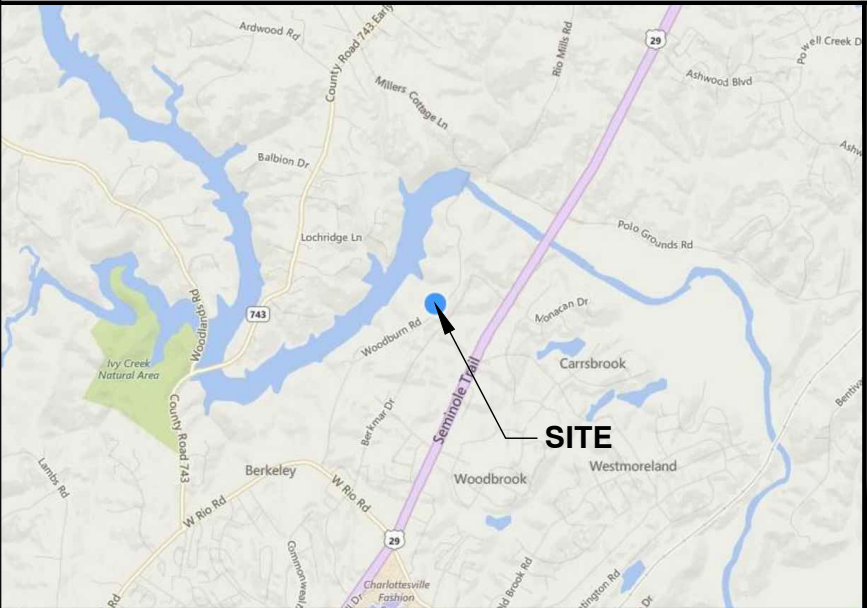
COUNTY OF ALBEMARLE - FIRE & RESCUE:	(434) 296-5833
ALBEMARLE COUNTY POLICE DEPT:	(434) 296-5807

PROJECT TEAM

ENGINEER OF RECORD:	TRENT T. SNARR, P.E. NB+C ENGINEERING SERVICES (804) 548-4079
SITE ACQUISITION	CHAD FRECKMAN GDN SITES (434) 996-4473
ZONING	STEPHEN WALLER GDN SITES (434) 825-0617
CONSTRUCTION MANAGER:	STEVE POOLE NB+C (540) 290-6704
UTILITY COORDINATOR:	JESSE WARD NB+C (540) 290-2005
RF ENGINEER:	JOE NEKAMBIZA WERIZON WIRELESS JOSEPH.NEKAMBUZA2@VERIZONWIRELESS.COM

VICINITY MAP

SCALE: 1" = 1000'



DIRECTIONS

FROM 1831 RADY COURT, START OUT GOING NORTHWEST ON RADY CT TOWARD RADY ST. TURN LEFT ONTO RADY ST. TURN LEFT ONTO MAGNOLIA ST. TURN RIGHT ONTO MECHANICSVILLE TURNPIKE/US-360 W. MERGE ONTO I-64 W TOWARD I-95 W. MERGE ONTO I-64 W VIA EXIT 79 TOWARD POWHITE PKWY/CHARLOTTESVILLE. TAKE THE US-250 EXIT, EXIT 124, TOWARD CHARLOTTESVILLE/SHADWELL. TURN RIGHT ONTO RICHMOND RD/US-250 W. CONTINUE TO FOLLOW US-250 W. TURN RIGHT ONTO HYDRAULIC RD. TURN RIGHT ONTO SEMINOLE TRL/US-29 N. TURN LEFT ONTO RIO RD W. TURN RIGHT ONTO WOODBURN RD. 2226 WOODBURN RD IS 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
SV-1	SURVEY DOCUMENT
Z-1	SITE PLAN
C-1	COMPOUND PLAN
C-2	LEASE AREA PLAN
C-3	TOWER ELEVATION & NOTES
S-1	EQUIPMENT STEEL PLATFORM DETAILS
S-2	EQUIPMENT STEEL PLATFORM, CONCRETE PAD, DETAILS & NOTES
S-3	CONSTRUCTION DETAILS & NOTES
S-4	GENERATOR DETAILS
A-1	RF PLUMBING DIAGRAM & DATA SHEET
E-1	ELECTRICAL PLAN & DETAILS
E-2	ELECTRICAL PANEL SCHEDULE, DIAGRAM & NOTES
E-3	ELECTRICAL RISER DIAGRAM & SERVICE ENTRANCE SCHEMATIC
G-1	GROUNDING PLAN & DETAILS
G-2	GROUNDING RISER DIAGRAM, DETAILS & NOTES
ES-1	EROSION & SEDIMENTATION CONTROL PLAN & NOTES
ES-2	SILT FENCE DETAILS
ST-1	TOWER ELEVATION & NOTES
ST-2	CORRAL INSTALLATION DETAILS I
ST-3	CORRAL INSTALLATION DETAILS II
ST-4	CORRAL INSTALLATION DETAILS III
ST-5	CORRAL INSTALLATION DETAILS IV
ST-6	COAX SUPPORT INSTALLATION DETAILS I
ST-7	COAX SUPPORT INSTALLATION DETAILS II
ST-8	CATWALK COAX PENETRATION DETAILS
N-1	COATING SYSTEM 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 MERLE DAIGER (804) 543-7573
------------	---

ENGINEER



APPLICANT



SITE INFORMATION

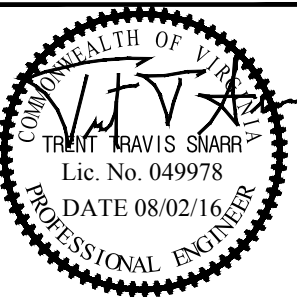
WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI

PROFESSIONAL STAMP



ENGINEER

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

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

PARCEL ID: 04500-00-00-07200
DEED REF.: D.B. 768, PG. 277
ZONING: RURAL AREAS
JURISDICTION: ALBEMARLE COUNTY
DISTRICT: RIO DISTRICT

ACCORDING TO FEDERAL EMERGENCY MANAGEMENT
AGENCY MAPS, THE PROPOSED TELECOMMUNICATIONS SITE
IS LOCATED IN ZONE "X", COMMUNITY PANEL
NO. 51003C02800, DATED 02/04/2005.

LEGAL DESCRIPTION

Situated on all that piece or parcel of land owned by Rivanna Water & Sewer Authority, being Tax Parcel No.: 04500-00-00-07200 and recorded in D.B. 768, at Pg. 277 in the Clerk's Office of the Circuit Court, Albemarle County, Virginia.

Commencing at a found pipe situated at the northwest corner of the parent parcel; thence with a bearing datum based on the Virginia State Plane, South Zone (NAD83) along a survey tie line S 45° 04' 47" E, a distance of 280.35' to a point, said point being the northwest corner of a 14x28' Lease Area and being THE PLACE OF BEGINNING; thence along the lease lines N 39° 00' 22" E, a distance of 28.00' to a point, thence S 59° 59' 39" W, a distance of 14.00' to a point, thence N 39° 00' 22" W, a distance of 28.00' to a point; thence N 50° 59' 39" W, a distance of 14.00' to a point, said point being THE PLACE OF BEGINNING and containing 392 s.f. of land more or less.

Situated on all that piece or parcel of land owned by Rivanna Water & Sewer Authority, being Tax Parcel No.: 04500-00-00-07200 and recorded in D.B. 768, at Pg. 277 in the Clerk's Office of the Circuit Court, Albemarle County, Virginia.

Commencing at a found pipe situated at the northwest corner of the parent parcel; thence with a bearing datum based on the Virginia State Plane, South Zone (Nad83) along a survey tie line S 45° 04' 47" E, a distance of 16.95' to a point; thence along a survey tie line N 14° 02' 12" E, a distance of 14.28' Lease Area; thence along the west line of said lease area a distance of 59' 38" E, a distance of 14.00' to a point; thence along the south line of said 14' 28" Lease Area, N 39° 00' 22" E, a distance of 6.84' to a point, said point being the PLACE OF BEGINNING; thence confining along the south line of said "14' 28" Lease Area N 39° 00' 22" E, a distance of 21.16' to a point; thence along the east line of said "14' 28" Lease Area, Utility Easement S 70° 02' 11" E, a distance of 63.59' to a point; thence S 38° 27' 06" E, a distance of 48.79' to a point; thence along the centerline of Woodburn Road S 48° 09' 51" W, a distance of 20.03' to a point; thence along the limits of the 20' Non-Exclusive Access & Utility Easement N 39° 00' 22" W, a distance of 10.00' to a point; thence N 40° 00' 00" W, a distance of 7.00' to a point, said point being the PLACE OF BEGINNING and containing 2,215 s.f. of land more or less.

Commencing at the southeast corner of the fore described $14^{\circ}28'$ Lease Area; thence along the east line of said lease area N $50^{\circ}59'38''$ E, a distance of $0.75'$ to a point, said point being the southwest corner of a 3' Non-Exclusive Easement and being THE PLACE OF BEGINNING; thence along the east line of said lease area and the limits of the 3' Non-Exclusive Easement, N $50^{\circ}59'38''$ E, a distance of $3.77'$ to a point; thence N $76^{\circ}12'51''$ E, a distance of $25.82'$ to a point; thence S $13^{\circ}47'09''$ E, a distance of $3.00'$ to a point; thence S $76^{\circ}12'51''$ W, a distance of $23.54'$ to a point, said point being THE PLACE OF BEGINNING and containing 74 s.f. of land more or less.

Commencing at the southwest corner of the fore described 20' Non-Exclusive Access & Utility Easement, thence along the centerline of Woodburn Road, Route 659 S 48° 09' 51" W, a distance of 12.48' to a point; said point being THE PLACE OF BEGINNING; thence along the centerline of Woodburn Road, Route 659, S 48° 09' 51" W, a distance of 12.48' to a point; thence along the centerline of Woodburn Road, Route 659, S 48° 09' 51" W, a distance of 46.50' to a point; thence N 00° 48' 19" W, a distance of 23.45' to a point; thence S 70° 02' 11" E, a distance of 21.39' to a point; thence S 00° 48' 19" W, a distance of 10.79' to a point; thence S 29° 18' 48" E, a distance of 36.98' to a point; said point being THE PLACE OF BEGINNING and containing 1,177 s.f. of land more or less.

SITE NAME:	WOODBURN
SITE NUMBER:	
SITE ADDRESS:	2226 WOODBURN RD CHARLOTTESVILLE, VA 22901
OWNERS NAME:	RIVANNA WATER & SEWER AUTHORITY 695 MOORES CREEK LN CHARLOTTESVILLE, VA 22902


TOWER CENTROID

LATITUDE:	<u>N 38°05'49.021" N</u>	LONGITUDE:	<u>W 78°28'12.573" W</u>
GROUND ELEVATION:	<u>542.2±</u>		
PARAPET ELEVATION:	<u>N/A</u>		
BASIS OF ELEVATIONS:	<u>GPS OBSERVATIONS RECORDED ON 9-03-2014</u>		
	<u>SUB-METER ACCURACY TO NEAREST FOOT</u>		
BASIS OF BEARINGS:	<u>GPS OBSERVATIONS RECORDED ON 9-03-2014</u>		
	<u>SUB-METER ACCURACY TO NEAREST FOOT</u>		

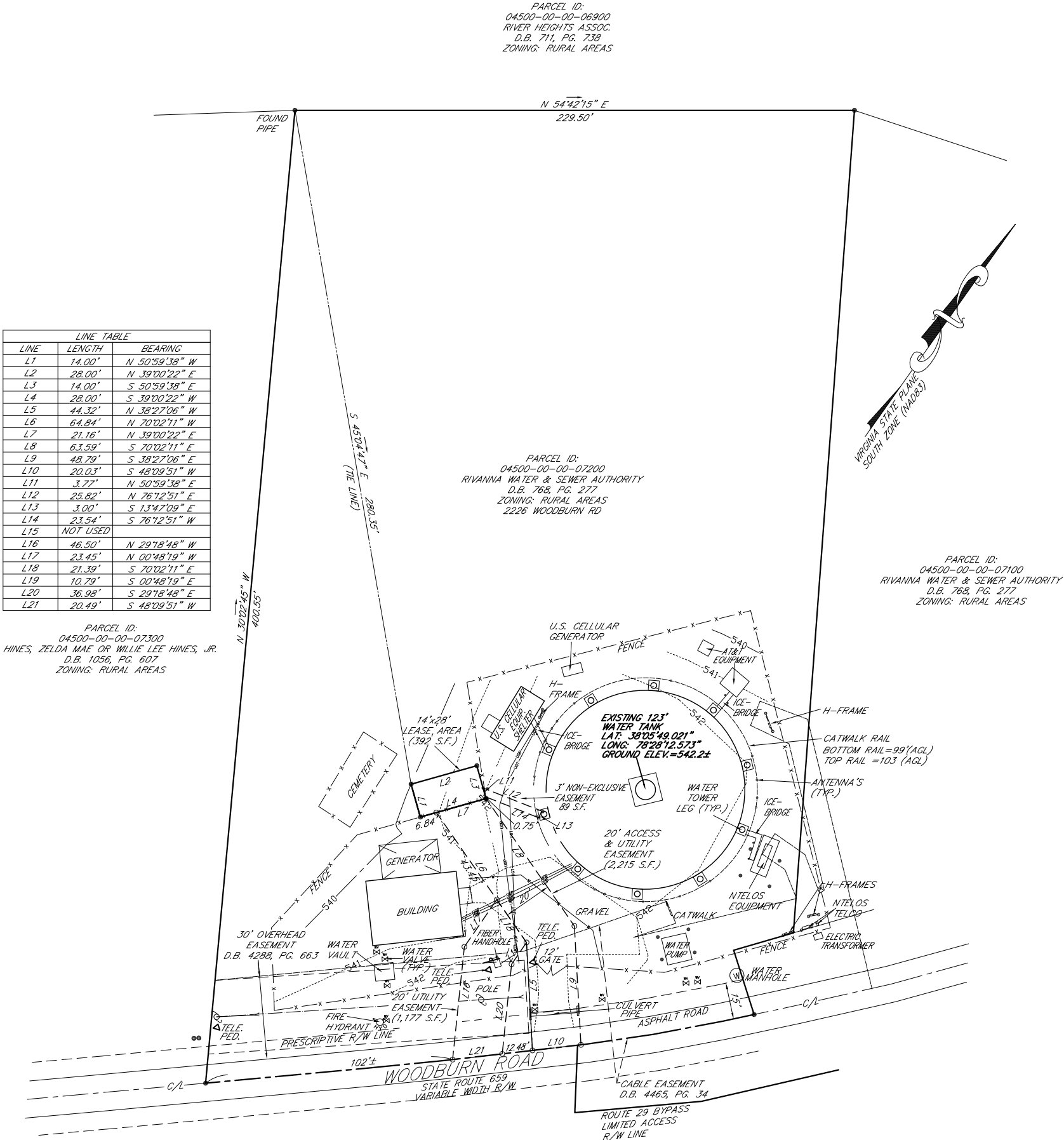
NOTES:
LATITUDE AND LONGITUDE SHOWN HEREON ARE BASED ON NAD83
AND ELEVATIONS NAVD 1988.

A BOUNDARY SURVEY WAS NOT PERFORMED FOR THE PREPARATION OF THIS PLAT. PROPERTY LINES AS SHOWN WERE COMPILED FROM TAX MAPS, DEEDS & PLATS OF RECORD. HALDER SURVEYS, PC, MAKES NO WARRANTY EITHER EXPRESSED OR IMPLIED AS TO THE ACCURACY OF THE BOUNDARIES AS SHOWN ON THIS MAP.

SCALE: 1"=50' (11"x17" PLOT)
SCALE: 1"=25' (24"x36" PLOT)



A horizontal graphic scale bar with a black and white alternating pattern. It is marked with the numbers 0, 12.5, 25, and 50, representing feet.





TAX MAP 04500-00-00-06900
RIVER HEIGHTS ASSOC.
D.B. 711, PG. 738
USE: RURAL AREAS

TAX MAP 04500-00-00-07100
RIVANNA WATER AND SEWER AUTHORITY
D.B. 768, PG. 277
USE: VACANT

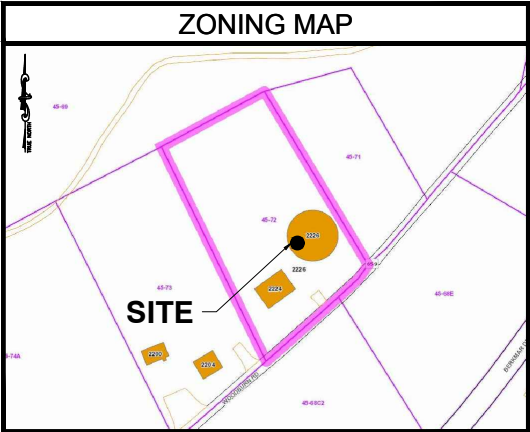
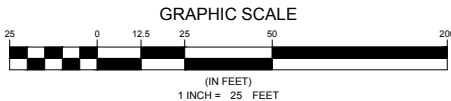
TAX MAP 04500-00-00-07200
RIVANNA WATER AND SEWER AUTHORITY
D.B. 768, PG. 277
2226 WOODBURN ROAD
ALBEMARLE COUNTY, VIRGINIA
ZONING: RURAL AREAS DISTRICT (RA)
MAGISTERIAL DISTRICT: RIO
VOTING PRECINCT: AGNOR RIO
SOUTH FORK RIVANNA RIVER RESERVOIR WATERSHED
USE: WATER STORAGE TANK

TAX MAP 04500-00-00-07300
ZELDA MAE HINES
AND
WILLIE LEE HINES
D.B. 1056, PG. 607
2204 WOODBURN ROAD
USE: SINGLE FAMILY

TAX MAP 04500-00-00-06800
COMMONWEALTH OF VIRGINIA
D.B. 1779, PG. 398
USE: VACANT RESIDENTIAL R1-R15

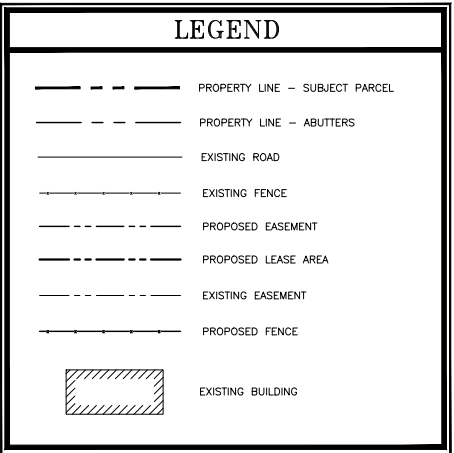
TAX MAP 04500-00-00-06802
COMMONWEALTH OF VIRGINIA
D.B. 1775, PG. 432
USE: VACANT RESIDENTIAL R1-R15

1 SITE PLAN
Z-1 SCALE: 1" = 25'



GENERAL NOTES

1. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
2. NO SIGNIFICANT NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
3. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION. THERE IS NO HANDICAP ACCESS REQUIRED.
4. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.



ENGINEER

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4078

APPLICANT

verizon

1831 RADY COURT
RICHMOND, VA 23222

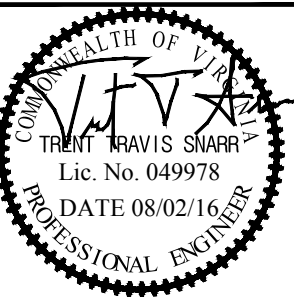
SITE INFORMATION

WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

DESIGN RECORD

REVISIONS			
REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI

PROFESSIONAL STAMP



ENGINEER

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

SHEET TITLE

SITE PLAN

SHEET NUMBER

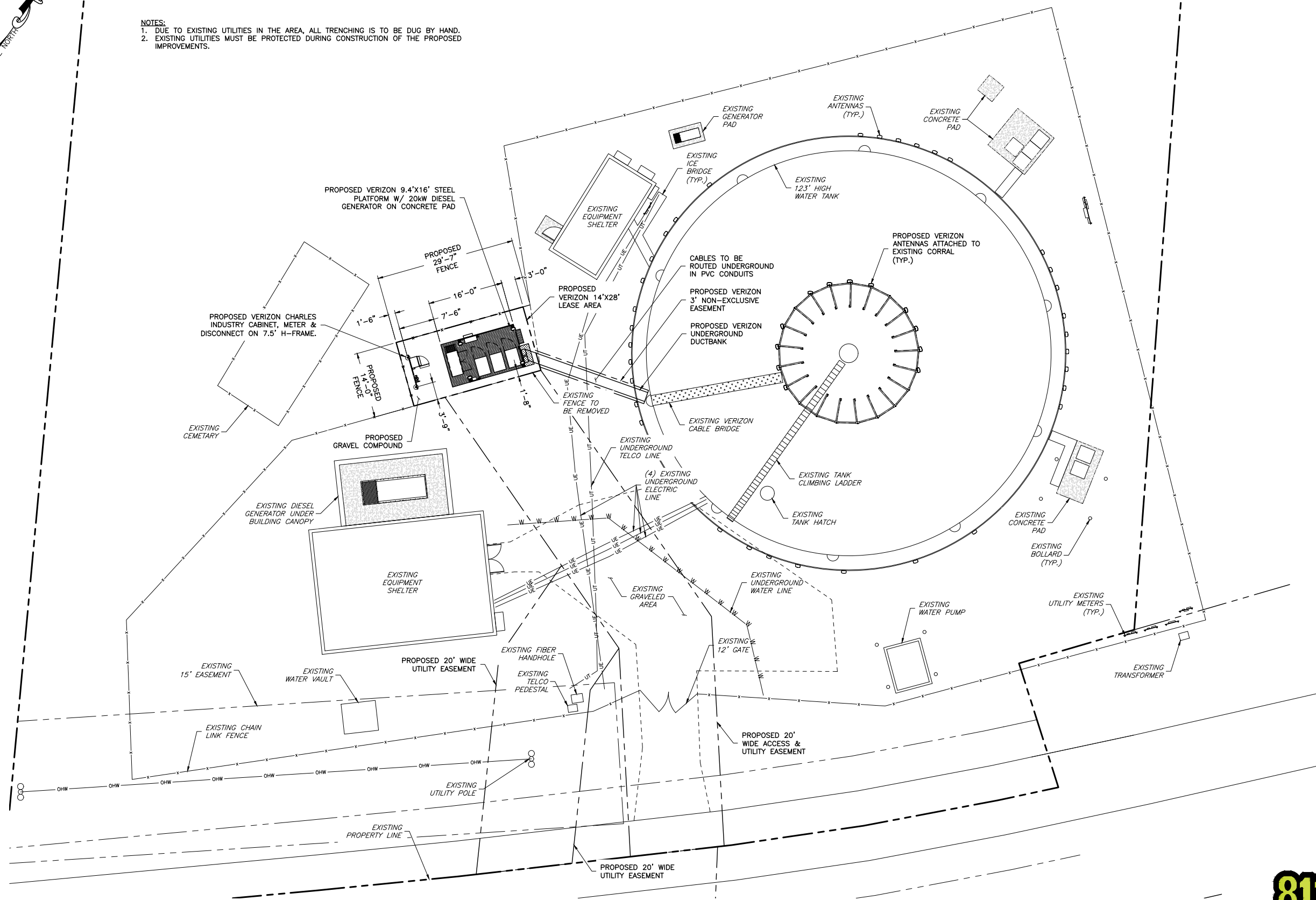
Z-1



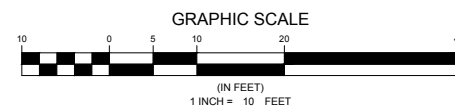
Know what's below.
Call before you dig.



- NOTES:
1. DUE TO EXISTING UTILITIES IN THE AREA, ALL TRENCHING IS TO BE DUG BY HAND.
 2. EXISTING UTILITIES MUST BE PROTECTED DURING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.



1
C-1
COMPOUND PLAN
SCALE: 1" = 10'



ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

SHEET NUMBER

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-648-6078

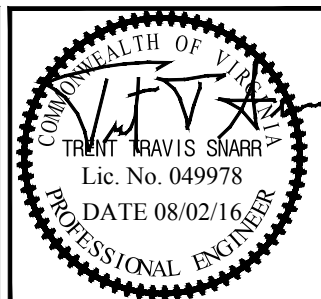
verizon

1831 RADY COURT
RICHMOND, VA 23222

WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REVISIONS

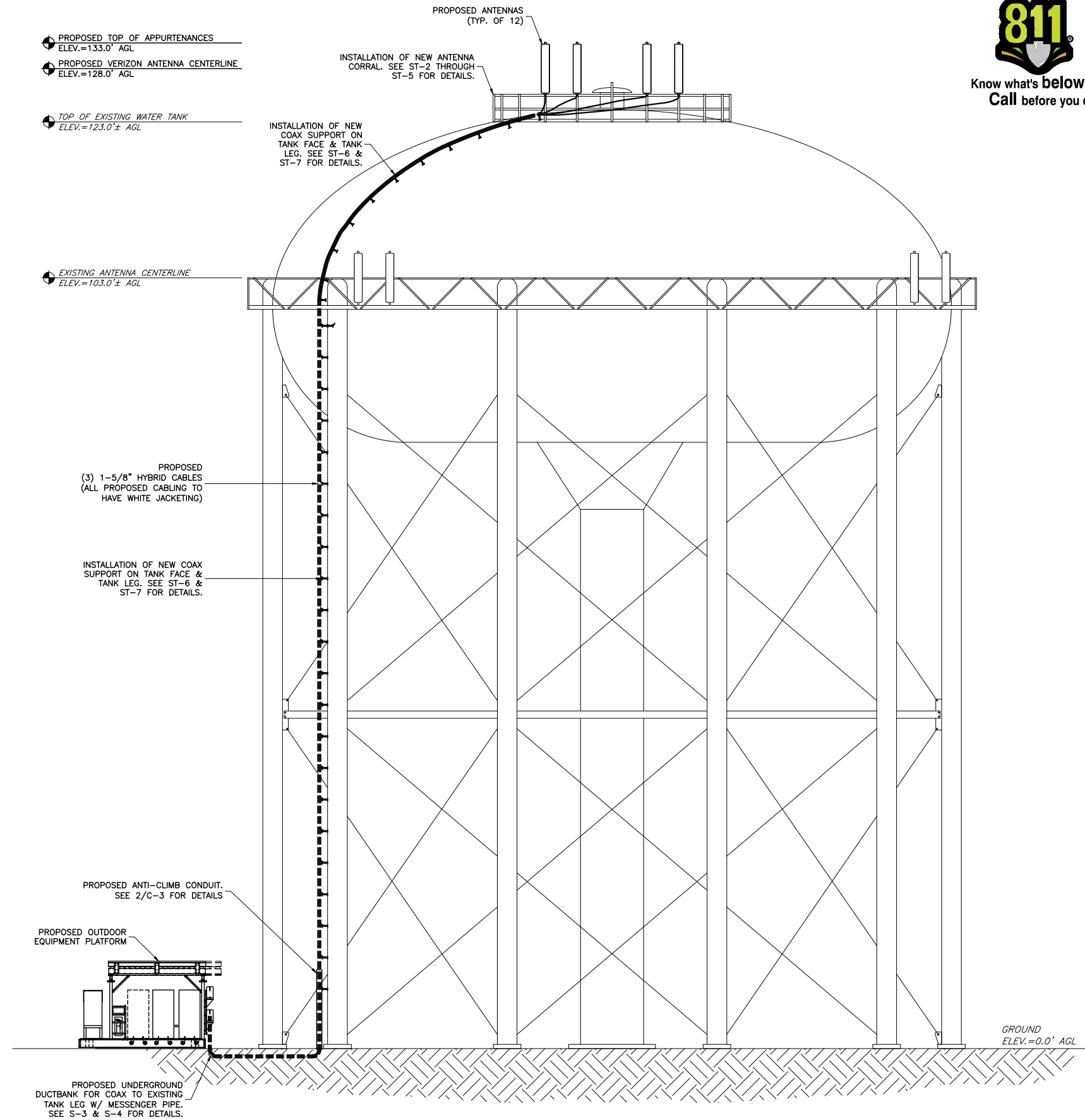
REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI



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

COMPOUND PLAN

C-1



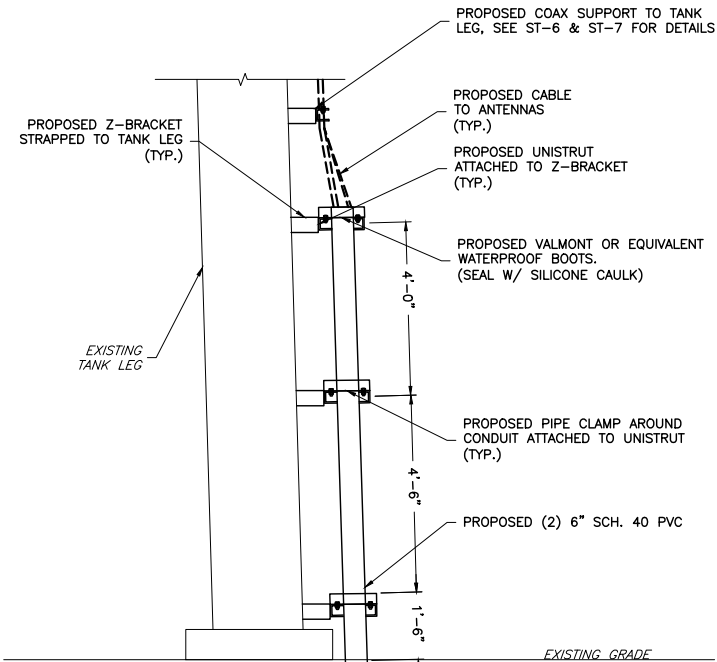
Know what's below.
Call before you dig.

GENERAL NOTES

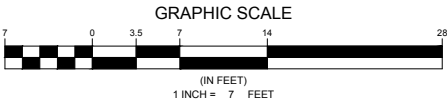
1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
5. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
8. TRANSMITTER EQUIPMENT AND ANTENNAS ARE DESIGNED TO MEET ANSI/TIA 222-G REQUIREMENTS.
9. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
10. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
11. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE IT AND CONTACT THE APPLICANT & THE OWNER'S REPRESENTATIVE.
12. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY 2 TIMES PER MONTH.
13. PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT OR MODIFICATION OF THE EXISTING STRUCTURE, A STRUCTURAL ANALYSIS SHALL BE PERFORMED BY THE OWNER'S AGENT TO CERTIFY THAT THE EXISTING/PROPOSED COMMUNICATION STRUCTURE AND COMPONENTS ARE STRUCTURALLY ADEQUATE TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, COAXIAL CABLES AND OTHER APPURTENANCES.
14. PROPERTY LINE INFORMATION WAS PREPARED USING DEEDS, TAX MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY.
15. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
16. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
17. NO SIGNIFICANT NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
18. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).
19. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
20. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.

ANTENNA NOTES

1. ALL ANTENNAS ARE TO BE FURNISHED WITH DOWNTILT BRACKETS. CONTRACTOR IS TO COORDINATE VERIFY THE PROPOSED DOWNTILTS THE V2W CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
2. ANTENNA RAD CENTER IS IN REFERENCE TO ELEVATION 0'-0" (EXISTING GRADE).
3. CONTRACTOR IS TO VERIFY ALL ANTENNA MODELS AZIMUTHS WITH THE V2W CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.



1 ELEVATION
C-3 SCALE: 1" = 7'



2 ANTI-CLIMB CONDUIT DETAIL
C-3 SCALE: 1" = 2'

ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

SHEET NUMBER

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4078

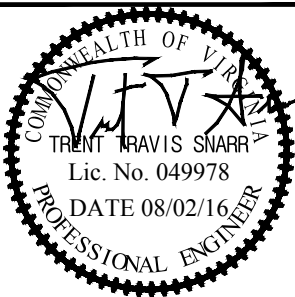
verizon

1831 RADY COURT
RICHMOND, VA 23222

WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REVISIONS

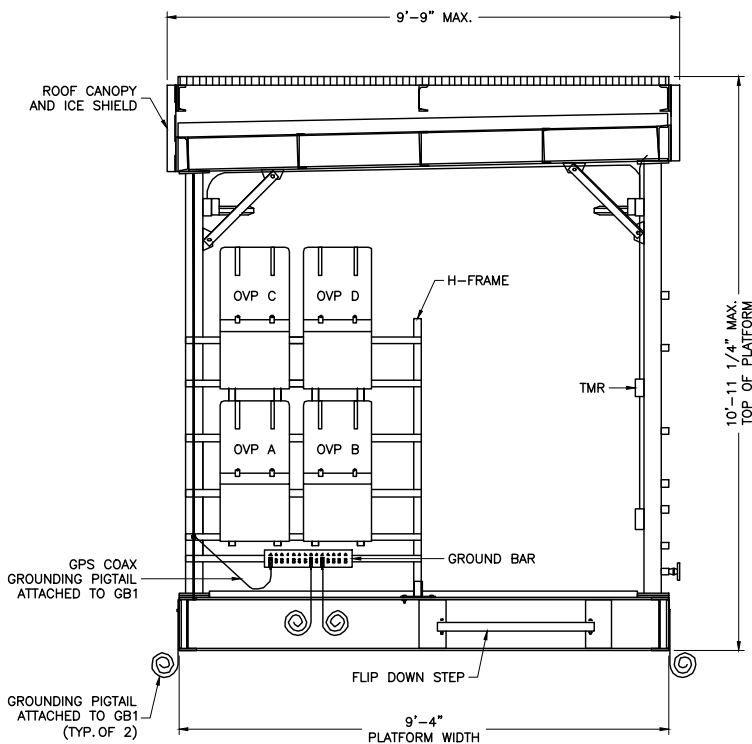
REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI



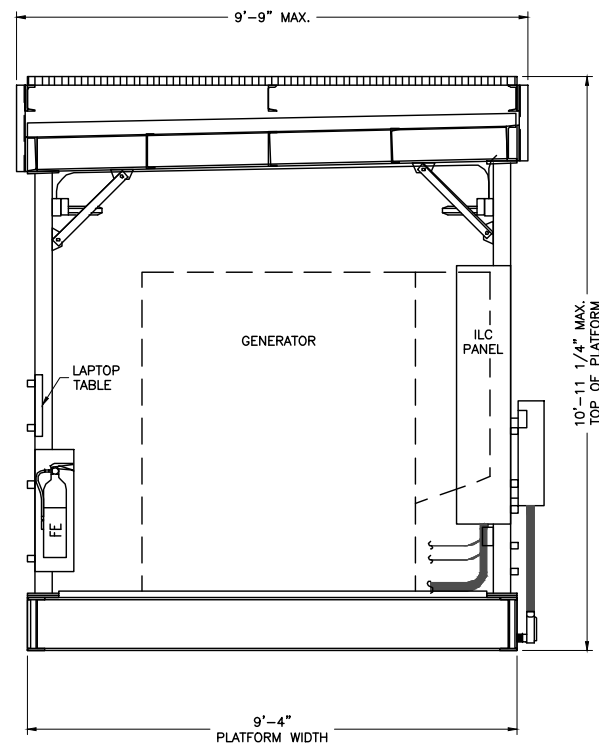
TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

TOWER ELEVATION
& NOTES

C-3



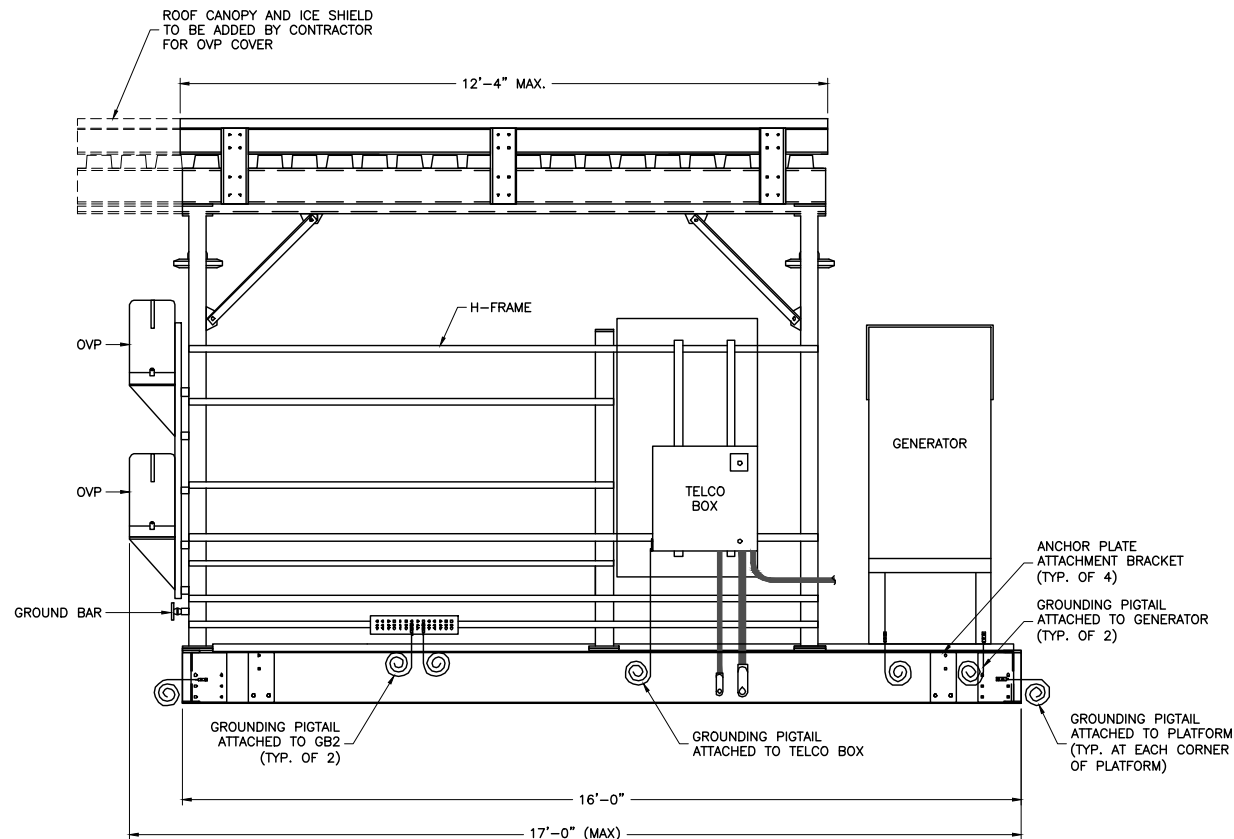
1 PLATFORM LEFT ELEVATION
S-1 SCALE: NTS



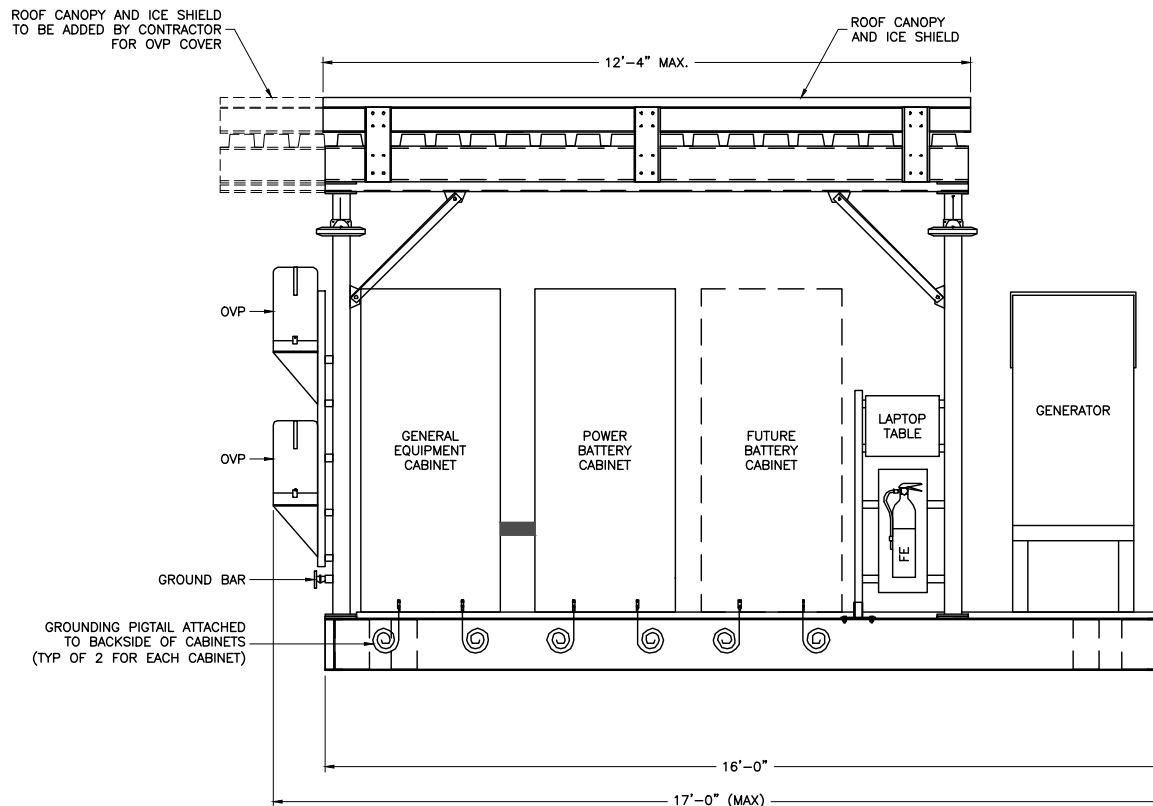
2 PLATFORM RIGHT ELEVATION
S-1 SCALE: NTS

VFP STEEL PLATFORM SELECTION

PLATFORM TYPE:	GROUND LEVEL STEEL PLATFORM (GLPS)	
PLATFORM SIZE:	9'-4" X 16'-0" (3 CABINETS W/ GENERAT.)	VZWA-9.4X16-GLSP-3
GENERAL OPTIONS		
	TELCO/FIBER DEMARCATION BOX (24"x24"x6")	VZ-DEMAR BOX
	TELCO/FIBER BOX AC POWER RECEPTACLE	VZ-RCPT-TELCO BOX
	FOLD DOWN LAPTOP SHELF	VZ-SHELF-EXTERIOR
	ONE 10LB FIRE EXTINGUISHER	VZ-FE-10#CO2/BOX
	STEPS - ANTI SLIP TREAD (1 STEP)	VZ-FLIP STEP
	SAFETY CHAIN ASSEMBLY FOR ENTRANCE	N/A
	GROUND BAR FOR OVP'S	VZ-GROUND-OVP
	GROUND BAR FOR RRH'S	N/A
GRATED STEEL PLATFORM OPTIONS		
	PLATFORM FRAME BASE SUPPORTS	VZ-PLATFORM BASE-STANDARD
SAFETY RAILING OPTIONS		
	REMOVABLE ROUND TUBULAR: 9'-4"x16'-0"	N/A
ICE BRIDGE OPTIONS		
	COVERING EQUIPMENT CABINET - 3 CABINET	VZ9.4X16-CNTLVR-ICE SHIELD
GENERATOR INSTALLATION OPTIONS		
	MODEL	MTU 20kW DIESEL AC GENERATOR/DG04RZ05VQM00001
	AC GENERATOR INSTALLATION	VZ-GEN INSTALL-AC
	AC CIRCUIT - BATTERY CHARGER	VZ-RCPT-GEN-BC
	AC CIRCUIT - BLOCK HEATER	VZ-RCPT-GEN-BH
ILC PANEL OPTIONS		
	NEMA 3R INTERSECT: 1PH, TVSS, ATS 30-POS	AA300G-1PH-3R
	ILC INSTALLATION WITH ATS AND TVSS	VZ-NEMA3-ILC-INSTALL-ATS
OTHER INSTALLATION OPTIONS		
	CHARLES BATTERY & BTS CABINET INSTALLATION	
	AC RECTIFIER DROPS & WIRING TO POWER PLANT	
	GPS ANTENNA & COAX INSTALL	
	THREE WALL MOUNT OVP INSTALL	
	BACKHAUL LGX PANEL IN BTS CABINET INSTALL	



3 PLATFORM FRONT ELEVATION
S-1 SCALE: NTS



4 PLATFORM FRONT ELEVATION
S-1 SCALE: NTS

ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

SHEET NUMBER

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4078

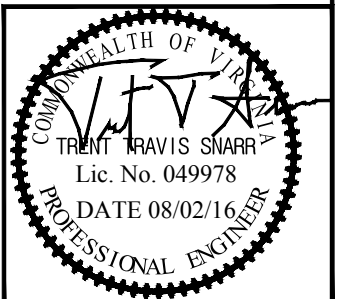
verizon

1831 RADY COURT
RICHMOND, VA 23222

WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REVISIONS

REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI



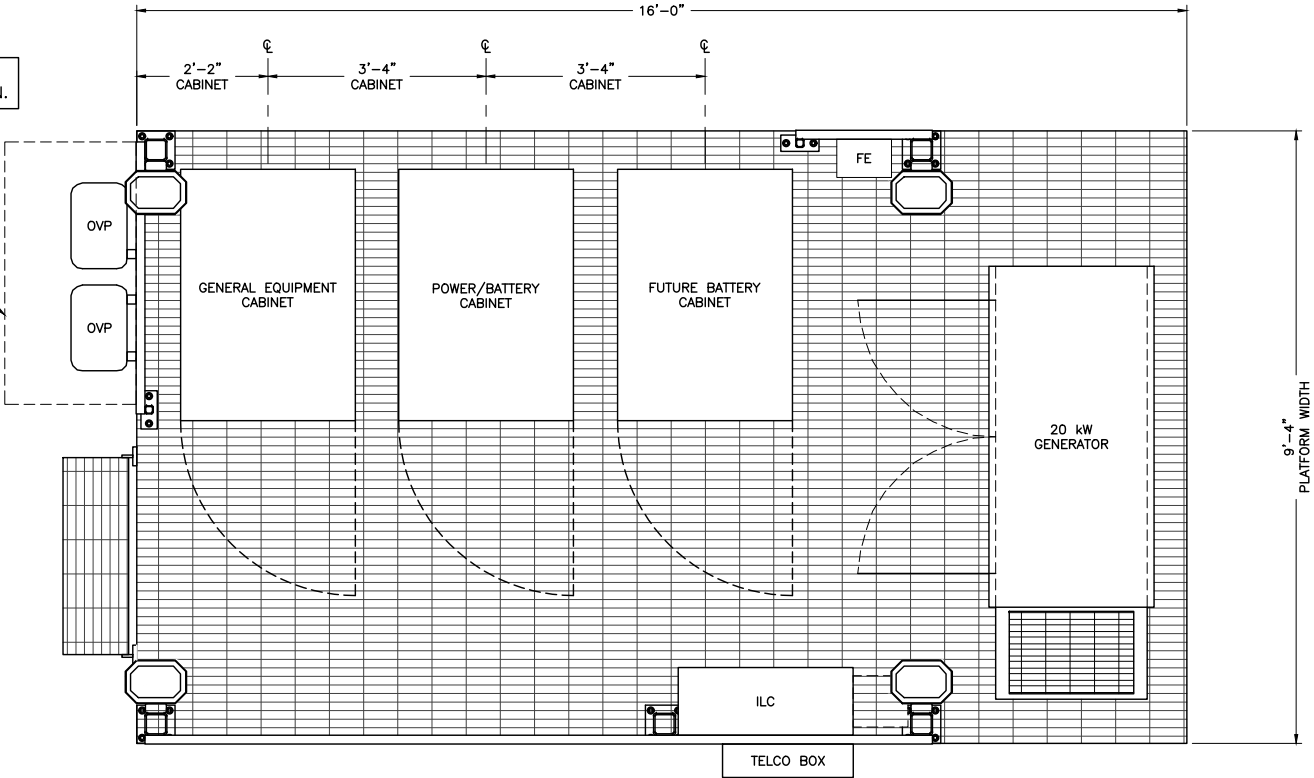
TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

**EQUIPMENT
STEEL PLATFORM
DETAILS**

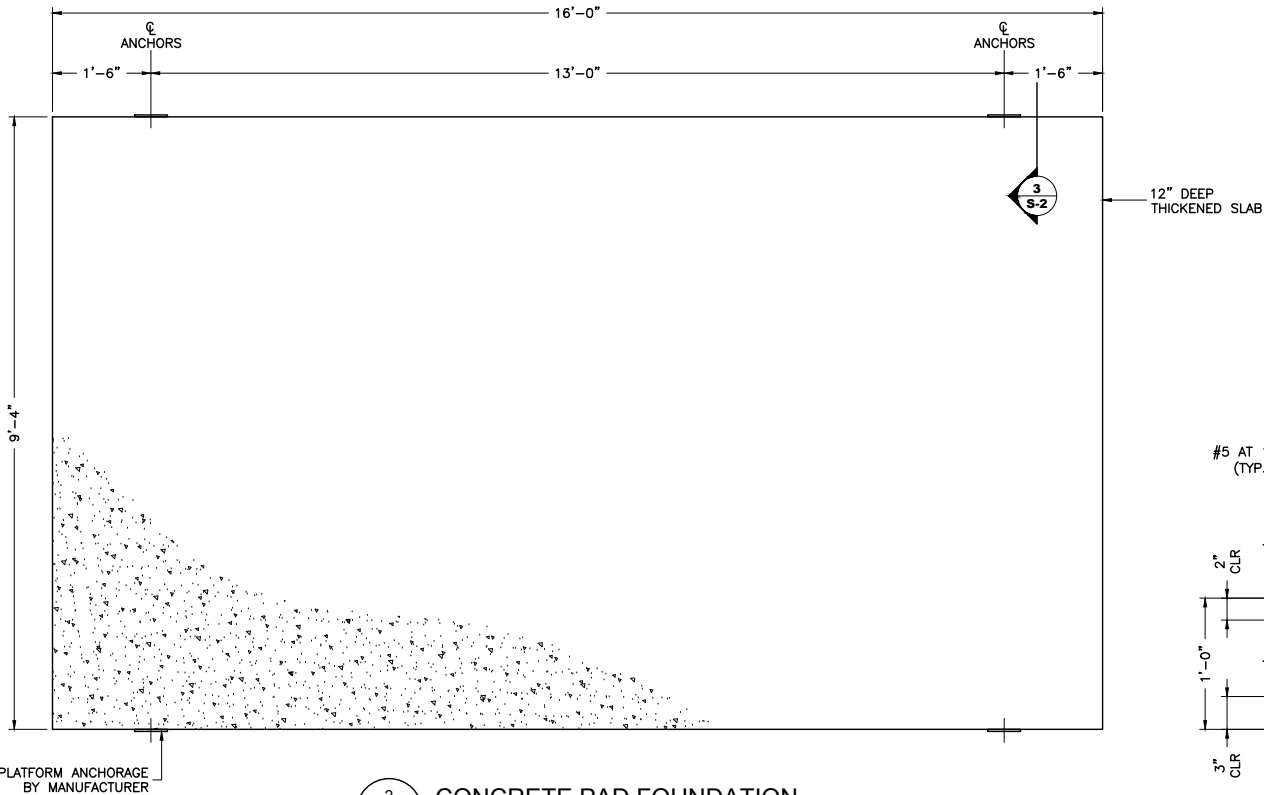
S-1

NOTE: SEE SHEET E-1
FOR CONDUIT INFORMATION.

ROOF CANOPY AND ICE
SHIELD TO BE ADDED BY
CONTRACTOR FOR OVP COVER

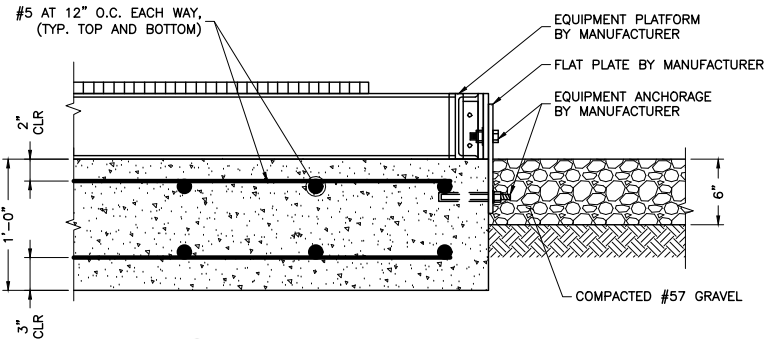


1
S-2
PLATFORM PLAN
SCALE: NTS



2
S-2
CONCRETE PAD FOUNDATION
SCALE: NTS

NOTE:
1. THIS DESIGN ASSUMES A 1500 psf
SOIL BEARING PRESSURE
2. CONCRETE AIR CONTENT SHALL BE
5.5% PLUS OR MINUS 1.5%



3
S-2
CONCRETE PAD FOUNDATION
SCALE: NTS

CONCRETE GENERAL NOTES

- ALL CONCRETE WORK SHALL CONFORM TO ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND TO THE PROJECT SPECIFICATIONS.
- ALL CONCRETE IS TO BE NORMAL DENSITY CONCRETE WITH A MAXIMUM SLUMP OF 4 INCHES. MAXIMUM AGGREGATE SIZE 3/4 INCH. NO ADDITIONAL WATER SHALL BE ADDED TO THE CONCRETE AT THE JOB SITE.
- PROVIDE AIR ENTRAINMENT OF 4 TO 6 PERCENT IN ALL EXPOSED CONCRETE WORK WITH AIR-ENTRAINING ADMIXTURE COMPLYING WITH ASTM C 260. AT TROWEL-FINISHED FLOORS, DO NOT EXCEED AIR-ENTRAINMENT CONTENT OF 3 PERCENT.
- NO HOLES OR SLEEVES SHALL BE MADE THROUGH CONCRETE WORK OTHER THAN THOSE INDICATED ON THE STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.
- ALL FORMWORK OFFSET TOLERANCES (PER ACI 117) TO BE CLASS A.
- FLOOR SLAB TOLERANCES TO ASTM E1155; SPECIFIED OVERALL MINIMUM VALUE OF FLATNESS F F=25 WITH LOCAL MINIMUM F F=17, AND MINIMUM VALUE OF LEVELNESS F F=20 WITH LOCAL MINIMUM F I AND F F WITHIN 72 HOURS OF SLAB CONSTRUCTION.
- CABINETS ON SLAB (IF APPLICABLE). ALLOWABLE CAPACITY OF CONCRETE USED IN DESIGN MIN. 3500 PSI.

FOUNDATION NOTES:

1. DESIGN INFORMATION AND GENERAL REQUIREMENTS

1.1 CODES

- DESIGN CONFORMS TO INTERNATIONAL BUILDING CODE 2012.
- AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318-99.

2. EARTHWORK

2.1 FOUNDATIONS

- FOUNDATIONS HAVE BEEN DESIGNED TO BEAR ON (UNDISTURBED RESIDUAL SOILS/COMPACTED STRUCTURAL FILL), CAPABLE OF SAFELY SUPPORTING A NET ALLOWABLE BEARING PRESSURE OF 2000 PSF. IF FOUNDATION CONDITIONS PROVE UNACCEPTABLE AT ELEVATIONS SHOWN, EXCAVATION SHALL BE CARRIED DEEPER AND SHALL BE BACKFILLED WITH LEAN CONCRETE TO PLAN FOOTING BOTTOM, OR REDESIGN OF FOUNDATIONS WILL BE REQUIRED AT THE DIRECTION OF THE ENGINEER.
- DESIGN, FURNISH AND INSTALL ALL TEMPORARY SHEETING, SHORING AND DRAINAGE NECESSARY TO MAINTAIN THE EXCAVATION AND PROTECT SURROUNDING STRUCTURES AND UTILITIES.
- THOROUGHLY COMPACT ALL BOTTOM OF FOOTINGS PRIOR TO PLACING ANY CONCRETE.

3. CONCRETE

3.1 FORMWORK

- CONCRETE CONSTRUCTION SHALL CONFORM TO "SPECIFICATIONS FOR STRUCTURAL, CONCRETE FOR BUILDINGS," (ACI 301-89).
- FORMWORK SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS."

3.2 REINFORCEMENT

- REINFORCING STEEL ASTM A615, GRADE 60. WELDED WIRE ASTM A185 (FLAT SHEET). LAPS 40 BAR DIAMETERS UNLESS NOTED. BARS SHALL BE SECURELY HELD IN ACCURATE POSITION BY SUITABLE ACCESSORIES, TIE BARS, SUPPORT BARS, ETC. HOOK LENGTHS SHALL BE 12 BAR DIAMETERS.
- CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED.
FOOTINGS & SLABS CAST AGAINST GROUND 3"
CONCRETE TO BE IN CONTACT WITH GROUND OR WEATHER AT BARS GREATER THAN #5 2"
AT BARS #5 OR LESS 1-1/2"
CONCRETE NOT TO BE EXPOSED TO GROUND OR WEATHER BEAMS, GIRDERS & COLUMNS 1-1/2"
SLABS & WALLS 3/4"

3.3 CAST-IN-PLACE-CONCRETE

- MINIMUM 28 DAY CYLINDER STRENGTH AND MAXIMUM SLUMP, PRIOR TO ADDITION OF SUPER PLASTICIZERS, AS FOLLOWS:

		F'C (PSI)	
SLUMP			
CLASS I FOOTINGS		4000	3"
CLASS II FOOTINGS		4000	3"
CLASS III INTERIOR ELEVATED		4000	4"
SLABS & WALLS			
CLASS V OTHER WORK		4000	4"
CLASS VI LEAN CONCRETE FOR OVER			
EXCAVATION OF FOUNDATIONS		2000	
N/A			

- MIX DESIGN TO BE IN ACCORDANCE WITH ACI 318, CHAPTER 5. NO CALCIUM CHLORIDE OR ADMIXTURE CONTAINING CHLORIDES SHALL BE USED IN ANY CONCRETE.
- COARSE AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33 SIZE #57. COARSE AGGREGATE FOR LIGHT WEIGHT CONCRETE SHALL CONFORM TO ASTM C330 GRADED 3/4" TO 1 1/4".
- COLD WEATHER PLACEMENT SHALL COMPLY WITH ACI 306.1
- HOT WEATHER PLACEMENT SHALL COMPLY WITH ACI 305 R.
- CHAMFER ALL EXPOSED EDGES 3/4".
- THE MAXIMUM TEMPERATURE OF ALL CONCRETE AT DELIVERY TO THE SITE SHALL BE 85°F, TOTAL DELIVERY TIME SHALL BE LESS THEN 75 MINUTES.

ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

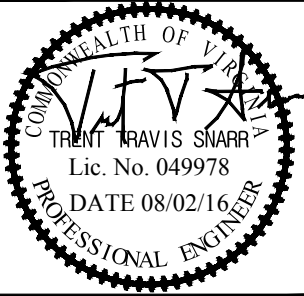
SHEET NUMBER



WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REVISIONS

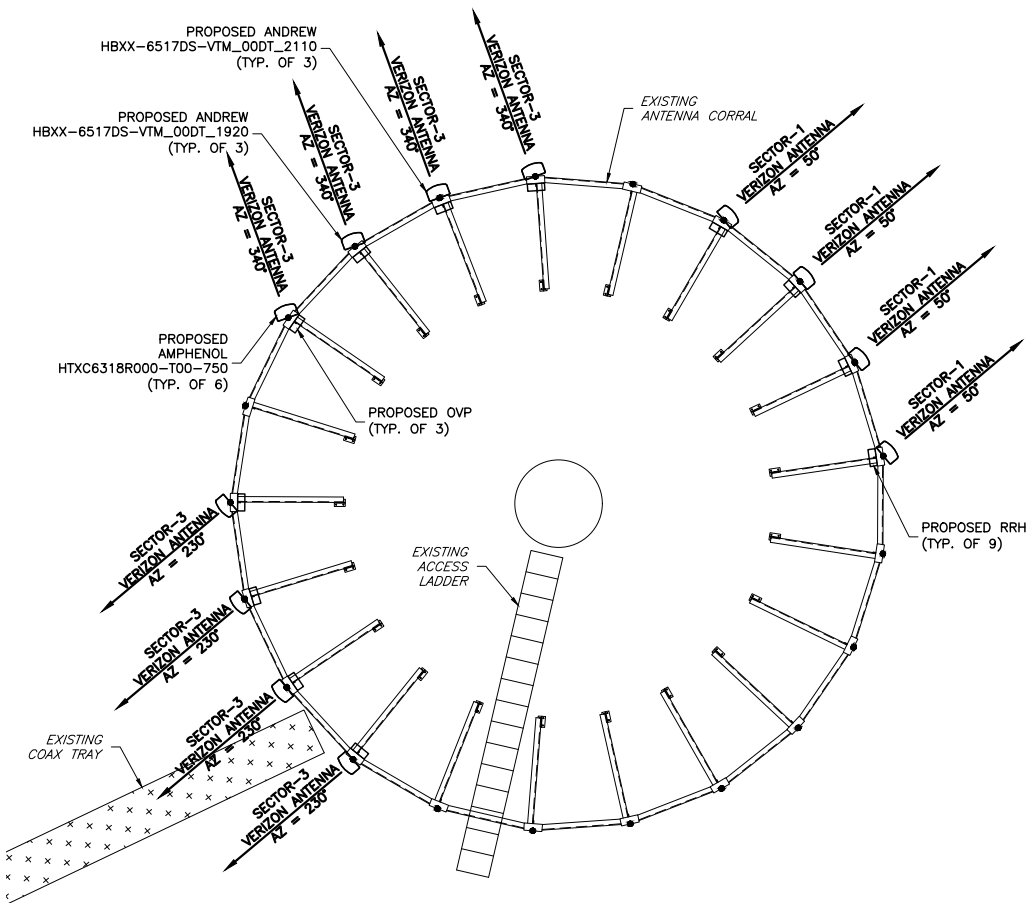
REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI



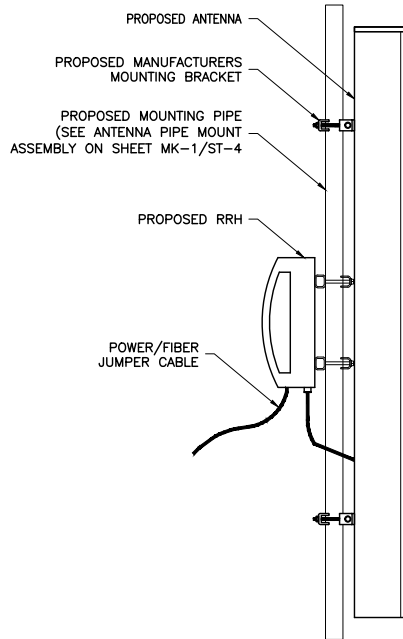
TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

EQUIPMENT
STEEL PLATFORM,
CONCRETE PAD
DETAILS & NOTES

S-2



1 ANTENNA ORIENTATION PLAN
SCALE: NTS
S-3



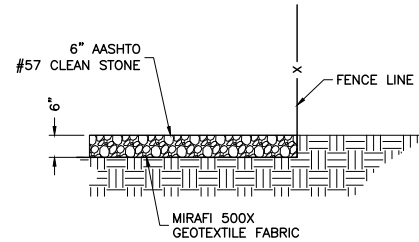
2 ANTENNA MOUNTING DETAILS
NTS
S-3

STRUCTURAL NOTES

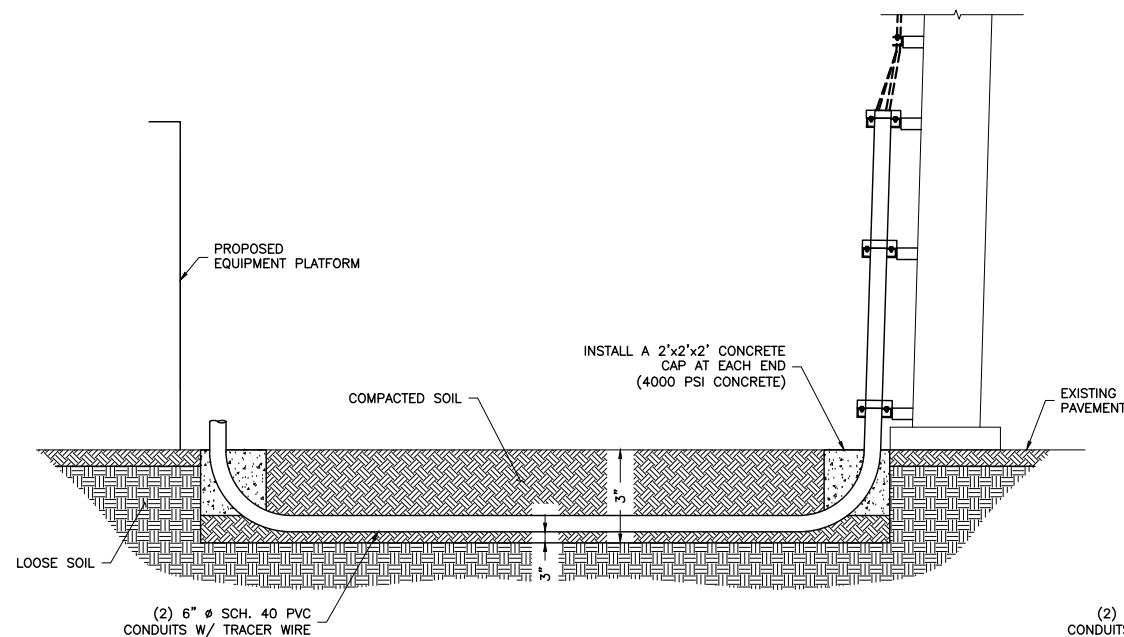
- DESIGN REQUIREMENTS PER INTERNATIONAL BUILDING CODE 2012 AND THE ANSI/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED BY FIELD MEASUREMENT AND FROM THE EXISTING STRUCTURAL DRAWINGS. THE GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH CONSTRUCTION.
- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS - ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN INCLUDING THE COMMENTARY AND THE AISC CODE FOR STANDARD PRACTICE.
- STRUCTURAL STEEL PLATES AND SHAPES SHALL CONFORM TO ASTM A36. ALL STRUCTURAL STEEL PIPES SHALL CONFORM TO ASTM A53 GRADE B. ALL STRUCTURAL STEEL COMPONENTS AND FABRICATED ASSEMBLIES SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
- WELDING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AMERICAN WELDING SOCIETY (AWS) STRUCTURAL WELDING CODE - STEEL WELD ELECTRODES SHALL BE E70XX.
- ALL COAXIAL CABLE CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE AS SPECIFIED BY THE OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL FURNISH ALL CONNECTION HARDWARE REQUIRED TO SECURE THE CABLES. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
- ALL THREADED STRUCTURAL FASTENERS AND THREADED ROD FOR ANTENNA SUPPORT ASSEMBLIES SHALL CONFORM TO ASTM A307 OR ASTM A36. ALL STRUCTURAL FASTENERS FOR STRUCTURAL STEEL FRAMING SHALL CONFORM TO ASTM A325. FASTENERS SHALL BE 5/8" MIN. DIAMETER BEARING TYPE CONNECTIONS WITH THREADS INCLUDED IN THE SHEAR PLANE. ALL EXPOSED FASTENERS, NUTS AND WASHERS SHALL BE GALVANIZED UNLESS OTHERWISE NOTED. CONCRETE EXPANSION ANCHORS SHALL BE HILTI KWIK BOLTS UNLESS OTHERWISE NOTED.
- NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY TRUE NORTH AND INFORM CONSTRUCTION MANAGER OF ANY DISCREPANCY BEFORE STARTING CONSTRUCTION.

ANTENNA MOUNTING NOTES

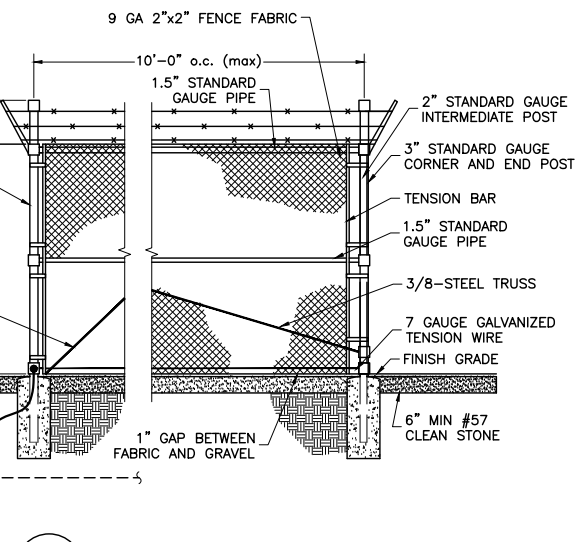
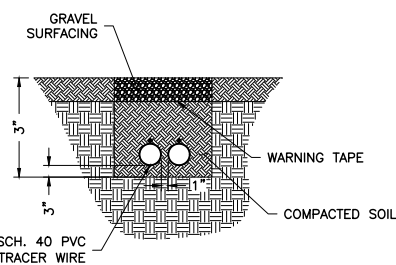
- ALL ATTACHMENTS TO PAINTED SURFACES ARE TO INCLUDE THE PLACEMENT OF NEOPRENE STRIPS BETWEEN HARDWARE AND POINTS OF CONTACT TO REDUCE/ELIMINATE DAMAGE TO THE PAINTED SURFACE. METAL SHIMS ARE REQUIRED IN SITUATIONS WHERE TIGHTENING A CLAMP MAY CAUSE THE NEOPRENE TO TEAR CAUSING METAL TO METAL CONTACT. WHERE POSSIBLE EXPOSED NEOPRENE SHOULD BE WRAPPED WITH WHITE TAPE. FASTENING SEQUENCE SHOULD INCLUDE NYLON WASHERS BETWEEN THE PAINTED SURFACE AND THE GALVANIZED WASHER.
- PROPOSED ANTENNAS INSTALLED ON THE EXTERIOR OF THE WATER TOWER SHALL BE SHOP PAINTED TO MATCH THE COLOR OF THE WATER TOWER (VERIFY COLOR).
- ALL EXPOSED JUMPERS, COAX CABLES, POWER CABLES AND FIBER CABLES WILL BE PROVIDED WITH WHITE JACKETING OR TAPED WHITE.
- ALL MOUNTING HARDWARE IS TO BE GALVANIZED AND/OR PROVIDED IN A NON-CORRODING MATERIAL.
- THE INSTALLATION OF NEW EQUIPMENT WILL BE PLACED BEHIND THE ANTENNAS AND IN A MANNER THAT MAINTAINS THE HANDRAILS' COMPLIANCE WITH CURRENT OSHA GUIDELINES FOR ACCESS.
- ALL ANTENNA FEED LINES, JUMPERS, COAX AND HYBRID CABLE CANNOT INTERFERE WITH TOP OF THE HANDRAIL AND MUST BE ROUTED AS SUCH THAT THEY COMPLY WITH OSHA REQUIREMENTS REGARDING HANDRAILS.
- ALL VERIZON RF EQUIPMENT IS TO BE TAGGED AND/OR LABELED.



4 GRAVEL COMPOUND DETAIL
NTS
S-3



3 CONDUIT TRENCH DETAIL
NTS
S-3



5 TYPICAL FENCE DETAIL
NTS
S-3

ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

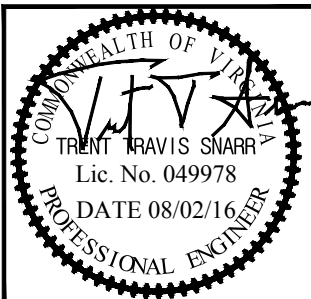
SHEET NUMBER



WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REVISIONS

REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI

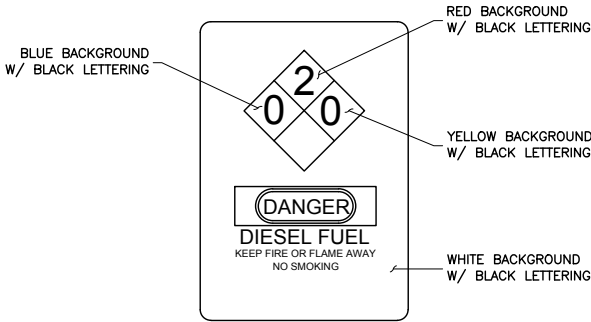
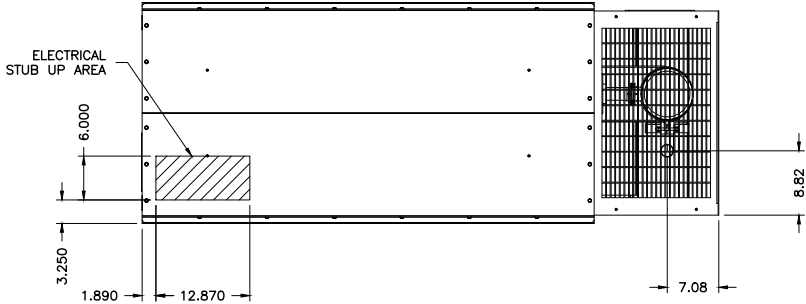


TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

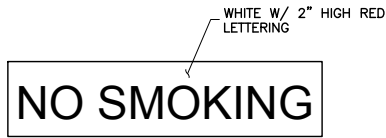
CONSTRUCTION DETAILS & NOTES

S-3

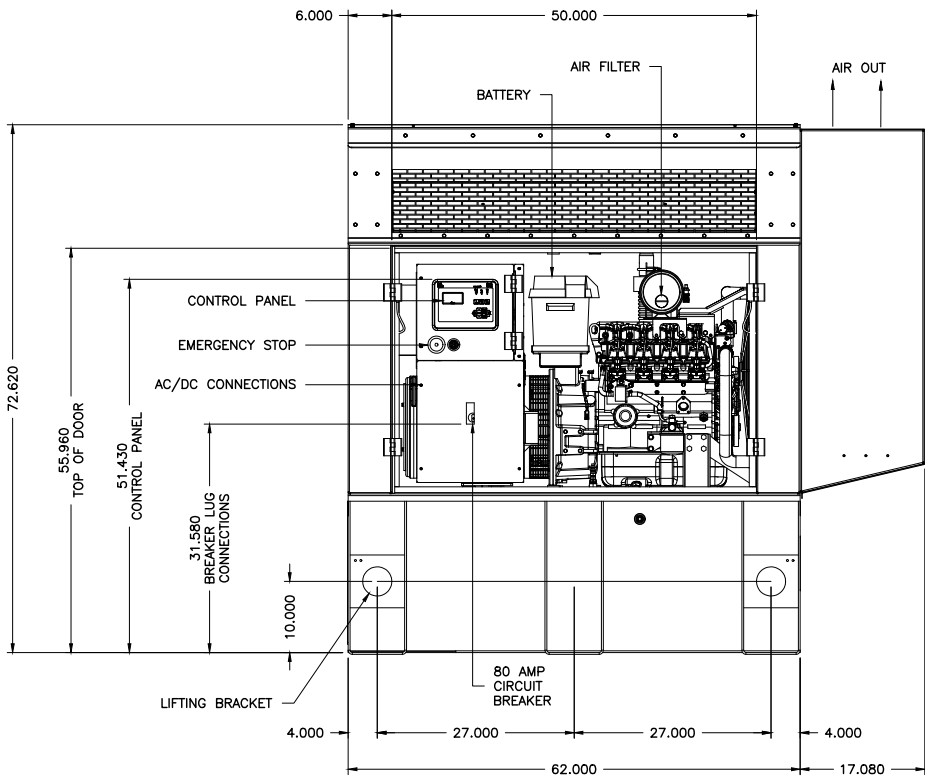
- NOTES:
- 1. APPROX. WEIGHT: (WET) 1,900 LBS
 - 2. FUEL TANK: UL LISTED DOUBLE WALL WITH 125% CONTAINMENT
 - 3. FUEL TANK CAPACITY: 75 GALLONS
 - 4. ENCLOSURE: SINGLE SIDE SERVICE RIGHT SIDE, ALUMINUM, 190 MPH WIND RATED
 - 5. SOUND LEVEL: 63dB(A) AT 7M
 - 6. VERIZON PART NUMBER: DG04RZ05V1M00001



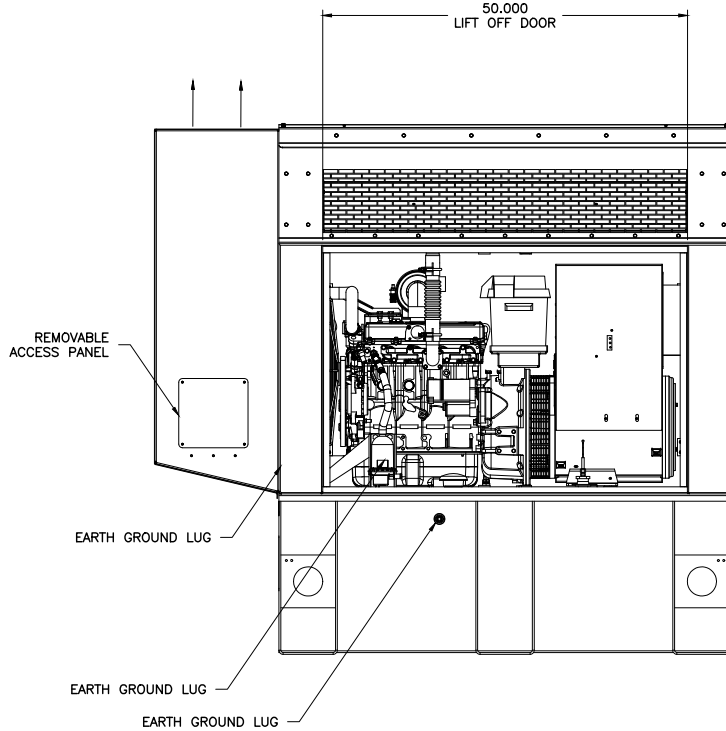
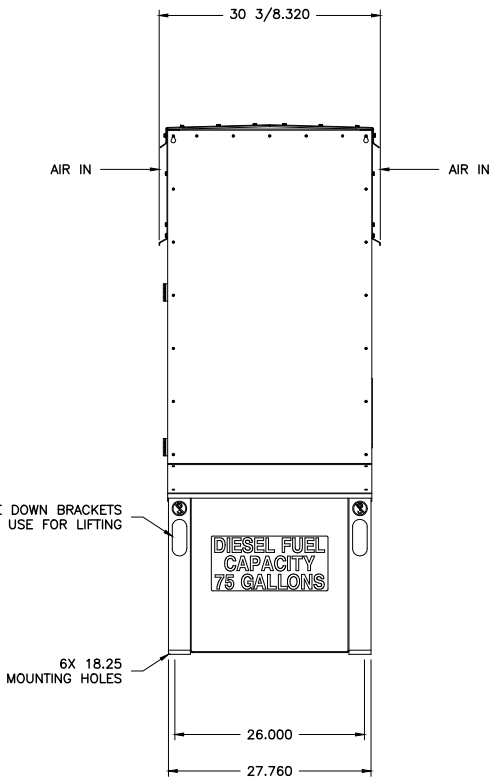
2 SIGNAGE DETAIL
S-4 NTS



3 SIGNAGE DETAIL
S-4 NTS



1 20KW VERIZON TRIPLE CONTAINMENT DIESEL GENERATOR DETAIL
S-4 NTS



ENGINEER

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4078

APPLICANT

verizon

1831 RADY COURT
RICHMOND, VA 23222

SITE INFORMATION

WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI

PROFESSIONAL STAMP



ENGINEER

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

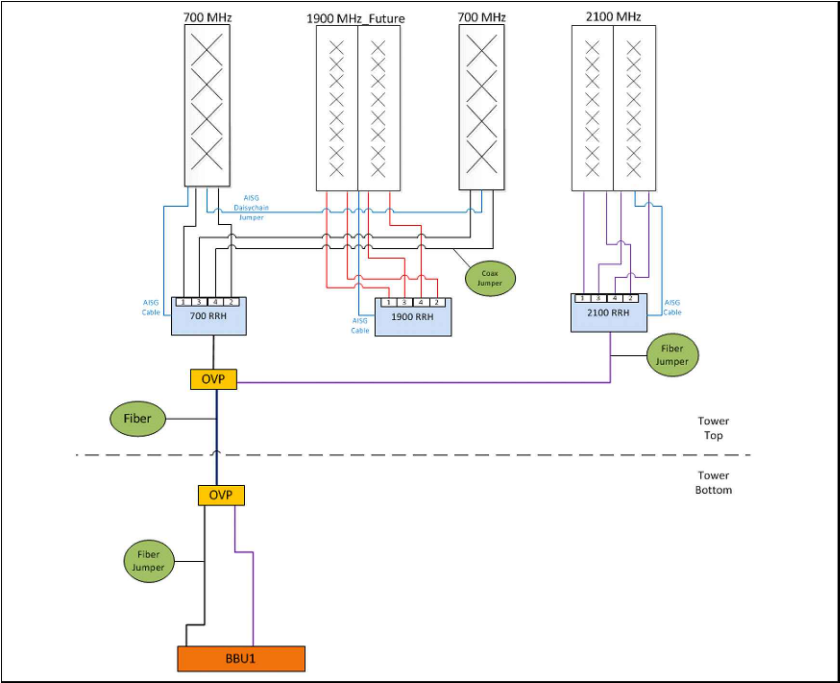
SHEET TITLE

**GENERATOR
DETAILS**

SHEET NUMBER

S-4

PLUMBING DIAGRAM PER SECTOR (TYP OF 3)



1 RF PLUMBING DIAGRAM
A-1 NTS

Market	Charlottesville, VA
Name	WOODBURN
Location	
NWF ID	2702449
Address	2226 Woodburn Road Charlottesville, VA, 22901
Cell #	590
SWITCH #	1

NAD83 Coordinates:	38-05-47.80 N	78-28-13.23 W	
NAD83 Degrees:	38.096611	-78.470342	
Structure Height (Feet):	95	Grnd Elv. (Ft.)	542
Tower Type:	Any Type of 1 Twr AGL (Ft.)		
Tower Owner:	Rivanna Water and Sewer Authority		
ASR#	0	FAA Study#	0

Reason for Issue:	Newbuild
Notes:	Total 12 Antennas: (6) HTXC's & (6) HBXX, (9) RRH's, (3) Hybriflex Cables & (3) OVP's.
Statement of Work:	Proposed configuration: Install (6) 700 Antennas, (3) AWS Antennas & (3) PCS Antennas. Add 9 total RRH's i.e. 6, (60 Watts) for 700 & PCS, and 3, (90 Watts) for AWS as specified in the Summary Table below.

Sector	Ant. Position	Technology	Ant. Manufacturer	Antenna Model	Mount	Azimuth	M. Tilt	E. Tilt/RET	RRH	RRH Type	TMA	Di/Triplexers	Notes
ALPHA	A2	850_CDMA / LTE Tx0Rx0Tx1Rx1											
	A1	700 LTE Tx0Rx0Tx1Rx1	AMPHENOL	HTXC6318R000-T00-750	128	50	0	2	Yes	B13 RRH4x30-4R	No	None	RET Panel
	A4	AWS_LTE Tx0Rx0Tx1Rx1Rx2Rx3	ANDREW	HBXX-6517DS-A2M_00DT_2110	128	50	0	2	Yes	AWS3(B66a) 4x45 RRH	No	None	RET Panel
	A3	850_LTE Rx2Rx3											
	A3	700_LTE Rx2Rx3	AMPHENOL	HTXC6318R000-T00-750	128	50	0	2	Yes	See Plumbing Diagram	No	None	RET Panel
BETA	A2	PCS_LTE Tx0Rx0Tx1Rx1Rx2Rx3	ANDREW	HBXX-6517DS-A2M_00DT_1920	128	50	0	2	Yes	B25 RRH4x30-4R	No	None	RET Panel
	B2	850_CDMA / LTE Tx0Rx0Tx1Rx1											
	B1	700 LTE Tx0Rx0Tx1Rx1	AMPHENOL	HTXC6318R000-T00-750	128	230	0	2	Yes	B13 RRH4x30-4R	No	None	RET Panel
	B4	AWS_LTE Tx0Rx0Tx1Rx1Rx2Rx3	ANDREW	HBXX-6517DS-A2M_00DT_2110	128	230	0	2	Yes	AWS3(B66a) 4x45 RRH	No	None	RET Panel
	B3	850_LTE Rx2Rx3											
	B3	700_LTE Rx2Rx3	AMPHENOL	HTXC6318R000-T00-750	128	230	0	2	Yes	See Plumbing Diagram	No	None	RET Panel
GAMMA	B2	PCS_LTE Tx0Rx0Tx1Rx1Rx2Rx3	ANDREW	HBXX-6517DS-A2M_00DT_1920	128	230	0	2	Yes	B25 RRH4x30-4R	No	None	RET Panel
	C2	850_CDMA / LTE Tx0Rx0Tx1Rx1											
	C1	700 LTE Tx0Rx0Tx1Rx1	AMPHENOL	HTXC6318R000-T00-750	128	340	0	2	Yes	B13 RRH4x30-4R	No	None	RET Panel
	C4	AWS_LTE Tx0Rx0Tx1Rx1Rx2Rx3	ANDREW	HBXX-6517DS-A2M_00DT_2110	128	340	0	2	Yes	AWS3(B66a) 4x45 RRH	No	None	RET Panel
	C3	850_LTE Rx2Rx3											
	C3	700_LTE Rx2Rx3	AMPHENOL	HTXC6318R000-T00-750	128	340	0	2	Yes	See Plumbing Diagram	No	None	RET Panel
	C2	PCS_LTE Tx0Rx0Tx1Rx1Rx2Rx3	ANDREW	HBXX-6517DS-A2M_00DT_1920	128	340	0	2	Yes	B25 RRH4x30-4R	No	None	RET Panel

Sector	# of Fiber	# of Coax	Size of Coax	TMA	Triplexer	RRH
Alpha	2	0	1-5/8"	0	0	3
Beta		0	1-5/8"	0	0	3
Gamma		0	1-5/8"	0	0	3
Total	2	0		0	0	9

2 RF DATA SHEET
A-1 NTS

ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

SHEET NUMBER

NB+C

TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-546-4078

verizon

1831 RADY COURT
RICHMOND, VA 23222

WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REVISIONS			
REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI

COMMONWEALTH OF VIRGINIA

TRENT TRAVIS SNARR

Lic. No. 049978

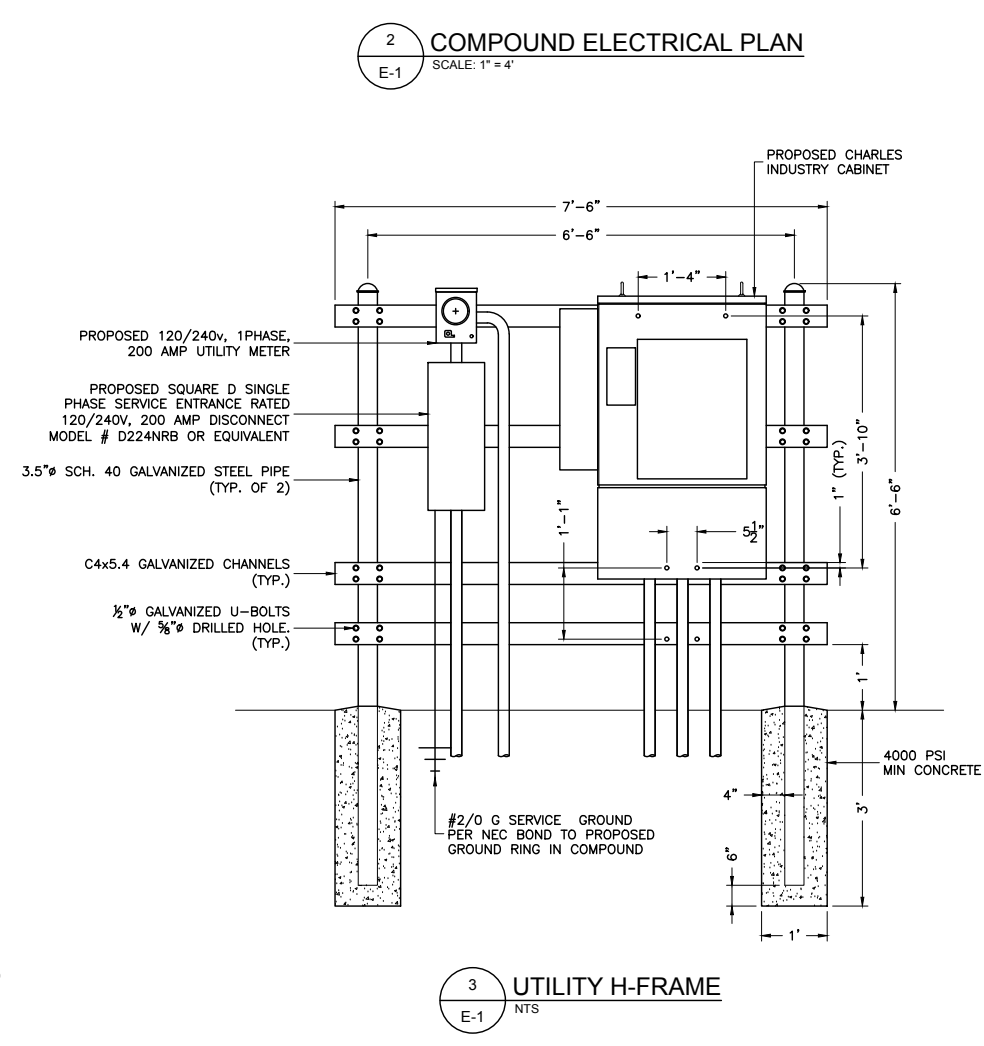
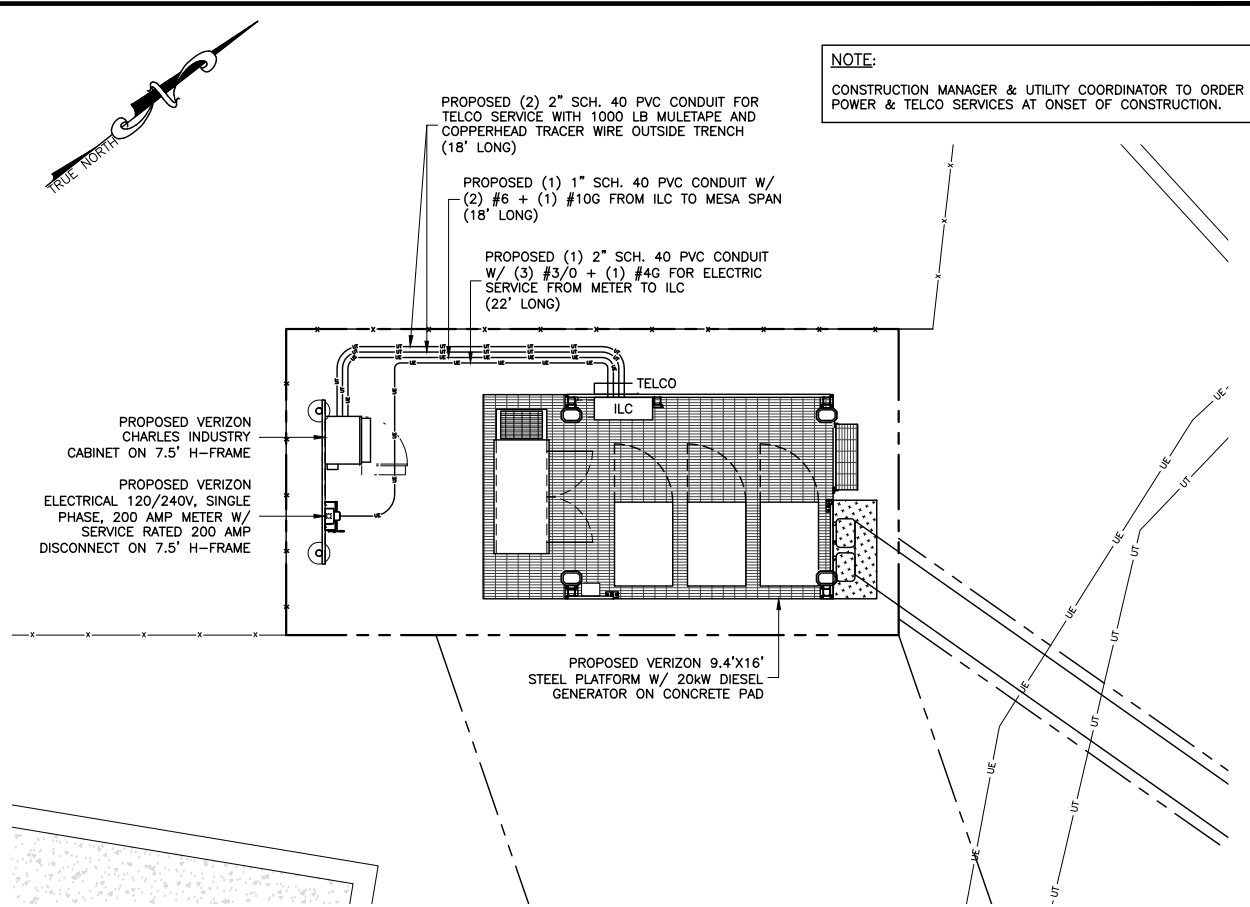
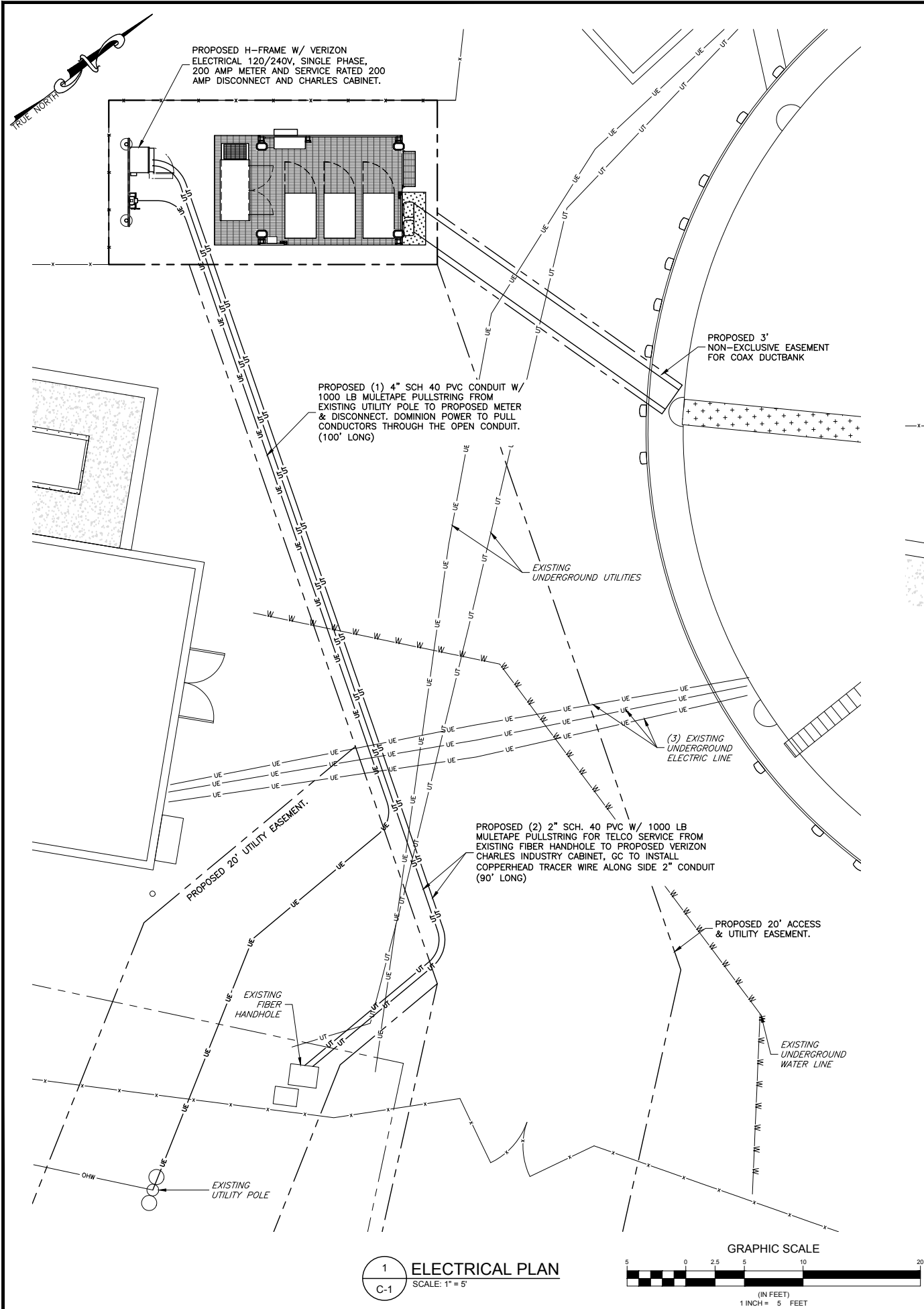
DATE 08/02/16

PROFESSIONAL ENGINEER

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

RF PLUMBING
DIAGRAM &
DATA SHEET

A-1



ENGINEER	NB+C TOTALLY COMMITTED. NB+C ENGINEERING SERVICES, LLC. 4435 WATERFRONT DRIVE, SUITE 100 GLEN ALLEN, VA 23060 804-548-4078																																				
APPLICANT	verizon 1831 RADY COURT RICHMOND, VA 23222																																				
SITE INFORMATION	WOODBURN VERIZON COLLOCATION NB+C PROJ. #27074 2226 WOODBURN ROAD CHARLOTTESVILLE, VA 22901 ALBEMARLE COUNTY																																				
DESIGN RECORD	<table><tr><th colspan="4">REVISIONS</th></tr><tr><th>REV</th><th>DATE</th><th>DESCRIPTION</th><th>BY</th></tr><tr><td>6</td><td>08/02/16</td><td>REVISED</td><td>PJP</td></tr><tr><td>5</td><td>07/14/16</td><td>REVISED</td><td>OP</td></tr><tr><td>4</td><td>03/31/16</td><td>REVISED</td><td>OP</td></tr><tr><td>3</td><td>01/28/16</td><td>REVISED</td><td>OP</td></tr><tr><td>2</td><td>11/17/15</td><td>REVISED</td><td>OP</td></tr><tr><td>1</td><td>10/29/15</td><td>REVISED</td><td>OP</td></tr><tr><td>0</td><td>08/25/15</td><td>PRELIMINARY CD</td><td>AI</td></tr></table>	REVISIONS				REV	DATE	DESCRIPTION	BY	6	08/02/16	REVISED	PJP	5	07/14/16	REVISED	OP	4	03/31/16	REVISED	OP	3	01/28/16	REVISED	OP	2	11/17/15	REVISED	OP	1	10/29/15	REVISED	OP	0	08/25/15	PRELIMINARY CD	AI
REVISIONS																																					
REV	DATE	DESCRIPTION	BY																																		
6	08/02/16	REVISED	PJP																																		
5	07/14/16	REVISED	OP																																		
4	03/31/16	REVISED	OP																																		
3	01/28/16	REVISED	OP																																		
2	11/17/15	REVISED	OP																																		
1	10/29/15	REVISED	OP																																		
0	08/25/15	PRELIMINARY CD	AI																																		
PROFESSIONAL STAMP																																					
ENGINEER	TRENT T. SNARR, P.E. VA PROFESSIONAL ENGINEER LIC. #49978																																				
SHEET TITLE	ELECTRICAL PLAN & DETAILS																																				
SHEET NUMBER	E-1																																				

SUBMITTAL OF BID INDICATES THAT THE CONTRACTOR IS COGNIZANT OF ALL CITY SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.

CONTRACTOR SHALL PERFORM ALL VERIFICATIONS, OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO ORDERING OF ANY EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.

VERIFY HEIGHTS WITH PROJECT MANAGER PRIOR TO INSTALLATION.

THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.

CONTRACTOR SHALL COORDINATE ALL WORK BETWEEN TRADES AND ALL OTHER SCHEDULING AND PROVISIONARY CIRCUMSTANCES SURROUNDING THE PROJECT.

CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR COMPLETE AND FUNCTIONALLY OPERATING SYSTEMS ENERGIZED AND READY FOR USE THROUGHOUT AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.

ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. ELECTRICAL MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION OVER THE CONSTRUCTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU. ALL MATERIALS AND EQUIPMENT SHALL BE APPROVED FOR THEIR INTENDED USE AND LOCATION.

ALL WORK SHALL COMPLY WITH ALL APPLICABLE GOVERNING STATE, COUNTY AND CITY CODES AND OSHA, NFPA, NEC & ASHRAE REQUIREMENTS.

ENTIRE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE. ALL WORK, MATERIAL AND EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.

PROPERLY SEAL ALL PENETRATIONS. PROVIDE UL LISTED FIRE-STOPS WHERE PENETRATIONS ARE MADE THROUGH FIRE-RATED ASSEMBLIES. WATER-TIGHT USING SILICONE SEALANT.

DELIVER ALL BROCHURES, OPERATING MANUALS, CATALOGS AND SHOP DRAWINGS TO THE PROJECT MANAGER AT JOB COMPLETION. PROVIDE MAINTENANCE MANUALS FOR MECHANICAL EQUIPMENT. AFFIX MAINTENANCE LABELS TO MECHANICAL EQUIPMENT.

ALL CONDUCTORS SHALL BE COPPER. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG., UNLESS OTHERWISE NOTED. CONDUCTORS SHALL BE TYPE THWN-2, RATED IN ACCORDANCE WITH NEC 110-14(C).

ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THE MAXIMUM INTERRUPTING CURRENT TO WHICH THEY MAY BE SUBJECTED.

THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE; ARTICLES 250 & 810 AND THE UTILITY COMPANY STANDARDS.

CONDUIT:

A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADSWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.

B. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.

C. LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE U.L. LISTED AND SHALL BE USED AT FINAL CONNECTIONS TO MECHANICAL EQUIPMENT & RECTIFIERS AND WHERE PERMITTED BY CODE, ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL CONTAIN A FULL-SIZE GROUND CONDUCTOR.

D. CONDUIT RUNS SHALL BE SURFACE MOUNTED ON CEILINGS OR WALLS UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL RUN PARALLEL OR PERPENDICULAR TO WALLS, FLOOR, CEILING, OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE PROJECT MANAGER PRIOR TO INSTALLING.

E. PVC CONDUIT MAY BE PROVIDED ONLY WHERE SHOWN, OR IN UNDERGROUND INSTALLATIONS. PROVIDE UV-RESISTANT CONDUIT WHERE EXPOSED TO THE ATMOSPHERE. PROVIDE GROUND CONDUCTOR IN ALL PVC RUNS; EXCEPT WHERE PERMITTED BY CODE TO OMIT.

ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS. BACKGROUND SHALL BE BLACK WITH WHITE LETTERS; EXCEPT AS REQUIRED BY CODE TO FOLLOW A DIFFERENT SCHEME.

UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORT TO PROJECT MANAGER. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.

CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION. LEGALLY DISPOSE OF ALL REMOVED, UNUSED AND EXCESS MATERIAL GENERATED BY THE WORK OF THIS CONTRACT. DELIVER ITEMS INDICATED ON THE DRAWINGS TO THE OWNER IN GOOD CONDITION. OBTAIN SIGNED RECEIPT UPON DELIVERY.

COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS SHALL BE PAID BY THE CONTRACTOR.

VERIFY ALL EXISTING CIRCUITRY PRIOR TO REMOVAL AND NEW WORK. MAINTAIN POWER TO ALL OTHER AREAS & CIRCUITS NOT SCHEDULED FOR REMOVAL.

RED LINED AS-BUILT PLANS SHALL BE PROVIDED TO THE CONSTRUCTION MANAGER.

-
- Diagram illustrating the cross-section of a proposed fence line, showing the following components and dimensions:
- PROPOSED FENCE LINE**: Indicated by a vertical line on the left.
 - 12"**: Dimension for the width of the gravel surfacing layer.
 - 6"**: Dimension for the depth of the gravel surfacing layer.
 - 1'-0"**: Dimension for the width of the backfill area.
 - 30" (MIN) POWER**: Dimension for the depth of the power line trench.
 - 24" (MIN) TELCO**: Dimension for the depth of the telco line trench.
 - UNDISTURBED SOIL**: The base layer of the ground.
 - FINISHED GRADE**: The top surface of the backfill.
 - BACKFILL TO MEET EXISTING FINISH GRADE**: The material used to fill the trench.
 - SELECT GRANULAR BACKFILL COMPACTED TO 85%**: The material used for the backfill.
 - AASHTO #57 GRAVEL SURFACING 6" DEEP**: The top layer of the backfill.
 - WARNING TAPE FOR UNDERGROUND UTILITIES (TYP)**: A layer of tape placed above the utilities.
 - (2) 2" PVC CARRYING TELCO SERVICE W/ TRACERWIRE**: Two parallel pipes for telco service.
 - 2" PVC CARRYING ELECTRIC SERVICE**: A single pipe for electric service.
 - 12" MIN (TYP)**: Dimension for the spacing between the utility pipes.
 - 8" MIN**: Dimension for the spacing between the utility pipes.
 - AASHTO #10 DUST**: The material used for the base of the backfill.

2 TYPICAL TRENCH DETAIL
E-2 NTS

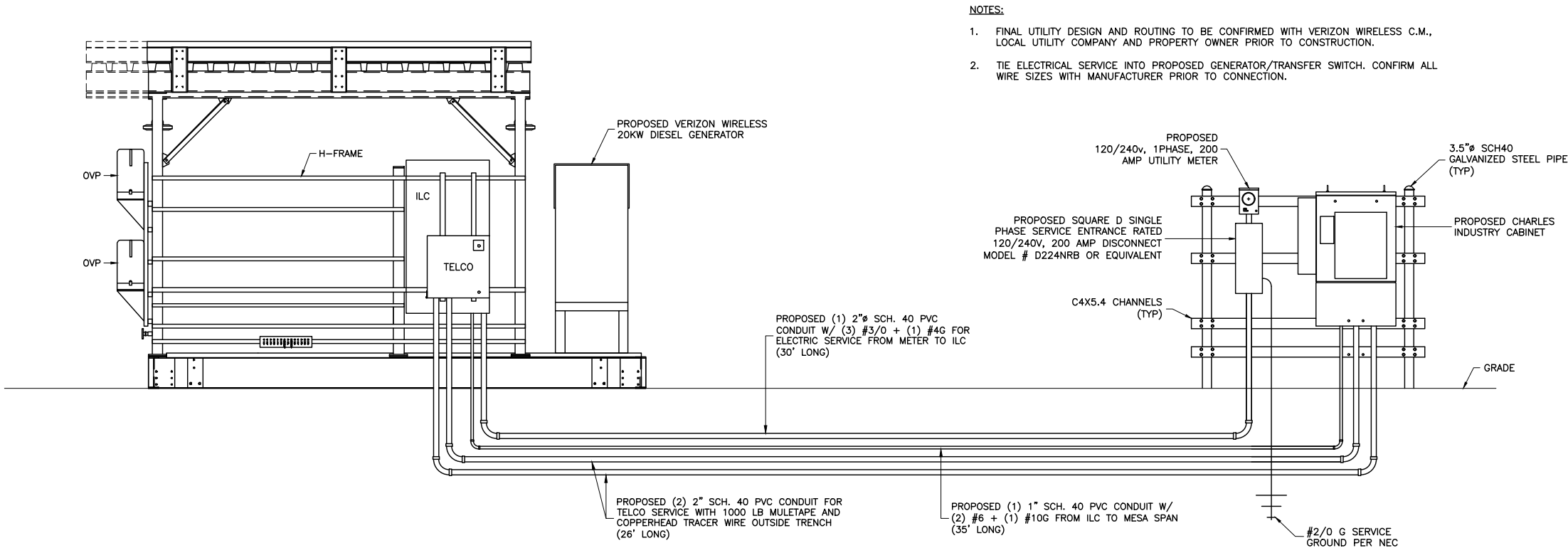
3 PANEL SCHEDULE
E-2 NTS



SHEET NUMBER SHEET TITLE ENGINEER PROFESSIONAL STAMP DESIGN RECORD SITE INFORMATION APPLICANT ENGINEER



- NOTES:
1. DUE TO EXISTING UTILITIES IN THE AREA, ALL TRENCHING IS TO BE DUG BY HAND.
 2. SITE SHALL BE SCRAPPED TO A DEPTH OF 3" MINIMUM TO REMOVE VEGETATIVE MATTER. EXCESS MATERIAL GENERATED FROM SCRAPPING ACTIVITIES SHALL BE BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF OFF-SITE.
 3. EXCAVATION MATERIAL SHALL BE USED FOR SURFACE GRADING AS NECESSARY; EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF OFF-SITE.
 4. CONTRACTOR TO PROVIDE A MINIMUM OF 4" SELECT TOPSOIL BORROW AND SEED TO ALL DISTURBED AREAS TO BE RESTORED WITH VEGETATION. SEED MIX SHALL BE APPROVED BY THE RWSA.
 5. DISTURBED AREAS OF THE ACCESS DRIVE SHALL BE RESTORED TO ITS ORIGINAL CROSS-SECTION (BOTH AGGREGATE BASE AND GRAVEL SURFACING) AND APPROVED BY THE RWSA.
 6. EXISTING UTILITIES MUST BE PROTECTED DURING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.



1
E-3 NTS

ELECTRICAL RISER DIAGRAM AND SERVICE ENTRANCE (SCHEMATIC)



Know what's below.
Call before you dig.

ENGINEER

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4079

APPLICANT

verizon

1831 RADY COURT
RICHMOND, VA 23222

SITE INFORMATION

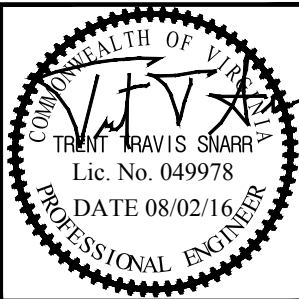
WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI

PROFESSIONAL STAMP



ENGINEER

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

SHEET TITLE

**ELECTRICAL RISER
DIAGRAM &
SERVICE ENTRANCE
SCHEMATIC**

SHEET NUMBER

E-3

GROUNDING NOTES:

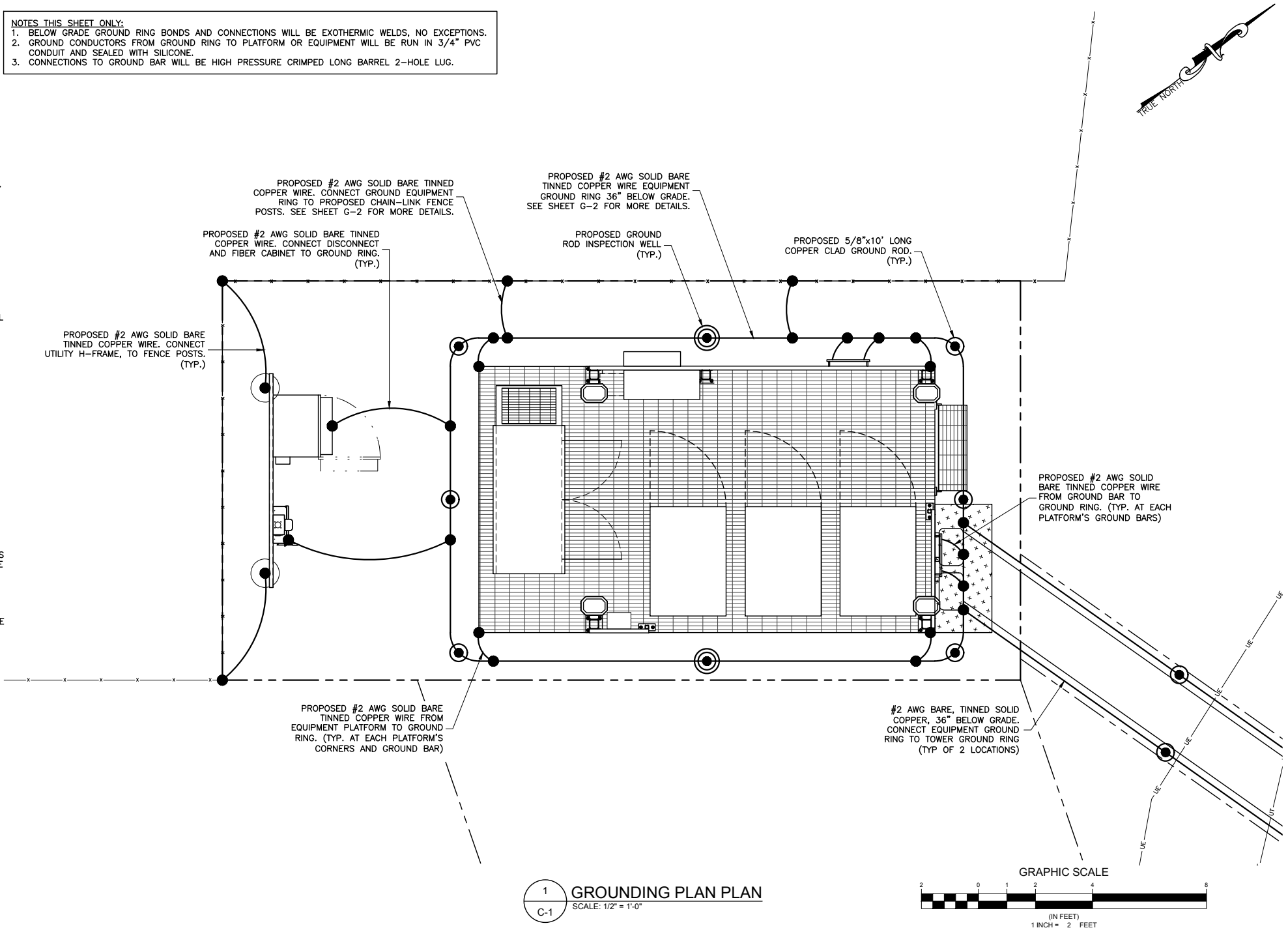
1. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
2. ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
3. ALL WIRES SHALL BE AWG THHN/THWN COPPER UNLESS NOTED OTHERWISE.
4. GROUNDING CONNECTIONS TO GROUND RODS, GROUND RING WIRE, TOWER BASE AND FENCE POSTS SHALL BE EXOTHERMIC ("CADWELDS") UNLESS NOTED OTHERWISE. CLEAN SURFACES TO SHINY METAL. WHERE GROUND WIRES ARE CADWELDED TO GALVANIZED SURFACES, SPRAY CADWELD WITH GALVANIZING PAINT.
5. GROUNDING CONNECTIONS TO GROUND BARS ARE TO BE TWO-HOLE BRASS MECHANICAL CONNECTORS WITH STAINLESS STEEL HARDWARE (INCLUDING SCREW SET) CLEAN GROUND BAR TO SHINY METAL. AFTER MECHANICAL CONNECTION, TREAT WITH PROTECTIVE ANTIOXIDANT COATING.
6. GROUND COAXIAL CABLE SHIELDS AT BOTH ENDS WITH MANUFACTURER'S GROUNDING KITS.
7. ROUTE GROUNDING CONDUCTORS THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12" RADIUS.
8. INSTALL #2 AWG GREEN-INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 TINNED SOLID COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
9. REFER TO GROUNDING PLAN FOR GROUND BAR LOCATIONS. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CADWELDS") TO ANTENNA MOUNTS AND GROUND RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
10. THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS POSITION ACCORDING TO GROUNDING PLAN. THE GROUND RODS SHALL BE 5/8"x10'-0" COPPER CLAD STEEL INTERCONNECTED WITH #2 TINNED SOLID COPPER WIRE BURIED 36" BELOW GRADE. BURY GROUND RODS A MAXIMUM OF 15' APART, AND A MINIMUM OF 8' APART.
11. IF ROCK IS ENCOUNTERED GROUND RODS SHALL BE PLACED AT AN OBLIQUE ANGLE NOT TO EXCEED 45°.
12. EXOTHERMIC WELDS SHALL BE MADE IN ACCORDANCE WITH ERICO PRODUCTS BULLETIN A-AT.
13. CONSTRUCTION OF GROUND RING AND CONNECTIONS TO EXISTING GROUND RING SYSTEM SHALL BE DOCUMENTED WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PROVIDE PHOTOS TO THE VERIZON CONSTRUCTION MANAGER.
14. ALL GROUND LEADS EXCEPT THOSE TO THE EQUIPMENT ARE TO BE #2 TINNED SOLID COPPER WIRE. ALL EXTERIOR GROUND BARS TINNED COPPER.
15. PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETTS KOPR-SHIELD (TM OF JET LUBE INC.). PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS, APPLY KOPR-SHIELD OR EQUAL.
16. ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED FIVE OHMS TO GROUND BY MEANS OF "FALL OF POTENTIAL TEST". TEST SHALL BE WITNESSED BY A VERIZON REPRESENTATIVE, AND RECORDED ON THE "GROUND RESISTANCE TEST" FORM.
17. WHERE BARE COPPER GROUND WIRES ARE ROUTED FROM ANY CONNECTION ABOVE GRADE TO GROUND RING, INSTALL WIRE IN 3/4" PVC SLEEVE, FROM 1' BELOW GRADE AND SEAL TOP WITH SILICONE MATERIAL.
18. PREPARE ALL BONDING SURFACES FOR GROUNDING CONNECTIONS BY REMOVING ALL PAINT AND CORROSION DOWN TO SHINY METAL. FOLLOWING CONNECTION, APPLY APPROPRIATE ANTI-OXIDIZATION PAINT.
19. ANY SITE WHERE THE EQUIPMENT (BTS, CABLE BRIDGE, PPC, GENERATOR, ETC.) IS LOCATED WITHIN 6 FEET OF METAL FENCING, THE GROUND RING SHALL BE BONDED TO THE NEAREST FENCE POST USING (3) RUNS OF #2 BARE TINNED COPPER WIRE.

NOTES THIS SHEET ONLY:

1. BELOW GRADE GROUND RING BONDS AND CONNECTIONS WILL BE EXOTHERMIC WELDS, NO EXCEPTIONS.

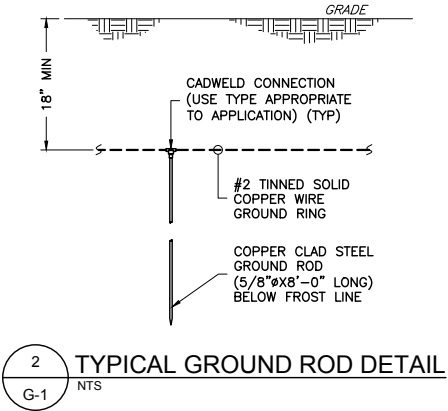
2. GROUND CONDUCTORS FROM GROUND RING TO PLATFORM OR EQUIPMENT WILL BE RUN IN 3/4" PVC CONDUIT AND SEALED WITH SILICONE.

3. CONNECTIONS TO GROUND BAR WILL BE HIGH PRESSURE CRIMPED LONG BARREL 2-HOLE LUG.

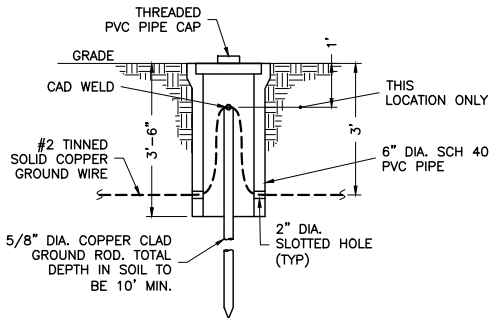


1 GROUNDING PLAN PLAN
SCALE: 1/2" = 1'-0"

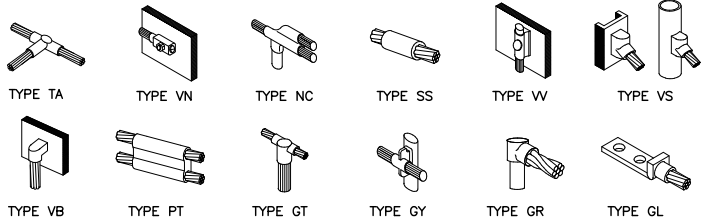
GROUNDING LEGEND	
	COAXIAL CABLE SHIELD GROUND KIT CONNECTION
	COMPRESSION FITTING CONNECTION
	EXOTHERMIC WELD CONNECTION
	5/8"x10" COPPER-CLAD STEEL GROUND ROD
	5/8"x10" COPPER-CLAD STEEL GROUND ROD WITH INSPECTION WELL
	PROPOSED GROUND WIRING
	EXISTING GROUND WIRING
	TINNED COPPER GROUND BAR 1/4"x4"x12" OR 1/4"x4"x20"
	CGB COLLECTOR GROUND BAR
	MGB MAIN GROUND BAR



2 TYPICAL GROUND ROD DETAIL
G-1 NTS



3 INSPECTION WELL DETAIL
G-1 NTS



4 CADWELD GROUNDING CONNECTION DETAILS
G-1 NTS

ENGINEER



APPLICANT



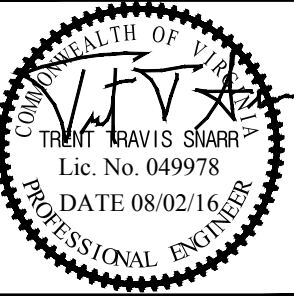
SITE INFORMATION

WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

DESIGN RECORD

REVISIONS			
REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI

PROFESSIONAL STAMP



ENGINEER

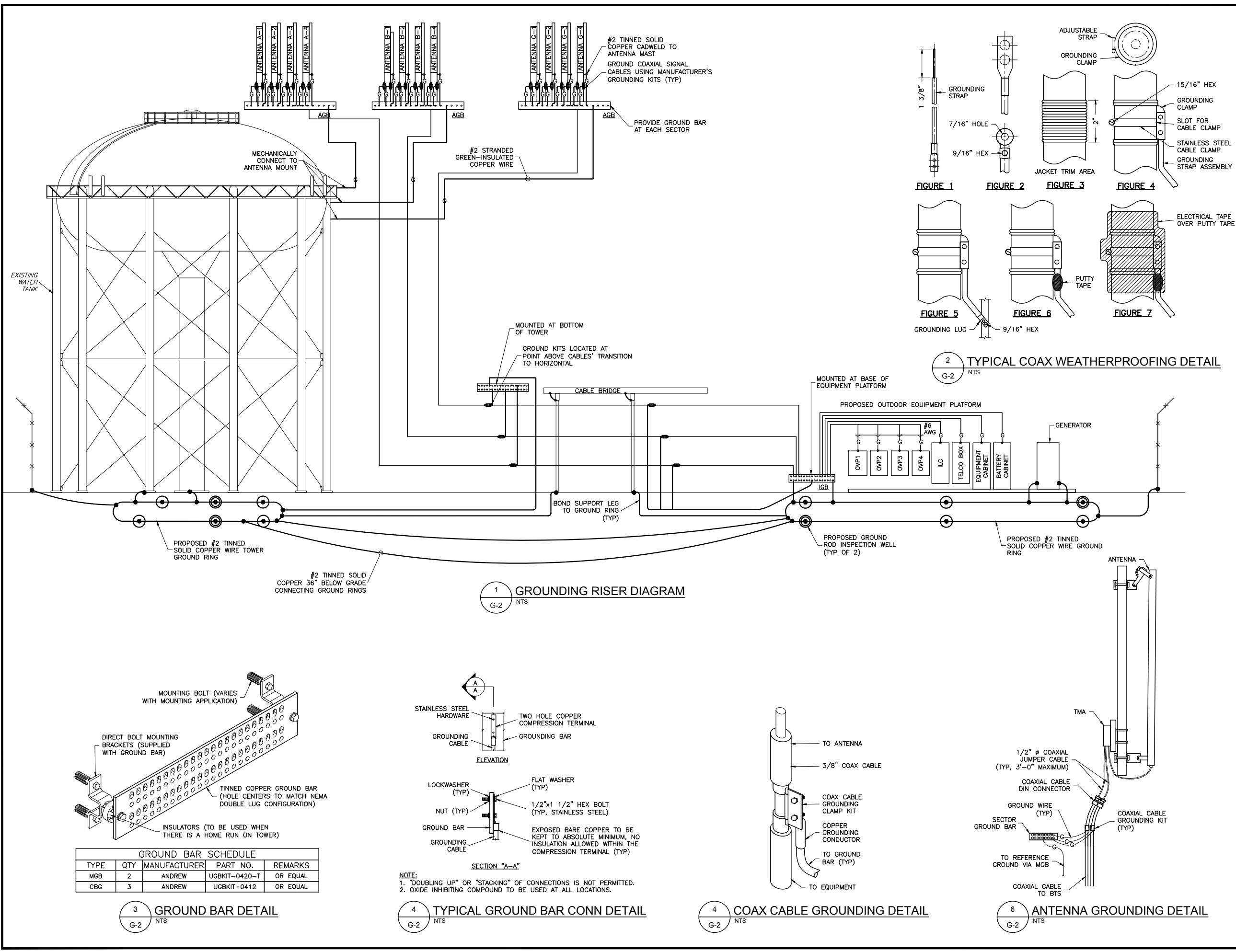
TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

GROUNDING PLAN
& DETAILS

SHEET NUMBER

G-1



ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

SHEET NUMBER

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-6078

verizon
1831 RADY COURT
RICHMOND, VA 23222

WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI

COMMONWEALTH OF VIRGINIA

TRENT TRAVIS SNARR

Lic. No. 049978

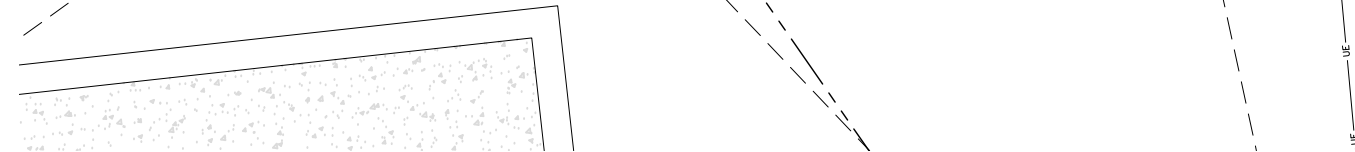
DATE 08/02/16

PROFESSIONAL ENGINEER

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

GROUNDING RISER
DIAGRAM, DETAILS
& NOTES

G-2



IP	IRON PIPE
TP	TOP OF PIER
BP	BOTTOM OF PIER
TW	TOP OF WALL
BW	BOTTOM OF WALL
(SF)	SILT FENCE

CONSTRUCTION SEQUENCE

AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE O/RP SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER, AND THE CONSERVATION DISTRICT TO AN ON-SITE MEETING. ALSO, AT LEAST 3 WORKING DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE VIRGINIA ONE CALL SYSTEM INCORPORATED AT 1-800-245-4848 FOR BURIED UTILITIES LOCATIONS.

EROSION AND SEDIMENT BMPs MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPs.

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

1. MOBILIZATION
2. INSTALL SILT FENCE AROUND COMPOUND AREA.
3. COMMENCE CLEARING AND GRUBBING. SOIL STOCKPILE AREA AND ROUGH GRADE SITE.
4. EXCAVATE AND POUR TOWER FOUNDATION. BACKFILL AND COMPACT FOUNDATION AREA.
5. CONSTRUCT AND MAINTAIN TEMPORARY COVER TO STABILIZE DISTURBED AREAS
6. COLLECT SILT AND SEDIMENT AND PLACE BACK ON SITE
7. ESTABLISH PERMANENT COVER
8. REMOVE EROSION AND CONTROL MEASURES

IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE O/RP SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

- PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS THE CONSTRUCTION OF A MONOPOLE TOWER, FENCED COMPOUND, AND GRAVEL ACCESS ROAD ALONG WITH ASSOCIATED UTILITIES. THE PROPOSED LIMITS OF DISTURBANCE IS 555 SQ.FT. OF WHICH 555 SQ.FT. IS CONSIDERED IMPERVIOUS.
2. THE OWNER/DEVELOPER MUST NOTIFY THE DEPARTMENT OF PUBLIC WORKS AT AT LEAST 24 HOURS PRIOR TO THE START OF THE CONSTRUCTION IN ACCORDANCE WITH APPLICABLE COUNTY ORDINANCES AND POLICIES.
3. THE OWNER/DEVELOPER GRANTS THE RIGHT-OF-ENTRY ON TO THIS PROPERTY TO THE DESIGNATED CITY OF CHARLESTON PERSONNEL FOR THE PURPOSE OF INSPECTING AND MONITORING FOR COMPLIANCE WITH EROSION AND SEDIMENT CONTROL LAW AND THE DESIGN AND CONSTRUCTION STANDARDS MANUAL.
4. ALL EROSION CONTROL MEASURES SHOWN ON THE APPROVED PLAN MUST BE IN PLACE AND INSPECTED AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS PRIOR TO CLEARING, STRIPPING OF TOPSOIL OR GRADING.
5. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE KEPT ON THE SITE AT ALL TIMES.
6. THE DEVELOPER/DEVELOPER'S REPRESENTATIVE IS RESPONSIBLE FOR THE INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION
- AS DETERMINED BY THE CITY OF CHARLESTON.
7. ALL DISTRIBUTED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL COMPLETE AND ADEQUATE STABILIZATION IS ACHIEVED.
8. WATER MUST BE PUMPED INTO AN APPROVED FILTERING DEVICE DURING DEWATERING OPERATIONS.
9. ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE SOUTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK AND THE SOUTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS AND TO THE CITY OF CHARLESTON STORMWATER PROGRAM PERMITTING STANDARDS AND PROCEDURES MANUAL. THE DEVELOPER/ DEVELOPER'S REPRESENTATIVE WILL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES AT
10. THE DEVELOPERS/ DEVELOPER'S REPRESENTATIVE SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES DAILY AND AFTER EACH SIGNIFICANT RAINFALL THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:
 - a. SILT FENCE BARRIERS WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF TO THE TOP OF THE BARRIER.
 - b. SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED.
11. SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING AND WILL BE SEEDED AND MULCHED IMMEDIATELY FOLLOWING INSULATION.
12. PERMANENT SOIL STABILIZATION SHALL BE APPLIED TO DENUDDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE.
13. TEMPORARY SOIL STABILIZED SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN FOURTEEN (14) DAYS. SEEDING AND SELECTION OF THE SEED MIXTURE SHALL BE IN ACCORDANCE WITH SOUTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK STANDARD AND SPECIFICATION 3.32. ROADS AND PARKING AREAS SHALL BE STABILIZED WITH SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED.
14. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WILL BE REMOVED WITHIN 30 DAYS AFTER ADEQUATE SITE STABILIZATION AND AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, AS AUTHORIZED BY THE DURHAM COUNTY INSPECTORS. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES WILL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
15. WHEN SEDIMENT IS TRANSPORTED ONTO PORTION OF THE ROAD SURFACE, THE ROAD WILL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT WILL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING WILL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
16. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC.
17. RPA AND FLOOD PLAIN LIMITS SHALL BE CLEARLY MARKED IN THE FIELD BY FLAGS, SIGNS, ETC.
18. TREE SAVE AREAS SHALL BE CLEARLY MARKED IN THE FIELD BY ORANGE SAFETY FENCE. APPROPRIATE TREE PRESERVATIONS SIGNS (WATERPROOF) TO IDENTIFY TREE PRESERVATION AREA SHALL BE LOCATED ON TREE PROTECTIONS FENCING (INCLUDES SUPER SILT FENCING) AND SHOULD BE LOCATED ALTERNATE BETWEEN ENGLISH AND SPANISH EVERY 30 FEET.
19. ORANGE SAFETY FENCE MUST BE INSTALLED AROUND ALL SILT TRAPS AND SEDIMENT BASINS.

Know what's below.
Call before you dig.



VIRGINIA LAW REQUIRES
THREE WORKING DAYS NOTICE PRIOR TO
ANY EARTH MOVING ACTIVITIES

SEEDING/ STABILIZATION SPECIFICATIONS

1. TOPSOIL STOCKPILE PROTECTION
 - A. APPLY GROUND LIMESTONE AT A RATE OF 90LBS. PER 1000 SQ.FT.
 - B. APPLY FERTILIZER (10-20-10) AT A RATE 11LBS. PER 1000 SQ.FT.
 - C. APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ.FT. AND ANNUAL RYEGRASS AT 1 LB. PER 1000 SQ.FT.
 - D. MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 138 LBS. PER 1000 SQ.FT.
 - E. PROPERLY ENTRENCH A SILT FENCE AT THE BOTTOM OF THE STOCKPILE.
18. TEMPORARY STABILIZATION SPECIFICATIONS
 - A. APPLY GROUND LIMESTONE AT A RATE OF 184 LBS. PER 1000 SQ.FT.
 - B. APPLY FERTILIZER (10-20-10) AT A RATE 11 LBS. PER 1000 SQ.FT.
 - C. APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ.FT. AND ANNUAL RYEGRASS AT 1LB. PER 1000 SQ.FT.
 - D. MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 138 LBS. PER 1000 SQ.FT.
 - E. APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
19. PERMANENT STABILIZATION SPECIFICATIONS
 - A. APPLY TOPSOIL TO A DEPTH OF 5 INCHES (UNSETTLED)
 - B. APPLY GROUND LIMESTONE AT A RATE OF 184 LBS. PER 1000 SQ.FT. AND WORK FOUR INCHES INTO SOIL.
 - C. APPLY FERTILIZER (10-20-10) AT A RATE 11 LBS. PER 1000 SQ.FT.
 - D. APPLY HARD FESCUE SEED AT 2.7 LBS. PER 1000 SQ.FT. AND CREEPING RED FESCUE SEED AT 0.7 LBS. PER 1000 SQ.FT. AND PERENNIAL RYEGRASS SEED AT 0.25 LBS. PER 1000 SQ.FT.
 - E. MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 138 LBS. PER 1000 SQ.FT.
 - F. APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4079



1831 RADY COURT
RICHMOND, VA 23222

WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REVISIONS

6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI
REV	DATE	DESCRIPTION	BY



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

EROSION & SEDIMENTATION CONTROL PLAN & NOTES

ES-1

ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

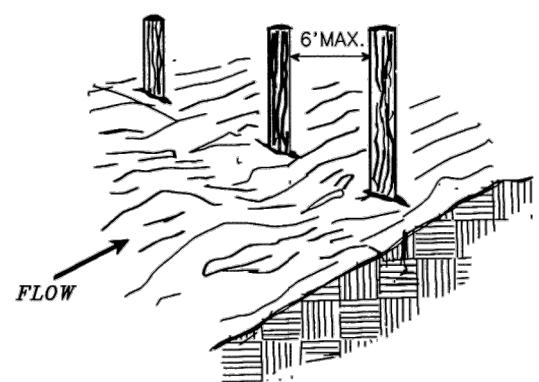
ENGINEER

SHEET TITLE

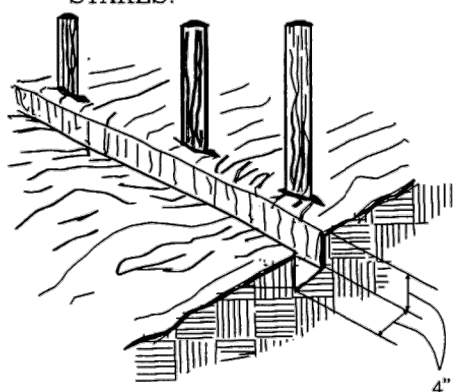
SHEET NUMBER

CONSTRUCTION OF A SILT FENCE
(WITHOUT WIRE SUPPORT)

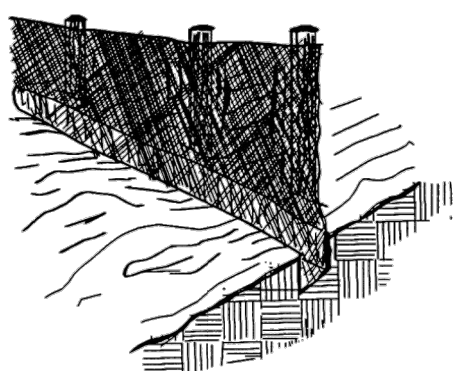
1. SET THE STAKES.



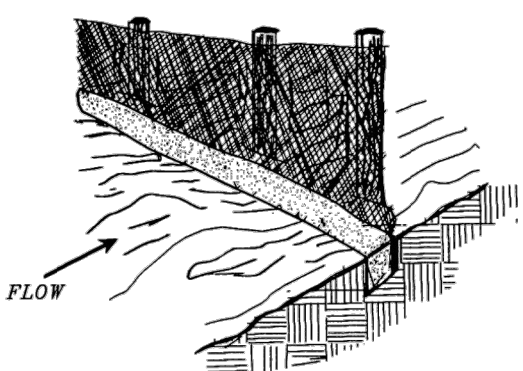
2. EXCAVATE A 4" X 4" TRENCH
UPSLOPE ALONG THE LINE OF
STAKES.



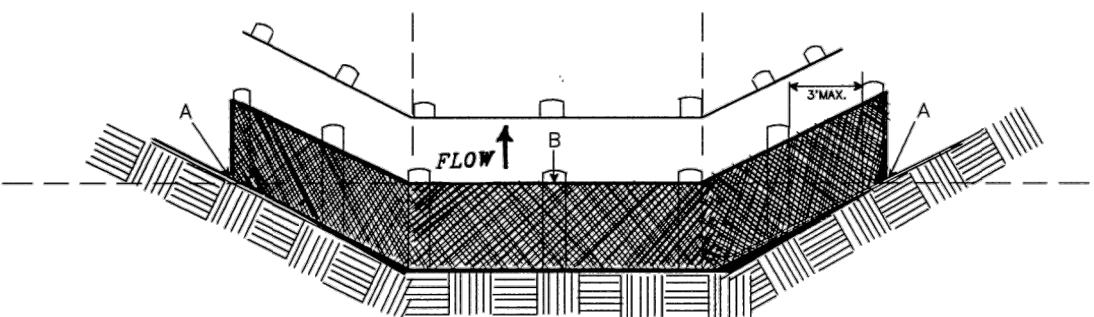
3. STAPLE FILTER MATERIAL
TO STAKES AND EXTEND
IT INTO THE TRENCH.



4. BACKFILL AND COMPACT
THE EXCAVATED SOIL.



SHEET FLOW INSTALLATION
(PERSPECTIVE VIEW)



POINTS A SHOULD BE HIGHER THAN POINT B.
DRAINAGEWAY INSTALLATION
(FRONT ELEVATION)

Source: Adapted from Installation of Straw and Fabric Filter
Barriers for Sediment Control, Sherwood and Wyant

Plate 3.05-2

ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

SHEET NUMBER



NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4078

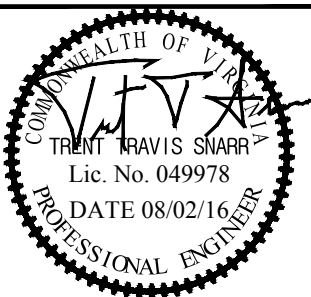


1831 RADY COURT
RICHMOND, VA 23222

WOODBURN
VERIZON COLLOCATION
NB+C PROJ. #27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REVISIONS

REV	DATE	DESCRIPTION	BY
6	08/02/16	REVISED	PJP
5	07/14/16	REVISED	OP
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI

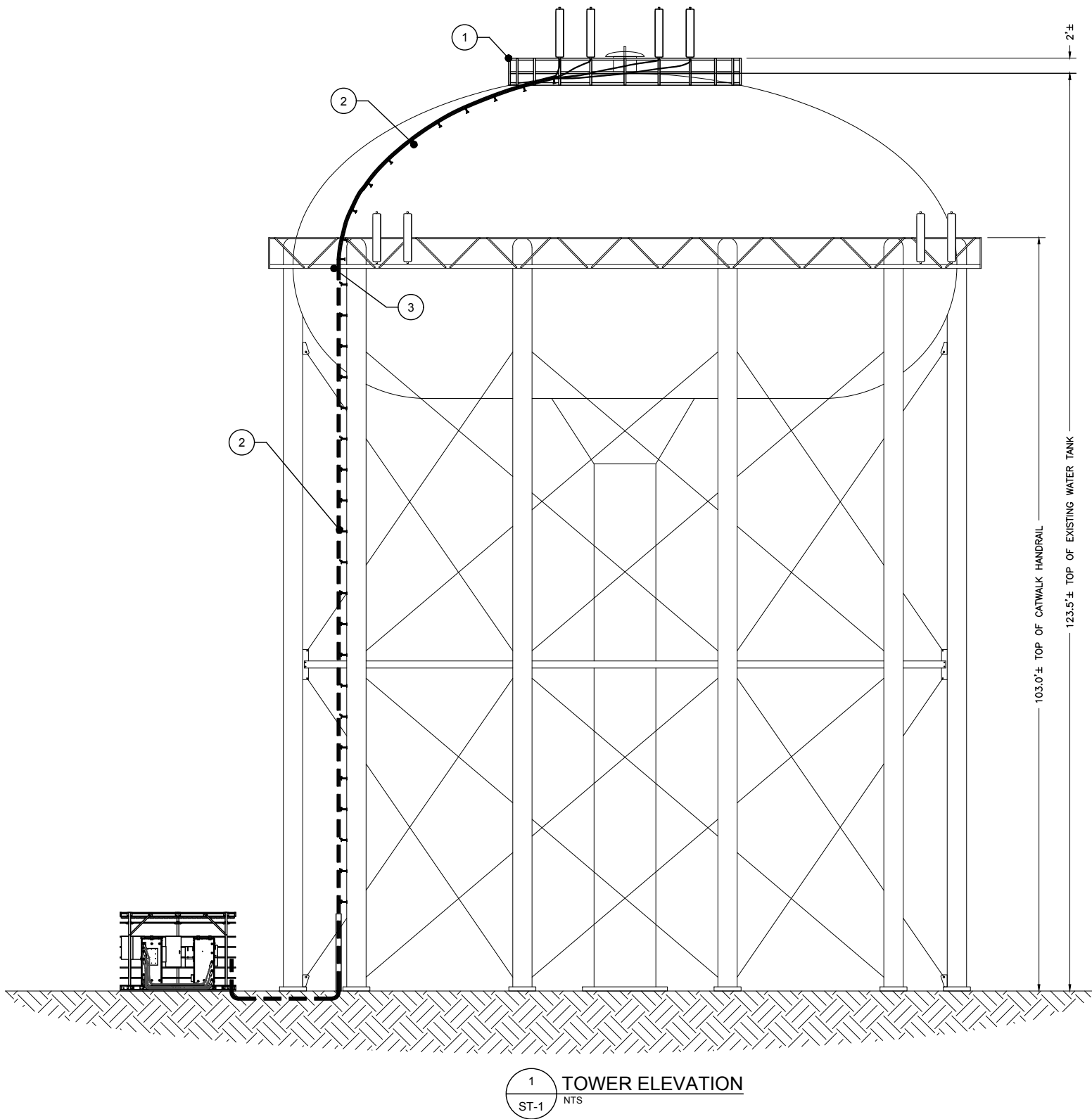


TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SILT FENCE DETAIL

ES-2

- MODIFICATION SCOPE:
- ① INSTALLATION OF NEW ANTENNA CORRAL. SEE ST-2 THROUGH ST-5 FOR DETAILS
 - ② INSTALLATION OF NEW COAX SUPPORT ON TANK FACE & TANK LEG. SEE ST-6 & ST-7 FOR DETAILS
 - ③ INSTALLATION OF NEW CATWALK COAX PENETRATION. SEE ST-8 FOR DETAILS



GENERAL AND TECHNICAL SPECIFICATION NOTES

- INDICATED MODIFICATIONS COMPLIES WITH ANSI/TIA-222-G & ASCE 7-10/IBC 2012 STANDARD SPECIFICATIONS FOR 120 MPH 3-SECOND PEAK GUST WIND SPEED WITH 3/4" ICE. THE TOWER IS ASSUMED TO BE IN GOOD CONDITION AND PROPERLY MAINTAINED.
- MODIFICATION DETAILS ARE BASED ON THE STRUCTURAL ANALYSIS REPORT BY NB&C ES, LLC DATED 07/14/2015, REF NB&C ES JOB #27074.
- ALL MODIFICATION FABRICATION AND INSTALLATION SHOULD BE DONE BY A CONTRACTOR EXPERIENCED IN SIMILAR WORK.
- CONTRACTOR SHOULD OBSERVE ALL OSHA AND OTHER APPLICABLE SAFETY GUIDELINES DURING INSTALLATION.
- ALL FABRICATION AND INSTALLATION PROCEDURES AND SITE SAFETY ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- DURING INSTALLING THE MODIFICATION, THE CONTRACTOR SHOULD PRESERVE THE STRUCTURAL INTEGRITY AND STABILITY OF THE TOWER. BRACE THE TOWER AS NEEDED TO STABILIZE THE TOWER DURING MODIFICATION. DO NOT REMOVE OR ADD MORE THAN ONE MEMBER AT A TIME.
- CONTRACTOR SHOULD OBSERVE ALL WEATHER CONDITIONS. DO NOT MODIFY THE TOWER DURING WINDS OF MORE THAN 20 MPH.
- CONTRACTOR SHOULD FIELD VERIFY ALL DIMENSIONS AND FIT BEFORE FABRICATION.
- MODIFICATION DRAWINGS DO NOT INCLUDE ALL THE EXISTING FIELD CONDITIONS, SOME OF WHICH MAY INTERFERE WITH THE INSTALLATION. CONTRACTOR SHOULD CONDUCT A FIELD SURVEY TO IDENTIFY ANY POTENTIAL DIFFICULTIES IN THE INSTALLATION BEFORE WORK COMMENCES. CONTACT THE ENGINEER IF THE FIELD CONDITIONS REQUIRE ANY CHANGES IN THE MODIFICATION.
- CONTRACTOR MAY HAVE TO TEMPORARILY REMOVE EXISTING TRANSMISSION LINES AND OTHER OBSTRUCTIONS TO ADD THE MODIFICATION. COORDINATE ALL SUCH PROCEDURES WITH THE TOWER OWNER.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LICENSES, PERMITS AND ANY OTHER APPROVALS REQUIRED FOR CONSTRUCTION.
- PAINT THE NEW MEMBERS TO MATCH THE EXISTING TOWER. SHOP PAINT ALL COMPONENTS (VERIFY COLOR)
- ALL SPECIFICATIONS BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION SHOULD BE FOLLOWED FOR FABRICATION AND INSTALLATION.
- ALL NEW STEEL SOLID ROD MEMBERS SHALL MEET THE ASTM A36 STEEL SPECIFICATIONS, 36 KSI YIELD STRENGTH.
- ALL STEEL ANGLE AND PLATE USED FOR DIAGONAL REPLACEMENT SHALL MEET ASTM A36 STEEL SPECIFICATIONS, 36 KSI YIELD STRENGTH.
- ALL STEEL SHALL BE HOT DIPPED GALVANIZED AS PER ASTM A123 SPECIFICATIONS.
- ALL STEEL HARDWARE SHALL BE HOT DIPPED GALVANIZED AS PER ASTM A153.
- ALL BOLTS SHALL BE DOMESTIC, NEW 1/2 INCH DIAMETER HIGH STRENGTH GALVANIZED BOLTS, BEARING TYPE 'X', UNLESS NOTED OTHERWISE IN THE DRAWINGS AND SHALL CONFORM TO ASTM A325 SPECIFICATIONS. USE ANCO LOCKNUTS & FLAT WASHERS ON ALL BOLTS.
- ALL U-BOLTS AND V-BOLTS SHALL CONFORM TO ASTM A36 SPECIFICATIONS UNLESS NOTES OTHERWISE.
- ALL FINISHED BOLT HOLES SHALL NOT BE MORE THAN 1/16 INCH LARGER THAN THE BOLT DIAMETER UNLESS NOTED OTHERWISE.
- ALL BOLTS SHALL BE TIGHTENED USING TURN-OF-THE-NUT METHOD.
- ALL BOLT HOLE EDGE DISTANCES SHALL BE 1 1/2 INCH UNLESS OTHERWISE NOTED.
- ALL WELDING SHALL BE DONE USING E-70 ELECTRODES AND IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY STANDARDS AND SPECIFICATIONS.
- DO NOT HEAT STRUCTURAL MATERIAL FOR STRAIGHTENING BENT OR WARPED MEMBERS.
- CLEAN THE SITE OF ALL DEBRIS UPON COMPLETION OF THE WORK. STORE ALL SURPLUS MATERIALS NEATLY IN AN AREA APPROVED BY THE OWNER.
- CONTRACTOR RESPONSIBLE FOR TEMPORARY HEAT SHIELDING AS REQUIRED DURING WELDING. CONTRACTOR SHOULD ALSO CHECK TOWER FOR LOOSE AND FLAMMABLE MATERIAL PRIOR TO WELDING.
- PREPARE SURFACE TO BE WELDED BY SPOT REMOVING PAINT OR GALVANIZATION TO BARE METAL USING POWER WIRE BRUSHING IN ACCORDANCE WITH SSPC-SP11. AFTER WIRE BRUSHING, CONTRACTOR SHALL POLISH METAL WITH HIGH SPEED GRINDER.
- CONTRACTOR SHALL USE ZINGA ZRC COLD GALVANIZATION COMPOUND OR APPROVED EQUIVALENT TO ALL WELDS AND BARE METAL AFTER WELDING. CONTRACTOR SHALL APPLY (2) COATS OF COLD GALVANIZATION COMPOUND PER MANUFACTURES RECOMMENDATIONS.

ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

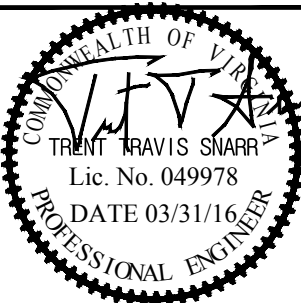
SHEET TITLE

SHEET NUMBER



WOODBURN
NB+C PROJ. # 27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REVISIONS				
REV	DATE	DESCRIPTION	BY	
4	03/31/16	REVISED	OP	
3	01/28/16	REVISED	OP	
2	11/17/15	REVISED	OP	
1	10/29/15	REVISED	OP	
0	08/25/15	PRELIMINARY CD	AI	



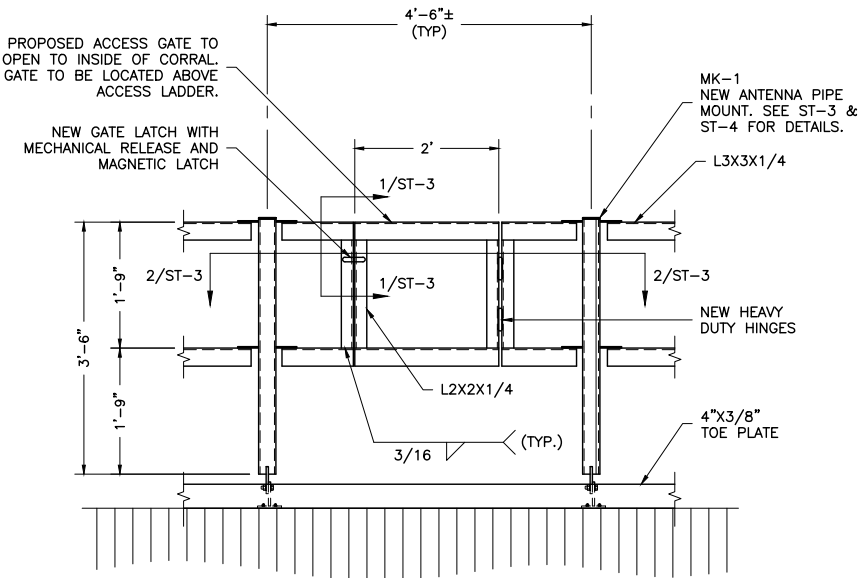
TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

TOWER ELEVATION
& NOTES

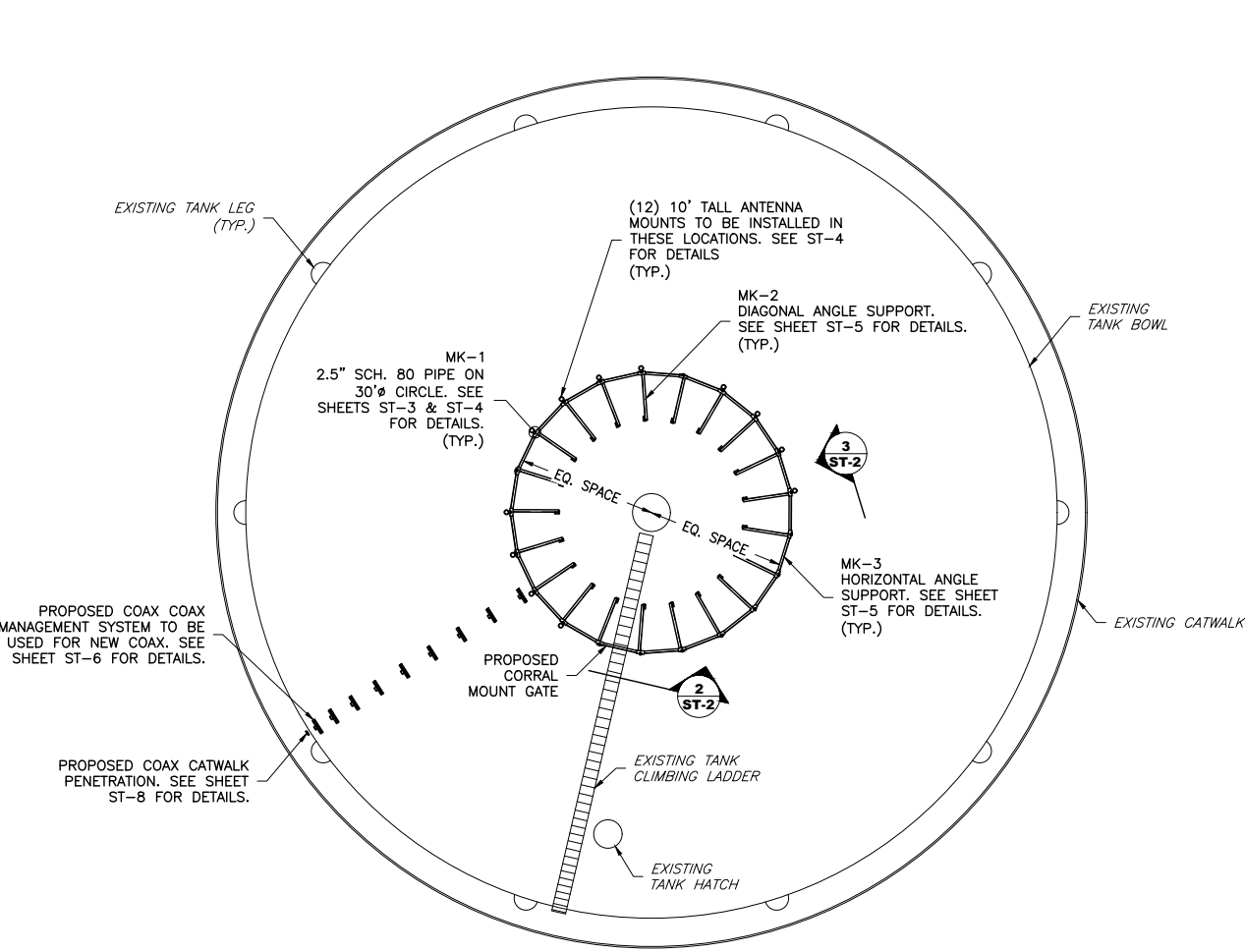
ST-1

CORRAL MOUNT MATERIAL LIST			
PART #	QUANTITY	REFERENCE	DESCRIPTION
MK-1	21	SEE ST-3 FOR DETAILS	ANTENNA PIPE MOUNT ASSEMBLY
MK-2	21	SEE ST-3 FOR DETAILS	DIAGONAL ANGLE SUPPORT
MK-3	21	SEE ST-3 FOR DETAILS	HORIZONTAL ANGLE SUPPORT
MK-4	21	SEE ST-3 FOR DETAILS	PIPE MOUNT SUPPORT BRACKET
MK-5	21	SEE ST-3 FOR DETAILS	DIAGONAL SUPPORT BRACKET
-	100 LF	SEE ST-3 FOR DETAILS	TOE PLATE
-	21	SEE ST-3 FOR DETAILS	1/2"Ø A325N ERECTION BOLT
-	168	SEE ST-3 FOR DETAILS	1/4"Ø STUD WELD W/ NUTS & LOCK WASHERS

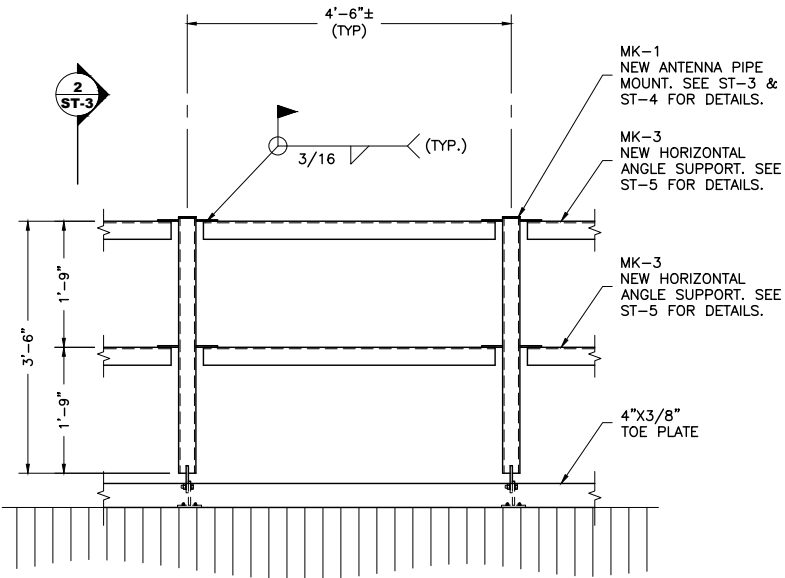
NOTES:
* ALL CORRAL MOUNT MEMBERS SHALL BE SHOP PAINTED TO MATCH TOWER. (VERIFY COLOR)





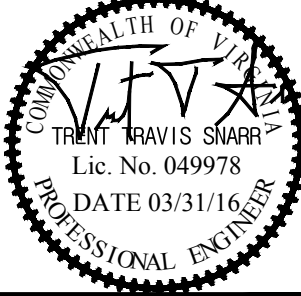
2 CORRAL MOUNT GATE INSTALLATION
SCALE: 3/8" = 1'-0"



1 CORRAL MOUNT PLAN
SCALE: 1" = 20'



3 CORRAL MOUNT INSTALLATION
SCALE: 3/8" = 1'-0"

ENGINEER	 TOTALLY COMMITTED. NB+C ENGINEERING SERVICES, LLC. 4435 WATERFRONT DRIVE, SUITE 100 GLEN ALLEN, VA 23060																												
APPLICANT	 8921 RESEARCH DRIVE CHARLOTTE, NC 28262																												
SITE INFORMATION	WOODBURN NB+C PROJ. # 27074 2226 WOODBURN ROAD CHARLOTTESVILLE, VA 22901 ALBEMARLE COUNTY																												
DESIGN RECORD	<table><tr><th colspan="4">REVISIONS</th></tr><tr><td>4</td><td>03/31/16</td><td>REVISED</td><td>OP</td></tr><tr><td>3</td><td>01/28/16</td><td>REVISED</td><td>OP</td></tr><tr><td>2</td><td>11/17/15</td><td>REVISED</td><td>OP</td></tr><tr><td>1</td><td>10/29/15</td><td>REVISED</td><td>OP</td></tr><tr><td>0</td><td>08/25/15</td><td>PRELIMINARY CD</td><td>AI</td></tr><tr><td>REV</td><td>DATE</td><td>DESCRIPTION</td><td>BY</td></tr></table>	REVISIONS				4	03/31/16	REVISED	OP	3	01/28/16	REVISED	OP	2	11/17/15	REVISED	OP	1	10/29/15	REVISED	OP	0	08/25/15	PRELIMINARY CD	AI	REV	DATE	DESCRIPTION	BY
REVISIONS																													
4	03/31/16	REVISED	OP																										
3	01/28/16	REVISED	OP																										
2	11/17/15	REVISED	OP																										
1	10/29/15	REVISED	OP																										
0	08/25/15	PRELIMINARY CD	AI																										
REV	DATE	DESCRIPTION	BY																										
PROFESSIONAL STAMP																													
ENGINEER	TRENT T. SNARR, P.E. VA PROFESSIONAL ENGINEER LIC. #49978																												
SHEET TITLE	CORRAL INSTALLATION DETAILS I																												
SHEET NUMBER	ST-2																												

STUD WELDING AND COATING RESTORATION NOTES:

GENERAL:

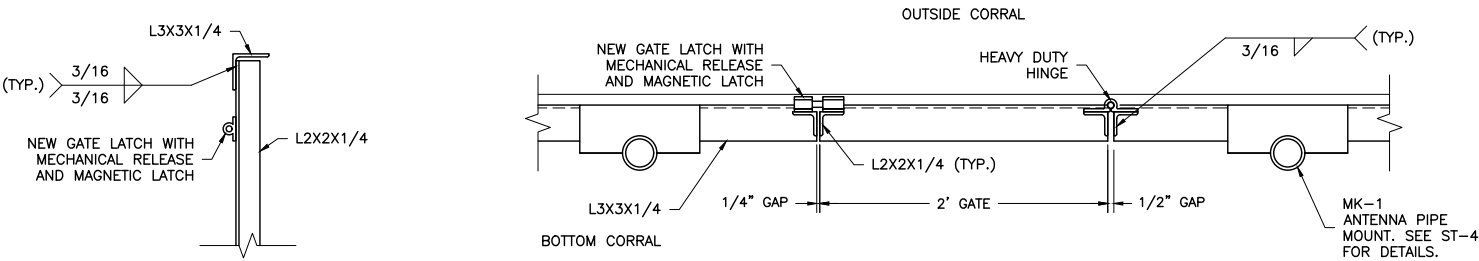
1. WELDING STUDS SHALL BE FLANGED THREADED STAINLESS STEEL STUDS, GRADE 1010 THROUGH 1020. CONFORMING TO ASTM A-108 "STEEL BAR, CARBON, COLD FINISHED, STANDARD QUALITY". ALL STUDS SHALL BE 1/4" DIA. X 1-3/4" LONG, UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS.
2. STUDS MUST BE WELDED BY THE CAPACITOR DISCHARGE METHOD, NELSON NCD 100 SYSTEM, AS MANUFACTURED AND MARKETED BY TRW NELSON STUD WELDING DIVISION, ELYRIA, OHIO, (800) 635-9353 OR (216) 329-0400 OR APPROVED EQUAL. FILLET WELDS ARE NOT ACCEPTABLE.
3. CONTRACTOR SHALL COMPLY WITH AWS D1.1 AND AWS C5.4 FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". CONTRACTOR SHALL ADHERE TO AWS RECOMMENDED "SAFE PRACTICES FOR WELDING".
4. WELDING PARAMETERS, MACHINE POWER, AND DWELL TIME SHALL BE QUALIFIED FOR THE WELDING POSITION, MATERIAL THICKNESS AND STUD SIZE TO BE USED. IF CHANGES IN THE SETUP OCCUR AS DEFINED IN AWS D1.1, THE PROCEDURE MUST BE REQUALIFIED.
5. CAPACITOR DISCHARGE STUDS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. CONTRACTOR TO SCHEDULE STUD WELDING INTERIOR INSPECTION WITH JESS DAVISON SEH (651.318.0343) UPON COMPLETION OF STUD WELD INSTALLATION.
7. VERIZON WILL BE RESPONSIBLE FOR ANY AREAS OF THE WATER TOWER DAMAGED FROM STUD WELDS, HANDRAIL MODIFICATIONS AND INSTALLATIONS. DAMAGED AREAS AREA TO BE REPAIRED IN ACCORDANCE WITH THE RWSA REQUIREMENTS AS APPLICABLE TO THE NECESSARY REPAIR AND IN A TIMEFRAME ACCEPTABLE TO THE RWSA.

SURFACE PREPARATION:

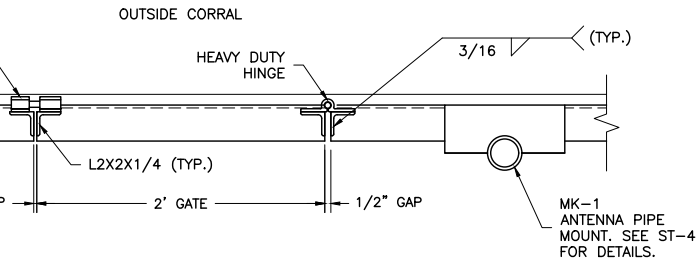
1. CLEANING PROCEDURES SHALL BE VERIFIED AS MEETING MINIMUM REQUIREMENTS PER THE AWS WELDING HANDBOOK, VOLUME 2, "QUALITY CONTROL AND INSPECTION" FOR STUD WELDING. IF THE EXISTING COATING SYSTEM CONTAINS LEAD OR OTHER POTENTIALLY HAZARDOUS MATERIALS, SPECIAL PROCEDURES FOR REMOVAL AND DISPOSAL WILL BE REQUIRED.
2. PREPARE SURFACE TO BE WELDED BY SPOT REMOVING PAINT TO BARE METAL USING POWER BRUSHING IN ACCORDANCE WITH SSPC-SP11, (STEEL STRUCTURES PAINTING COUNCIL SSPC-V151-571). USE 3M STRIP-N-CLEAN FLEXIBLE WHEEL OR APPROVED EQUAL. A WIRE WHEEL IS NOT ACCEPTABLE.
3. FOLLOW POWER TOOL CLEANING WITH A NONFLAMMABLE SOLVENT CLEANING TO REMOVE ANY OILS, CONTAMINANTS, RUST OR DIRT PRIOR TO STUD WELDING, (SSPC-SP1 BY STEEL STRUCTURES PAINTING COUNCIL, SSPC-VIS 1-571).

REPAINTING:

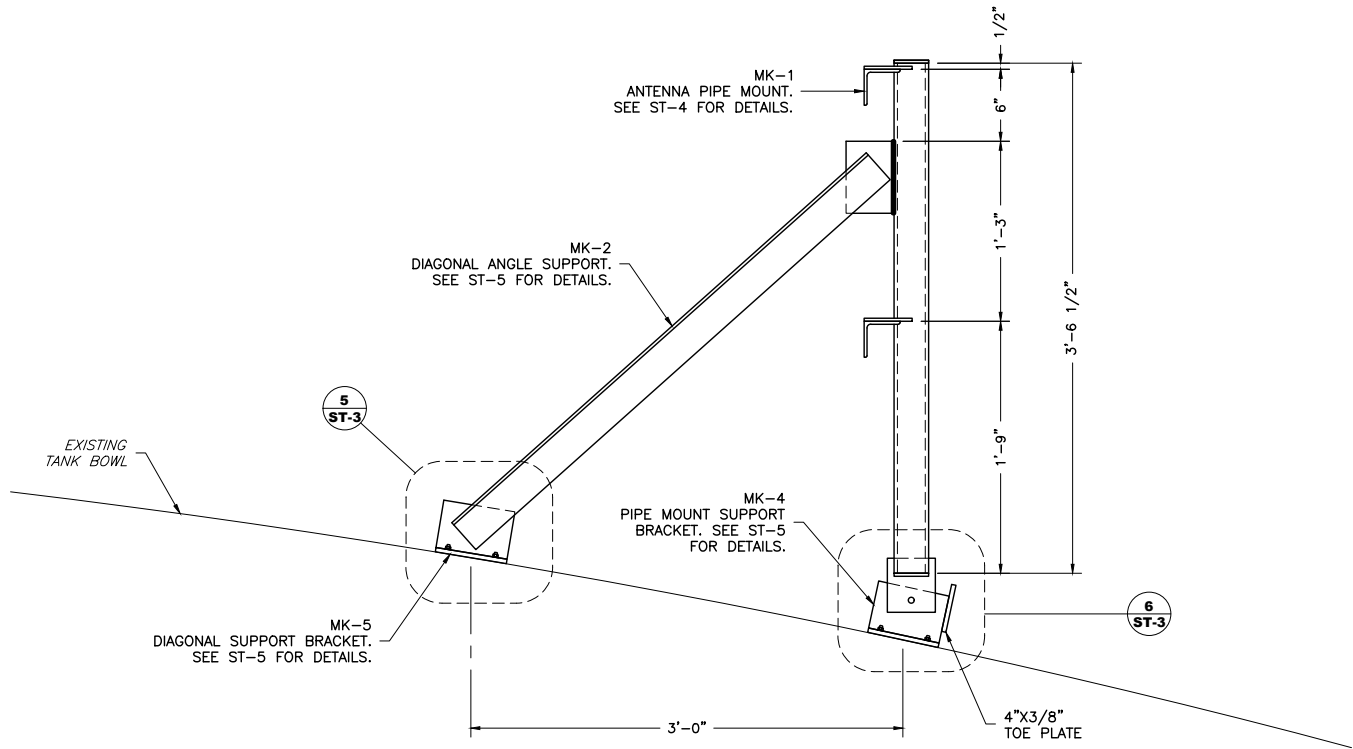
1. ANY DAMAGE TO EXISTING AND PROPOSED COATED SURFACES FROM OPERATIONS ASSOCIATED WITH THE INSTALLATION ARE THE RESPONSIBILITY OF THE CARRIER (GC) AND SHALL BE REPAIRED AS DIRECTED BY THE RWSA.
2. SEE COATING SYSTEMS FOR TELECOMMUNICATIONS EQUIPMENT NOTES ON N-1.



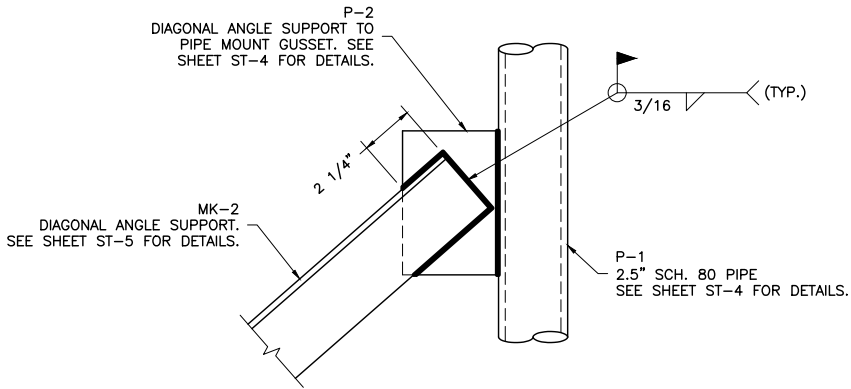
1
ST-3
GATE INSTALLATION
SCALE: 3/4" = 1'-0"



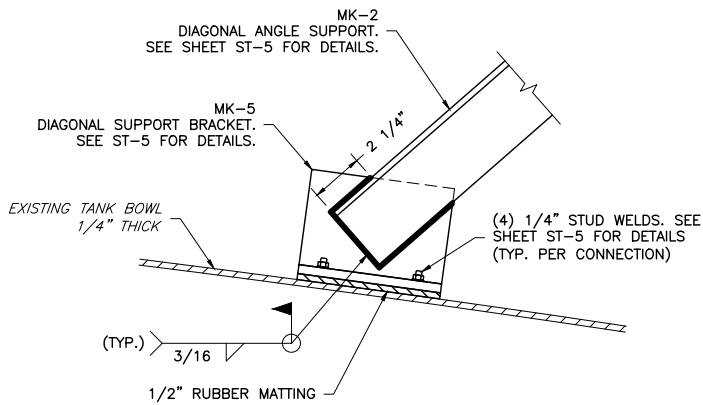
2
ST-3
GATE INSTALLATION
SCALE: 3/4" = 1'-0"



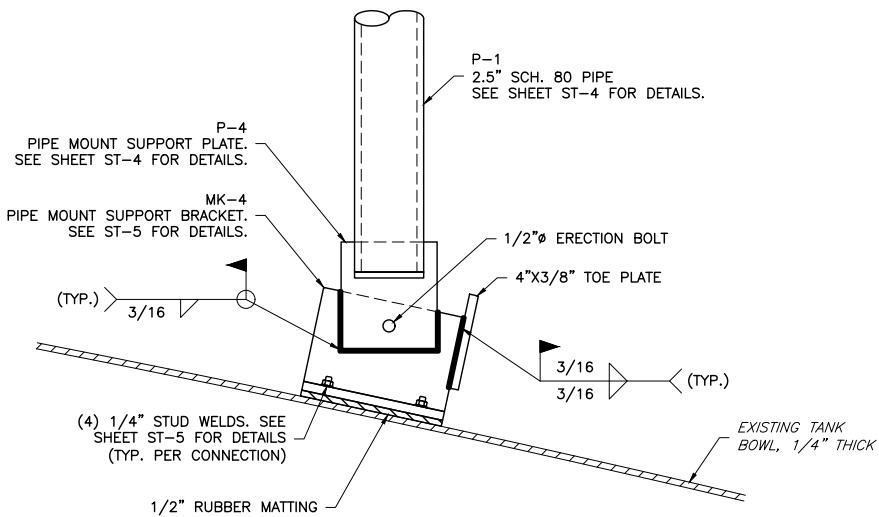
3
ST-3
CORRAL MOUNT INSTALLATION
SCALE: 3/4" = 1'-0"



4
ST-3
BRACE TO PIPE MOUNT CONNECTION
SCALE: 1-1/2" = 1'-0"



5
ST-3
BRACE TO TANK CONNECTION
SCALE: 1-1/2" = 1'-0"



6
ST-3
PIPE MOUNT TO TANK CONNECTION
SCALE: 1-1/2" = 1'-0"

ENGINEER



APPLICANT



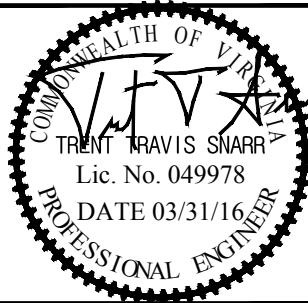
SITE INFORMATION

WOODBURN
NB+C PROJ. # 27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

DESIGN RECORD

REVISIONS				
REV	DATE	DESCRIPTION	BY	
4	03/31/16	REVISED	OP	
3	01/28/16	REVISED	OP	
2	11/17/15	REVISED	OP	
1	10/29/15	REVISED	OP	
0	08/25/15	PRELIMINARY CD	AI	

PROFESSIONAL STAMP



ENGINEER

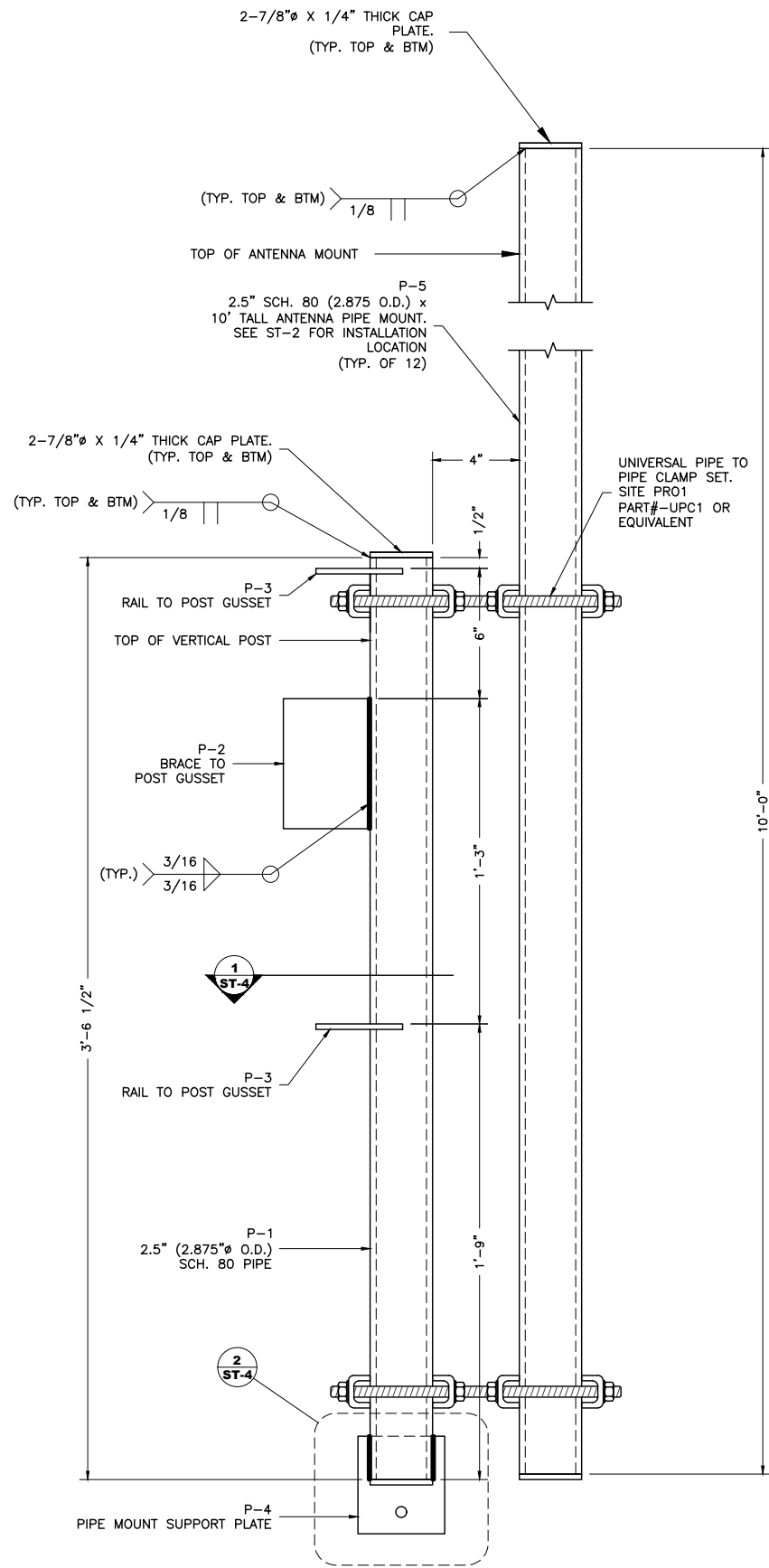
TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

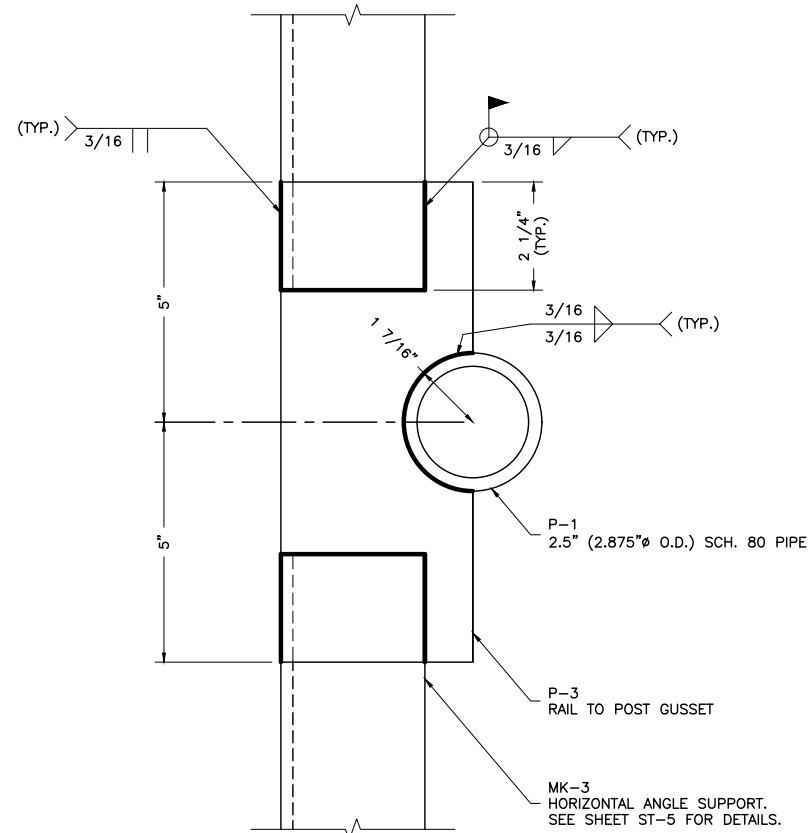
CORRAL
INSTALLATION
DETAILS II

SHEET NUMBER

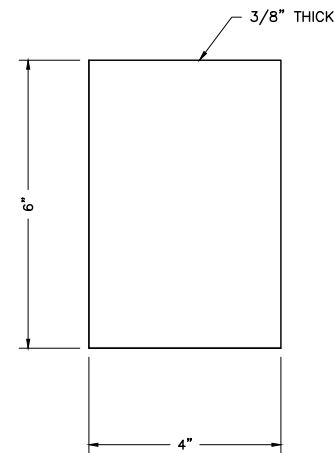
ST-3



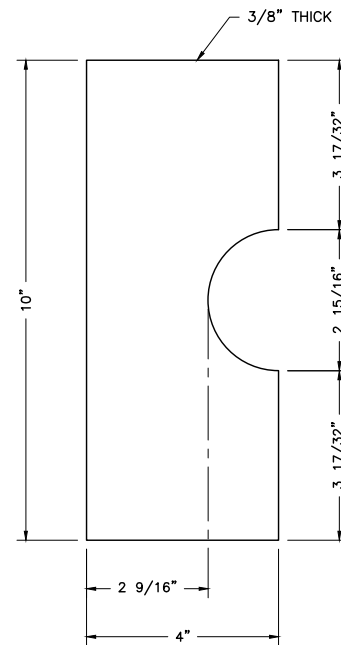
MK-1
ST-4
ANTENNA PIPE MOUNT ASSEMBLY
SCALE: 1-1/2" = 1'-0"



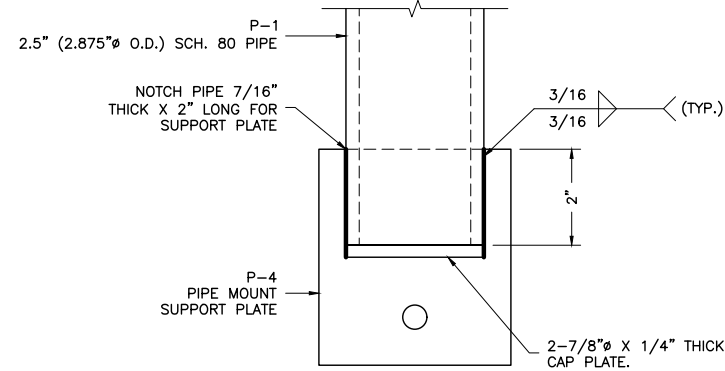
1
ST-4
RAIL TO POST GUSSET INSTALLATION
SCALE: 3" = 1'-0"



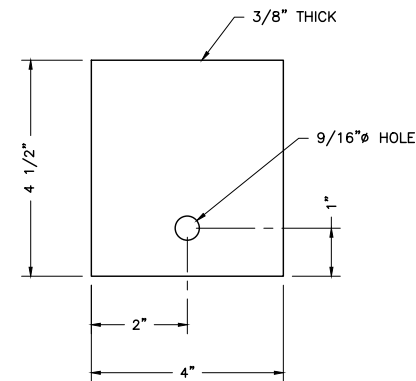
P-2
ST-4
BRACE TO POST GUSSET
SCALE: 3" = 1'-0"



P-3
ST-4
RAIL TO POST GUSSET
SCALE: 3" = 1'-0"



2
ST-4
PIPE MOUNT SUPPORT PLATE INSTALLATION
SCALE: 3" = 1'-0"



P-4
ST-4
PIPE MOUNT SUPPORT PLATE
SCALE: 3" = 1'-0"

MATERIAL LIST (MK-1)		
PART #	QTY.*	DESCRIPTION
P-1	21	2.5" (2.875" ϕ O.D.) SCH. 80 PIPE X 3'-6 1/2" LONG
P-2	21	BRACE TO POST GUSSET
P-3	42	RAIL TO POST GUSSET
P-4	21	PIPE MOUNT SUPPORT PLATE
P-5	12	2.5" (2.875 O.D.) SCH. 80 PIPE X 10' LONG
P-6	12	PIPE TO PIPE CLAMP SET (INCLUDES UPPER & LOWER CLAMP) SITE PRO1 #UPC1

ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

SHEET NUMBER

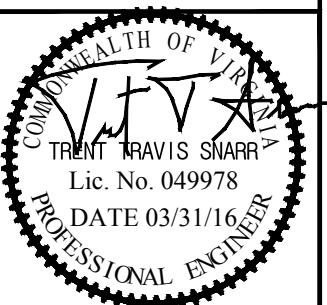
NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060

verizonwireless
8921 RESEARCH DRIVE
CHARLOTTE, NC 28262

WOODBURN
NB+C PROJ. # 27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REVISIONS

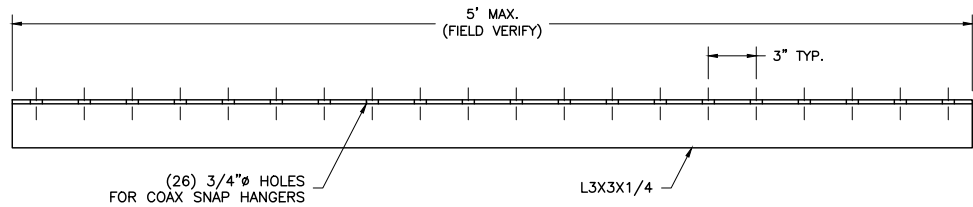
REV	DATE	DESCRIPTION	BY
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI



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

**CORRAL
INSTALLATION
DETAILS III**

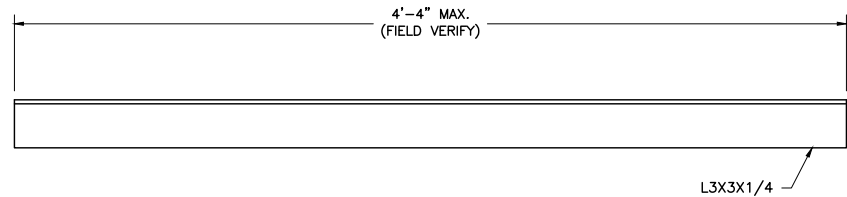
ST-4



MK-2
ST-5

DIAGONAL ANGLE SUPPORT

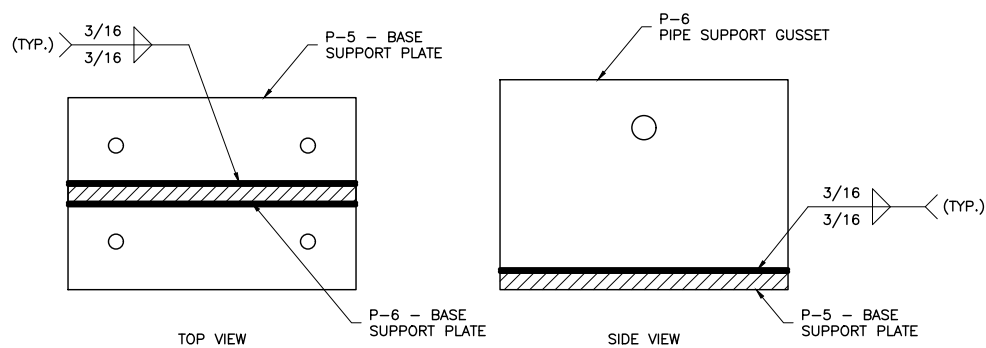
SCALE: 1" = 1'-0"



MK-3
ST-5

HORIZONTAL ANGLE SUPPORT

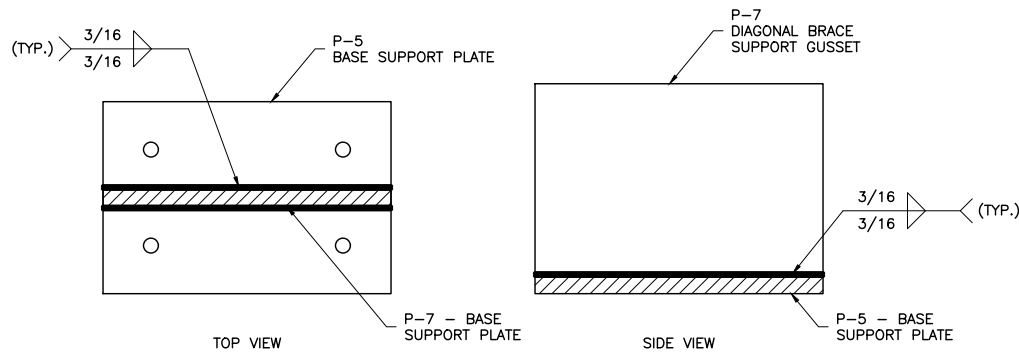
SCALE: 1" = 1'-0"



MK-4
ST-5

PIPE MOUNT SUPPORT BRACKET

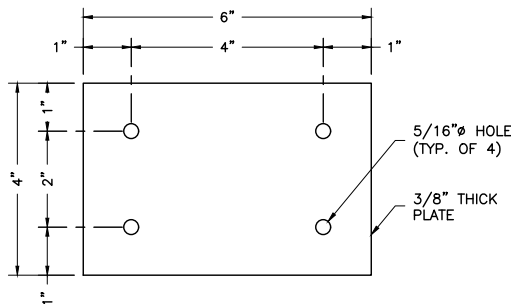
SCALE: 3" = 1'-0"



MK-5
ST-5

DIAGONAL BRACE SUPPORT BRACKET

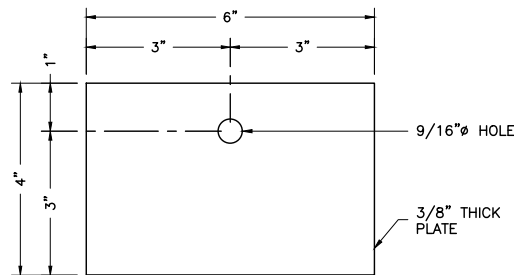
SCALE: 3" = 1'-0"



P-5
ST-5

BASE SUPPORT PLATE

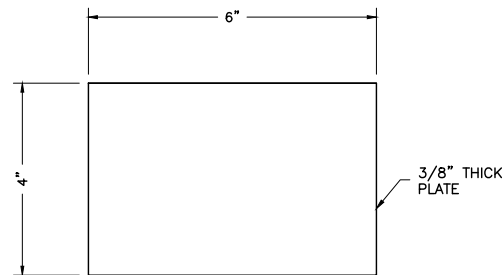
SCALE: 3" = 1'-0"



P-6
ST-5

PIPE MOUNT SUPPORT GUSSET

SCALE: 3" = 1'-0"



P-7
ST-5

DIAGONAL BRACE SUPPORT GUSSET

SCALE: 3" = 1'-0"

MATERIAL LIST (MK-4)		
PART #	QTY.*	DESCRIPTION
P-5	1	BASE SUPPORT PLATE
P-6	1	PIPE MOUNT SUPPORT GUSSET

*QUANTITIES ARE FOR (1) MK-4 PIPE MOUNT SUPPORT BRACKET. (21) TOTAL MK-4 PIPE MOUNT SUPPORT BRACKETS ARE REQUIRED.

MATERIAL LIST (MK-5)		
PART #	QTY.*	DESCRIPTION
P-5	1	BASE SUPPORT PLATE
P-7	1	DIAGONAL BRACE SUPPORT GUSSET

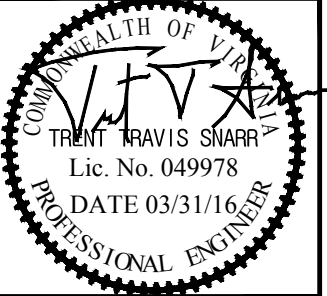
*QUANTITIES ARE FOR (1) MK-5 DIAGONAL BRACE SUPPORT BRACKET. (21) TOTAL MK-5 DIAGONAL BRACE SUPPORT BRACKETS ARE REQUIRED.



WOODBURN
NB+C PROJ. # 27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REVISIONS

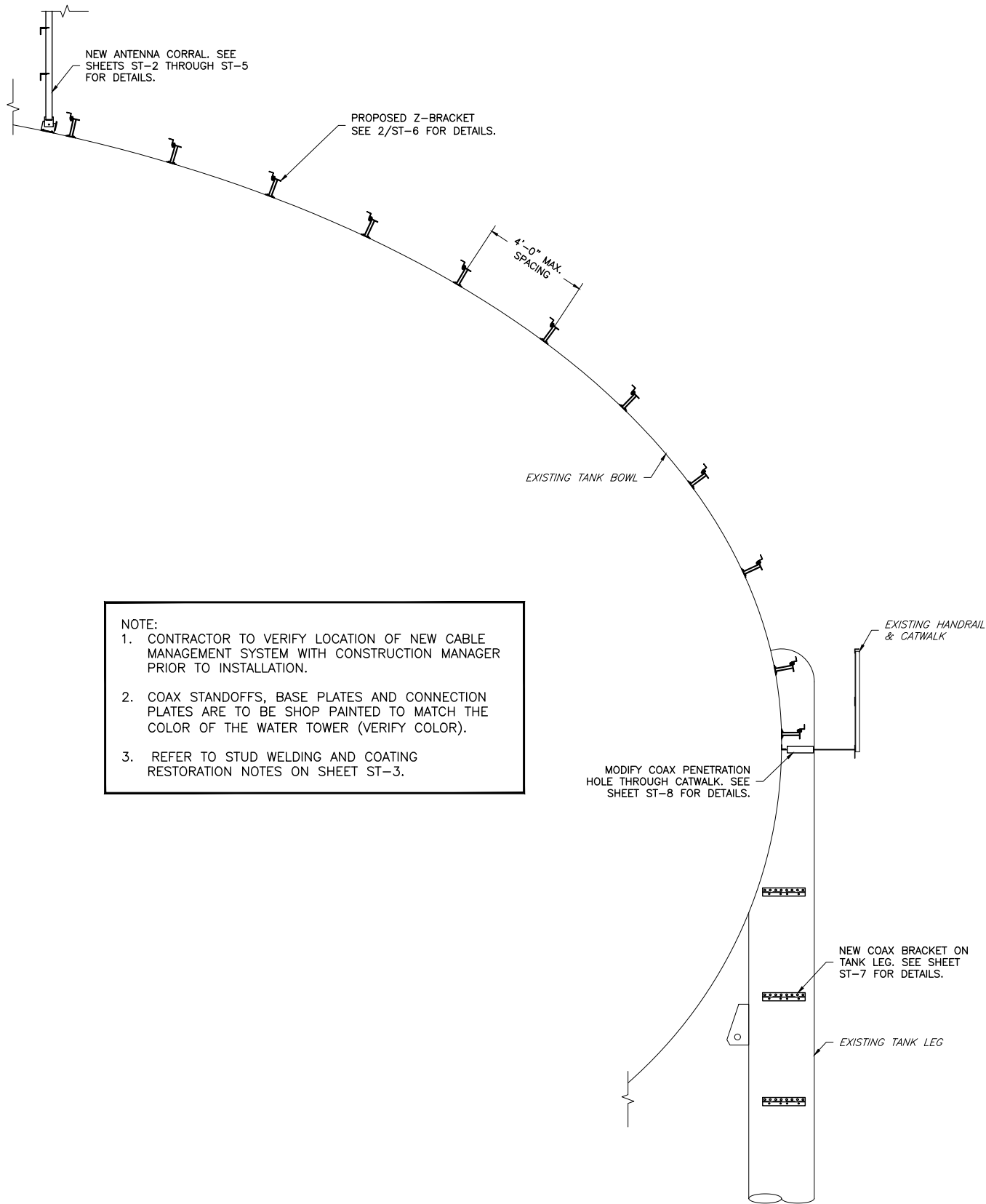
REV	DATE	DESCRIPTION	BY
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI



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

CORRAL
INSTALLATION
DETAILS IV

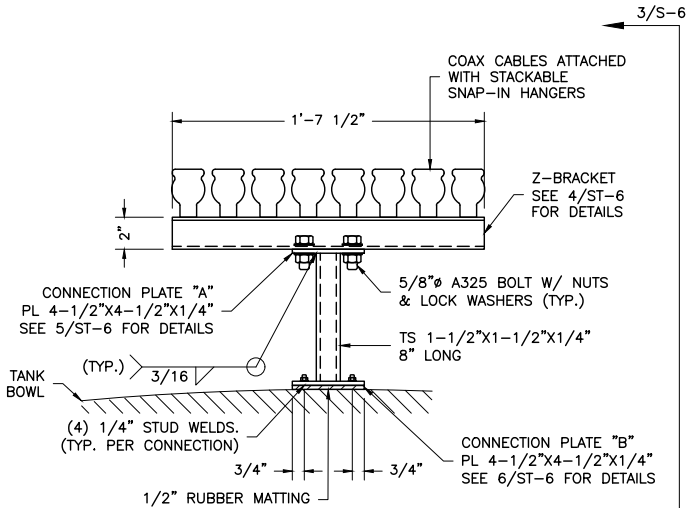
ST-5



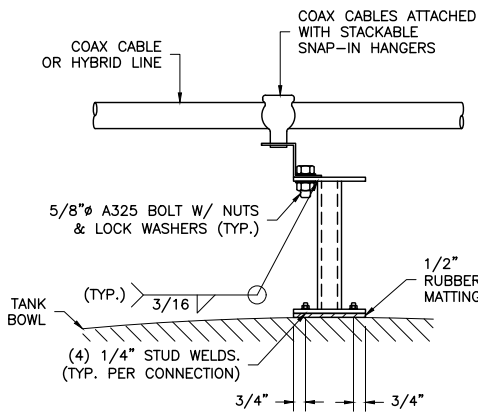
- NOTE:
1. CONTRACTOR TO VERIFY LOCATION OF NEW CABLE MANAGEMENT SYSTEM WITH CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
 2. COAX STANDOFFS, BASE PLATES AND CONNECTION PLATES ARE TO BE SHOP PAINTED TO MATCH THE COLOR OF THE WATER TOWER (VERIFY COLOR).
 3. REFER TO STUD WELDING AND COATING RESTORATION NOTES ON SHEET ST-3.

1 WATER TANK COAX TRAY
SCALE: 3/16" = 1'-0"

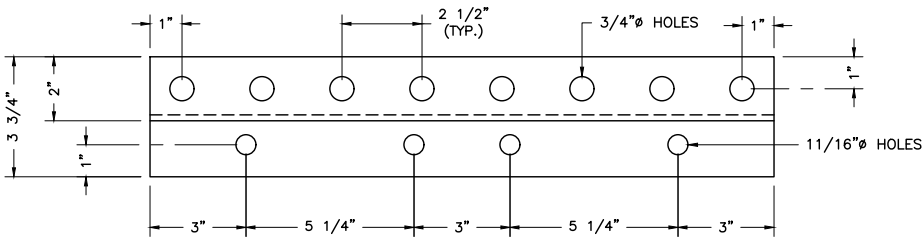
COAX BRACKET MATERIAL LIST		
PART	QUANTITY	DESCRIPTION
Z-BRACKET	11	SEE 3/ST-6 FOR DETAILS
CONNECTION TUBE	11	TS 1-1/2"x1-1/2"x1/4" X 8" LONG
CONNECTION PLATE "A"	11	PL 4-1/2"x4-1/2"x1/4" W/ (4) 11/16"Ø DRILLED HOLES
CONNECTION PLATE "B"	11	PL 4-1/2"x4-1/2"x1/4" W/ (4) 5/16"Ø DRILLED HOLES
STUD WELDS	44	1/4"Ø STUD WELD W/ NUTS & LOCK WASHERS
CONNECTION BOLTS	44	5/8"Ø A325N BOLT W/ NUTS & LOCK WASHERS



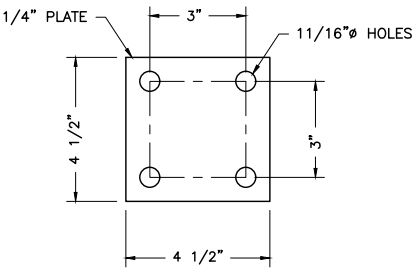
2 COAX BRACKET DETAIL
SCALE: 1 1/2" = 1'-0"



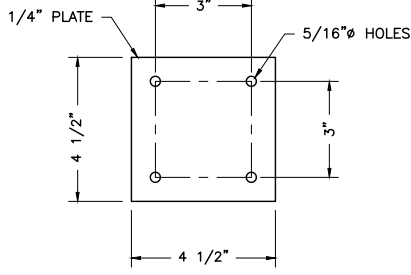
3 COAX BRACKET DETAIL
SCALE: 1 1/2" = 1'-0"



4 COAX BRACKET
SCALE: 1"=1'-0"



5 CONNECTION PLATE "A"
SCALE: NTS



6 CONNECTION PLATE "B"
SCALE: NTS

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

verizonwireless
8921 RESEARCH DRIVE
CHARLOTTE, NC 28262

WOODBURN
NB+C PROJ. # 27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

REVISIONS			
REV	DATE	DESCRIPTION	BY
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI

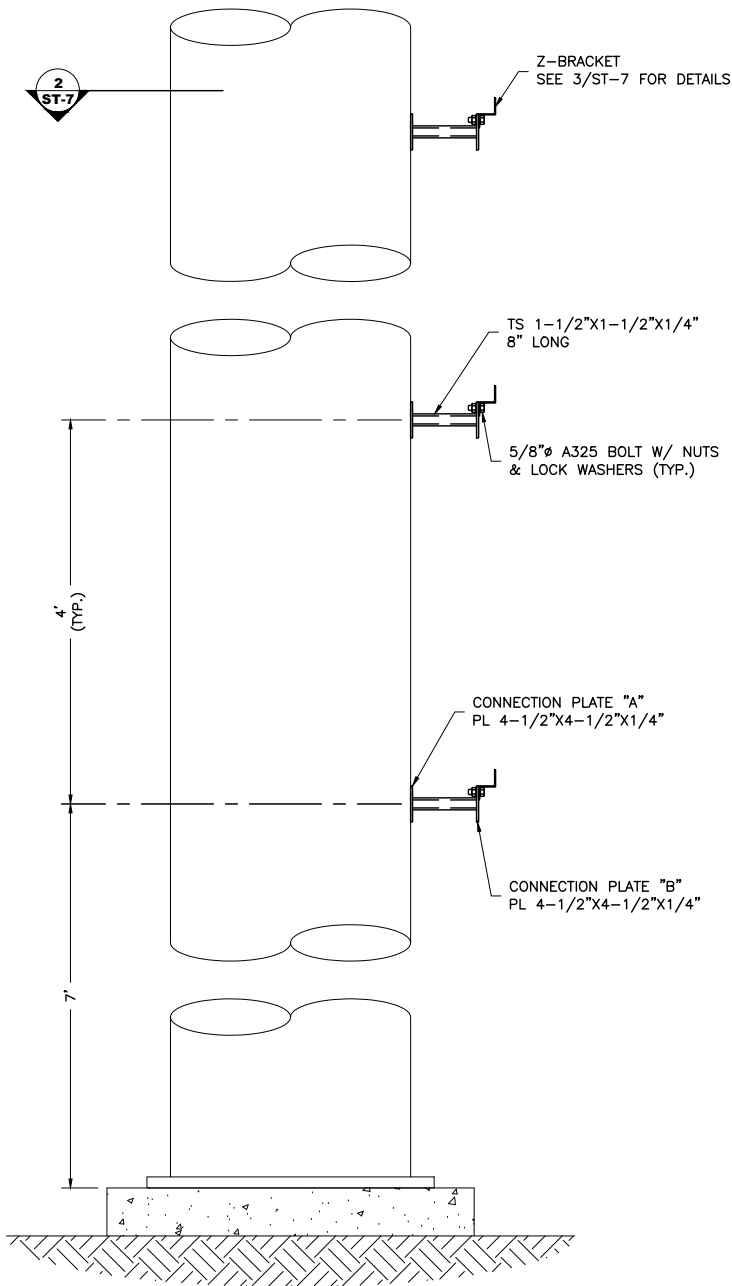
COMMONWEALTH OF VIRGINIA
TRENT TRAVIS SNARR
Lic. No. 049978
DATE 03/31/16
PROFESSIONAL ENGINEER

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

COAX SUPPORT
INSTALLATION
DETAILS I

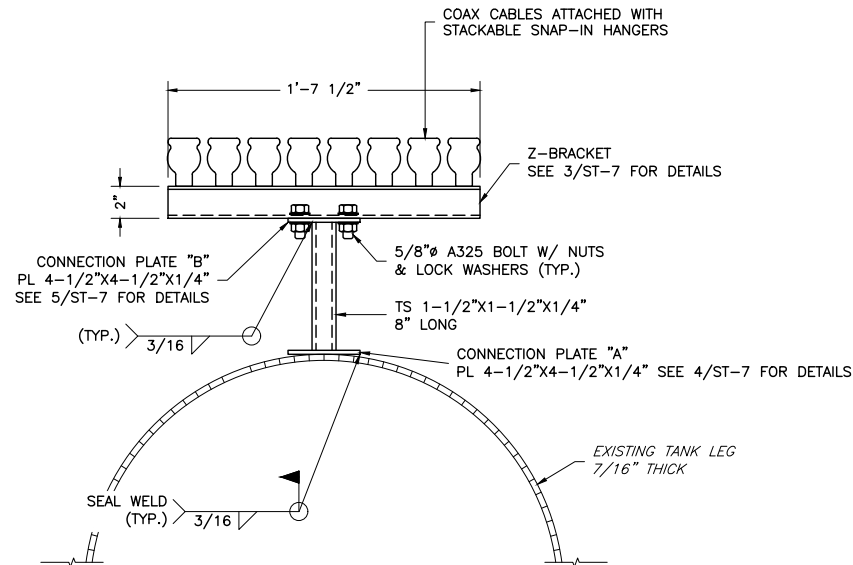
ST-6

COAX BRACKET MATERIAL LIST		
PART	QUANTITY	DESCRIPTION
Z-BRACKET	22	SEE 3/ST-7 FOR DETAILS
CONNECTION TUBE	22	TS 1-1/2"x1-1/2"x1/4" X 8" LONG
CONNECTION PLATE "A"	22	PL 4-1/2"x4-1/2"x1/4"
CONNECTION PLATE "B"	22	PL 4-1/2"x4-1/2"x1/4" W/ (4) 5/8"Ø DRILLED HOLES
CONNECTION BOLTS	44	5/8"Ø A325N BOLT W/ NUTS & LOCK WASHERS

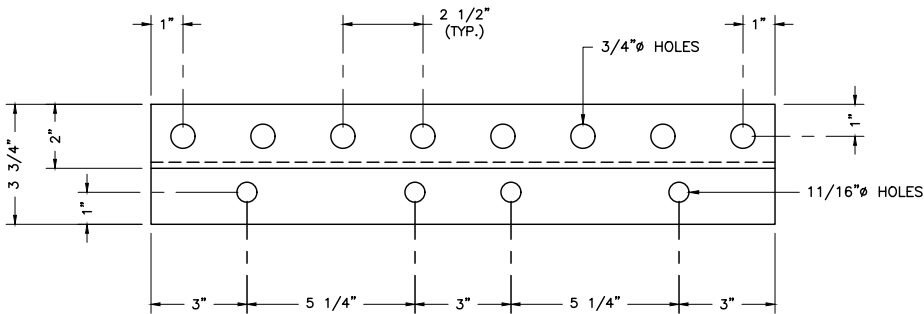


1 COAX BRACKET
ST-7 SCALE: 1" = 1'-0"

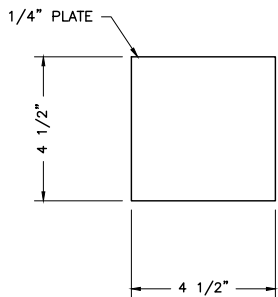
NOTE:
1. NEW COAX BRACKET TO BE
PAINTED TO MATCH TOWER LEG



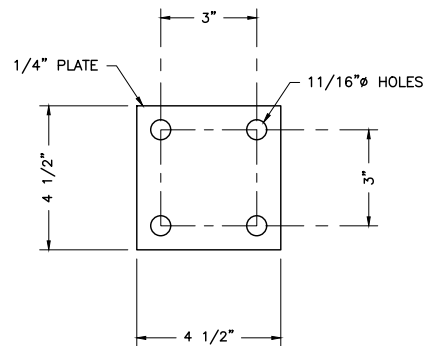
2 COAX BRACKET
ST-7 SCALE: 1" = 1'-0"




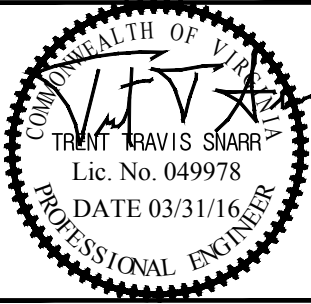
3 Z-BRACKET
ST-7 SCALE: NTS

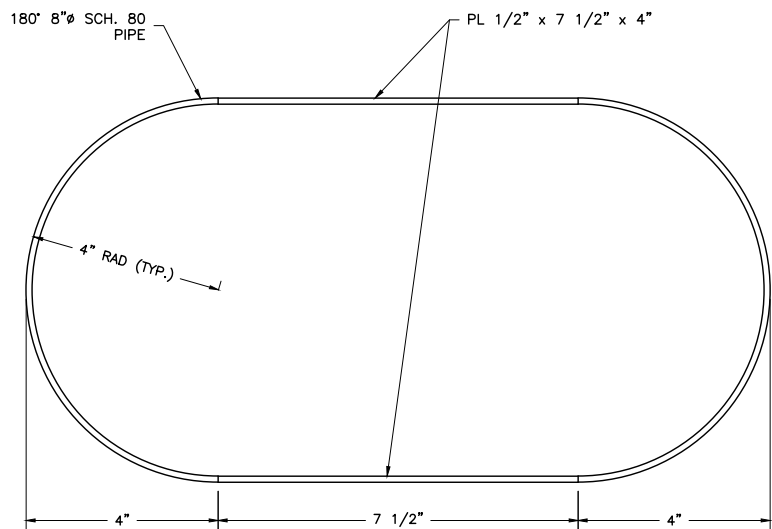
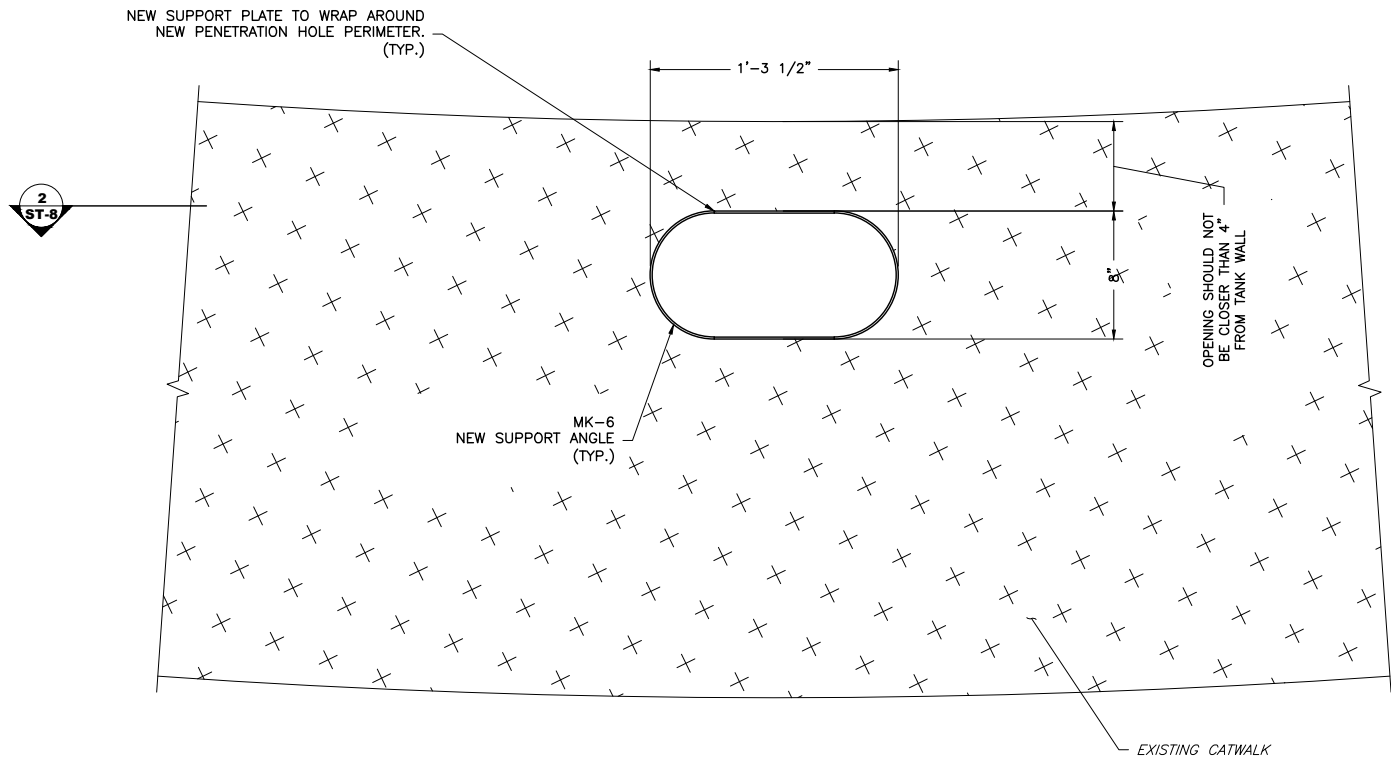


4 CONNECTION PLATE "A"
ST-7 SCALE: NTS



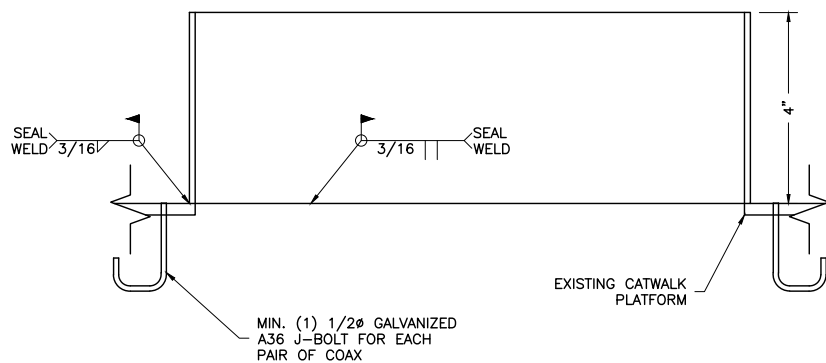
5 CONNECTION PLATE "B"
ST-7 SCALE: NTS

ENGINEER	<div><div>NB+CTM</div><div>TOTALLY COMMITTED.</div><div>NB+C ENGINEERING SERVICES, LLC.</div><div>4435 WATERFRONT DRIVE, SUITE 100 GLEN ALLEN, VA 23060</div></div>																																				
APPLICANT	<div><div></div><div>8921 RESEARCH DRIVE CHARLOTTE, NC 28262</div></div>																																				
SITE INFORMATION	<div>WOODBURN NB+C PROJ. # 27074 2226 WOODBURN ROAD CHARLOTTESVILLE, VA 22901 ALBEMARLE COUNTY</div>																																				
DESIGN RECORD	<div>REVISIONS</div> <table><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td>03/31/16</td><td>REVISED</td><td>OP</td></tr><tr><td>3</td><td>01/28/16</td><td>REVISED</td><td>OP</td></tr><tr><td>2</td><td>11/17/15</td><td>REVISED</td><td>OP</td></tr><tr><td>1</td><td>10/29/15</td><td>REVISED</td><td>OP</td></tr><tr><td>0</td><td>08/25/15</td><td>PRELIMINARY CD</td><td>AI</td></tr><tr><td>REV</td><td>DATE</td><td>DESCRIPTION</td><td>BY</td></tr></table>													4	03/31/16	REVISED	OP	3	01/28/16	REVISED	OP	2	11/17/15	REVISED	OP	1	10/29/15	REVISED	OP	0	08/25/15	PRELIMINARY CD	AI	REV	DATE	DESCRIPTION	BY
4	03/31/16	REVISED	OP																																		
3	01/28/16	REVISED	OP																																		
2	11/17/15	REVISED	OP																																		
1	10/29/15	REVISED	OP																																		
0	08/25/15	PRELIMINARY CD	AI																																		
REV	DATE	DESCRIPTION	BY																																		
PROFESSIONAL STAMP	<div></div>																																				
ENGINEER	<div>TRENT T. SNARR, P.E. VA PROFESSIONAL ENGINEER LIC. #49978</div>																																				
SHEET TITLE	<div>COAX SUPPORT INSTALLATION DETAILS II</div>																																				
SHEET NUMBER	<div>ST-7</div>																																				

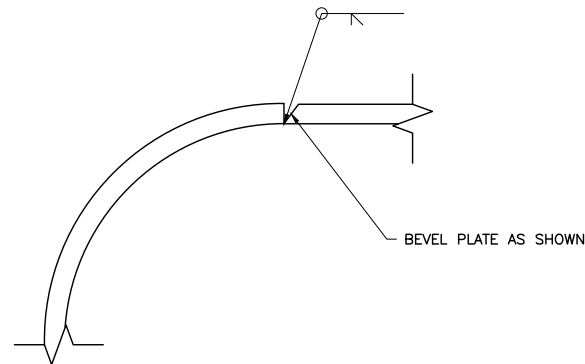


- NOTES:
- 1: CONTRACTOR TO CHAMFER ALL CUT EDGES ON AFTER CUTTING
 - 2: CONTRACTOR TO WELD PIPE SLEEVE AS SHOWN IN SECTION DRAWING.
 - 3: PROPOSED PENETRATION SHALL BE SHOP PAINTED TO MATCH THE TANK CATWALK. (VERIFY COLOR)

1 CATWALK COAX PENETRATION HOLE
SCALE: 1" = 1'-0"



- NOTE:
- CONTRACTOR TO FORM KICK PLATE USING (1) 8" SCH. 80 PIPE & 1/2" FLAT STOCK. AFTER FABRICATION THE KICK PLATE WILL BE WELDED INTO THE CONDENSATE CATWALK PENETRATION



2 CATWALK COAX PENETRATION CHAMFER DETAILS
SCALE: 3" = 1'-0"

ENGINEER



APPLICANT



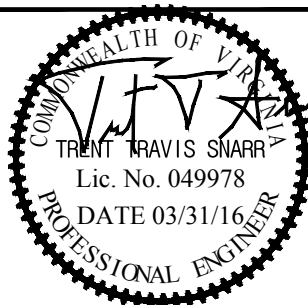
SITE INFORMATION

WOODBURN
NB+C PROJ. # 27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

DESIGN RECORD

REVISIONS			
REV	DATE	DESCRIPTION	BY
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI

PROFESSIONAL STAMP



ENGINEER

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

SHEET TITLE

CATWALK
COAX PENETRATION
DETAILS

SHEET NUMBER

ST-8

COATING SYSTEMS FOR TELECOMMUNICATION EQUIPMENT

PART 1 GENERAL

1.01 SUMMARY

A. Section includes painting and painting repair work associated with the installation of antennas, coaxial cables, and other common components with direct attachment to water tank facilities.

1.02 REFERENCES

A. Society for Protective Coatings (SSPC):

www.sspc.org

1. Volume 1: Good Painting Practice
2. Volume 2: Systems and Specifications

1.03 SUBMITTALS

A. Product Data: Submit data sheet for each coating system.

PART 2 PRODUCTS

2.01 MATERIALS

A. Manufacturers:

1. Sherwin Williams Company www.sherwin-williams.com
2. Tnemec Company www.tnemec.com
3. X-I-M Products www.ximbonder.com

PART 3 EXECUTION

3.01 EXAMINATION

A. Visually evaluate surface preparation by comparison with pictorial standards of SSPC-VIS-1-89.

3.02 PREPARATION

A. Remove all surface contaminants in accordance with SSPC-SP1 Solvent Cleaning.

1. Do not use hydrocarbon solvents on surfaces to be coated with water-based coatings.

B. Clean and remove all rust, slag, weld splatter, weld scabs, mill scale, and loose paint.

C. Protect areas adjacent to welding & or grinding operations to prevent damage of surrounding intact paint system.

D. Ferrous Metal: SSPC-SP6 Commercial Blast Cleaning

E. Galvanized Steel: SSPC-SP7 Brush Off Blast

F. Antenna Covers, Coaxial Cable, Non-metallic Substrates and Previously Painted Surfaces: Scarify to degloss.

SSPC-SP1 with a non-hydrocarbon solvent.

G. Surface profile shall be in accordance with manufacturer's product recommendation.

H. Re-blast all surfaces:

1. Where rusting has recurred.
2. That do not meet the requirements of these specifications.

3.03 APPLICATION

A. Coatings shall be applied in accordance with manufacturer's printed instructions.

Coating Systems for Telecommunication Equipment

09 97 15 - 2

B. Surfaces to be coated shall be clean, dry, and free of airborne dust and contaminants at the time of application and while film is forming.

C. Finish coat shall be uniform in color and sheen without streaks, laps, runs, sags or missed areas.

D. Shop Painting: Tape-off (2-inch minimum) surfaces that will be in the Heat-Affected-Zone during field welding.

E. Component Painting:

1. Interior Exposed Ferrous Metal and Galvanized Steel:

a. Product: Sherwin Williams Macropoxy 646 or Tnemec Series 161

1) Number of Coats: 2

2) Dry Film Thickness: 4.0-6.0 mils (per coat)

3) Color: By Owner

2. Exterior Exposed Ferrous Metal and Galvanized Steel:

a. Primer: Sherwin Williams Macropoxy 646 or Tnemec Series 161 or N69

1) Number of Coats: 1

2) Dry Film Thickness: 4.0-6.0 mils

3) Color: By Owner

b. Finish: Sherwin Williams Acrolon 218 or Tnemec Series 10740/10750

1) Number of Coats: 1

2) Dry Film Thickness: 2.0-3.0 mils

3) Color: By Owner

3. Antenna Covers:

a. Primer: Sherwin Williams Pro-Cryl Primer

1) Number of Coats: 1

2) Dry Film Thickness: 2.0-4.0 mils

b. Finish: Sherwin Williams Sher-Cryl HPA

1) Number of Coats: 1

2) Dry Film Thickness: 2.5-4.0 mils

3) Color: By Owner

4. Coaxial Cable

a. Primer: X-I-M 1138

1) Number of Coats: 1

2) Dry Film Thickness: 2.0-3.0 mils

b. Finish: Sherwin Williams Sher-Cryl HPA

1) Number of Coats: 1

2) Dry Film Thickness: 2.5-4.0 mils

3) Color: By Owner

3.04 REPAIR OF AREAS DAMAGED BY WELDING

A. Prepare the damage by one of the two following methods as directed by the Engineer.

1. Abrasive-blast to SSPC-SP6.

2. Mechanically clean to SSPC-SP11.

B. Feather edges to provide smooth coating transition.

C. Apply prime coat to bare metal surface.

D. Mask off rectangular area around prime coat.

E. Apply finish coat.

3.05 QUALITY CONTROL

A. Measure dry film thickness with a magnetic film thickness gage in accordance with SSPC-PA2.

B. Visually inspect dried film for funs, sags, dry spray, overspray, embedded particles and missed areas.

C. Repair defective or damaged areas in accordance with Articles 3.02 and 3.03.

ENGINEER



APPLICANT



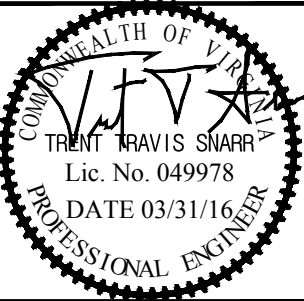
SITE INFORMATION

WOODBURN
NB+C PROJ. # 27074
2226 WOODBURN ROAD
CHARLOTTESVILLE, VA 22901
ALBEMARLE COUNTY

DESIGN RECORD

REVISIONS			
4	03/31/16	REVISED	OP
3	01/28/16	REVISED	OP
2	11/17/15	REVISED	OP
1	10/29/15	REVISED	OP
0	08/25/15	PRELIMINARY CD	AI
REV	DATE	DESCRIPTION	BY

PROFESSIONAL STAMP



ENGINEER

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

SHEET TITLE

COATING SYSTEMS
NOTES

SHEET NUMBER

N-1