Application for
Use Permit

OFFICE USE ONLY
Date Received:

June 24, 2024

Case Number: **UP 24 - 0456**

Complete this application in its entirety and submit pages 4 and 5 along with the required materials (including any required supplements) as listed on page 2 to the address below:

City of Hampton
Community Development Department, Planning Division
22 Lincoln Street, 5th Floor
Hampton, Virginia 23669

1. PROPERTY INFORMATION

Address or Location 902 G. Street, Hampton, VA 23661

LRSN 1000699 Zoning District M-2

Current Land Use Corporate Office/Operations and Maintenance Facility with communication tower

Proposed Land Use No use change planned. Existing uses remain. Relocating communication tower.

The proposed use will be in: ❑ an existing building **X a new location** ❑ a new building

2. PROPERTY OWNER INFORMATION (an individual or a legal entity may be listed as owner)

Owner's Name Virginia Electric and Power Company

Address 120 Tredegar Street City Richmond State VA Zip 23219

Phone _____ Email _____

3. APPLICANT INFORMATION (if different from owner)

Applicant's Name Virginia Electric and Power Company

Address 600 E Canal Street City Richmond State VA Zip 23219

Phone 423-715-4006 Email konsta.t.stamatiadis@dominionenergy.com

4. APPLICANT AGENT INFORMATION (if different from applicant)

Agent's Name Harold K. Timmons

Address 10700 Sikes Place, Ste. 360 City Charlotte State NC Zip 28277

Phone 336-210-9684 Email hktimmons@tepgroup.net

5. CERTIFICATION FOR LEGAL ENTITY PROPERTY OWNERS

*Complete this section only if the property owner is **not** an individual but rather a legal entity such as a corporation, trust, LLC, partnership, diocese, etc. as specified in Step 2 above.*

"I hereby submit that I am legally authorized to execute this application on behalf of the fee-simple owner of this property. I have read this application and it is submitted with my full knowledge and consent. I authorize city staff and representatives to have access to this property for inspection. The information contained in this application is accurate and correct to the best of my knowledge."

Name(s), title(s), signature(s), and date(s) of authorized representative(s) of the legal entity (attach additional page if necessary):

Name of Legal Entity Virginia Electric and Power Company

Signed by:

Name (printed) KYLE M. YOUNG, Its (title) AUTHORIZED REPRESENTATIVE

Signature Kyle M. Young Date _____

Name (printed) _____, Its (title) _____

Signature _____ Date _____

Name (printed) _____, Its (title) _____

Signature _____ Date _____

6. CERTIFICATION FOR INDIVIDUAL PROPERTY OWNERS

Complete this section only if the property owner is an individual or individuals.

"I hereby submit that I am the fee-simple owner of this property. I have read this application and it is submitted with my full knowledge and consent. I authorize city staff and representatives to have access to this property for inspection. The information contained in this application is accurate and correct to the best of my knowledge."

Name(s), signature(s), and date(s) of owner(s) (attach additional page if necessary):

Name (printed) _____

Signature _____ Date _____

Name (printed) _____

Signature _____ Date _____

OFFICE USE ONLY

❑ Application Form	❑ Narrative Statement	❑ Supplemental Form (if required)
❑ Application Fee	❑ Survey Plat	❑ Additional materials (if required)

TOWER ENGINEERING PROFESSIONALS

CHARLOTTE OFFICE
10700 SIKES PLACE, SUITE 360
CHARLOTTE, NC 28277
980.202.5596
WWW.TEPGROUP.NET

June 24, 2024

City of Hampton
Community Development Planning Division
City Hall
22 Lincoln Street, 5th Floor
Hampton, Virginia 23669

Transmittal Letter

To Whom It May Concern:

Enclosed are the documents required for the submittal of an application for a 170-foot-tall, steel lattice, self-supporting communication tower and related ground equipment on property currently under the ownership of Dominion Resources Services, Inc. The property is located at 902 G. Street on Parcel #1000699 in the City of Hampton, Virginia. Included in this submittal are the documents required for a Use Permit for the proposed communications tower. Attached are the following documents:

- Use Permit Application
- Certification for Legal Entity – Property Owners
- Intermodulation Report
- NIER Emissions Report
- Structural Documentation
- Site Development Plan
- Survey

Narrative Statement

The applicant for this tower is Dominion Resources Services, Incorporated "Dominion"). Dominion will be the owner and operator of the proposed tower. Dominion currently has an existing, self-supporting tower on the property. The purpose for requesting the Use Permit is to allow Dominion to replace the existing self-supporting tower structure with a new and modern self-supporting structure. The existing tower is located adjacent to the rear of the existing main building located on the property. The proposal is to remove the existing tower and construct a new tower along the northern property line as shown on the site development plans provided. Dominion will use the new structure in the same or in a very similar manner as it uses the current tower on the property which is to provide communication between facilities and work crews. The proposed structure will be a privately owned structure that will have sufficient capacity to allow Dominion to mount the equipment that is essential in their day-to-today operations. Dominion also understands that the City promotes the construction of towers that can be collocated upon by more than a single user. At the present time, the collocation of equipment by non-Dominion

TOWER ENGINEERING PROFESSIONALS

CHARLOTTE OFFICE
10700 SIKES PLACE, SUITE 360
CHARLOTTE, NC 28277
980.202.5596
WWW.TEPGROUP.NET

entities is not a priority nor the essential purpose of the structure. Dominion is open to considering the aspect of collocation at a point in the future should the issue arise.

The proposed steel lattice designed tower, will be designed to withstand wind speeds and forces as required by State and local building regulations as well as those standards defined by the American National Standards Association *(ANSA)* specifications. Regardless, Dominion carries extensive liability insurance in the instance there is damage or injuries resulting from our operations.

The tower will be designed by the manufacturer to be protected from strikes by lightning. Two important factors combine to protect our facility from lightning. First, the tower will be grounded using rods and cables that will be buried within the fenced compound. Second, the tower itself will provide a "cone of protection," a 45-degree circular arc from the top of the tower to the ground, which will protect all structures within that area from lightning strikes. Should the tower receive a lightning strike, the electrical surge would be directed into the ground and dissipated immediately.

The Telecommunications Act of 1996 recognizes the importance of ensuring the integrity of wireless communication networks that provide nationwide communication services. Nevertheless, our client understands the concerns regarding health and safety and recognizes their responsibility to address those concerns. Consequently, this antenna facility site will comply with FCC regulations governing the safety of RF emissions.

Should you need any additional information or clarification regarding this request, please feel free to contact me on 336-210-9684.

Sincerely,

Harold Timmons

Harold K. Timmons
Real Estate and Zoning Specialist
Tower Engineering Professionals
hktimmons@tepgroup.net

RF Design & Services
Division

Tower Engineering Professionals

Tower Engineering Professionals
RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(815) 721-6954
WWW.TEPGROUP.NET

RADIO FREQUENCY INTERFERENCE ANALYSIS REPORT

Hampton Office

May 17, 2024

Prepared By:

Adam R Carlson MS, CPI, CBRE
330654 P-396029

Reviewed By:

COMMONWEALTH OF VIRGINIA
SCOTT C. BRANTLEY
Lic. No. 064821
PROFESSIONAL ENGINEER

05/20/24

Table of Contents

1.0 Executive Summary

This report presents a radio frequency interference (RFI) analysis which was performed on the Hampton Office site. The RFI analysis consists of transmitter noise, receiver desensitization, intermodulation, harmonic and transmitter spurious output interference. The report consists of Sections that provide details of the communications site, antenna systems, operational frequencies, and each interference analysis mode.

A summary of the interference analysis results is depicted in the following Table.

Interference Analysis Mode	Type Mix	Status	Summary	Worst-Case Margin (dB)
Transmitter Noise	N/A	Passed	No Interference was predicted	0
Receiver Desensitization	N/A	Passed	No Interference was predicted	0
Transmitter Intermodulation	1 Tx	Passed	No Interference was predicted	N/A
Transmitter Intermodulation	2 Tx	Passed	No Interference was predicted	N/A
Transmitter Intermodulation	3 Tx	Passed	No Interference was predicted	N/A
Transmitter Intermodulation	4 Tx	Passed	No Interference was predicted	N/A
Transmitter Intermodulation	5 Tx	Passed	No Interference was predicted	N/A
Receiver Intermodulation	1 Tx	Passed	No Interference was predicted	N/A
Receiver Intermodulation	2 Tx	Passed	No Interference was predicted	N/A
Receiver Intermodulation	3 Tx	Passed	No Interference was predicted	N/A
Receiver Intermodulation	4 Tx	Passed	No Interference was predicted	N/A
Receiver Intermodulation	5 Tx	Passed	No Interference was predicted	N/A
Transmitter Harmonics	N/A	Passed	No Interference was predicted	N/A
Transmitter Spurious Output	N/A	Passed	No Interference was predicted	N/A
Interference Level Summing - C/(I+N)	N/A	Passed	No Interference was predicted	N/A
Wideband IM Spectral Analysis	N/A	Passed	No Interference was predicted	N/A

The analysis was performed with the setup options depicted in the Table below.

Analysis	Description
Receiver Performance	Receiver Sensitivity Threshold
Receiver Bandwidth	Receiver Dependent
Antenna Patterns Considered	No (Worst Case)
Measured Antenna Isolation Data	No
Filters/Multicouplers Considered	None
Number of Simultaneous Transmitters Mixed	4
Highest Intermodulation Order Tested	4
Condense Intermodulation Hit Quantity	Yes - 1000/Order
TX IM Bandwidth Multiplication	Yes
Tx/Rx Systems Excluded	None
Site File Name	Hampton office 05172024.DTA
Report File Name	Hampton Office IM.docx
WirelessSiteRFI Software Version	10.1.19A

2.0 Site Description

The communication systems located at this site are described in this section as well as the configuration of the antenna systems.

The site parameters are:

Site Number/Name: Hampton Office
Owner: Dominion Energy
Site Description: 170" Self-Support Tower
Address: 902 G St.in Hampton, Virginia
Latitude: 37.010692
Longitude: -76.391764
Notes: Dominion Energy is installing new equipment on this tower. This study is to confirm that it doesn't interfere with the local public service frequencies.

2.1 Communications Systems

System	Provider	Technology	Frequency Band
1	DE1	FM Land Mobile	420 - 470 MHz - Land Mobile
2	DE2	FM Land Mobile	420 - 470 MHz - Land Mobile
3	DE3	Two-Way Paging	896 - 960 MHz - Land Mobile
4	Hampton Public Safety	800 MHz Trunking	806 - 896 MHz - Land Mobile

2.2 Antenna Systems

Ant #	Mfg	Antenna Model	Gain (dBd)	Hgt (ft)	Orient (deg)	Sector	Ant Use	Transmission Line Type	Line Loss (/100')	Line Length (ft)
1	Commscope	DB420-B	11.3	160	20		Tx/Rx	AVA5-50	0.63	190
2	Commscope	DB420-B	11.3	160	140		Tx/Rx	AVA5-50	0.63	190
3	Commscope	DB224-A	8.1	159	350		Tx/Rx	1-1/4 in. Foam	0.36	189
4	Antenna Products	CAT10-188199T0	10	150	0		Dplx	AVA5-50	1.72	180

3.0 Transmitter Frequencies

Freq #	Ant #	Provider	Model	Technology	Channel Label	ID	Frequency	Power (Watts)	BW (kHz)
1	1	DE1	Generic	FM Land Mobile	DE1	A	451.475000	500	1300
2	2	DE2	Generic	FM Land Mobile	DE1	B	451.475000	500	1300
3	3	DE3	Generic	Two-Way Paging	DE2	D	153.458000	900	1300
4	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS01	E	853.775000	50	20
5	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS02	F	853.662500	50	20
6	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS03	G	853.637500	50	20
7	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS04	H	853.575000	50	20
8	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS05	I	853.525000	50	20
9	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS06	J	853.400000	50	20
10	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS07	K	853.362500	50	20
11	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS08	L	853.275000	50	20
12	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS09	M	852.900000	50	20
13	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS10	N	852.875000	50	20
14	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS11	O	852.850000	50	20
15	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS12	P	852.775000	50	20
16	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS13	Q	852.600000	50	20
17	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS14	R	852.375000	50	20
18	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS15	S	852.350000	50	20
19	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS16	T	852.325000	50	20
20	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS17	U	852.175000	50	20
21	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS18	V	852.125000	50	20
22	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS19	W	851.375000	50	20
23	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS20	X	851.250000	50	20

4.0 Receiver Frequencies

Freq #	Ant #	Provider	Model	Technology	Channel Label	ID	Frequency	Sen (dBm)	BW (kHz)
1	1	DE1	Generic	FM Land Mobile	DE1	A	456.475000	-119	1300
2	2	DE2	Generic	FM Land Mobile	DE1	B	456.475000	-119	1300
3	3	DE3	Generic	Two-Way Paging	DE2	D	153.458000	-20	1300
4	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS01	E	808.775000	-119	20
5	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS02	F	808.662500	-119	20
6	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS03	G	808.637500	-119	20
7	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS04	H	808.575000	-119	20
8	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS05	I	808.525000	-119	20
9	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS06	J	808.400000	-119	20
10	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS07	K	808.362500	-119	20
11	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS08	L	808.275000	-119	20
12	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS09	M	807.900000	-119	20
13	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS10	N	807.875000	-119	20
14	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS11	O	807.850000	-119	20
15	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS12	P	807.775000	-119	20
16	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS13	Q	807.600000	-119	20
17	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS14	R	807.375000	-119	20
18	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS15	S	807.350000	-119	20
19	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS16	T	807.325000	-119	20
20	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS17	U	807.175000	-119	20
21	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS18	V	807.125000	-119	20
22	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS19	W	806.375000	-119	20
23	4	Hampton Public Safety	Generic	800 MHz Trunking	HPS20	X	806.250000	-119	20

5.0 Transmitter Noise Analysis

Transmitter noise interference occurs because a transmitter radiates energy on its operating frequency as well as frequencies above and below the assigned frequency. The energy that is radiated above and below the assigned frequency is known as sideband noise energy and extends for several megahertz on either side of the operating frequency. This undesired noise energy can fall within the passband of a nearby receiver even if the receiver's operating frequency is several megahertz away. The transmitter noise appears as "on-channel" noise interference and cannot be filtered out at the receiver. It is on the receiver's operating frequency and competes with the desired signal, which in effect, degrades the operational performance.

The analysis predicts each transmitter's noise signal level present at the input of each receiver. It takes into account the transmitter's noise characteristics, frequency separation, power output, transmission line losses, filters, duplexers, combiners, isolators, multi-couplers, and other RF devices that are present in both systems. Additionally, the analysis considers the antenna separation space loss, horizontal and vertical gain components of the antennas as well as how they are mounted on the structure. The gain components are derived from antenna pattern data published by each manufacturer.

The analysis determines how much isolation is required, if any, to prevent receiver performance degradation caused by transmitter noise interference. The Table below depicts the results of this analysis. For each receiver, the transmitter that has the worst-case impact is displayed. The Signal Margin represents the margin in dB before the receiver's performance is degraded. A negative number indicates that the performance is degraded, and the value indicates how much additional isolation is required to prevent receiver performance degradation.

Receiver Provider	Receive Channel	Receive Frequency (MHz)	Transmitter Provider	Transmit Channel	Transmit Frequency (MHz)	Attn Required (dB)	Attn Provided (dB)	Signal Margin (dB)
None								

No transmitter noise interference problems were predicted.

6.0 Receiver Desensitization Analysis

Receiver desensitization interference occurs when an undesired signal from a nearby "off-frequency" transmitter is sufficiently close to a receiver's operating frequency. The signal may get through the RF selectivity of the receiver. If this undesired signal is of sufficient amplitude, the receiver's critical voltage and current levels are altered, and the performance of the receiver is degraded at its operating frequency. The gain of the receiver is reduced, thereby reducing the performance of the receiver.

A transmitter can be operating several megahertz away from the receiver frequency and/or its antenna can be located several thousand feet from the receiver's antenna and still cause interference.

The analysis predicts each transmitter's signal level present at the input of each receiver. It takes into account the transmitter's power output, frequency separation, transmission line losses, filters, duplexers, combiners, isolators, multi-couplers, and other RF devices that are present in both systems. Additionally, the analysis considers the antenna separation space loss, horizontal and vertical gain components of the antennas as well as how they are mounted on the structure. The gain components are derived from antenna pattern data published by each manufacturer.

The analysis determines how much isolation is required, if any, to prevent receiver performance degradation caused by receiver desensitization interference. The Table below depicts the results of this analysis. For each receiver, the transmitter that has the worst-case impact is displayed. The Signal Margin represents the margin in dB before the receiver's performance is degraded. A negative number indicates that the performance is degraded, and the value indicates how much additional isolation is required to prevent receiver performance degradation.

Receiver Provider	Receive Channel	Receive Frequency (MHz)	Transmitter Provider	Transmit Channel	Transmit Frequency (MHz)	Attn Required (dB)	Attn Provided (dB)	Signal Margin (dB)
None								

No receiver desensitization interference problems were predicted.

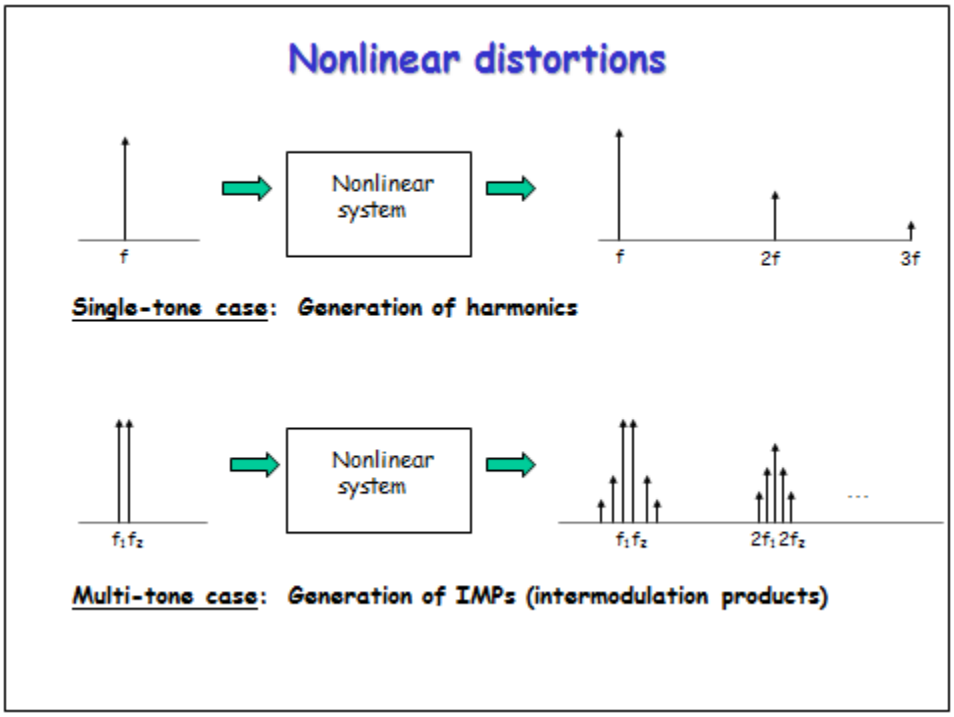
7.0 Intermodulation Interference Analysis

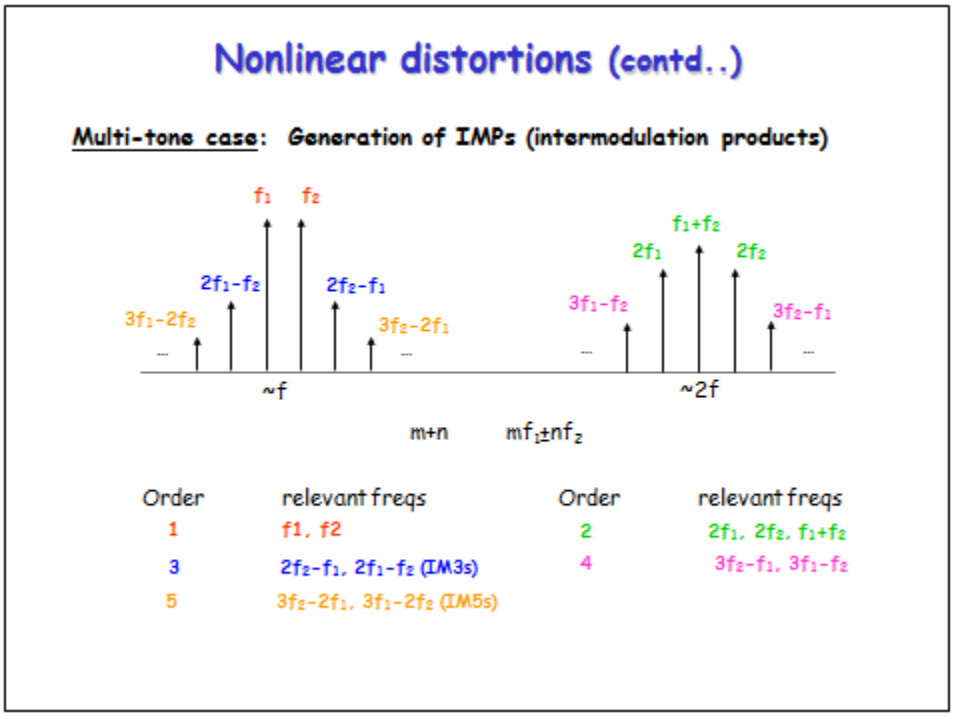
There are three basic categories of Intermodulation (IM) interference. They are receiver produced, transmitter produced, and "other" radiated IM. Transmitter produced IM is the result of one or more transmitters impressing a signal in the non-linear final output stage circuitry of another transmitter, usually via antenna coupling. The IM product frequency is then re-radiated from the transmitter's antenna. Receiver produced IM is the result of two or more transmitter signals mixing in a receiver RF amplifier or mixer stage when operating in a non-linear range.

"Other" radiated IM is the result of transmitter signals mixing in other non-linear junctions. These junctions are usually metallic, such as rusty bolts on a tower, dissimilar metallic junctions, or other non-linear metallic junctions in the area. IM products can also be caused by non-linearity in the transmission system such as antenna, transmission line, or connectors.

Communication sites with co-located transmitters usually have RF coupling between each transmitter and antenna system. This results in the signals of each transmitter entering the nonlinear final output (PA) circuitry of the other transmitters. When intermodulation (IM) products are created in the output circuitry and they fall within the passband of the final amplifier, the IM products are re-radiated and may interfere with receivers at the same site or at other nearby sites. Additionally, these strong transmitter signals may directly enter a receiver and drive the RF amplifier into a nonlinear operation, or if not filtered effectively by the receiver input circuitry, these signals could mix in the nonlinear circuitry of the receiver front-end or mixer, creating IM products directly in the receiver.

The frequencies of IM mixing are known as nonlinear distortions. The images below depict how these IM products are derived when passing through a nonlinear junction/system.





Not all of the mixing possibilities are significant in creating interference signals. Some fall “out-of-band” of the receiver and the higher order IM products are usually weaker in signal strength.

7.1 Transmitter Generated Intermodulation Analysis

Intermodulation in transmitters occurs when a signal from another transmitter is impressed on the nonlinear final output stage circuitry, usually via antenna coupling. The power level of the IM product is determined by the power level of the incoming extraneous signal from another transmitter and by a conversion loss factor. The conversion loss factor takes into account the mixing efficiency of the transmitter's final output stage. Conversion loss differs with transmitter design, adjustment, frequency separation of the source signals, and with the order of the IM product.

The analysis calculates all possible IM product frequencies that could potentially interfere with receivers at the communications site based on each receiver’s individual bandwidth. It then predicts each IM signal level present at the input of each affected receiver. For each IM frequency, the analysis considers all possible sources of IM generation in the transmitters. For example, if there are four transmitters involve, the analysis will calculate the IM signal level that would be generated in each transmitter. For this example, that would be four possible mixing conditions.

The analysis takes into account the transmitter’s power output, modulation bandwidth, conversion losses, transmission line losses, filters, duplexers, combiners, isolators, multi-couplers, and other RF devices that are present in each system. Additionally, the analysis considers the antenna separation space loss, horizontal and vertical gain components of the antennas as well as how

they are mounted on the structure. The gain components are derived from antenna pattern data published by each manufacturer.

The analysis determines how much isolation is required to prevent receiver performance degradation for each IM interference signal that occurs. Receivers experiencing transmitter generated intermodulation interference are depicted in the following Table.

Tx 1 Source Mix Tx		Tx 2 Source		TX 3 Source		Tx 4 Source		Tx 5 Source		Intermod Hit		Affected Receiver		Attn Need
ID	Freq (MHz)	ID	Freq (MHz)	ID	Freq (MHz)	ID	Freq (MHz)	ID	Freq (MHz)	Freq (MHz)	Ord	ID	Freq (MHz)	
None														

No transmitter generated intermodulation interference problems were predicted.

7.2 Receiver Generated Intermodulation Analysis

Within a receiver, when two or more strong off-channel signals enter and mix in the receiver and one of the IM product frequencies created coincides with the receiver operating frequency, potential interference results. This internal IM mixing process takes place in the receiver's RF amplifier when it operates in a nonlinear range and/or in the first mixer, which, of course, has been designed to operate as a nonlinear device.

Receivers have a similar conversion loss type factor and receiver performance is commonly described in terms of conversion loss with respect to the 2A - B type products. Here, conversion loss is the ratio of a specified level of A and B to the level of the resulting IM product, when the product is viewed as an equivalent on-channel signal. Receiver conversion loss varies with input levels, AGC action, and product order.

The analysis calculates all possible IM product frequencies that could potentially interfere with receivers at the communications site based on each receiver's individual bandwidth. It then predicts each IM signal level present at the input of each affected receiver. For each IM frequency, the analysis considers that the IM signal is generated directly in the receiver.

The analysis takes into account the transmitter's power output, modulation bandwidth, conversion losses, transmission line losses, filters, duplexers, combiners, isolators, multi-couplers, and other RF devices that are present in each system. Additionally, the analysis considers the antenna separation space loss, horizontal and vertical gain components of the antennas as well as how they are mounted on the structure. The gain components are derived from antenna pattern data published by each manufacturer.

The analysis determines how much isolation is required to prevent receiver performance degradation for each IM interference signal that occurs. Receivers experiencing receiver generated intermodulation interference are depicted in the following Table.

Tx 1 Source		Tx 2 Source		TX 3 Source		Tx 4 Source		Tx 5 Source		Intermod Hit		Affected Receiver		Attn Need
ID	Freq (MHz)	ID	Freq (MHz)	ID	Freq (MHz)	ID	Freq (MHz)	ID	Freq (MHz)	Freq (MHz)	Ord	ID	Freq (MHz)	
None														

No receiver generated intermodulation interference problems were predicted.

8.0 Transmitter Harmonic Output Interference Analysis

Transmitter harmonic interference is due to non-linear characteristics in a transmitter. The harmonics are typically created due to frequency multiplers and the non-linear design of the final output stage of the transmitter. If the harmonic signal falls within the passband of a nearby receiver and the signal level is of sufficient amplitude, it can degrade the performance of the receiver.

The analysis takes into account the transmitter's harmonic characteristics, output level, transmission line losses, filters, duplexers, combiners, isolators, multi-couplers, and other RF devices that are present in each system. Additionally, the analysis considers the antenna separation space loss, horizontal and vertical gain components of the antennas as well as how they are mounted on the structure. The gain components are derived from antenna pattern data published by each manufacturer.

The analysis determines how much isolation is required to prevent receiver performance degradation for any harmonics that fall within a receiver's passband. Receivers experiencing transmitter harmonic interference are depicted in the following Table.

Transmitter		Harmonic		Affected Receiver		Attn Needed
ID	Frequency (MHz)	Frequency (MHz)	Order	ID	Frequency (MHz)	
None						

No transmitter generated harmonic interference problems were predicted.

9.0 Transmitter Spurious Output Interference Analysis

Transmitter spurious output interference can be attributed to many different factors in a transmitter. The generation of spurious frequencies could be due to non-linear characteristics in a transmitter or possibly the physical placement of components and unwanted coupling. If a spurious signal falls within the passband of a nearby receiver and the signal level is of sufficient amplitude, it can degrade the performance of the receiver.

The analysis takes into account a transmitter's spurious output specification, output levels, transmission line losses, filters, duplexers, combiners, isolators, multi-couplers, and other RF devices that are present in each system. Additionally, the analysis considers the antenna separation space loss, horizontal and vertical gain components of the antennas as well as how they are mounted on the structure. The gain components are derived from antenna pattern data published by each manufacturer.

The analysis determines how much isolation is required to prevent receiver performance degradation for any transmitter spurious signals that fall within a receiver's passband. Receivers experiencing transmitter spurious output interference are depicted in the following Table.

Transmitter		Affected Receiver		Attn Needed
ID	**Frequency (MHz)**	**ID**	**Frequency (MHz)**	
None				

No transmitter generated spurious interference problems were predicted.

10.0 Interference Power Level Summing Analysis

This section of the report provides a simulation of Intermodulation (IM) interference, transmitter wideband noise and receiver desensitization interference occurring on each individual receiver when all transmitters at the site are active at the same instance in time. Even though individual interference modes may not be reported in other report sections, this summing analysis represents a worst-case interference scenario.

However, the probability of this interference occurrence for an individual receiver could be low since it depends on the utilization of the transmitters involved in the interference generation.

The carrier-to-noise C/(I + N) ratio for each receiver is based on the aggregate of interference power levels. A negative C/(I + N) ratio indicates that the performance of the receiver could possibly be degraded by the value shown.

The following Table presents this data:

Receiver		Interference Power Level (dBw)				
Channel Label	**Freq (MHz)**	**Tx Noise**	**Rx Desense**	**IM Power**	**Aggregate**	**C / (I+N)**
None						

11.0 Wideband Spectral Intermodulation Interference Analysis

Considering the spectral components of a wideband carrier, a methodology is utilized to slice the wideband transmitter frequency into narrow band sub-channels. For example, a transmitter operating on 1931.2500 MHz with a bandwidth of 1.25 MHz could be subdivided into fifty (50) 25 kHz channels.

Based on the assumptions of ideal transmitter and receiver cutoff frequencies, it is possible that slicing a wideband carrier in the frequency domain into equally spaced sub-channels, produces IM hits within the pass-band of a narrowband receiver where a conventional IM analysis does not. This slicing method is prone to produce many additional IM hits especially, when IM bandwidth multiplication is enabled during the analysis.

During the IM analysis, transmitter frequencies are automatically sliced with a bandwidth greater than the user specified minimum bandwidth. IM “Hits” produced with this methodology are not utilized for IM signal level analysis. However, the center operating frequency of each wideband transmitter will remain at the full bandwidth of the channel and is included in the IM signal analysis.

This analysis was performed with carrier slicing activation for carrier channels with a bandwidth greater than 30kHz and a slice quantity of 50 slices per carrier. A summary of the results is depicted in the Table below. Note that any 1st Order IM Hits are due to direct harmonic relationships.

Receiver			Quantity of IM Hits/Order					
Channel Label	**Freq (MHz)**	**BW (kHz)**	**1st**	**2nd**	**3rd**	**4th**	**5th**	**Total**
None								

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

Non-Ionizing Electromagnetic Radiation (NIER) Study

Site Name:

Hampton Office

Location:

Hampton, Virginia

Tenant:

Dominion Energy

Prepared For:

Dominion Energy,
Richmond, Virginia

May 15th, 2024

330654 P-396029

Prepared By:

Adam Carlson MS, CBRE, CPI
Program Manager RF Design & Service
Tower Engineering Professionals

Approved By:

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

Contents

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

Disclaimer Notice

This work is based upon our best interpretation of available information. However, these data and their interpretation are constantly changing. Therefore, we do not warrant that any undertaking based on this report will be successful, or that others will not require further research or actions in support of this proposal or future undertaking. In the event of errors, our liability is strictly limited to the replacement of this document with a corrected one. Liability for consequential damages is specifically denied. Any use of this document constitutes an agreement to hold Tower Engineering Professionals and its employees harmless and indemnify it for all liability, claims, demands, and litigation expenses and attorney's fees arising out of such use.

Work product documents released prior to account settlement remain the sole property of Tower Engineering Professionals and must be returned on demand. Underlying work notes and data relating to this document remain the property of Tower Engineering Professionals. This document shall not be reproduced in whole or part without the permission of Tower Engineering Professionals. Any dispute hereunder shall be adjudicated in North Carolina. Any use or retention of this document constitutes acceptance of these terms, the entire work product, and all charges associated therewith.

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

Non-Ionizing Electromagnetic Radiation (NIER) Study

Hampton Office
Hampton, Virginia

INTRODUCTION

Tower Engineering Professionals RF Design & Services Division (TEP-RF) of Raleigh, North Carolina, has been retained by Dominion Energy, (DE), of Richmond, Virginia to evaluate the RF emissions compared to the Maximum Permissible Exposure (MPE) limit for the facilities at this location. This evaluation uses compliance standards as outlined in Federal Communications Commission (FCC) document OET-65.

SITE AND FACILITY CONSIDERATIONS

Site Hampton Office is located at 902 G St. in Hampton, Virginia at coordinates 37.010692°, - 76.391764°. The support structure is a 170' self-support tower. An aerial view of the tower location can be found in Appendix 1, Site Photos. The only tenant is Dominion Energy (DE). A table listing all antennae and effective radiated power (ERP) levels that were used in this study may be found in Appendix 2, Antenna Inventory.

POWER DENSITY CALCULATIONS

Power densities were calculated based on FCC MPE limits for both General Population/Uncontrolled and Occupational/Controlled environments.

For the purpose of this study, a radius of 100' from the base of the tower with a height of 6' above ground level was used, beyond 100' the MPE levels become *di minimus*. This study utilized FCC recognized and accepted software programs using the maximum ERP levels for the antenna models provided by ATC. Diagrams depicting the predicted spatial average power density level at any specific location may be found in Appendix 3, MPE Limit Study. A discussion regarding the FCC limits may be found in Appendix 4, Information Pertaining to MPE Studies. Study methodology describing Non-ionizing Radiation Prediction Models used in this study may be found in Appendix 5, MPE Standards Methodology.

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

All data used in this study was collected from one or more of the following sources:

- DE furnished data and does not include other unidentified communication facilities.
- Hampton_ Intermodulation and NIER Study Full Data Sheet received 5/3/2024.
- Carrier standard configurations.
- Empirical data collected by TEP.

SITE MITIGATION & CONTROL

In order to comply with FCC, & DE requirements, TEP recommends the placement of signage at the base of the tower and all compound access points to alert workers of potential exposure to RF fields while working on or near the antennae.

TEP recommends that all personnel working on this tower be trained in RF safety procedures and carry a personal RF monitor at all times.

COMPLIANCE DETERMINATION

This installation ***WILL BE*** in compliance with current FCC MPE limits as described in FCC OET-65.

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

Appendix 1 Site Photos

Aerial View of the Tower Location

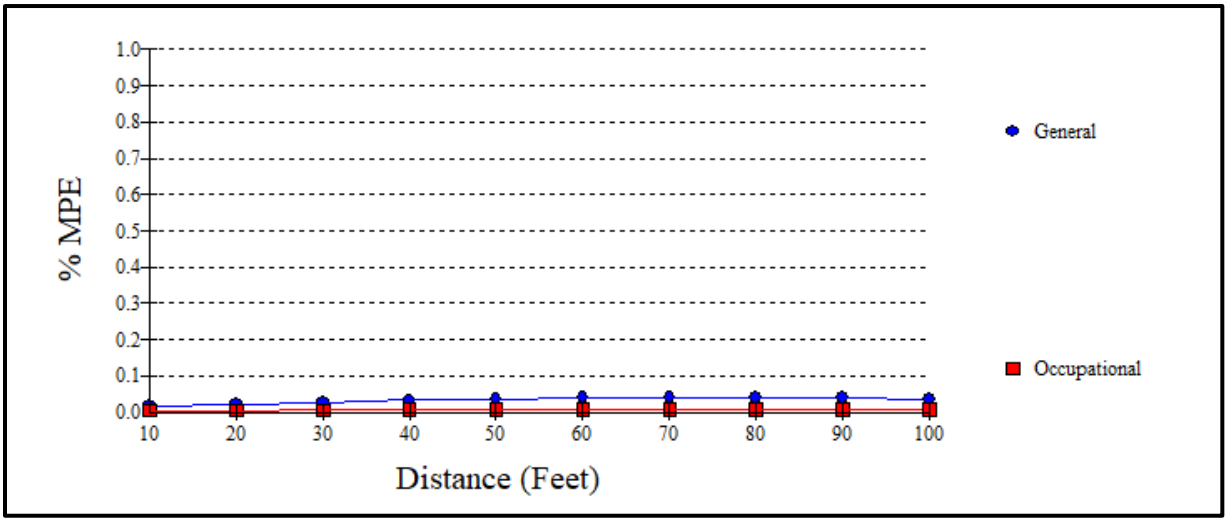
RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

Appendix 2 Antenna Inventory

Hampton Office							
Antenna Inventory							
Antenna #	Carrier	Antenna Manufacturer	Antenna Model	Frequency Band (MHz)	Azmiuth (°)	Effective Radiated Power (W)	Radiation Center (ft)
1	DE	Commscope	DB420-B	400	020	500.0	160.0
2	DE	Commscope	DB420-B	400	140	500.0	160.0
3	DE	Commscope	DB224-A	100	350	900.0	159.0

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

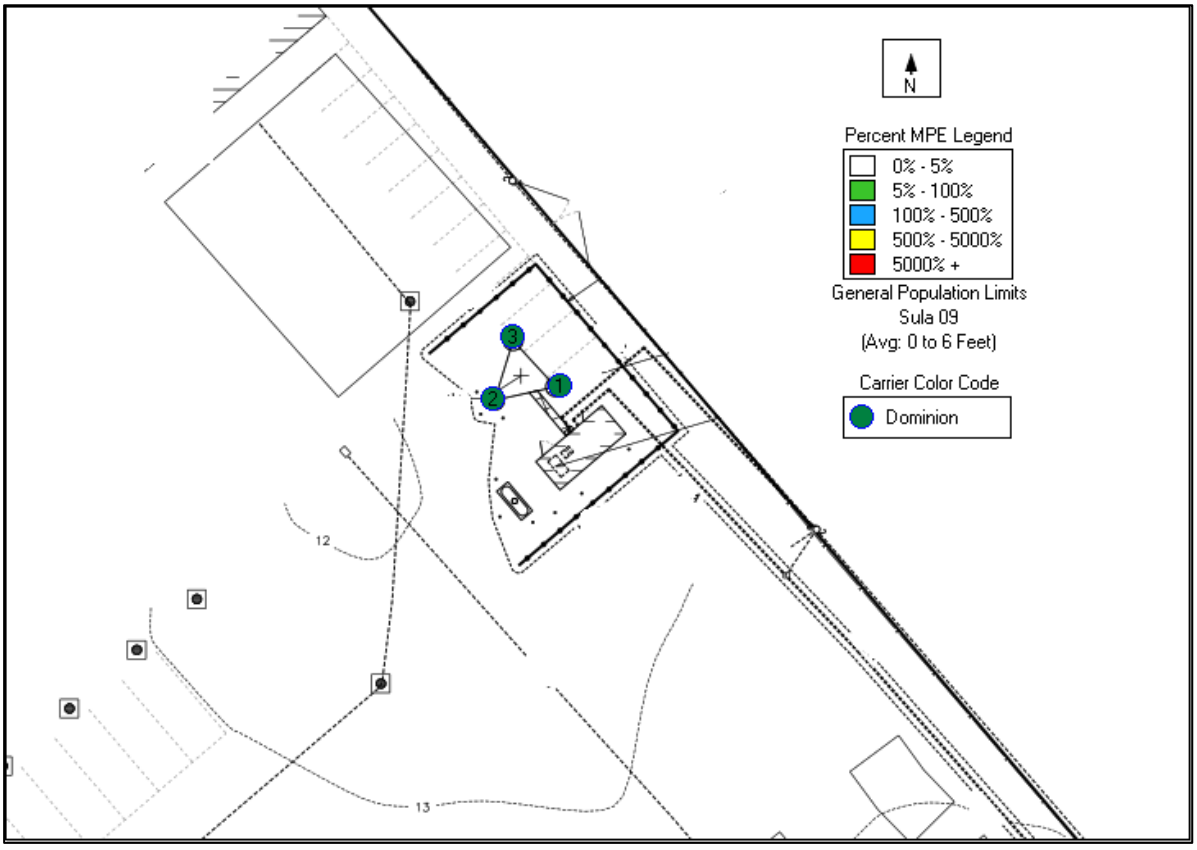
Appendix 3.1 MPE Limit Study



Maximum Power Density (@70'):	0.0003 mW/cm²
General Population MPE (@70'):	0.0395%
Occupational MPE (@70'):	0.0079%

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

Appendix 3.2 MPE Limit Study



RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

Appendix 4 Information Pertaining to MPE Studies

In 1985, the FCC first adopted guidelines to be used for evaluating human exposure to RF emissions. The FCC revised and updated these guidelines on August 1, 1996, as a result of a rule-making proceeding initiated in 1993. The new guidelines incorporate limits for Maximum Permissible Exposure (MPE) in terms of electric and magnetic field strength and power density for transmitters operating at frequencies between 300 kHz and 100 GHz.

The FCC's MPE limits are based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP), and, over a wide range of frequencies, the exposure limits were developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC's limits, and the NCRP and ANSI/IEEE limits on which they are based, are derived from exposure criteria quantified in terms of specific absorption rate (SAR). The basis for these limits is a whole-body averaged SAR threshold level of 4 watts per kilogram (4 W/kg), as averaged over the entire mass of the body, above which expert organizations have determined that potentially hazardous exposures may occur. The MPE limits are derived by incorporating safety factors that lead, in some cases, to limits that are more conservative than the limits originally adopted by the FCC in 1985. Where more conservative limits exist, they do not arise from a fundamental change in the RF safety criteria for whole-body averaged SAR, but from a precautionary desire to protect subgroups of the general population who, potentially, may be more at risk.

The FCC exposure limits are also based on data showing that the human body absorbs RF energy at some frequencies more efficiently than at others. The most restrictive limits occur in the frequency range of 30-300 MHz where whole-body absorption of RF energy by human beings is most efficient. At other frequencies, whole-body absorption is less efficient, and consequently, the MPE limits are less restrictive.

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

MPE limits are defined in terms of power density (units of milliwatts per centimeter squared: mW/cm^2), electric field strength (units of volts per meter: V/m) and magnetic field strength (units of amperes per meter: A/m). The far-field of a transmitting antenna is where the electric field vector (E), the magnetic field vector (H), and the direction of propagation can be considered to be all mutually orthogonal ("plane-wave" conditions).

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area. Additional details can be found in FCC OET 65.

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

Appendix 5 MPE Standards Methodology

This study predicts RF field strength and power density levels that emanate from communications system antennae. It considers all transmitter power levels (less filter and line losses) delivered to each active transmitting antenna at the communications site. Calculations are performed to determine power density and MPE levels for each antenna as well as composite levels from all antennas. The calculated levels are based on where a human (Observer) would be standing at various locations at the site. The point of interest where the MPE level is predicted is based on the height of the Observer.

Compliance with the FCC limits on RF emissions are determined by spatially averaging a person's exposure over the projected area of an adult human body, that is approximately six-feet or two-meters, as defined in the ANSI/IEEE C95.1 standard. The MPE limits are specified as time-averaged exposure limits. This means that exposure is averaged over an identifiable time interval. It is 30 minutes for the general population/uncontrolled RF environment and 6 minutes for the occupational/controlled RF environment. However, in the case of the general public, time averaging should not be applied because the general public is typically not aware of RF exposure, and they do not have control of their exposure time. Therefore, it should be assumed that any RF exposure to the general public will be continuous.

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

The FCC's limits for exposure at different frequencies are shown in the following Tables.

Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)**
0.3 - 3.0	614	1.63	100*	6
3.0 - 30	1842/f	4.89/f	$900/F^2$	6
30 - 300	61.4	0.163	1.0	6
300 - 1500	--	--	f/300	6
1500 - 100,000	--	--	5	6

f = frequency

* = Plane-wave equivalent power density

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)**
0.3 - 1.34	614	1.63	100*	30
1.34 - 30	824/f	2.19/f	$180/F^2$	30
30 -300	27.5	0.073	0.2	30
300 -1500	--	--	f/1500	30
1500 -100,000	--	--	1.0	30

f = frequency

* = Plane-wave equivalent power density

General population/uncontrolled exposures apply in situations in which the general public may be exposed or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

It is important to understand that these limits apply cumulatively to all sources of RF emissions affecting a given area. For example, if several different communications system antennas occupy a shared facility such as a tower or rooftop, then the total exposure from all systems at the facility must be within compliance of the FCC guidelines.

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

The field strength emanating from an antenna can be estimated based on the characteristics of an antenna radiating in free space. There are basically two field areas associated with a radiating antenna. When close to the antenna, the region is known as the Near Field. Within this region, the characteristics of the RF fields are very complex, and the wave front is extremely curved. As you move further from the antenna, the wave front has less curvature and becomes planar. The wave front still has a curvature, but it appears to occupy a flat plane in space (plane-wave radiation). This region is known as the Far Field.

Two models are utilized to predict Near and Far field power densities. They are based on the formulae in FCC OET 65.

Cylindrical Model (Near Field Predictions)

Spatially averaged plane-wave equivalent power densities parallel to the antenna may be estimated by dividing the antenna input power by the surface area of an imaginary cylinder surrounding the length of the radiating antenna. While the actual power density will vary along the height of the antenna, the average value along its length will closely follow the relation given by the following equation:

$$S = P \div 2\pi RL$$

Where:

S = Power Density

P = Total Power into antenna

R = Distance from the antenna

L = Antenna aperture length

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

For directional-type antennas, power densities can be estimated by dividing the input power by that portion of a cylindrical surface area corresponding to the angular beam width of the antenna. For example, for the case of a 120-degree azimuthal beam width, the surface area should correspond to 1/3 that of a full cylinder. This would increase the power density near the antenna by a factor of three over that for a purely omni-directional antenna. Mathematically, this can be represented by the following formula:

$$S = (180 / \theta_{BW}) P \div \pi RL$$

Where:

S = Power Density

θ_{BW} = Beam width of antenna in degrees (3 dB half-power point)

P = Total Power into antenna

R = Distance from the antenna

L = Antenna aperture length

If the antenna is a 360-degree omni-directional antenna, this formula would be equivalent to the previous formula.

RF Design and Services
326 Tryon Road
Raleigh, North Carolina 27603
(612) 965-8225
WWW.TEPGROUP.NET

Spherical Model (Far Field Predictions)

Spatially averaged plane-wave power densities in the Far Field of an antenna may be estimated by considering the additional factors of antenna gain and reflective waves that would contribute to exposure.

The radiation pattern of an antenna has developed in the Far Field region and the power gain needs to be considered in exposure predictions. Also, if the vertical radiation pattern of the antenna is considered, the exposure predictions would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential four-fold increase in power density.

These additional factors are considered, and the Far Field prediction model is determined by the following equation:

$$S = EIRP \times Rc \div 4\pi R^2$$

Where:

S = Power Density

EIRP = Effective Radiated Power from antenna

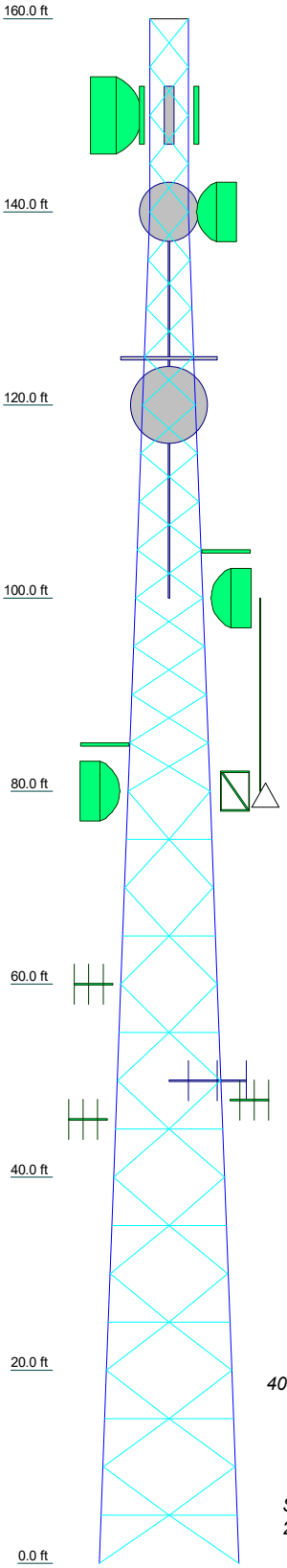
Rc = Reflection Coefficient (2.56)

R = Distance from the antenna

The EIRP includes the antenna gain. If the antenna pattern is considered, the antenna gain is relative based on the horizontal and vertical pattern gain values at that particular location in space, on a rooftop or on the ground. However, it is recommended that the antenna radiation pattern characteristics not be considered to provide a conservative "worst case" prediction. This is the equation is utilized for the Far Field exposure predictions herein.

Section		T1				
Legs		SR 1 3/4				
Leg Grade		A572-50				
Diagonals		L2x2x3/16				
Diagonal Grade		A36				
Top Girts		L2x2x1/8				
Horizontals		N.A.				
Face Width (ft)	14.5	13	11.5	10	8.5	7	5.5	4
# Panels @ (ft)	17.7	3.8	3.1	2.7	2.4	1.9	1.6	1.3	0.9
Weight (K)		L3x3x1/4	L3x3x3/16	SR 3 1/4	SR 3	SR 2 3/4	SR 2 1/2	SR 2 1/4	SR 1 3/4
Section		T8	T7	T6	T5	T4	T3	T2	T1

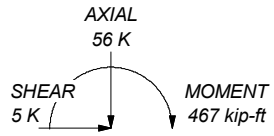
Legs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Horizontals	Face Width (ft)	# Panels @ (ft)	Weight (K)
L2 1/2x2 1/2x3/16	A572-50	L3x3x1/4	A36	L2x2x1/8	N.A.	13	32 @ 5	3.8
L2 1/2x2 1/2x3/16	A572-50	L3x3x3/16	A36	N.A.	L2x2x3/16	11.5	32 @ 5	3.1
L2x2x3/16	A572-50	L3x3x3/16	A36	N.A.	L2x2x3/16	10	32 @ 5	2.7
L2x2x3/16	A572-50	L2x2x3/16	A36	N.A.	N.A.	8.5	32 @ 5	2.4
L2x2x3/16	A572-50	L2x2x3/16	A36	N.A.	N.A.	7	32 @ 5	1.9
L2x2x3/16	A572-50	L2x2x3/16	A36	N.A.	N.A.	5.5	32 @ 5	1.6
L2x2x3/16	A572-50	L2x2x3/16	A36	N.A.	N.A.	4	32 @ 5	1.3
L2x2x3/16	A572-50	L2x2x3/16	A36	N.A.	N.A.	4	32 @ 5	0.9



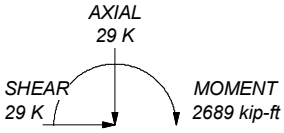
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 224 K
SHEAR: 18 K

UPLIFT: -196 K
SHEAR: 16 K



TORQUE 2 kip-ft
40.00 mph WIND - 0.50 in ICE



TORQUE 10 kip-ft
REACTIONS - 115.00 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 9/16x10'	160	Dish Mount	120
Dish Mount	150	USX8-6W-6GF	120
Commscope RR-65B-R2 w/ mt. pipe* (71.969" x 19.606" x 7.756")	150	Ice Shield for 6' Dish*	105
		6' Pipe Side Arm*	100
Commscope RR-65B-R2 w/ mt. pipe* (71.969" x 19.606" x 7.756")	150	Dish Mount	100
		Commscope ASP705K (220" x 3" Dia.)	100
Commscope RR-65B-R2 w/ mt. pipe* (71.969" x 19.606" x 7.756")	150	USX6-6W-6WH	100
		Ice Shield for 6' Dish*	85
HX8-6W	150	Commscope ASP705K (220" x 3" Dia.)	80
Dish Mount	140	Dish Mount	80
Dish Mount	140	6' Pipe Side Arm*	80
USX6-6W-6WH	140	USX6-6W-6WH	80
USX6-11W-6WH	140	Yagi (CaAa=3.6)	60
3' Pipe Side Arm*	131	Yagi (CaAa=3.6)	50
Omni 20' X 3" Dia.*	131	Yagi (CaAa=3.6)	48
Ice Shield for 8' Dish*	125	Yagi (CaAa=3.6)	46

MATERIAL STRENGTH

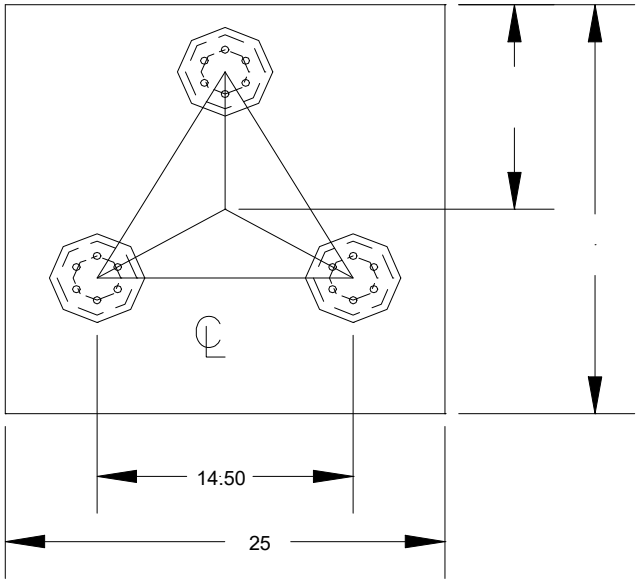
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in James City County, Virginia.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 115.00 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 40.00 mph basic wind with 0.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.00 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0 ft
8. TOWER RATING: 68.1%

World Tower Company, Inc.
1213 Compressor Dr
Mayfield, KY
Phone: 270-247-3642
FAX:

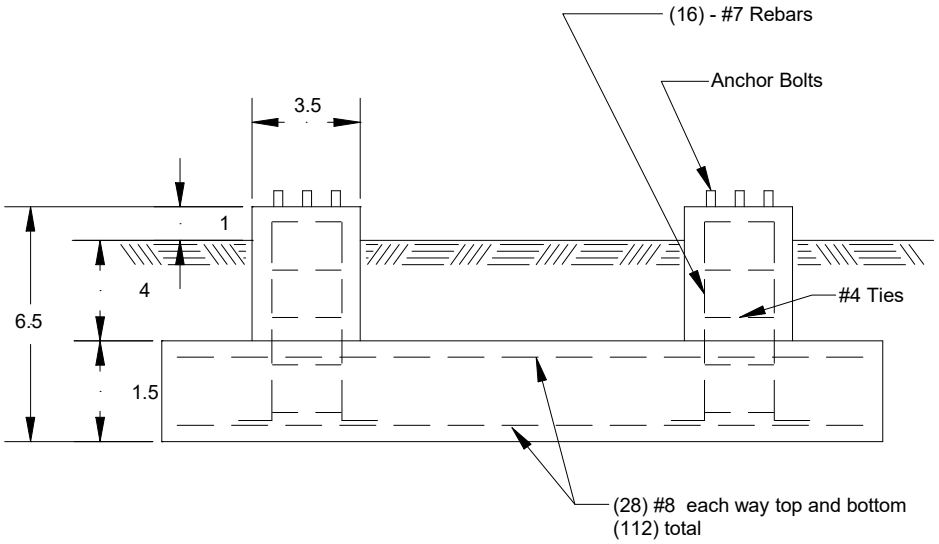
Job: ***160' WSST Tower / Run C2312-027***			
Project: ***Williamsburg***			
Client: Dominion Energy Services	Drawn by: Cort Walker	App'd:	
Code: TIA-222-G	Date: 12/18/23	Scale: NTS	
Path: \\WorldTower\World Tower\Engineering\21-Bid Runs\2023\12 - December\C2312-027 dominion 160 sst\Run Data\C2312-027.eri		Dwg No. E-1	



40.07 CU. YDS.
CONCRETE REQUIRED

12.5

25



GENERAL NOTES

1. CONCRETE TO HAVE 4000 PSI MIN. COMPRESSIVE STRENGTH AFTER 28 DAYS. ASTM A615 GRADE 60.
2. REINFORCEMENT STEEL IS DEFORMED AND MEETS THE REQUIREMENTS OF
3. EMBEDDED STEEL TO HAVE 3" MIN. CONCRETE COVER.

TITLE: C2312-027

WORLD TOWER COMPANY, INC.

SCALE			
	DRN.	CKD.	DATE
FILE	DRAWING NO.		

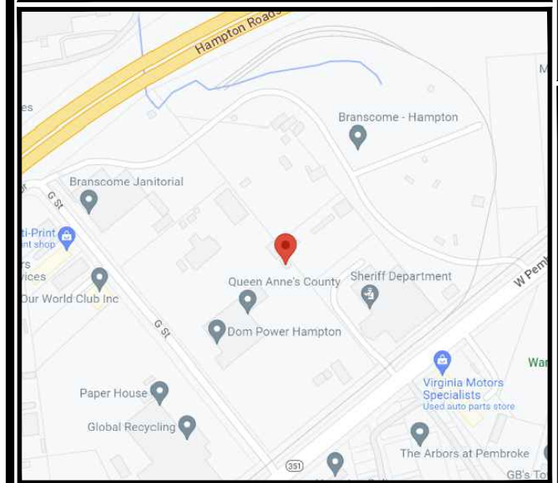
SITE NAME:	**HAMPTON OFFICE**
PROJECT DESCRIPTION:	**PROPOSED TOWER REPLACEMENT**
TOWER TYPE:	**170' SELF-SUPPORT (176' OVERALL)**
SITE ADDRESS:	**902 G ST. HAMPTON, VA 23661**
JURISDICTION:	**CITY OF HAMPTON**
CURRENT ZONING:	**M-2**
PARCEL #:	**1000699**

PROJECT INFORMATION

LATITUDE N 37° 00' 39.23" NAD 83 (37.010897°)*
LONGITUDE W - 76° 23' 31.35" NAD 83 (-76.392042°)*
GROUND ELEV. (AMSL) = 12.6'± AMSL NAVD 88 *

*** INFORMATION PROVIDED BY POINT TO POINT LAND SURVEYORS, INC.**

1-A CERTIFICATION



LOCATION MAP

FROM NORFOLK INTERNATIONAL AIRPORT. GET ON I-64 W FROM AIRPORT RD AND ROBIN HOOD RD (1.8 MI). HEAD EAST ON NORVIEW AVE TOWARD AIRPORT PARKING DEP RD. SLIGHT RIGHT ONTO AIRPORT PARKING DEP RD (0.2 MI). TURN RIGHT TOWARD AIRPORT RD (148 FT). TURN RIGHT AT THE 1ST CROSS STREET ONTO AIRPORT RD (0.8 MI). CONTINUE ONTO INT'L AIRPORT RD/ROBIN HOOD RD (0.5 MI). TURN LEFT TO MERGE ONTO I-64 W (0.2 MI). FOLLOW I-64 W TO POWER PLANT PKWY/POWHATAN PKWY IN HAMPTON. TAKE EXIT 2 FROM I-664 S (17.7 MI). MERGE ONTO I-64 W (3.9 MI). KEEP RIGHT AT THE FORK TO STAY ON I-64 W, FOLLOW SIGNS FOR HAMPTON/RICHMOND (12.3 MI). USE THE RIGHT 2 LANES TO TAKE EXIT 264 FOR I-664 S TOWARD DOWNTOWN NEWPORT NEWS/SUFFOLK (0.6 MI). CONTINUE ONTO I-664 S (0.8 MI). TAKE EXIT 2 FOR POWER PLANT PKWY/POWHATAN PKWY (0.2 MI). CONTINUE ON POWER PLANT PKWY/POWHATAN PKWY. TAKE W PEMBROKE AVE TO G ST (0.9 MI). TURN LEFT ONTO POWER PLANT PKWY/POWHATAN PKWY (0.3 MI). TURN RIGHT ONTO W PEMBROKE AVE (0.5 MI). TURN RIGHT ONTO G ST. DESTINATION WILL BE ON THE RIGHT.

DRIVING DIRECTIONS

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCE SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

SITE NAME: HAMPTON OFFICE
902 G ST.
HAMPTON, VA 23661

TOWER OWNER:
NAME: DOMINION RESOURCE SERVICES, INC.
ADDRESS: 707 EAST MAIN STREET
CITY, STATE, ZIP: RICHMOND, VA 23219
CONTACT: RICKY CRUDA
PHONE: (972) 342-5568

CIVIL ENGINEER:
NAME: TEP OPCO, LLC
ADDRESS: 326 TRYON ROAD
CITY, STATE, ZIP: RALEIGH, NC 27603
CONTACT: TYLER D. SHENK, P.E.
PHONE: (919) 661-6351

PROPERTY OWNER:
NAME: VIRGINIA ELECTRIC & POWER CO C/O DOMINION VA POWER FACILITY MGT
ADDRESS: 7500 W BROAD ST
CITY, STATE, ZIP: RICHMOND, VA 23294-2003

UTILITIES:
POWER COMPANY: DOMINION ENERGY
CONTACT: CUSTOMER SERVICE
PHONE: (866) 366-4357
METER # NEAR SITE: 42176364

TELEPHONE COMPANY: TBD
CONTACT: TBD
PHONE: UNKNOWN
PHONE # NEAR SITE: UNKNOWN
PEDESTAL # NEAR SITE: UNKNOWN

CONTACT INFORMATION

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:

1. VIRGINIA STATEWIDE BUILDING CODE (2021 EDITION)
2. INTERNATIONAL CODE COUNCIL
3. ANSI/TIA/EIA-222-G
4. VIRGINIA ELECTRICAL CODE 2020 (NFPA 70)
5. LOCAL BUILDING CODE
6. CITY/COUNTY ORDINANCES

CODE COMPLIANCE

SURVEYOR:
NAME: POINT TO POINT LAND SURVEYORS, INC.
ADDRESS: 100 GOVERNORS TRACE, STE 103
CITY, STATE, ZIP: PEACHTREE CITY, GA 30269
CONTACT: G. DARRELL TAYLOR, PLS
PHONE: (919) 661-6351

ELECTRICAL ENGINEER:
NAME: TEP OPCO, LLC
ADDRESS: 326 TRYON ROAD
CITY, STATE, ZIP: RALEIGH, NC 27603
CONTACT: TYLER D. SHENK, P.E.
PHONE: (919) 661-6351

SHEET	DESCRIPTION	REV
T-1	TITLE SHEET	8
N1-N2	PROJECT NOTES	6
C-1	SITE PLAN	8
C-2	SITE LAYOUT	7
C-3	TOWER ELEVATION	6
C-4	PROPOSED ANTENNA LAYOUT & SCHEDULE	6
C-5	ICE BRIDGE DETAILS	6
C-6A	EROSION CONTROL PLAN I	6
C-6B	EROSION CONTROL PLAN II	7
C-7	SILT FENCE DETAILS	6
C-8A	FOUNDATION DETAILS I	7
C-8B	FOUNDATION DETAILS II	7
C-9	FOUNDATION CALCULATIONS	7
L-1	LANDSCAPING PLAN	8
L-2	LANDSCAPING DETAILS	6
E-1	ELECTRICAL NOTES	6
E-2	ONE-LINE DIAGRAM	6
E-3	PANEL SCHEDULE	6
E-4	FIBER & PSTN ROUTING	7
E-5	GROUNDING PLAN	7
E-6	GROUNDING DETAILS I	6
E-7	GROUNDING DETAILS II	6

INDEX OF SHEETS

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

REV	DATE	ISSUED FOR:
8	11-01-24	CONSTRUCTION
7	10-22-24	CONSTRUCTION
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION
2	05-09-24	PRELIMINARY
1	02-09-24	PRELIMINARY

DRAWN BY: DJL | CHECKED BY: TDS

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER
November 01, 2024

SHEET NUMBER: **T-1**

REVISION: **8**

TEP#: 330654.843298

GENERAL NOTES:

1. ALL REFERENCES MADE TO LESSEE IN THESE DOCUMENTS SHALL BE CONSIDERED DOMINION ENERGY OR ITS DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING TO HAVE SUFFICIENT EXPERIENCE AND ABILITY, IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF VIRGINIA.
3. WORK SHALL BE COMPLETED IN ACCORDANCE WITH ANSI/TIA 222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES, ASCE 7-05 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES AND THE VIRGINIA CONSTRUCTION CODE (2021 EDITION).
4. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
5. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERSEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
6. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
7. THE LESSEE SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL CONDITIONS PRIOR TO SUBMITTING THE PROPOSAL. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS (LATEST REVISION) SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATION. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE LESSEE AND THE LESSEE'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE LESSEE AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.
8. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE LESSEE AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
9. THESE DOCUMENTS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. SAFETY, CARE OF ADJACENT PROPERTIES, AND COMPLIANCE WITH LOCAL, PROVINCIAL AND FEDERAL REGULATIONS REGARDING SAFETY, SHALL BE THE CONTRACTOR'S RESPONSIBILITY, AND THIS, PER THE INTERNATIONAL CODE – REGULATORS RESPECTING OCCUPATIONAL SAFETY & HEALTH THE SUCCESSFUL CONTRACTOR WILL SUBMIT HIS SAFETY MANUAL AT THE PROJECT SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
10. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE LESSEE'S PROJECT MANAGER.
11. BILL OF MATERIALS AND PART NUMBERS LISTED ON CONSTRUCTION DRAWINGS ARE INTENDED TO AID CONTRACTOR/LESSEE. CONTRACTOR/LESSEE SHALL VERIFY PARTS AND QUANTITIES WITH MANUFACTURER PRIOR TO BIDDING AND/OR ORDERING MATERIALS.
12. THE CONTRACTOR SHALL REWORK (DRY, SCARIFY, ETC.) ALL MATERIAL NOT SUITABLE FOR SUBGRADE IN ITS PRESENT STATE. AFTER REWORKING, IF THE MATERIAL REMAINS UNSUITABLE, THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE WITH APPROVED MATERIAL. ALL SUBGRADES SHALL BE PROOF-ROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PAVING. ANY SOFT MATERIAL SHALL BE REWORKED OR REPLACED.
13. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL PIPES, DITCHES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE LESSEE. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURE IN OPERABLE CONDITION.
14. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.
15. ANY BUILDINGS ON THIS SITE ARE INTENDED TO SHELTER EQUIPMENT WHICH WILL ONLY BE PERIODICALLY MAINTAINED, AND ARE NOT INTENDED FOR HUMAN OCCUPANCY.
16. TEMPORARY FACILITIES FOR PROTECTION OF TOOLS AND EQUIPMENT SHALL CONFORM TO LOCAL REGULATIONS AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
17. RENTAL CHARGES, SAFETY, PROTECTION AND MAINTENANCE OF RENTED EQUIPMENT SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
18. THE CONTRACTOR AND ITS SUBCONTRACTORS SHALL CARRY LIABILITY INSURANCE IN THE AMOUNTS AND FORM IN ACCORDANCE WITH SPECIFICATIONS. CERTIFICATES DEMONSTRATING PROOF OF COVERAGE SHALL BE PROVIDED TO PRIOR TO THE START OF THE WORK ON THE PROJECT.
19. THE CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITY SERVICES TO VERIFY LOCATIONS OF EXISTING UTILITIES AND REQUIREMENTS FOR NEW UTILITY CONNECTIONS PRIOR TO EXCAVATING. CONTRACTOR WILL BE RESPONSIBLE TO ASSIST IN COORDINATING AND OBTAINING PRIMARY POWER TO THE SITE PRIOR TO TOWER ERECTION BEFORE PROJECT COMPLETION. (ON SITE VISITS WITH UTILITY COMPANY REPRESENTATIVES AS NECESSARY, ETC...)
21. THE CONTRACTOR SHALL GUARANTEE THE WORK PERFORMED ON THE PROJECT BY THE CONTRACTOR AND ANY OR ALL OF THE SUBCONTRACTORS WHO PERFORMED WORK FOR THE CONTRACTOR ON THIS PROJECT. THE GUARANTEE SHALL BE FOR A FULL YEAR FOLLOWING ISSUANCE OF THE FINAL PAYMENT OF HOLDBACK.
22. AWARDED CONTRACTOR WILL BE REQUIRED TO SIGN AND RETURN A COPY OF AN AWARD LETTER FOR THE LESSEE'S FILE.
23. CONTRACTOR WILL BE REQUIRED TO PROVIDE PROOF OF LICENSE TO PERFORM WORK IN JURISDICTION AT TIME OF BID AWARD.
24. CONTRACTOR WILL PROVIDE A CONSTRUCTION SCHEDULE PRIOR TO CONSTRUCTION STARTING AND WILL PROVIDE UPDATE/CHANGES (WITH EXPLANATIONS) TO THAT SCHEDULE WHEN/IF ITEMS ARE DELAYED OR PUSHED OUT.
25. CONTRACTOR WILL BE RESPONSIBLE TO PROVIDE PROJECT MANAGERS WITH PHOTOS OF THE MAJOR CONSTRUCTION MILESTONES AS THEY OCCUR.
26. CONTRACTOR SHOULD BE PREPARED FOR RANDOM SAFETY INSPECTIONS AT ALL TIMES.
27. CONTRACTOR IS EXPECTED TO MAINTAIN PROPER WORKING CONDITIONS AND PROCEDURES PER LOCAL AND FEDERAL STANDARDS AT ALL TIMES.
28. CONTRACTOR WILL BE REQUIRED TO OBTAIN THE NECESSARY ELECTRICAL PERMITS AND INSPECTIONS AS REQUIRED BY JURISDICTION.
29. CONTRACTOR IS RESPONSIBLE FOR CONCRETE COMPRESSION TESTING.
30. CONTRACTOR IS RESPONSIBLE FOR GROUND MEG TESTING AND PROVIDING PROOF OF RESULT.
31. WHEN REQUESTED, PROVIDE 3 COPIES OF FABRICATION AND ERECTION DRAWINGS PRIOR TO FABRICATION. ALLOW UP TO 1 WEEK FOR REVIEW BY CONSULTANT.
32. IN ADDITION TO CONTRACTOR'S QUALITY CONTROL PROGRAM, INDEPENDENT TESTING AND INSPECTION MAY BE PERFORMED BY LESSEE OR LESSEE'S REPRESENTATIVE.
33. SUBMIT RED-LINES COPY OF CONSTRUCTION DRAWINGS UPON COMPLETION OF CONSTRUCTION HIGHLIGHTING CHANGES IN THE STAMPED AND SIGNED AS-BUILT CONDITION FROM SHOWN ON THE DRAWINGS.
34. CONTRACTOR WILL BE RESPONSIBLE FOR ALL GRADING AND FILL COMPACTION TESTING REQUIRED AS SET FORTH IN THE GEO TECHNOLOGICAL REPORT PROVIDED BY LESSEE.

CONCRETE:

1. ALL CONCRETE AND CONCRETE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE VIRGINIA CONSTRUCTION CODE (2021 EDITION).
2. THE CONTRACTOR SHALL TAKE SAMPLES OF THE CONCRETE POURED UNDER THE CONDITIONS OUTLINED IN THE VIRGINIA CONSTRUCTION CODE, 2021 EDITION.
3. ANY FAILURE OF A CONCRETE TEST CYLINDER TO MEET THE SPECIFIED STRENGTH REQUIREMENTS MUST BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY. CORRECTIVE ACTION MUST BE APPROVED BY THE ENGINEER AND ALL RELATED COSTS SHALL BE AT THE CONTRACTOR'S EXPENSE.
4. THE MINIMUM 28-DAY COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE A MINIMUM OF 4,000 PSI (21 MPA), EXCEPT AS NOTED OR DIRECTED IN THE SOIL REPORT. THE CONCRETE, WHEN POURED, SHALL CONTAIN 7% AIR ENTRAINMENT WITH AN ALLOWABLE VARIATION OF +2%.
5. CONTRACTOR MUST TAKE SLUMP TEST AT LEAST ONCE FROM EACH TRANSIT MIXER AFTER A MINIMUM OF 5% CONCRETE LOAD HAD BEEN DISCHARGED. SLUMP, UNLESS NOTED OTHERWISE ON THE DRAWINGS, SHALL BE 75 MM (2.95 INCHES).
6. MIXED CONCRETE ON SITE (REMOTE AREAS) WITH THE CORRECT PROPORTION OF CEMENT, SAND, GRAVEL, AND AIR-ENTRAINING AGENT ALREADY ADDED, THE DRY PREMIX IS TO BE MIXED IN A CONCRETE BATCHER IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
7. BEFORE POURING CONCRETE, THE TRANSPORTING EQUIPMENT AND FORMS SHALL BE CLEANED AND ALL DEBRIS AND ICE SHALL BE REMOVED FROM PLACES TO BE OCCUPIED BY THE CONCRETE. ANY WATER THAT HAS ACCUMALATED IN THE FORMS SHALL BE REMOVED.
8. ALL CONCRETE SHALL BE VIBRATED AND WORKED AROUND THE REINFORCEMENTS, EMBEDDED FIXTURES AND INTO THE CORNERS OF THE FORMS. ANY EXCESS WATER THAT ACCUMALATES WHILE THE CONCRETE IS BEING POURED SHALL BE REMOVED.

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

PROJECT NOTES

SHEET NUMBER: **N-1**

REVISION: **6**

TEP #330654.843298

CONCRETE (CONTINUED):

9. THE DESIGN ENGINEER SHALL RECEIVE A MINIMUM OF 24 HOURS NOTICE OF EVERY POUR.

10. THE CONCRETE IN FOUNDATIONS MUST BE POURED IN CONTINOUS POURS BETWEEN CONSTRUCTION JOINTS. NO CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON SITE SPECIFIC DRAWINGS WILL BE PERMITTED. THE CONTRACTOR SHALL PROVIDE EFFICIENT EQUIPMENT TO COMPLETE THE POURING OF EACH SECTION IN ONE CONTINOUS POUR.

11. ALL FRAMEWORK SHALL BE BUILT IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE SHALL BE THOROUGHLY BRACED AND PLUMBED SO THAT THE FINISHED CONCRETE WILL CONFORM TO THE SHAPES, LINES, GRADES, AND DIMENSIONS INDICATED ON THE SITE DRAWINGS.

12. FORMS AND SHORING SHALL NOT BE REMOVED UNTIL THE CONCRETE IS ADEQUATELY SET. THEIR REMOVAL SHALL BE DONE IN SUCH A MANNER AS TO ENSURE THE COMPLETE SAFETY OF THE STRUCTURE.

13. FORMS WHICH SUPPORT THE WEIGHT OF THE CONCRETE, OR OF SUPERIMPOSED LOADS, SHALL NOT BE REMOVED UNTIL THE CONCRETE IS STRONG ENOUGH TO CARRY ITS OWN WEIGHT, AND SUCH SUPERIMPOSED LOADS AS MAY BE PLACED UPON IT.

14. THE CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR AT LEAST 5 DAYS AFTER IT HAS BEEN POURED.

15. ALL SURFACES WHICH ARE NOT PROTECTED BY FORMS OR A SEALED WATERPROOF COATING SHALL BE KEPT MOIST BY CONTINOUS SPRINKLING, OR OTHER MEANS SUCH AS COVERING WITH MOIST SAND, SAWDUST, OR BURLAP.

16. WHERE NECESSARY, THE CONCRETE SHALL BE PROTECTED AGAINST THE WEATHER BY A FRAMED HOUSING, TARPAULINS, OR OTHER SUITABLE COVERING.

REINFORCING STEEL (REBAR):

1. REINFORCING STEEL SHALL MEET CODE AND BE PLACED ACCORDING TO THE APPLICABLE DRAWINGS. THE MINIMUM THICKNESS OF CONCRETE OVER THE STEEL SHALL BE AT LEAST 3".

2. ALL REINFORCEMENTS THAT ARE REQUIRED FOR A DAYS POUR ON CONCRETE SHALL BE SECURELY FIXED IN PLACE IN SUFFICIENT TIME TO PERMIT INSPECTION BEFORE CONCRETING BEGINS.

3. THE DESIGN ENGINEER SHALL BE GIVEN 24 HOURS NOTICE BEFORE THE CONCRETE IS TO BE POURED. FAILURE TO COMPLY MAY NECESSITATE, BUT NOT BE LIMITED TO, THE REMOVAL OF THE POURED CONCRETE AT THE CONTRACTOR'S EXPENSE.

GROUTING:

1. WHERE GROUT IS INDICATED ON THE DRAWINGS UNDER STRUCTURAL BASE PLATES, THIS SHALL BE A NON-SHRINK, NON-FERROUS TYPE. METHODS OF MIXING AND PLACING MUST BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

COLD WEATHER CONCRETING:

1. THE CONTRACTOR SHALL PROVIDE AND HAVE ON THE SITE READY FOR USE, ADEQUATE EQUIPMENT FOR HEATING CONCRETE MATERIALS AND PROTECTING FRESH CONCRETE DURING FREEZING OR NEAR FREEZING WEATHER CONDITIONS, ACCORDING TO THE 2021 VIRGINIA CONSTRUCTION CODE.

2. ALL CONCRETE MATERIALS, REBAR, FORMS, FILLERS, AND THE EARTH WITH WHICH THE CONCRETE IS TO COME INTO CONTACT WITH, SHALL BE FREE FROM FROST AND ICE.

3. WHENEVER THE SURROUNDING TEMPERATURE IS BELOW 39°F, ALL CONCRETE POURED IN THE FORMS SHALL HAVE A TEMPERATURE OF 68°F FOR 4 DAYS.

4. THE HOUSING, COVERING, OR OTHER PROTECTION USED FOR THE CURING SHALL REMAIN IN PLACE AND INTACT FOR AT LEAST 24 HOURS AFTER THE ARTIFICIAL HEATING IS DISCONTINUED.

5. SALT, CALCIUM CHLORIDE, OR OTHER CHEMICALS SHALL NOT BE USED IN THE CONCRETE MIX TO PREVENT THE WATER CONTENT FROM FREEZING.

UTILITIES:

1. CONTRACTOR SHALL CONTACT A SUBSURFACE UTILITY LOCATOR FOR LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. LOCATION OF EXISTING SEWER, WATER LINES, GAS LINES, CONDUITS OR OTHER STRUCTURES ACROSS, UNDERNEATH, OR OTHERWISE ALONG THE LINE OF PROPOSED WORK ARE NOT NECESSARILY SHOWN ON THE PLANS, AND IF SHOWN ARE ONLY APPROXIMATELY CORRECT. CONTRACTOR ASSUMES SOLE RESPONSIBILITY FOR VERIFYING LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES (INCLUDING TEST PITS BY HAND IF NECESSARY) IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OF ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS, OR IF THERE APPEARS TO BE A CONFLICT.

2. CONTRACTOR SHALL COORDINATE ALL UTILITY CONNECTIONS WITH APPROPRIATE UTILITY LICENSEES AND CONSTRUCTION MANAGER.

3. DAMAGE BY THE CONTRACTOR TO UTILITIES OR PROPERTY OF OTHERS, INCLUDING EXISTING PAVEMENT AND OTHER SURFACES DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE LICENSEE. FOR GRASSES AREAS, SEED AND MULCH SHALL BE ACCEPTABLE.

UTILITIES (CONT.):

4. THE CONTRACTOR SHALL COORDINATE WITH THE LESSEE THE REQUIREMENTS FOR AND LIMITS OF OVERHEAD AND/OR UNDERGROUND ELECTRICAL SERVICE.

5. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF NEW UNDERGROUND TELEPHONE SERVICE WITH THE TELEPHONE UTILITY AND THE LESSEE'S REQUIREMENTS.

6. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED AND TESTED SATISFACTORY PRIOR TO COMMENCING ANY PAVING OPERATIONS WHERE SUCH UTILITIES ARE WITHIN THE LIMITS OF PAVEMENT.

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

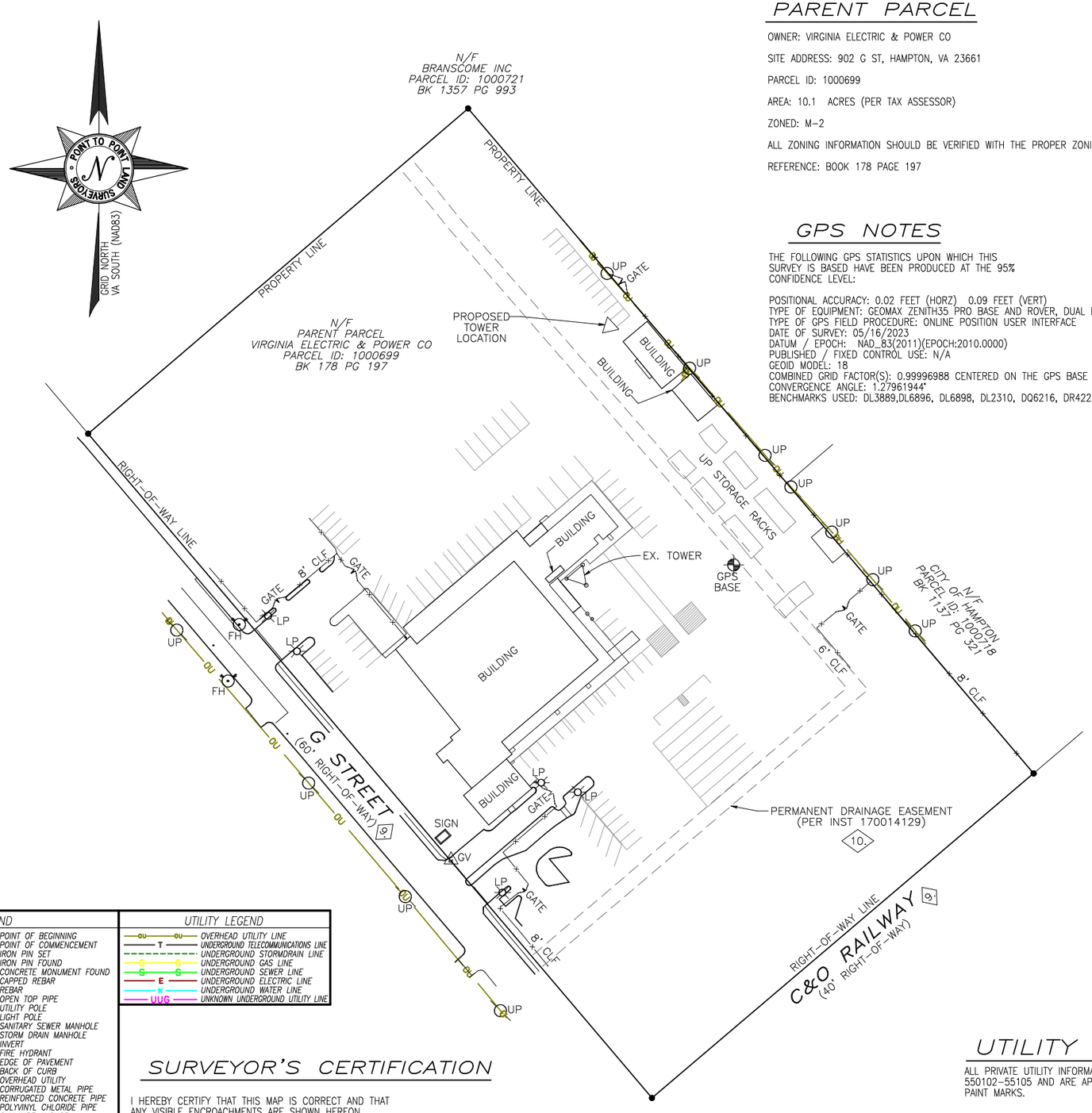
SHEET TITLE:

PROJECT NOTES

SHEET NUMBER: **N-2**

REVISION: 6

TEP#330654.843298



PARENT PARCEL

OWNER: VIRGINIA ELECTRIC & POWER CO

SITE ADDRESS: 902 G ST, HAMPTON, VA 23661

PARCEL ID: 1000699

AREA: 10.1 ACRES (PER TAX ASSESSOR)

ZONED: M-2

ALL ZONING INFORMATION SHOULD BE VERIFIED WITH THE PROPER ZONING OFFICIALS

REFERENCE: BOOK 178 PAGE 197

GPS NOTES

THE FOLLOWING GPS STATISTICS UPON WHICH THIS SURVEY IS BASED HAVE BEEN PRODUCED AT THE 95% CONFIDENCE LEVEL:

POSITIONAL ACCURACY: 0.02 FEET (HORZ) 0.09 FEET (VERT)
TYPE OF EQUIPMENT: GEOMAX ZENITH35 PRO BASE AND ROVER, DUAL FREQUENCY
TYPE OF GPS FIELD PROCEDURE: ONLINE POSITION USER INTERFACE
DATE OF SURVEY: 05/16/2023
DATUM / EPOCH: NAD_83(2011)(EPOCH:2010.0000)
PUBLISHED / FIXED CONTROL USE: N/A
GEOID MODEL: 18
COMBINED GRID FACTOR(S): 0.99996988 CENTERED ON THE GPS BASE POINT AS SHOWN HEREON.
CONVERGENCE ANGLE: 1.27961944°
BENCHMARKS USED: DL3889,DL6896, DL6898, DL2310, DQ6216, DR4222, DH7133, AJ2122

VICINITY MAP

NOT TO SCALE

GENERAL NOTES

* THIS SPECIFIC PURPOSE SURVEY IS FOR THE LEASED PREMISES AND EASEMENTS ONLY. THIS SPECIFIC PURPOSE SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF TDOMINION ENERGY AND EXCLUSIVELY FOR THE TRANSFERRAL OF THE LEASED PREMISES AND THE RIGHTS OF EASEMENT SHOWN HEREON AND SHALL NOT BE USED AS AN EXHIBIT OR EVIDENCE IN THE FEE SIMPLE TRANSFERRAL OF THE PARENT PARCEL NOR ANY PORTION OR PORTIONS THEREOF. BOUNDARY INFORMATION SHOWN HEREON HAS BEEN COMPILED FROM TAX MAPS AND DEED DESCRIPTIONS ONLY. NO BOUNDARY SURVEY OF THE PARENT PARCEL WAS PERFORMED.

THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

EQUIPMENT USED FOR ANGULAR & LINEAR MEASUREMENTS: GEOMAX ZOOM ROBOTIC AND/OR LEICA TS12 [DATE OF LAST FIELD VISIT: 05/16/2023]. SEE GPS NOTES FOR GPS EQUIPMENT.

THE 1' CONTOURS AND SPOT ELEVATIONS SHOWN ON THIS SPECIFIC PURPOSE SURVEY ARE ADJUSTED TO NAVD 88 DATUM (COMPUTED USING GEOID18) AND HAVE A VERTICAL ACCURACY OF ± 0.5'. CONTOURS OUTSIDE THE IMMEDIATE SITE AREA ARE APPROXIMATE.

BEARINGS SHOWN ON THIS SPECIFIC PURPOSE SURVEY ARE BASED ON VIRGINIA GRID NORTH (NAD 83) SOUTH ZONE.

PER THE FEMA FLOODPLAIN MAPS, THE SITE IS LOCATED IN AN AREA DESIGNATED AS ZONE X (AREA OF MINIMAL FLOOD HAZARD). COMMUNITY PANEL NO. : 5155270024H DATED: 05/16/2016

NO WETLAND AREAS HAVE BEEN INVESTIGATED BY THIS SPECIFIC PURPOSE SURVEY.

ALL ZONING INFORMATION SHOULD BE VERIFIED WITH THE PROPER ZONING OFFICIALS.

ANY UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM ABOVE GROUND FIELD SURVEY INFORMATION. THE SURVEYOR MAKES NO GUARANTEES THAT ANY UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT ANY UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED ANY UNDERGROUND UTILITIES.

LEGEND	
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
IPS	IRON PIN SET
IPF	IRON PIN FOUND
CMF	CONCRETE MONUMENT FOUND
CRB	CAPPED REBAR
RB	REBAR
OTP	OPEN TOP PIPE
UP	UTILITY POLE
LP	LIGHT POLE
SSMH	SANITARY SEWER MANHOLE
SDMH	STORM DRAIN MANHOLE
INV	INVERT
FH	FIRE HYDRANT
EP	EDGE OF PAVEMENT
BC	BACK OF CURB
OU	OVERHEAD UTILITY
CMP	CORRUGATED METAL PIPE
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE PIPE
GW	GUY WIRE ANCHOR
TR	TRANSFORMER
CLF	CHAIN LINK FENCE
BWF	BARBED WIRE FENCE
WV	WATER VALVE
WM	WATER METER
CO	SEWER CLEAN-OUT
GV	GAS VALVE
HH	HANDHOLE
CP	CONCRETE PAD
BFO	BURIED FIBER OPTIC
N/F	NOW OR FORMERLY
R/W	RIGHT-OF-WAY

UTILITY LEGEND	
OU OU	OVERHEAD UTILITY LINE
T	UNDERGROUND TELECOMMUNICATIONS LINE
	UNDERGROUND STORMDRAIN LINE
G G	UNDERGROUND GAS LINE
S S	UNDERGROUND SEWER LINE
E	UNDERGROUND ELECTRIC LINE
W	UNDERGROUND WATER LINE
UUG	UNKNOWN UNDERGROUND UTILITY LINE

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS MAP IS CORRECT AND THAT ANY VISIBLE ENCROACHMENTS ARE SHOWN HEREON.

G. DARRELL TAYLOR, PLS — 07/02/2024 DATE

THIS MAP IS NOT A CERTIFIED SURVEY AND HAS NOT BEEN REVIEWED BY A LOCAL GOVERNMENT AGENCY FOR COMPLIANCE WITH ANY APPLICABLE LAND DEVELOPMENT REGULATIONS. THIS MAP IS ONLY INTENDED FOR THE PARTIES AND PURPOSES SHOWN. THIS MAP IS NOT FOR RECORDATION.

UTILITY NOTE

ALL PRIVATE UTILITY INFORMATION WAS PROVIDED BY GPRS (WA # 550102-55105 AND ARE APPROXIMATE BASED ON FIELD LOCATED PAINT MARKS.

60 0 120 240
GRAPHIC SCALE IN FEET
SCALE: 1" = 120'

SURVEY NOT VALID WITHOUT SHEETS 2 & 3 OF 3

Know what's below. Call before you dig.

COMMONWEALTH OF VIRGINIA
G. DARRELL TAYLOR
Lic. No. 2985
LAND SURVEYOR

NO.	DATE	REVISION
1.	05/21/24	NEW LOCATION
1.	07/02/24	ADD TITLE

* SPECIFIC PURPOSE SURVEY PREPARED BY:

POINT TO POINT LAND SURVEYORS
100 Governors Trace, Ste. 103
Peachtree City, GA 30269
(p) 678.565.4440
(f) 678.565.4497
(w) pointtopointsurvey.com

SPECIFIC PURPOSE SURVEY PREPARED FOR:

Dominion Energy

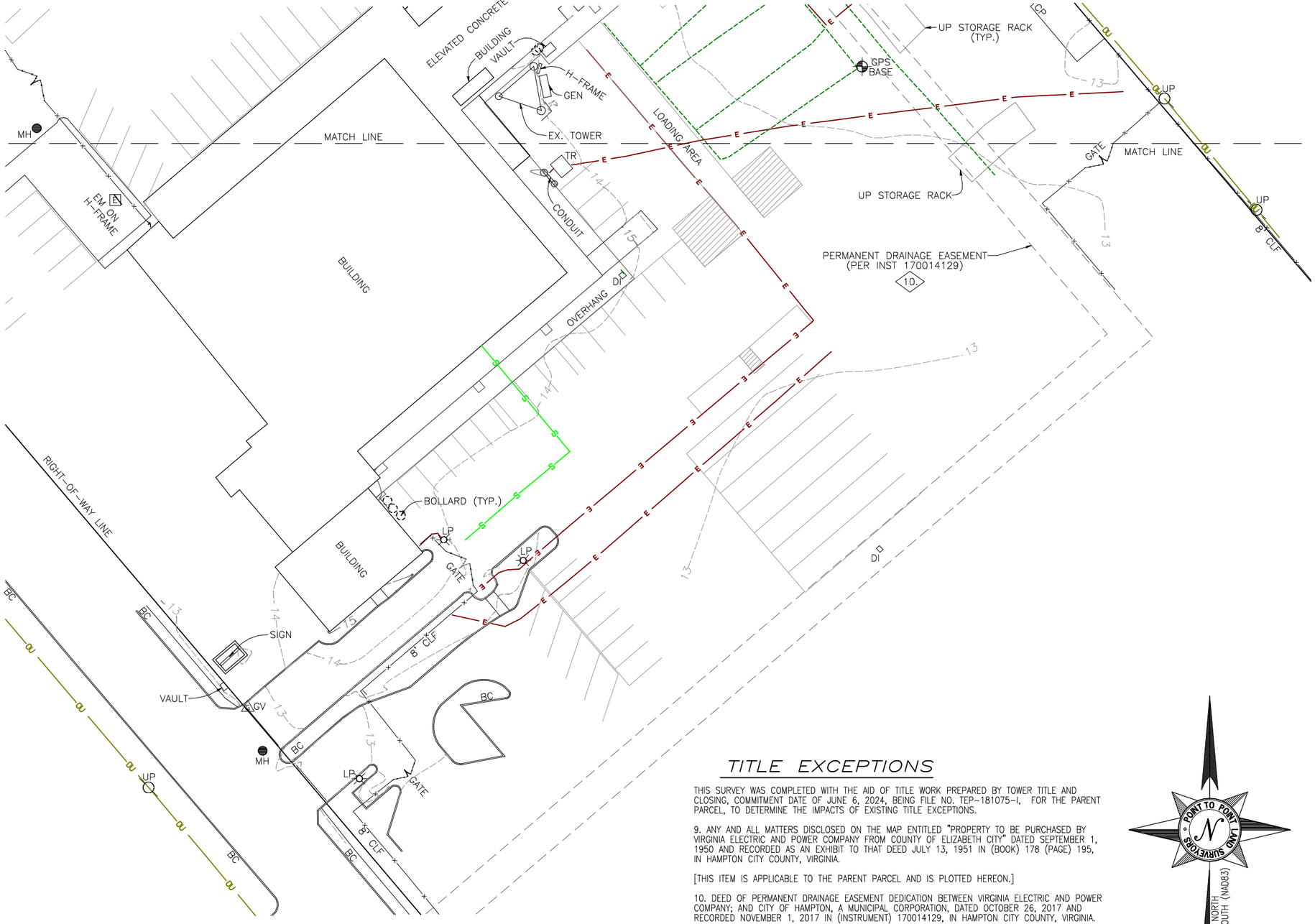
HAMPTON OFFICE

CITY OF HAMPTON,
ELIZABETH CITY COUNTY, VIRGINIA

DRAWN BY: MK
CHECKED BY: JKL
APPROVED: D. MILLER
DATE: 08/14/2023
P2P JOB #: 230561VA

SHEET: 1 OF 3

E:\Point To Point Dropbox\P2P Current Jobs\2023\230561VA-Hampton Office\230561VA.pro



LEGEND

POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
IPS	IRON PIN SET
IPF	IRON PIN FOUND
CMF	CONCRETE MONUMENT FOUND
CRB	CAPPED REBAR
RB	REBAR
OTP	OPEN TOP PIPE
UP	UTILITY POLE
LP	LIGHT POLE
SSMH	SANITARY SEWER MANHOLE
SDMH	STORM DRAIN MANHOLE
INV	INVERT
FH	FIRE HYDRANT
EP	EDGE OF PAVEMENT
BC	BACK OF CURB
OU	OVERHEAD UTILITY
CMP	CORRUGATED METAL PIPE
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE PIPE
GW	GUY WIRE ANCHOR
TR	TRANSFORMER
CLF	CHAIN LINK FENCE
BWF	BARBED WIRE FENCE
WV	WATER VALVE
WM	WATER METER
CO	SEWER CLEAN-OUT
GV	GAS VALVE
HH	HANDHOLE
CP	CONCRETE PAD
BFO	BURIED FIBER OPTIC
N/F	NOW OR FORMERLY
R/W	RIGHT-OF-WAY

UTILITY LEGEND

OU	OVERHEAD UTILITY LINE
T	UNDERGROUND TELECOMMUNICATIONS LINE
	UNDERGROUND STORMDRAIN LINE
G	UNDERGROUND GAS LINE
S	UNDERGROUND SEWER LINE
E	UNDERGROUND ELECTRIC LINE
W	UNDERGROUND WATER LINE
UUG	UNKNOWN UNDERGROUND UTILITY LINE

TITLE EXCEPTIONS

THIS SURVEY WAS COMPLETED WITH THE AID OF TITLE WORK PREPARED BY TOWER TITLE AND CLOSING, COMMITMENT DATE OF JUNE 6, 2024, BEING FILE NO. TEP-181075-I, FOR THE PARENT PARCEL, TO DETERMINE THE IMPACTS OF EXISTING TITLE EXCEPTIONS.

9. ANY AND ALL MATTERS DISCLOSED ON THE MAP ENTITLED "PROPERTY TO BE PURCHASED BY VIRGINIA ELECTRIC AND POWER COMPANY FROM COUNTY OF ELIZABETH CITY" DATED SEPTEMBER 1, 1950 AND RECORDED AS AN EXHIBIT TO THAT DEED JULY 13, 1951 IN (BOOK) 178 (PAGE) 195, IN HAMPTON CITY COUNTY, VIRGINIA.

[THIS ITEM IS APPLICABLE TO THE PARENT PARCEL AND IS PLOTTED HEREON.]

10. DEED OF PERMANENT DRAINAGE EASEMENT DEDICATION BETWEEN VIRGINIA ELECTRIC AND POWER COMPANY; AND CITY OF HAMPTON, A MUNICIPAL CORPORATION, DATED OCTOBER 26, 2017 AND RECORDED NOVEMBER 1, 2017 IN (INSTRUMENT) 170014129, IN HAMPTON CITY COUNTY, VIRGINIA.

[THIS ITEM IS APPLICABLE TO THE PARENT PARCEL AND IS PLOTTED HEREON.]

25 0 50 100

GRAPHIC SCALE IN FEET
SCALE: 1" = 50'

GRID NORTH
VA SOUTH (NAD83)

SURVEY NOT VALID WITHOUT SHEETS 1 & 3 OF 3

COMMONWEALTH OF VIRGINIA
G. DARRELL TAYLOR
Lic. No. 2985
LAND SURVEYOR

NO.	DATE	REVISION
1.	05/21/24	NEW LOCATION
1.	07/02/24	ADD TITLE

* SPECIFIC PURPOSE SURVEY PREPARED BY:

POINT TO POINT LAND SURVEYORS
100 Governors Trace, Ste. 103
Peachtree City, GA 30269
(p) 678.565.4440
(f) 678.565.4497
(w) pointtopointsurvey.com

SPECIFIC PURPOSE SURVEY PREPARED FOR:

Dominion Energy

HAMPTON OFFICE

CITY OF HAMPTON,
ELIZABETH CITY COUNTY, VIRGINIA

DRAWN BY: MK
CHECKED BY: JKL
APPROVED: D. MILLER
DATE: 08/14/2023
P2P JOB #: 230561VA

SHEET: 2 OF 3

E:\Point To Point Dropbox\P2P Current Jobs\2023\230561VA-Hampton Office\230561VA.pro

SITE INFORMATION

LATITUDE = 37°00'39.23" (NAD 83) (37.010897°)
LONGITUDE = -76°23'31.35" (NAD 83) (-76.392042°)
AT CENTER OF PROPOSED TOWER

ELEVATION AT CENTER OF PROPOSED TOWER = 12.6' A.M.S.L.

GRID NORTH
VA SOUTH (NAD83)

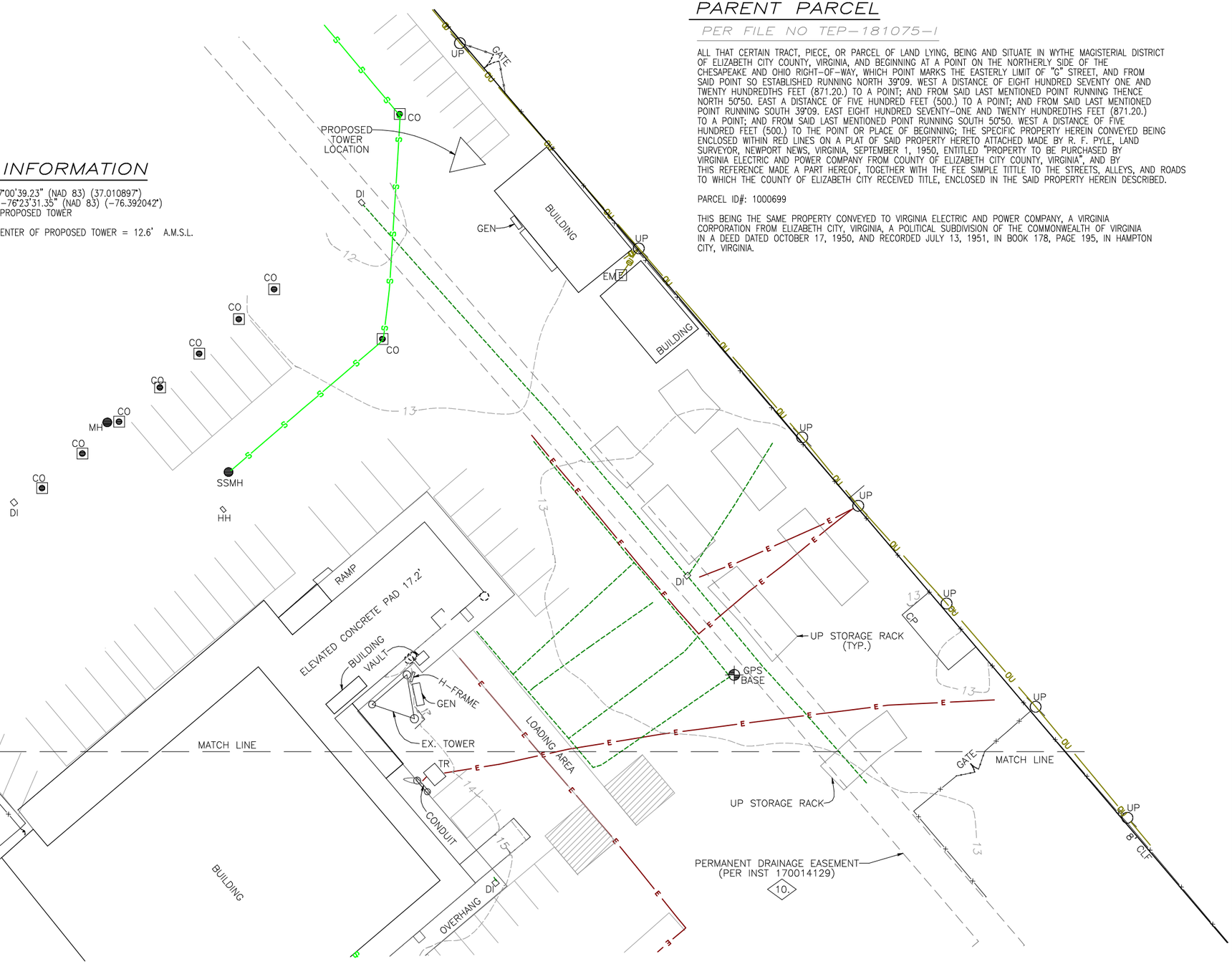
PARENT PARCEL

PER FILE NO TEP-181075-1

ALL THAT CERTAIN TRACT, PIECE, OR PARCEL OF LAND LYING, BEING AND SITUATE IN WYTHE MAGISTERIAL DISTRICT OF ELIZABETH CITY COUNTY, VIRGINIA, AND BEGINNING AT A POINT ON THE NORTHERLY SIDE OF THE CHESAPEAKE AND OHIO RIGHT-OF-WAY, WHICH POINT MARKS THE EASTERLY LIMIT OF "G" STREET, AND FROM SAID POINT SO ESTABLISHED RUNNING NORTH 39°09. WEST A DISTANCE OF EIGHT HUNDRED SEVENTY ONE AND TWENTY HUNDREDTHS FEET (871.20.) TO A POINT; AND FROM SAID LAST MENTIONED POINT RUNNING THENCE NORTH 50°50. EAST A DISTANCE OF FIVE HUNDRED FEET (500.) TO A POINT; AND FROM SAID LAST MENTIONED POINT RUNNING SOUTH 39°09. EAST EIGHT HUNDRED SEVENTY-ONE AND TWENTY HUNDREDTHS FEET (871.20.) TO A POINT; AND FROM SAID LAST MENTIONED POINT RUNNING SOUTH 50°50. WEST A DISTANCE OF FIVE HUNDRED FEET (500.) TO THE POINT OR PLACE OF BEGINNING; THE SPECIFIC PROPERTY HEREIN CONVEYED BEING ENCLOSED WITHIN RED LINES ON A PLAT OF SAID PROPERTY HERETO ATTACHED MADE BY R. F. PYLE, LAND SURVEYOR, NEWPORT NEWS, VIRGINIA, SEPTEMBER 1, 1950, ENTITLED "PROPERTY TO BE PURCHASED BY VIRGINIA ELECTRIC AND POWER COMPANY FROM COUNTY OF ELIZABETH CITY COUNTY, VIRGINIA", AND BY THIS REFERENCE MADE A PART HEREOF, TOGETHER WITH THE FEE SIMPLE TITTLE TO THE STREETS, ALLEYS, AND ROADS TO WHICH THE COUNTY OF ELIZABETH CITY RECEIVED TITLE, ENCLOSED IN THE SAID PROPERTY HEREIN DESCRIBED.

PARCEL ID#: 1000699

THIS BEING THE SAME PROPERTY CONVEYED TO VIRGINIA ELECTRIC AND POWER COMPANY, A VIRGINIA CORPORATION FROM ELIZABETH CITY, VIRGINIA, A POLITICAL SUBDIVISION OF THE COMMONWEALTH OF VIRGINIA IN A DEED DATED OCTOBER 17, 1950, AND RECORDED JULY 13, 1951, IN BOOK 178, PAGE 195, IN HAMPTON CITY, VIRGINIA.



LEGEND

POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
IPS	IRON PIN SET
IPF	IRON PIN FOUND
CMF	CONCRETE MONUMENT FOUND
CRB	CAPPED REBAR
RB	REBAR
OTP	OPEN TOP PIPE
UP	UTILITY POLE
LP	LIGHT POLE
SSMH	SANITARY SEWER MANHOLE
SDMH	STORM DRAIN MANHOLE
INV	INVERT
FH	FIRE HYDRANT
EP	EDGE OF PAVEMENT
BC	BACK OF CURB
OU	OVERHEAD UTILITY
CMP	CORRUGATED METAL PIPE
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE PIPE
GW	GUY WIRE ANCHOR
TR	TRANSFORMER
CLF	CHAIN LINK FENCE
BWF	BARBED WIRE FENCE
WV	WATER VALVE
WM	WATER METER
CO	SEWER CLEAN-OUT
GV	GAS VALVE
HH	HANDHOLE
CP	CONCRETE PAD
BFO	BURIED FIBER OPTIC
N/F	NOW OR FORMERLY
R/W	RIGHT-OF-WAY

UTILITY LEGEND

OU	OVERHEAD UTILITY LINE
T	UNDERGROUND TELECOMMUNICATIONS LINE
SD	UNDERGROUND STORMDRAIN LINE
G	UNDERGROUND GAS LINE
S	UNDERGROUND SEWER LINE
E	UNDERGROUND ELECTRIC LINE
W	UNDERGROUND WATER LINE
UUG	UNKNOWN UNDERGROUND UTILITY LINE

25 0 50 100
GRAPHIC SCALE IN FEET
SCALE: 1" = 50'

SURVEY NOT VALID WITHOUT SHEETS 1 & 2 OF 3

COMMONWEALTH OF VIRGINIA
G. DARRELL TAYLOR
Lic. No. 2985
LAND SURVEYOR

NO.	DATE	REVISION
1.	05/21/24	NEW LOCATION
1.	07/02/24	ADD TITLE

* SPECIFIC PURPOSE SURVEY PREPARED BY:

POINT TO POINT LAND SURVEYORS
100 Governors Trace, Ste. 103
Peachtree City, GA 30269
(p) 678.565.4440
(f) 678.565.4497
(w) pointtopointsurvey.com

SPECIFIC PURPOSE SURVEY PREPARED FOR:

Dominion Energy®

HAMPTON OFFICE

CITY OF HAMPTON,
ELIZABETH CITY COUNTY, VIRGINIA

DRAWN BY: MK
CHECKED BY: JKL
APPROVED: D. MILLER
DATE: 08/14/2023
P2P JOB #: 230561VA

SHEET: 3 OF 3

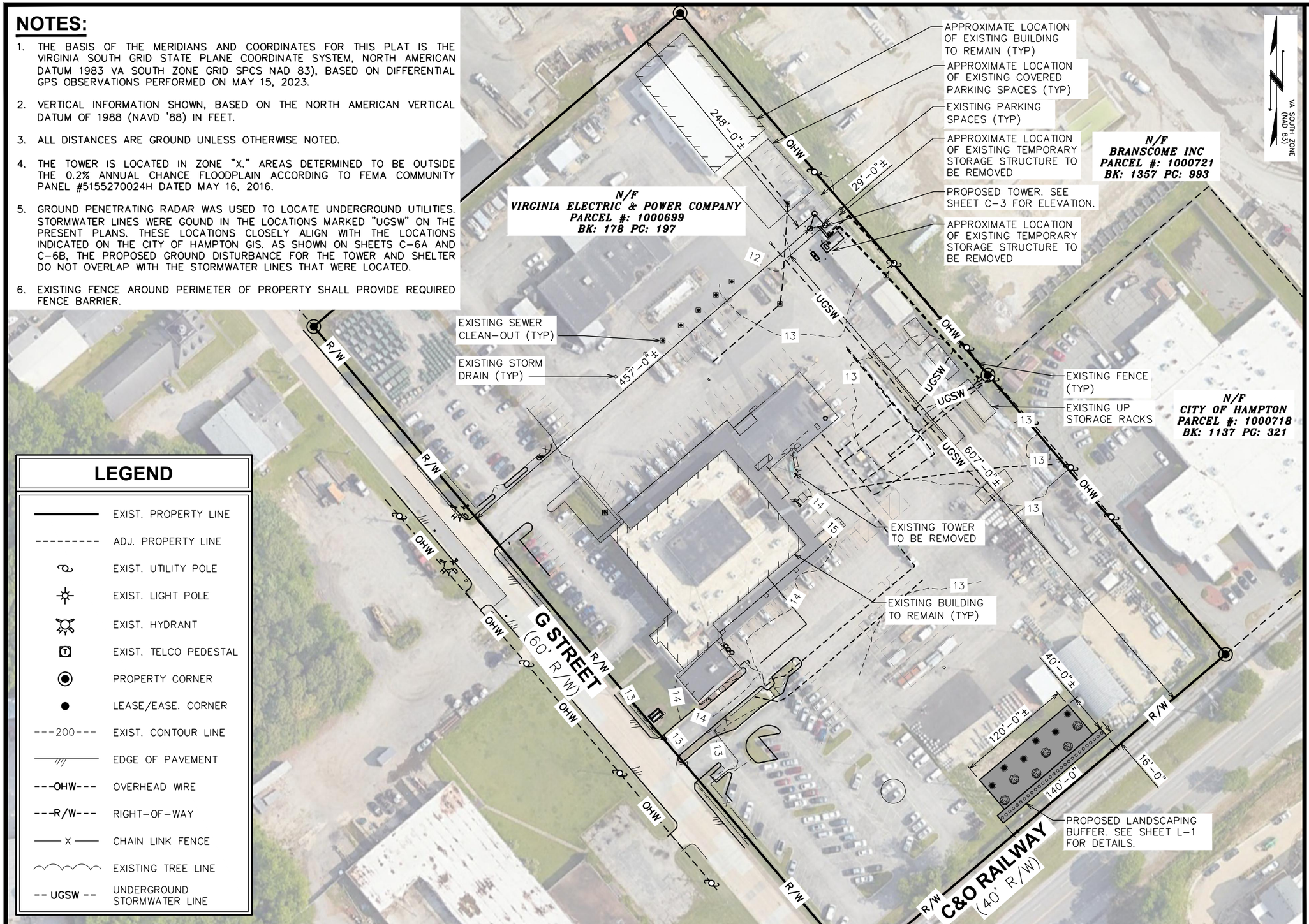
E:\Point To Point Dropbox\P2P Current Jobs\2023\230561VA-Hampton Office\230561VA.pro

NOTES:

1. THE BASIS OF THE MERIDIANS AND COORDINATES FOR THIS PLAT IS THE VIRGINIA SOUTH GRID STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 VA SOUTH ZONE GRID SPCS NAD 83), BASED ON DIFFERENTIAL GPS OBSERVATIONS PERFORMED ON MAY 15, 2023.
2. VERTICAL INFORMATION SHOWN, BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88) IN FEET.
3. ALL DISTANCES ARE GROUND UNLESS OTHERWISE NOTED.
4. THE TOWER IS LOCATED IN ZONE "X." AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL #5155270024H DATED MAY 16, 2016.
5. GROUND PENETRATING RADAR WAS USED TO LOCATE UNDERGROUND UTILITIES. STORMWATER LINES WERE GOUND IN THE LOCATIONS MARKED "UGSW" ON THE PRESENT PLANS. THESE LOCATIONS CLOSELY ALIGN WITH THE LOCATIONS INDICATED ON THE CITY OF HAMPTON GIS. AS SHOWN ON SHEETS C-6A AND C-6B, THE PROPOSED GROUND DISTURBANCE FOR THE TOWER AND SHELTER DO NOT OVERLAP WITH THE STORMWATER LINES THAT WERE LOCATED.
6. EXISTING FENCE AROUND PERIMETER OF PROPERTY SHALL PROVIDE REQUIRED FENCE BARRIER.

LEGEND

- EXIST. PROPERTY LINE
- ADJ. PROPERTY LINE
- EXIST. UTILITY POLE
- EXIST. LIGHT POLE
- EXIST. HYDRANT
- EXIST. TELCO PEDESTAL
- PROPERTY CORNER
- LEASE/EASE. CORNER
- ---200--- EXIST. CONTOUR LINE
- EDGE OF PAVEMENT
- ---OHW--- OVERHEAD WIRE
- ---R/W--- RIGHT-OF-WAY
- —— X —— CHAIN LINK FENCE
- EXISTING TREE LINE
- -- UGSW -- UNDERGROUND STORMWATER LINE



SITE PLAN
SCALE: 1" = 100'

0 100 200
SCALE IN FEET

PLANS PREPARED FOR:

Dominion Energy

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER
November 01, 2024

REV	DATE	ISSUED FOR:
8	11-01-24	CONSTRUCTION
7	10-22-24	CONSTRUCTION
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

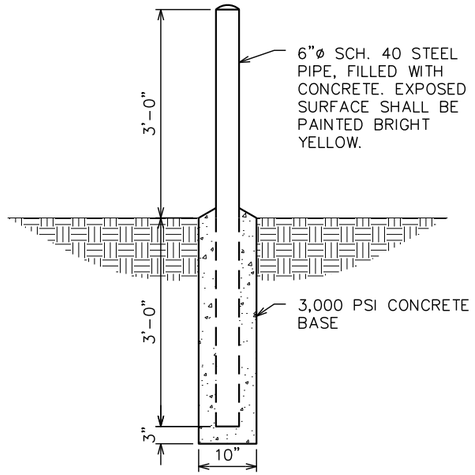
SHEET TITLE:

SITE PLAN

SHEET NUMBER: C-1

REVISION: 8

TEP #330654.843298



BOLLARD DETAILS

SCALE: N.T.S.

SITE LAYOUT

SCALE: 1" = 40'

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 22, 2024

REV	DATE	ISSUED FOR:
7	10-22-24	CONSTRUCTION
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

SITE LAYOUT

SHEET NUMBER: **C-2**

REVISION: 7

TEP #330654.843298

NOTES:

1. PROPOSED CABLES TO BE RUN PER SPECIFICATIONS OF PASSING STRUCTURAL ANALYSIS.
2. TOWER SHALL BE CONSTRUCTED OF GALVANIZED STEEL OR PAINTED PER APPLICABLE STANDARDS OF THE FAA OR OTHER APPLICABLE FEDERAL OR STATE AGENCY
3. TOWER ELEVATION SHOWN FOR REFERENCE ONLY. VERIFY ACTUAL TOWER DESIGN & LOADING WITH TOWER DRAWINGS FROM MANUFACTURER AND/OR PASSING STRUCTURAL ANALYSIS PRIOR TO CONSTRUCTION.

176'-0"
T/LIGHTNING ROD

170'-0"
T/TOWER

160'-0"
℄/FUTURE 8' UHP PARABOLIC ANTENNA

150'-0"
℄/(2) FUTURE 6' UHP PARABOLIC ANTENNAS

150'-0"
℄/FUTURE ANTENNA

149'-0"
℄/YAGI ANTENNA

148'-0"
℄/OMNI ANTENNA

147'-0"
℄/OMNI ANTENNA

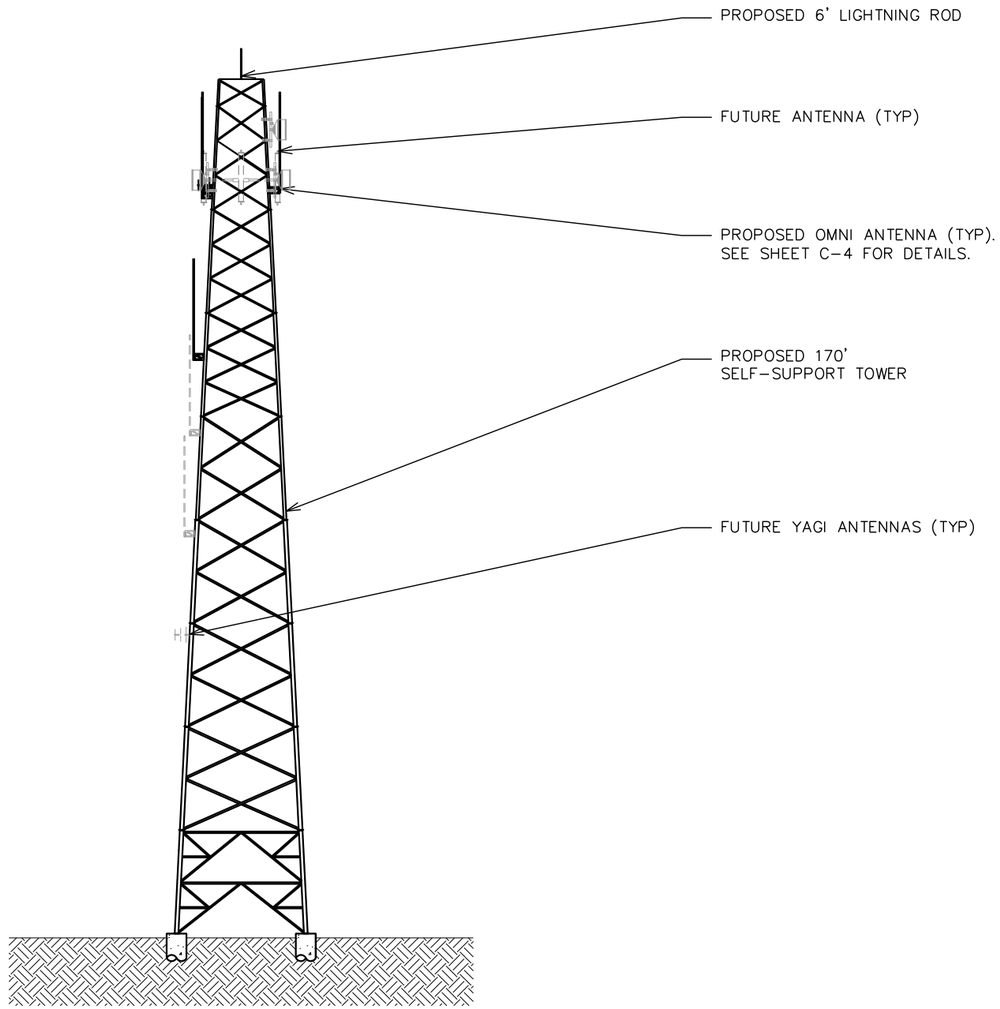
115'-0"
℄/OMNI ANTENNA

100'-0"
℄/FUTURE OMNI ANTENNA

80'-0"
℄/FUTURE OMNI ANTENNA

60'-0"
℄/FUTURE YAGI ANTENNA

0'-0" (REFERENCE)
T/GRADE



TOWER ELEVATION

SCALE: 1" = 30'

0 30 60

SCALE IN FEET

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 40700671?

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL CHECKED BY: TDS

SHEET TITLE:

TOWER ELEVATION

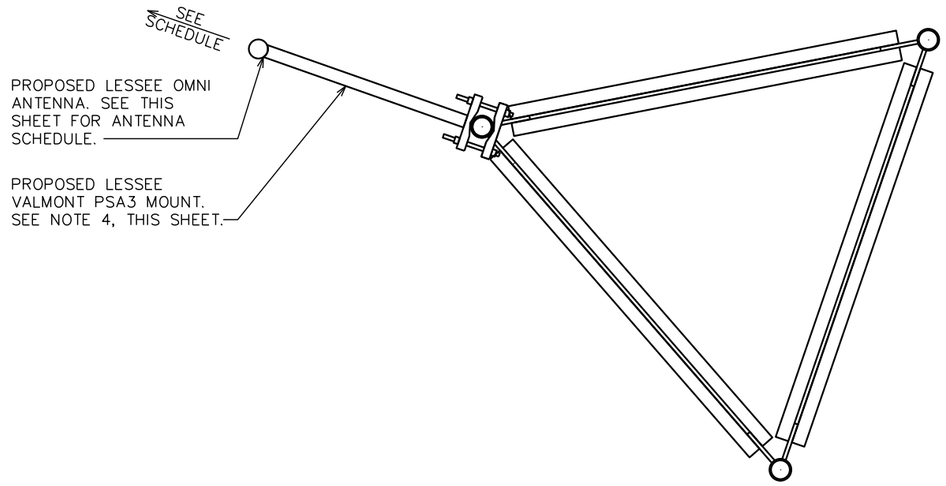
SHEET NUMBER: **C-3**

REVISION: **6**

TEP #330654.843298

NOTES:

1. TEP DID NOT ANALYZE MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY VERIZON LOADING.
2. SEE THIS SHEET FOR PROPOSED ANTENNA SCHEDULE.
3. CONTRACTOR TO VERIFY PROPOSED LOADING WITH TOWER STRUCTURAL ANALYSIS PRIOR TO CONSTRUCTION.
4. INSTALL ANTENNA MOUNT PER MANUFACTURER INSTRUCTIONS



TYPICAL OMNI ANTENNA LAYOUT

SCALE: N.T.S.

FINAL ANTENNA, EQUIPMENT, AND CABLE SCHEDULE

POS.	SECTOR	FREQUENCY	ANTENNA MFR (MODEL #)	MOUNTING HEIGHT	CABLE SIZE	AZIMUTH (TN)	*CABLE LENGTH	MECH. D-TILT	ELEC. D-TILT	DIPLEXERS	RADIO MFR (MODEL #)	TMA	J-BOX (TOWER)
1	LEG B	LMR	UNKNOWN OMNI ANTENNA (20 FT)	℄ @ 148'-0"±	(2) EP-65	140°	180'±	**	**	–	–	–	–
1	LEG B	LMR	UNKNOWN OMNI ANTENNA (20 FT)	℄ @ 148'-0"±	(2) EP-65	140°	180'±	**	**	–	–	–	–
1	LEG A	LMR	UNKNOWN OMNI ANTENNA (20 FT)	℄ @ 147'-0"±	(2) EP-65	20°	180'±	**	**	–	–	–	–
1	LEG B	LMR	UNKNOWN OMNI ANTENNA (20 FT)	℄ @ 115'-0"±	(2) EP-65	140°	145'±	**	**	–	–	–	–
1	LEG C	LMR	DIRECTIONAL ANTENNA	℄ @ 149'-0"±	(2) EP-65	350°	180'±	**	**	–	–	–	–

* CONTRACTOR TO VERIFY CABLE RUN LENGTHS PRIOR TO CONSTRUCTION
** CONTRACTOR TO REFERENCE MOST RECENT TOWER LOADING DOCUMENT FOR MECHANICAL AND ELECTRICAL D-TILTS

FINAL ANTENNA, EQUIPMENT, AND CABLE SCHEDULE

SCALE: N.T.S.

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

PROPOSED ANTENNA LAYOUT & SCHEDULE

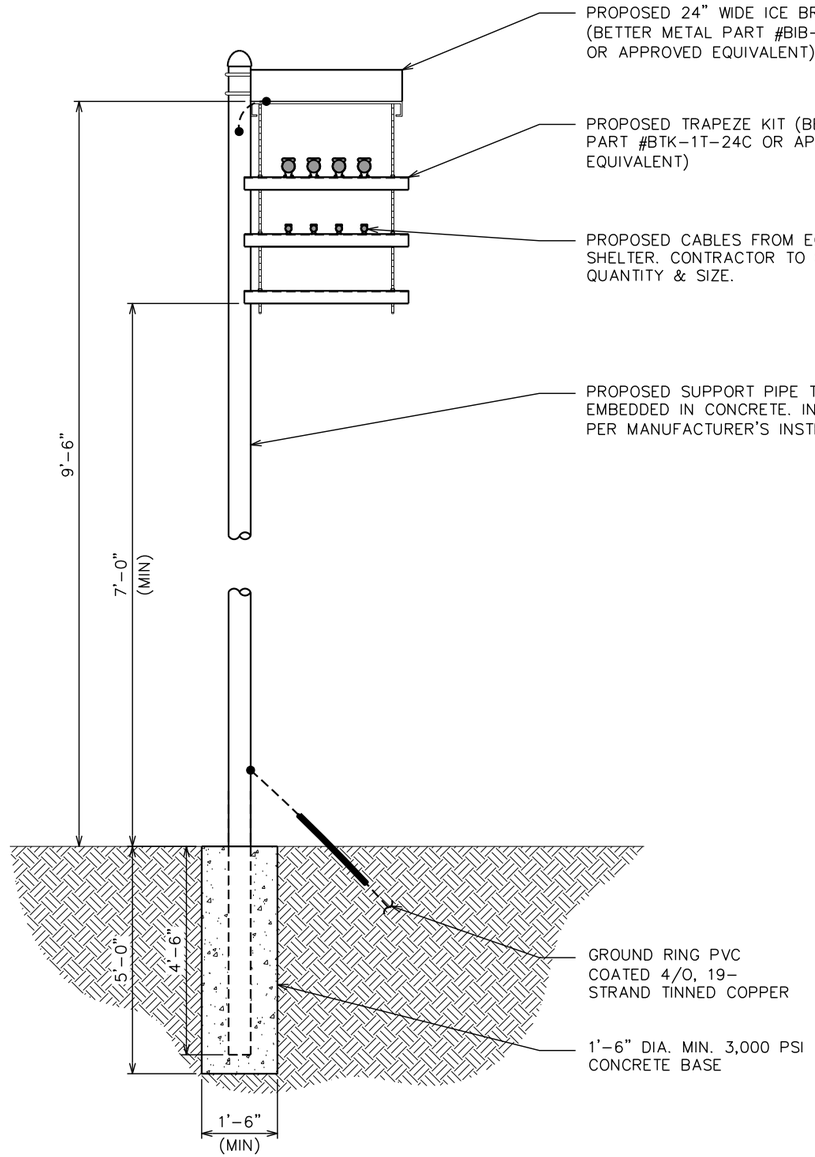
SHEET NUMBER: **C-4**

REVISION: **6**

TEP#330654.843298

NOTE:

EACH WAVEGUIDE SECTION TO BE THROUGH-BOLTED ON BOTH SIDES.



ICE BRIDGE DETAILS

SCALE: N.T.S.

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

ICE BRIDGE DETAILS

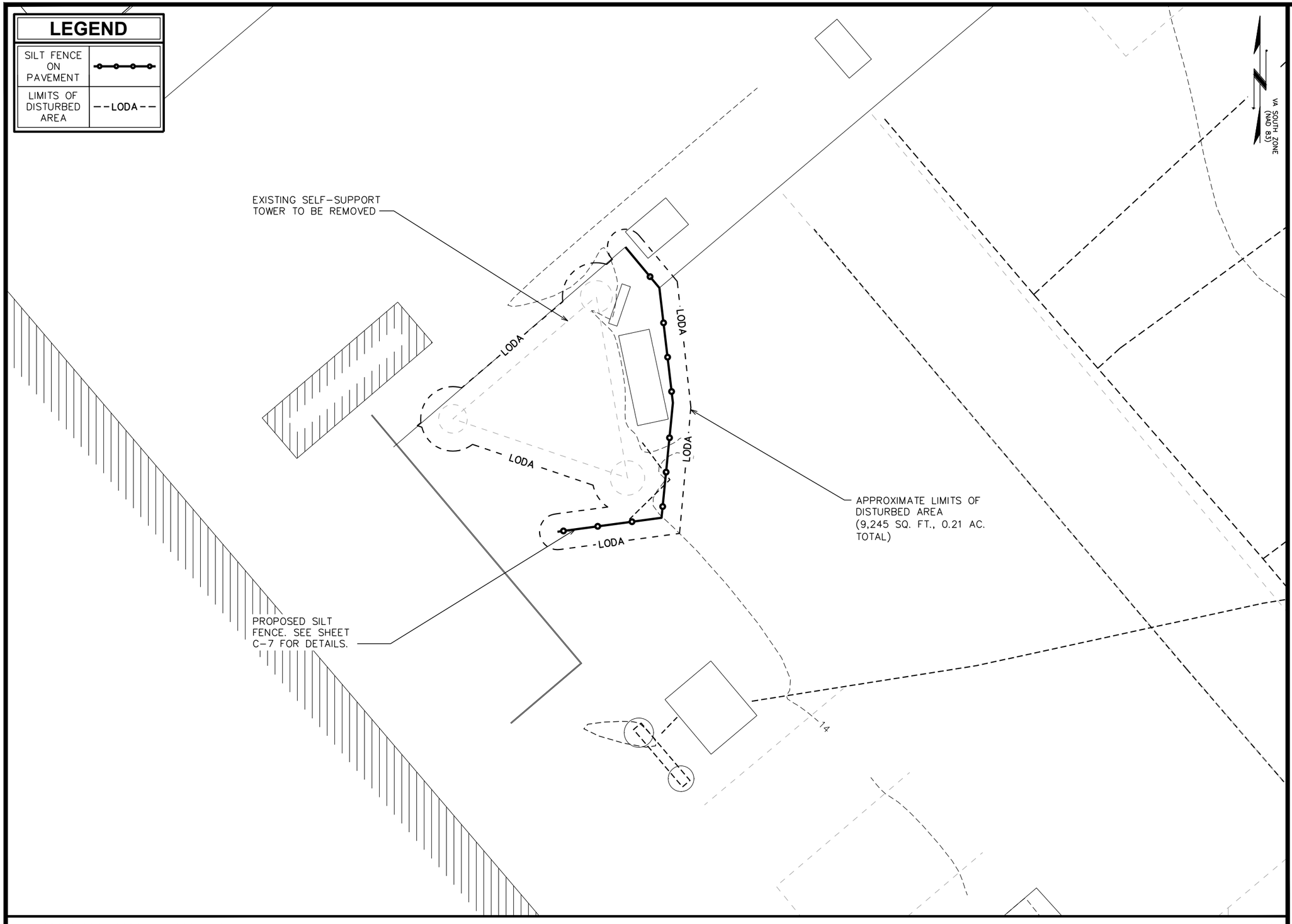
SHEET NUMBER: **C-5**

REVISION: 6

TEP #330654.843298

LEGEND

SILT FENCE ON PAVEMENT	
LIMITS OF DISTURBED AREA	--LODA--



EROSION CONTROL PLAN

SCALE: 3/32" = 1'-0"

0 8 16

SCALE IN FEET

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER J. SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

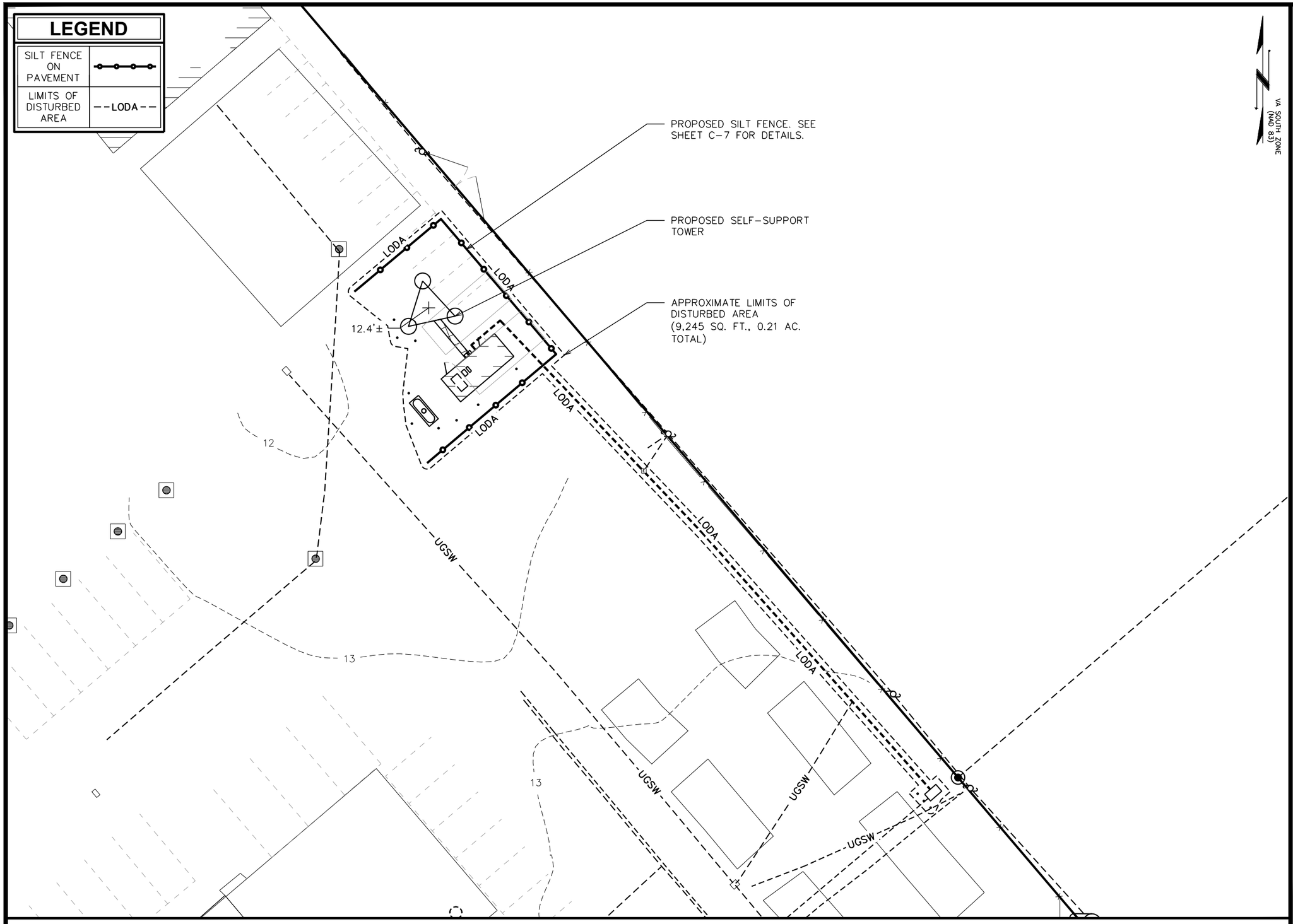
SHEET TITLE:

EROSION CONTROL PLAN I

SHEET NUMBER: **C-6A**

REVISION: 6

TEP#330654.843298



EROSION CONTROL PLAN

SCALE: 1/32" = 1'-0"

0 32 64

SCALE IN FEET

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 22, 2024

REV	DATE	ISSUED FOR:
7	10-22-24	CONSTRUCTION
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION

DRAWN BY: DJL CHECKED BY: TDS

SHEET TITLE:

EROSION CONTROL PLAN II

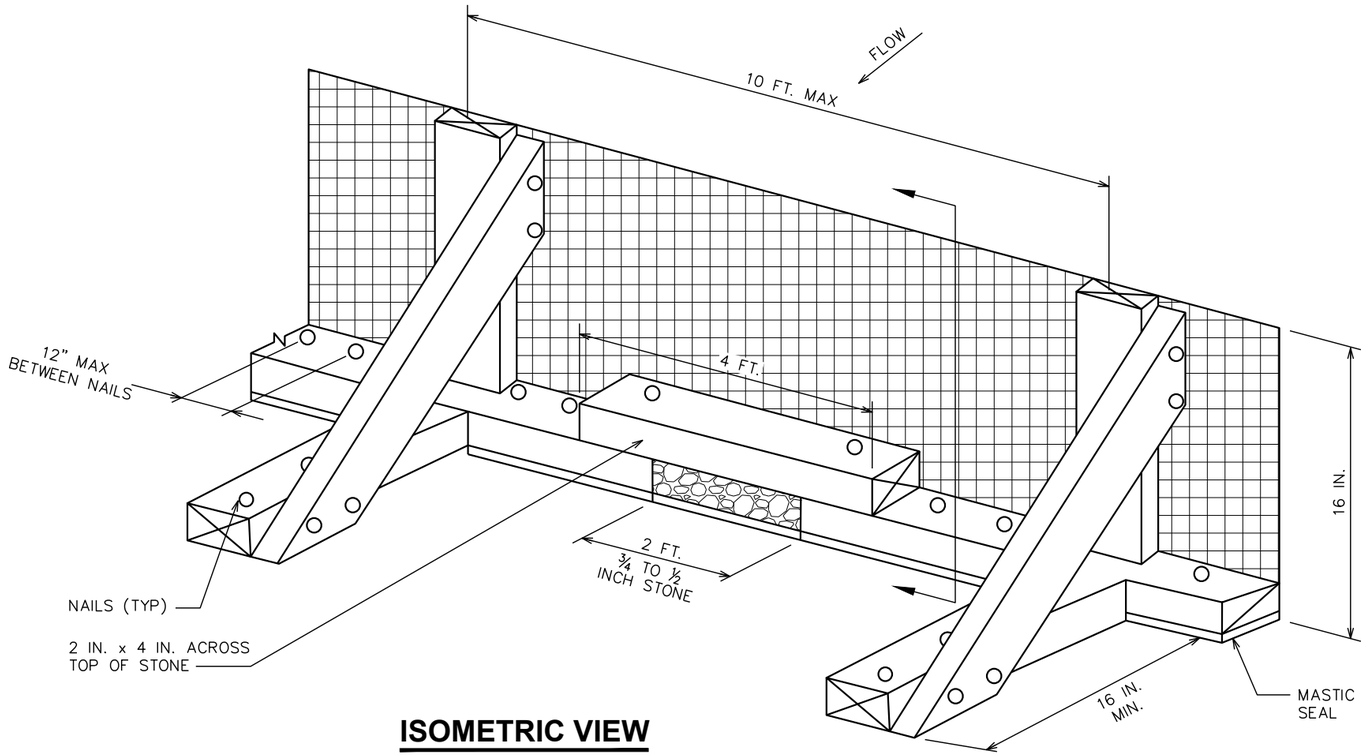
SHEET NUMBER: **C-6B**

REVISION: 7

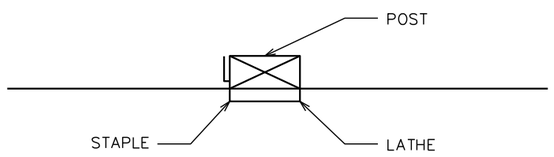
TEP#330654.843298

NOTES:

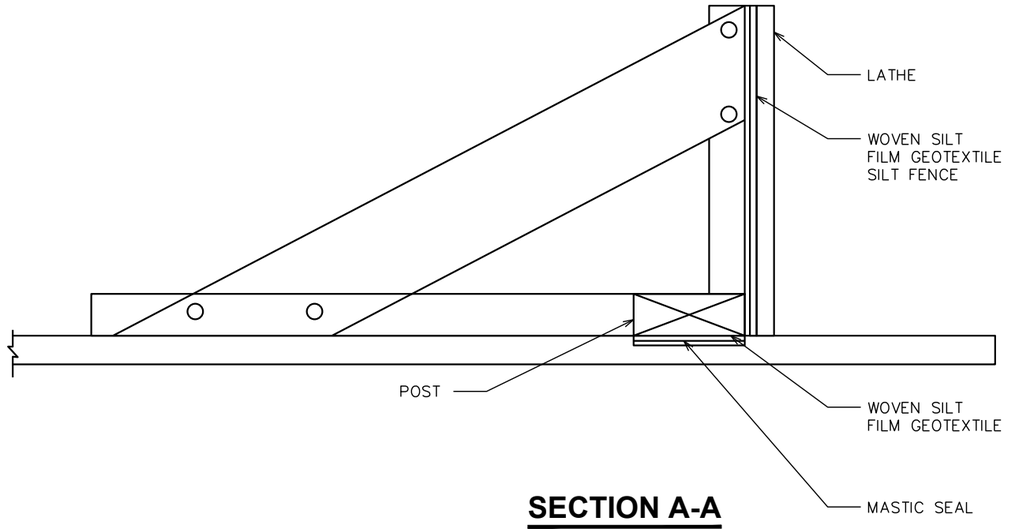
1. USE NOMINAL 2–INCH x 4–INCH LUMBER.
2. USE WOVEN SEDIMENT CONTROL GEOTEXTILE FABRIC.
3. SPACE UPRIGHT SUPPORTS NO MORE THAN 10 FEET APART.
4. PROVIDE A TWO FOOT OPENING BETWEEN EVERY SET OF SUPPORTS AND PLACE #57 GRADED STONE IN THE OPENING OVER GEOTEXTILE.
5. KEEP SILT FENCE TAUT AND SECURELY STAPLE TO THE UPSLOPE SIDE OF UPRIGHT SUPPORTS. EXTEND GEOTEXTILE UNDER 2x4.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, FOLD, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. ATTACH A LATHE.
7. PROVIDE A MASTIC SEAL BETWEEN PAVEMENT, GEOTEXTILE, AND 2x4 TO PREVENT SEDIMENT–LADEN WATER FROM ESCAPING BENEATH SILT FENCE INSTALLATION.
8. SECURE BOARDS TO PAVEMENT WITH 40D 5–INCH MINIMUM LENGTH NAILS.
9. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. MAINTAIN WATER TIGHT SEAL ALONG BOTTOM. REPLACE STONE IF DISPLACED.



ISOMETRIC VIEW



JOINING ADJACENT SECTIONS OF GEOTEXTILE



SECTION A-A

SILT FENCE ON PAVEMENT DETAIL

SCALE: N.T.S.

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

SILT FENCE DETAILS

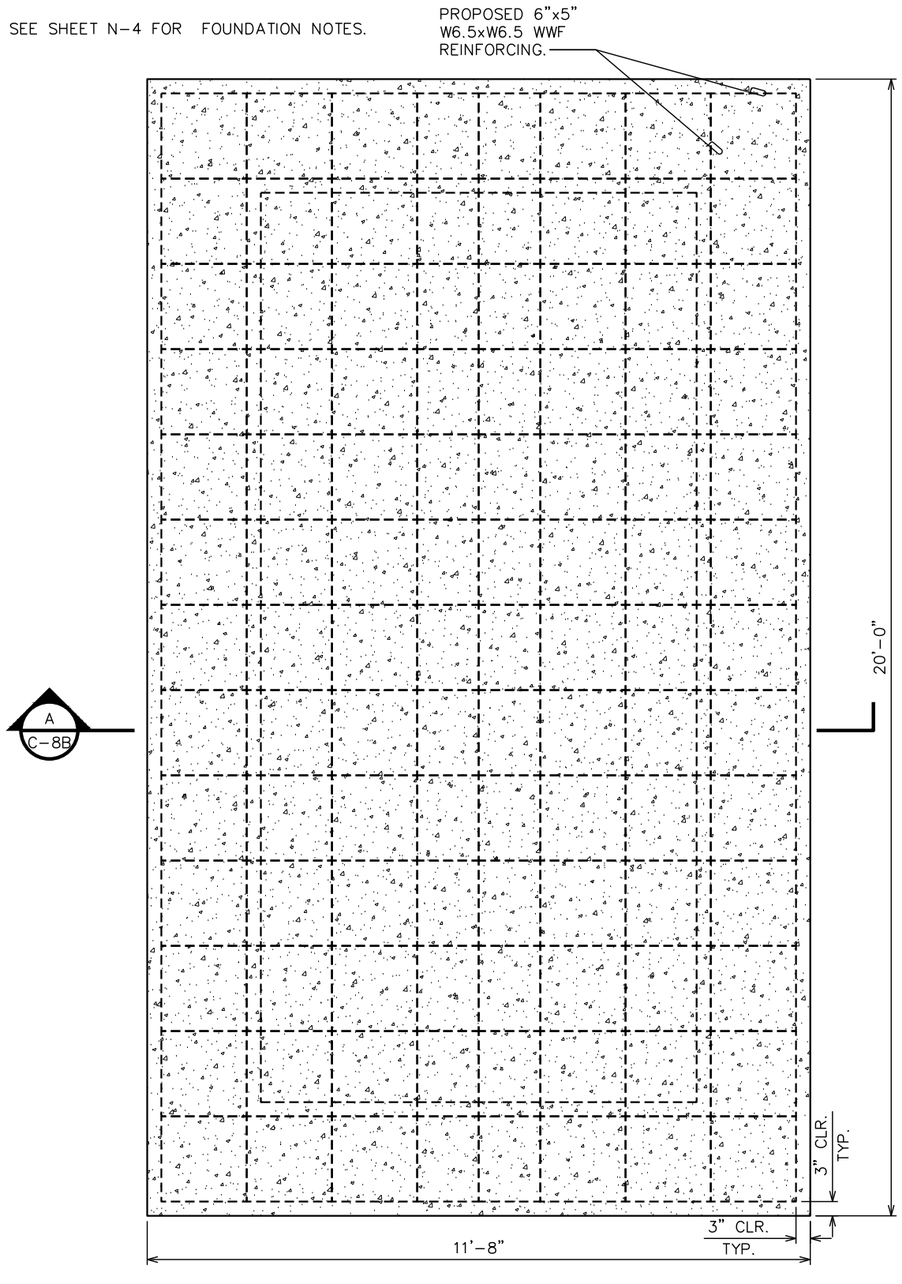
SHEET NUMBER: **C-7**

REVISION: **6**

TEP #330654.843298

NOTES:

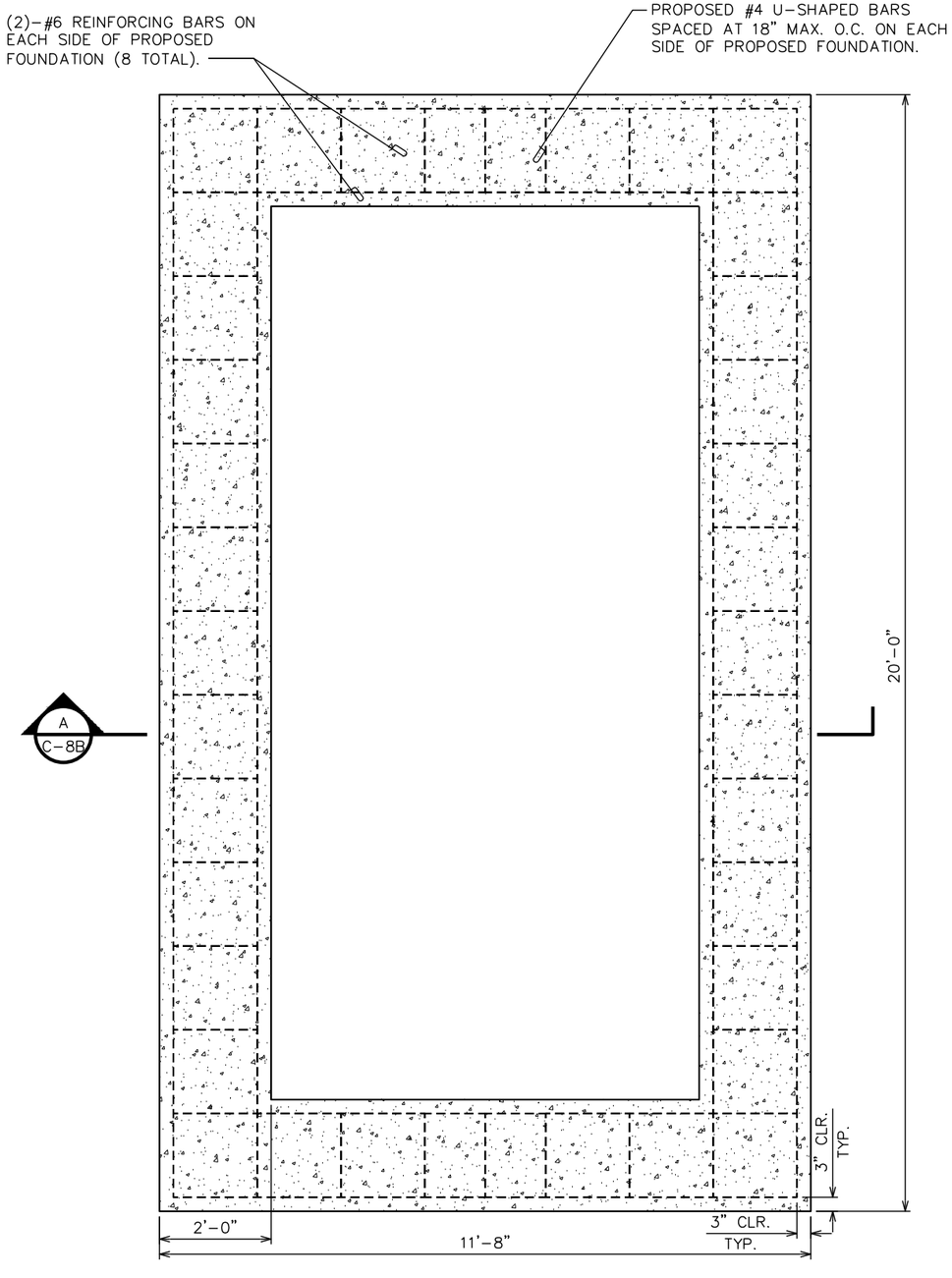
1. GENERATOR TO BE LOCATED PER CIVIL CONSTRUCTION DRAWINGS. CONTRACTOR TO VERIFY GENERATOR DIMENSIONS WITH CIVIL DRAWINGS.
2. SEE SHEET N-4 FOR FOUNDATION NOTES.



FOUNDATION PLAN - SLAB

SCALE: 3/8" = 1'=0"

0 2 4
SCALE IN FEET



FOUNDATION PLAN - TURNDOWN

SCALE: 3/8" = 1'=0"

0 2 4
SCALE IN FEET

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 22, 2024

REV	DATE	ISSUED FOR:
7	10-22-24	CONSTRUCTION
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

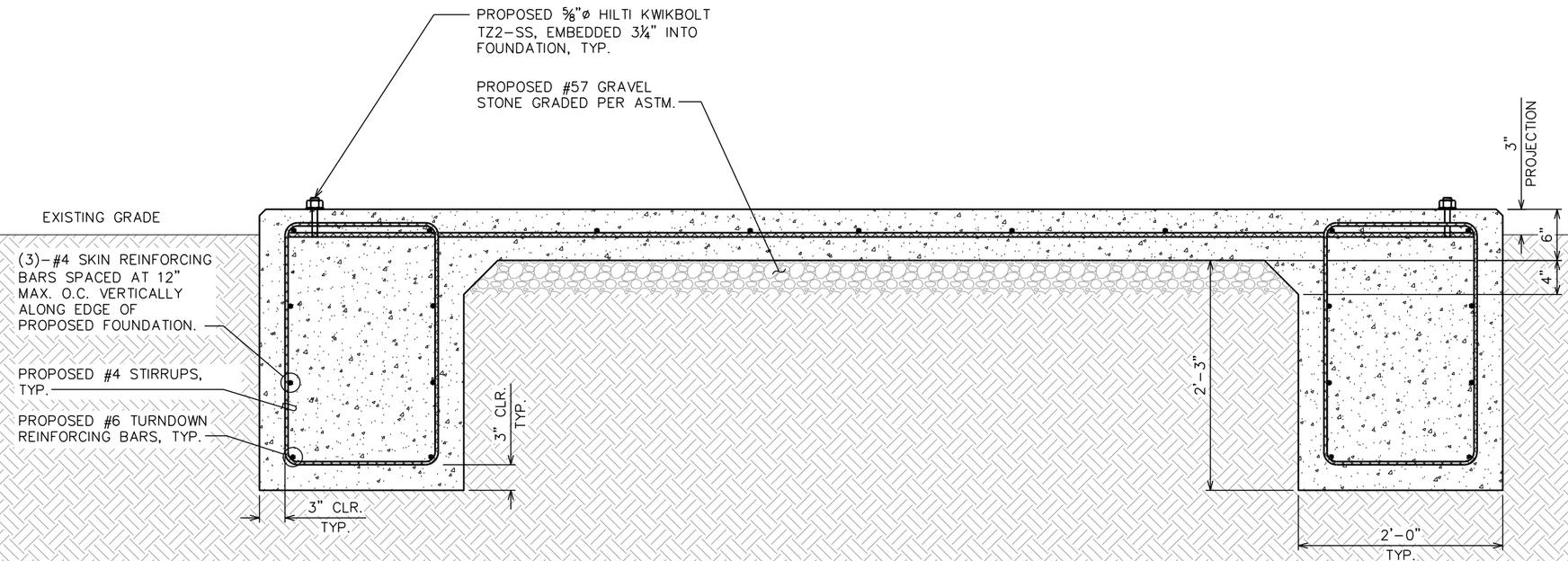
SHEET TITLE:

FOUNDATION DETAILS I

SHEET NUMBER: **C-8A**

REVISION: 7

TEP#330654.843298



SECTION A

SCALE: N.T.S.

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 22, 2024

REV	DATE	ISSUED FOR:
7	10-22-24	CONSTRUCTION
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

FOUNDATION DETAILS II

SHEET NUMBER: **C-8B**

REVISION: 7

TEP#330654.843298

TOWER ENGINEERING PROFESSIONALS

Structural Capacity: 68.5%
Soil Interaction Capacity: 67.7%

TEP #:
Analysis: SCW 8/16/2024
Check: SWS 8/16/2024

Turndown Foundation Design

Building

Wind Input

Exposure Cat	C		
Elevation (z)	10.13	ft	
Ground Elev. (zs)	13	ft	
	Building	Other	
zg	900	900	
alpha	9.5	9.5	
Kz	0.85	0.85	Kz,min: 0.85
Ke	1.00	1.00	
Kzt	1.00	1.00	
Kd	0.85	0.85	
Vmph	118	118	
qz	25.74	25.74	psf
G	0.85	0.85	
Cp (windward)	0.8		
Cp (leeward)	-0.5		
Cf		1.2	
Wind, pz:	28.44	26.26	psf

Seismic Input

S_{DS}	0.455	
R	3.0	ASCE 7-16 Table 12.2-1
Ie:	1.0	
S_1	0.062	
Cs	0.152	
Vs	12038	lbs
a_p:	1.0	N/A
z/h:	0.0	N/A

Concrete Structural Check

Flexural Check

Turndown Width	24.00	in
Turndown Depth	33.00	in
Max. Beam Length	18.00	ft
f'c	4,500	psi - per ACI 318-14 Table 19.3.2.1
fy	60,000	psi
Rebar Size	#6	
Quantity	2	
As	0.880	in^2
Clear Cover	3.00	in
β_1:	0.825	
d	29.13	in
a	0.575	in
ϕMn	114.2	k-ft

ϕ: 0.90

Shear Check

Tie fy	60,000	psi
Stirrup Size	#4	
Tie Spacing	18	in
Av	0.267	in^2
Vc	106.3	kips
Vs	25.9	kips
ϕVn	99.1	kips

ϕ: 0.75

Shelter Input

Min. Weight	61,500	lbs
Max. Weight	79,373	lbs
Length (L)	21.80	ft
Width (B)	12.04	ft
Height	10.13	ft

Foundation Input

Length (x)	20.00	ft
Width (y)	11.67	ft
Strip Footing Width	2.00	ft
Strip Footing Depth	2.75	ft
Concrete Weight	150	pcf
Gross Ultimate Bearing	1,900	psf
Footing C-C (x-x)	9.67	ft
Footing C-C (y-y)	18.00	ft

Soil Interaction

	Wind	Seismic	
Uplift Resistance	1560	743	plf
Uplift Force (x)	-737	-662	plf
Uplift Force (y)	-667	-294	plf
Capacity:	0.0%	0.0%	
	(No Net Uplift)	*(No Net Uplift)*	
Bearing Capacity (ϕqn)	2850	2850	plf
Bearing Force (x)	1488	1562	plf
Bearing Force (y)	1558	1931	plf
Capacity:	54.7%	67.7%	
Sliding Resistance	378111	378111	lb
Sliding Force	6279	12038	lb
Capacity:	1.7%	3.2%	

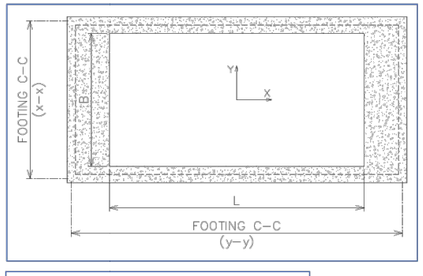
	Wind	Seismic	
Linear Load	1558	1931	lb/ft
Max. Moment	63.10	78.19	k-ft
Capacity:	55.3%	68.5%	

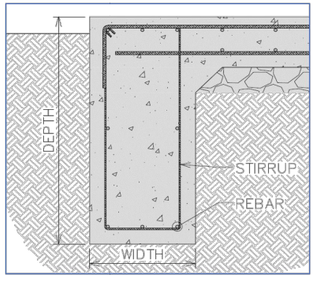
	Wind	Seismic	
Max. Shear	14.02	17.38	kips
Capacity:	14.1%	17.5%	

	Wind	Seismic	
Min Weight/Foot	909	909	plf
0.9*W	818	818	plf
1.2*W	1090	1090	plf
Max. Weight/Foot	1173	1173	plf
0.9*W	1055	1055	plf
1.2*W	1407	1407	plf
Shear (x)/Foot	288	552	plf
Shear (y)/Foot	288	1000	plf
Reaction (x)/Foot	81	155	plf
Reaction (y)/Foot	151	524	plf
Strip Footing Weight	825	825	plf
0.9*W	743	743	plf
1.2*W	990	990	plf

Soil Lateral Input

ysoil	110	pcf	Type: Clay
Friction Angle (deg)	0		μ: 0.30
Cohesion (ksf)	2.15		
Turndown Embed (ft)	2.50		Neglect (ft): 1.00





FOUNDATION CALCULATIONS

SCALE: N.T.S.

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 22, 2024

REV	DATE	ISSUED FOR:
7	10-22-24	CONSTRUCTION
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

FOUNDATION CALCULATIONS

SHEET NUMBER: **C-9**

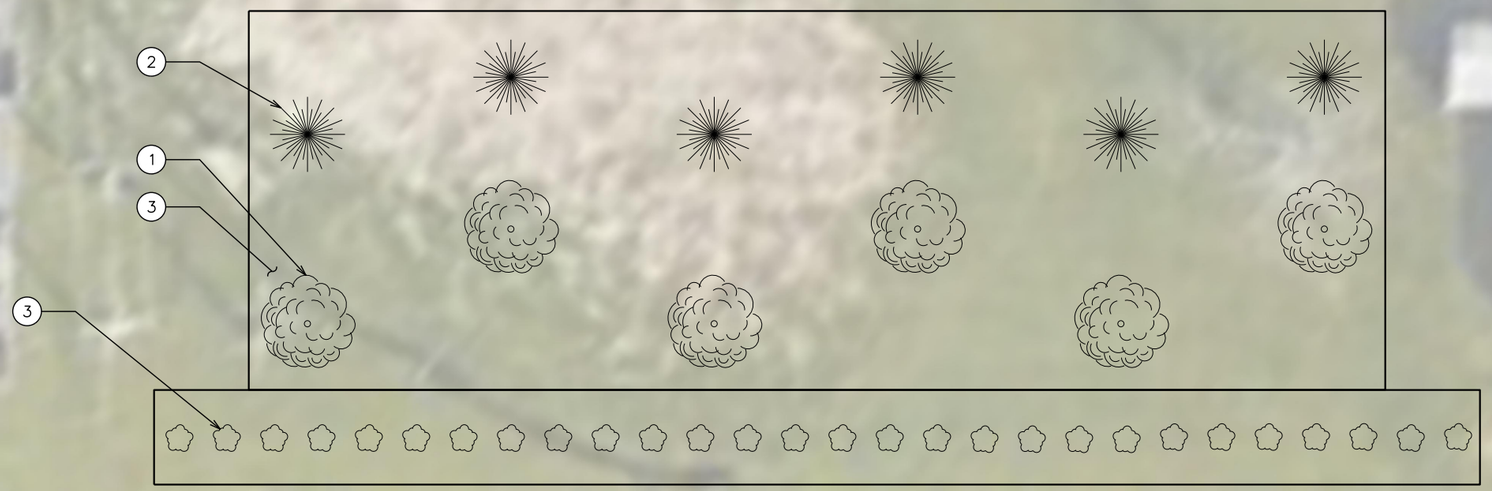
REVISION: 7

TEP #330654.843298

PLANTING SCHEDULE

ITEM	QTY.	BOTANICAL NAME	COMMON NAME	HEIGHT @ PLANTING	HEIGHT @ MATURITY	CALIPER	SPACING	REMARKS
TREE								
(1)	6	PINUS TAEDA	LOBLOLLY PINE	8'–0" (MIN)	60'–0' (MIN)	1–½" (MIN)	30'	SHOWN AS
TREE								
(2)	6	ILEX OPACA	AMERICAN HOLLY	8'–0" (MIN)	15'–0' (MIN)	1–½" (MIN)	20'	SHOWN AS
SHRUB								
(3)	28	MYRTUS	MYRTLE	5'–0" (MIN)	20'–0" (MIN)	1–½" (MIN)	5'–0"	SHOWN AS
MULCH								
(4)	–	–	–	–	–	–	–	APPLY 3"–4" DEEP FROM THE TRUNKLINE TO THE DRIPLINE. FOR GROUND COVER – APPLY 1"–2" DEEP.

VA SOUTH ZONE (NAD 83)



R/W R/W R/W

C&O RAILWAY
(40' R/W)

LANDSCAPING PLAN
SCALE: 1/16" = 1'–0"

0 16 32
SCALE IN FEET

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

SEAL:

TEP OPCO, LLC 407006712

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

November 01, 2024

REV	DATE	ISSUED FOR:
8	11-01-24	CONSTRUCTION
7	10-22-24	CONSTRUCTION
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

LANDSCAPING PLAN

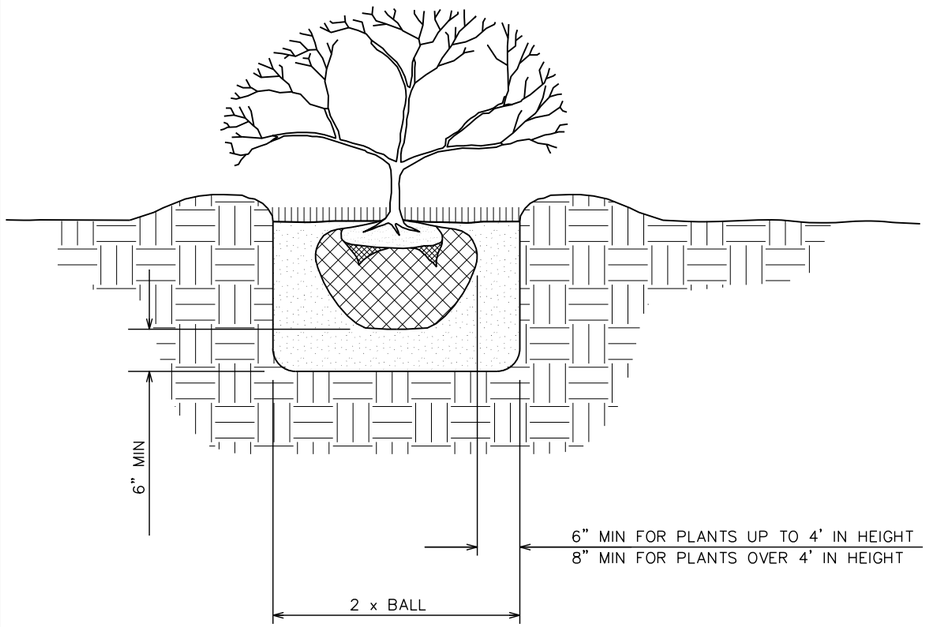
SHEET NUMBER: **L-1**

REVISION: **8**

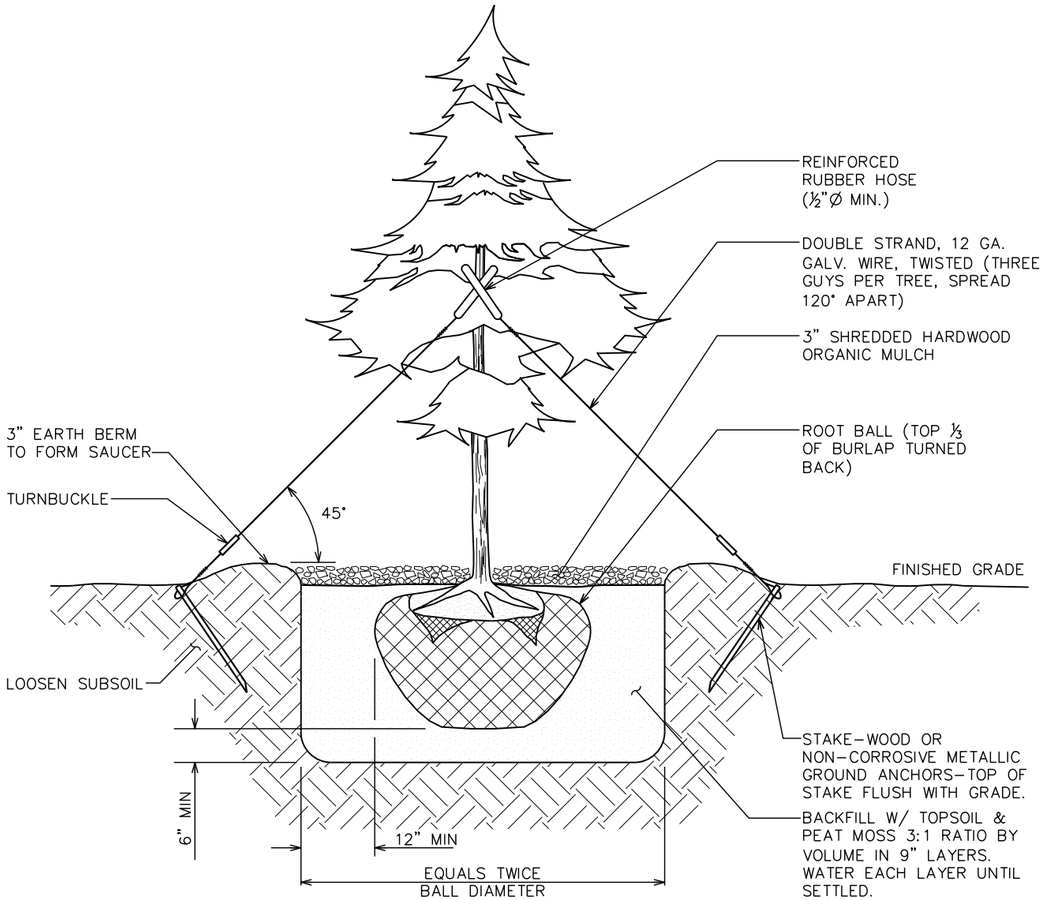
TEP#330654.843298

LANDSCAPE NOTES:

1. TOPSOIL TO BE PROVIDED BY SITE CONTRACTOR IN ROUGH GRADE TO WITHIN 1" OF FINISH GRADE.
2. EACH PLANT TO BE IN GOOD CONDITION AFTER SHEARING AND PRUNING.
3. EACH PLANT TO BE FREE FROM DISEASE, INSECT INFESTATION, AND MECHANICAL INJURIES, AND IN ALL RESPECTS BE SUITABLE FOR FIELD PLANTING.
4. ALL PLANTS TO BE FULLY GUARANTEED (LABOR AND MATERIALS) FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF INSTALLATION.
5. ALL PLANTS SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.I–1973 IN REGARD TO SIZING, GROWING, AND B&B SPECIFICATIONS.
6. THE CONTRACTOR SHALL PROTECT ALL EXISTING TREES AND SHRUBS WITHIN THE CONSTRUCTION AREA IDENTIFIED AS "TO REMAIN" FROM DAMAGE BY EQUIPMENT AND CONSTRUCTION ACTIVITIES.



SHRUB PLANTING DETAIL



TREE PLANTING DETAIL

LANDSCAPING DETAILS

SCALE: N.T.S.

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

SEAL:

TEP OPCO, LLC 407006712

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

LANDSCAPING DETAILS

SHEET NUMBER: **L-2**

REVISION: 6

TEP #330654.843298

ELECTRICAL NOTES:

SCOPE:

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

CODES:

1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND CODES. THESE INCLUDE BUT ARE NOT LIMITED TO THE LATEST ADOPTED EDITIONS OF:
   A. THE NATIONAL ELECTRICAL SAFETY CODE
   B. THE NATIONAL ELECTRIC CODE – NFPA–70
   C. REGULATIONS OF THE SERVING UTILITY COMPANY
   D. LOCAL AND STATE AMENDMENTS
   E. THE INTERNATIONAL ELECTRIC CODE – IEC (WHERE APPLICABLE)
2. PERMITS REQUIRED SHALL BE OBTAINED BY THE CONSTRUCTION TEAM.
3. AFTER COMPLETION AND FINAL INSPECTION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF COMPLETION AND APPROVAL.

TESTING:

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

GUARANTEE:

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

UTILITY CO-ORDINATION:

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

EXAMINATION OF SITE:

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

CUTTING, PATCHING AND EXCAVATION:

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

RACEWAYS / CONDUITS GENERAL:

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

EXTERIOR CONDUIT:

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

INTERIOR CONDUIT:

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

EQUIPMENT:

1. DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
2. CONSTRUCTION TEAM SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK. CONTRACTOR WILL VERIFY THAT EXISTING CIRCUIT BREAKERS ARE RATED FOR MORE THAN AVAILABLE FAULT CURRENT AND REPLACE AS NECESSARY.
3. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY.

CONDUCTORS:

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

UL COMPLIANCE:

1. ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E., LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY.

GROUNDING:

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

ABBREVIATIONS AND LEGEND

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

——E——	UNDERGROUND ELECTRICAL CONDUIT
——T——	UNDERGROUND TELEPHONE CONDUIT
	KILOWATT–HOUR METER
	UNDERGROUND BONDING AND GROUNDING CONDUCTOR.
⌀	GROUND ROD
●	CADWELD
⊠	GROUND ROD WITH INSPECTION WELL

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

SEAL:

TEP OPCO, LLC 407006712

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

ELECTRICAL NOTES

SHEET NUMBER: **E-1**

REVISION: 6

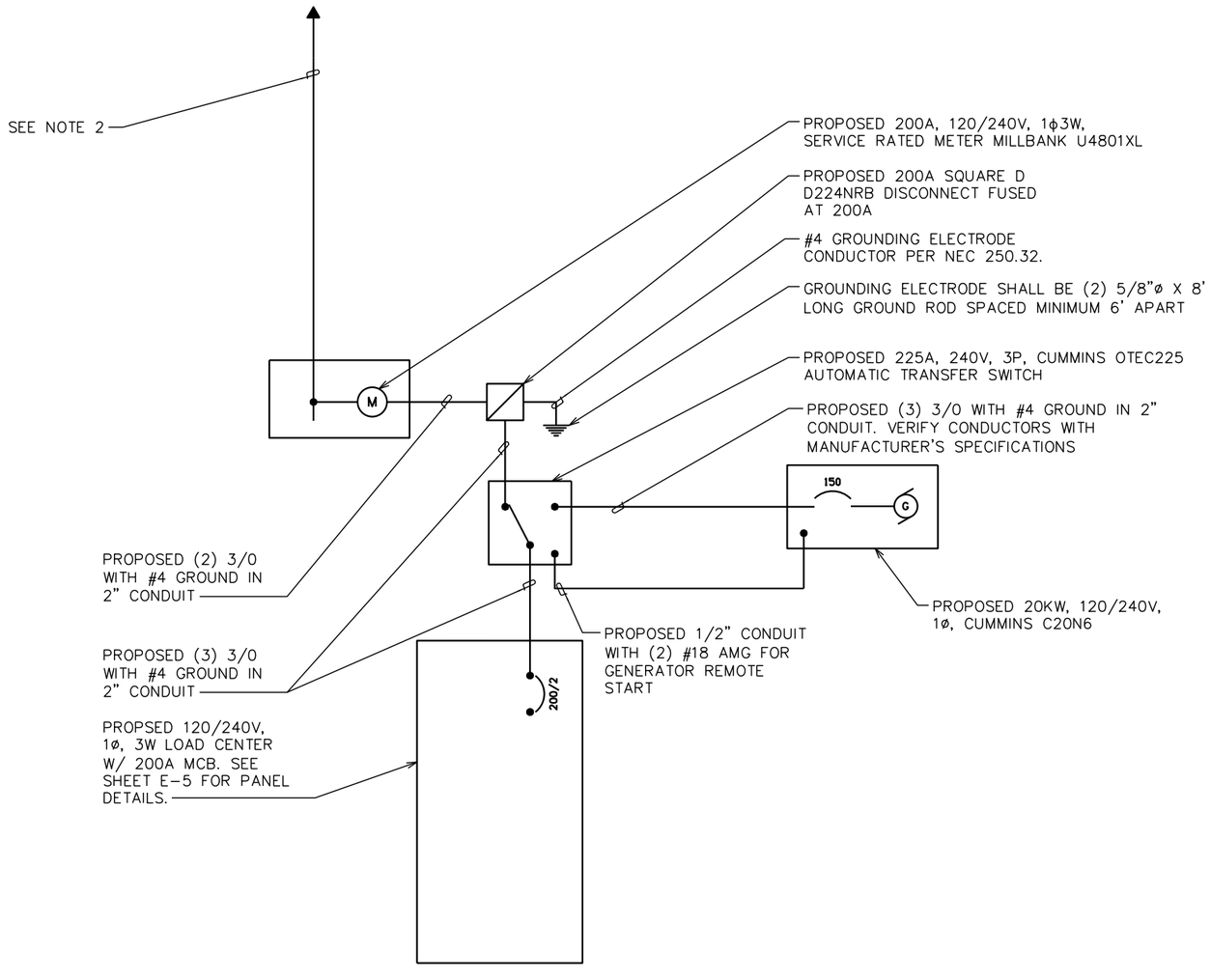
TEP #330654.843298

GENERAL NOTES:

1. CONSTRUCTION TEAM SHALL VERIFY AVAILABLE FAULT CURRENT WITH POWER COMPANY AND ENSURE ALL ELECTRICAL EQUIPMENT IS SUITABLE FOR AVAILABLE FAULT CURRENT.
2. CONSTRUCTION TEAM SHALL COORDINATE UTILITY SERVICES WITH LOCAL UTILITY COMPANIES. VERIFY ALL REQUIREMENTS WITH UTILITY COMPANY STANDARDS.
3. ONE-LINE DIAGRAM IS FOR SCHEMATIC PURPOSES ONLY AND IS NOT INDICATIVE OF THE ACTUAL EQUIPMENT LAYOUT.
4. CONSTRUCTION TEAM SHALL LABEL METER SOCKET WITH SERVICE OWNER NAMEPLATE WITH ½" HEIGHT MINIMUM LETTERS.
5. ALL EQUIPMENT WILL HAVE A MINIMUM AIC OF 10 KA. CONTRACTOR TO DETERMINE AVAILABLE FAULT CURRENT BEFORE ENERGIZING EQUIPMENT. THE AMOUNT OF AVAILABLE FAULT CURRENT SHALL BE MARKED ON THE SERVICE EQUIPMENT PER NEC 110.24.
6. CONSTRUCTION TEAM WILL NOTIFY UTILITY COMPANY OF CHANGES IN ELECTRICAL LOAD.
7. ALL NEW GROUNDING AND BONDING PER THE NEC
8. ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 UNLESS NOTED OTHERWISE.

ONE-LINE DIAGRAM NOTES:

1. ELECTRICAL SERVICE SHALL BE 200A, 120/240V, 1ø, 3W.
2. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT, REFER TO VENDOR PRINTS PROVIDED BY EQUIPMENT MANUFACTURER.
3. CONDUCTOR SIZES BASED ON TYPICAL CONFIGURATIONS. CONSTRUCTION TEAM WILL VERIFY WITH MANUFACTURER SPECIFICATIONS BEFORE ORDERING OR INSTALLING PARTS.



ONE-LINE DIAGRAM

SCALE: N.T.S.

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

ONE-LINE DIAGRAM

SHEET NUMBER: **E-2**

REVISION: 6

TEP#330654.843298

NOTE:

LOAD CALCULATION TAKEN FROM INFORMATION PROVIDED BY DOMINION RESOURCE SERVICES, INC. CONSTRUCTION TEAM TO VERIFY LOADS WITH MANUFACTURER'S SPECIFICATIONS PRIOR TO CONSTRUCTION

PROPOSED 200A M.C.B, 240/120 VAC, 1Ø, 3W PPC PANEL SCHEDULE

LOAD SERVED	VOLT AMPERES (WATTS) L1	VOLT AMPERES (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPERES (WATTS) L1	VOLT AMPERES (WATTS) L2	LOAD SERVED
SURGE ARRESTOR	0		60	1	A	2	35	3360		HVAC #1
		0		3	B	4			3360	
6 LIGHTS	1920		20	5	A	6	15	1440		ALARM
4 QUAD RECEPTACLE		1920	20	7	B	8			1440	
3 QUAD RECEPTACLE	1920		20	9	A	10	15	1440		HEAT DETECTOR
3 QUAD RECEPTACLE		1920	20	11	B	12	20		1920	WALL HEATER
GFCI EXTERIOR	1920		20	13	A	14	20	1920		EQUIP ROOM
4 LIGHTS		1920	20	15	B	16	20		1920	GEN ROOM
–	–		–	17	A	18	–	–		–
–		–	–	19	B	20	–		–	–
–	–		–	21	A	22	–	–		–
–		–	–	23	B	24	–		–	–
–	–		–	25	A	26	–	–		–
–		–	–	27	B	28	–		–	–
–	–		–	29	A	30	–	–		–
–		–	–	31	B	32	–		–	–
–	–		–	33	A	34	–	–		–
–		–	–	35	B	36	–		–	–
–	–		–	37	A	38	–	–		–
SPARE		0	20	39	B	40	20		0	SPARE
	0			41	A	42		0		
VOLT AMPS	5760	5760						8160	8640	VOLT AMPS

L1 VOLT AMPERES	13920	14400 L2 VOLT AMPERES
	14400	MAX VOLT AMPERES
	120	MAX AMPS
	150	MAX AMPS x 125%

NOTES:
* PROPOSED BREAKERS & LOADS IN BOLD

PANEL SCHEDULE

SCALE: N.T.S.

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

PANEL SCHEDULE

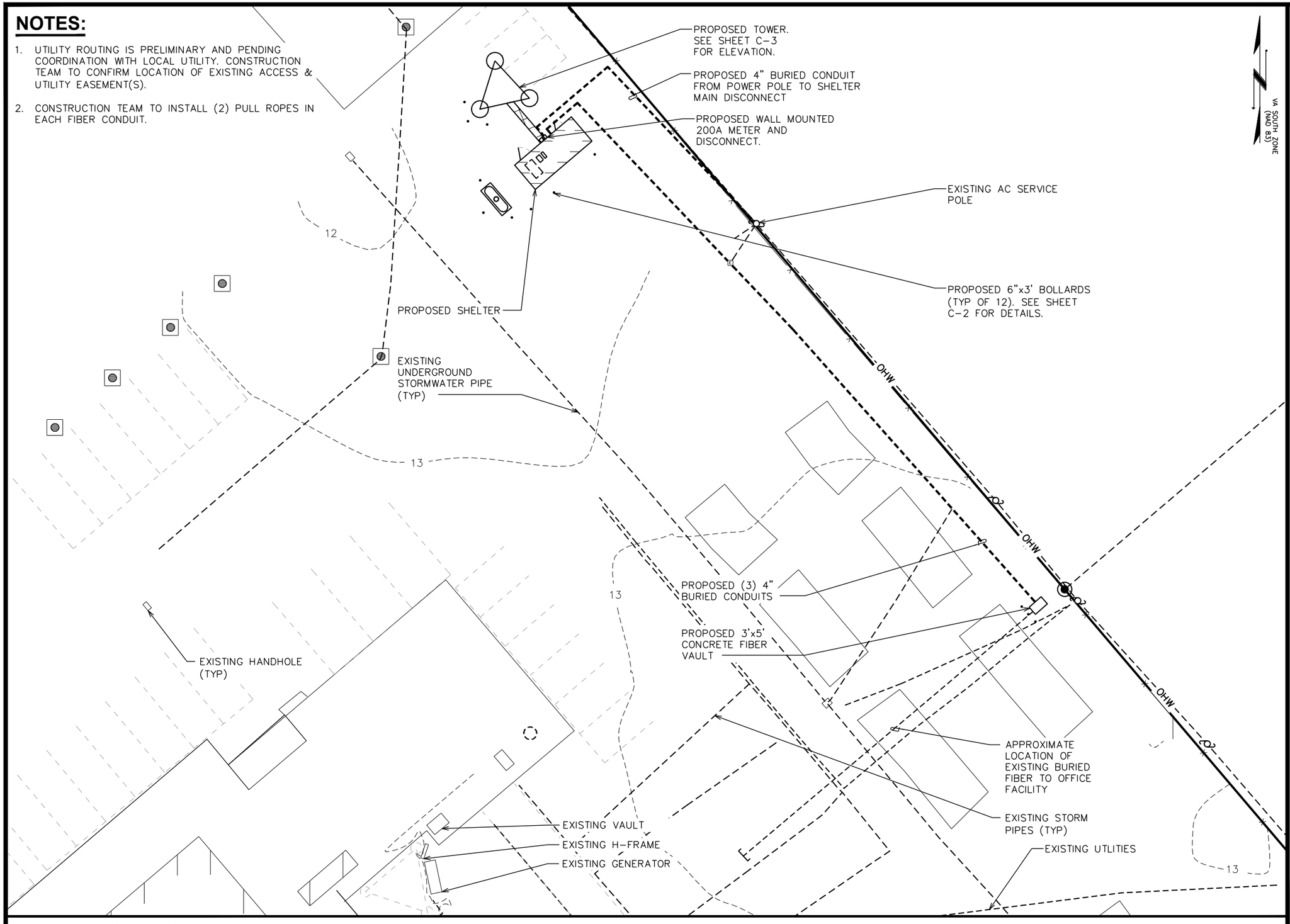
SHEET NUMBER: **E-3**

REVISION: 6

TEP#330654.843298

NOTES:

1. UTILITY ROUTING IS PRELIMINARY AND PENDING COORDINATION WITH LOCAL UTILITY. CONSTRUCTION TEAM TO CONFIRM LOCATION OF EXISTING ACCESS & UTILITY EASEMENT(S).
2. CONSTRUCTION TEAM TO INSTALL (2) PULL ROPES IN EACH FIBER CONDUIT.



FIBER & PSTN ROUTING

SCALE: 1" = 30'

0 30 60

SCALE IN FEET

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 22, 2024

REV	DATE	ISSUED FOR:
7	10-22-24	CONSTRUCTION
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

FIBER & PSTN ROUTING

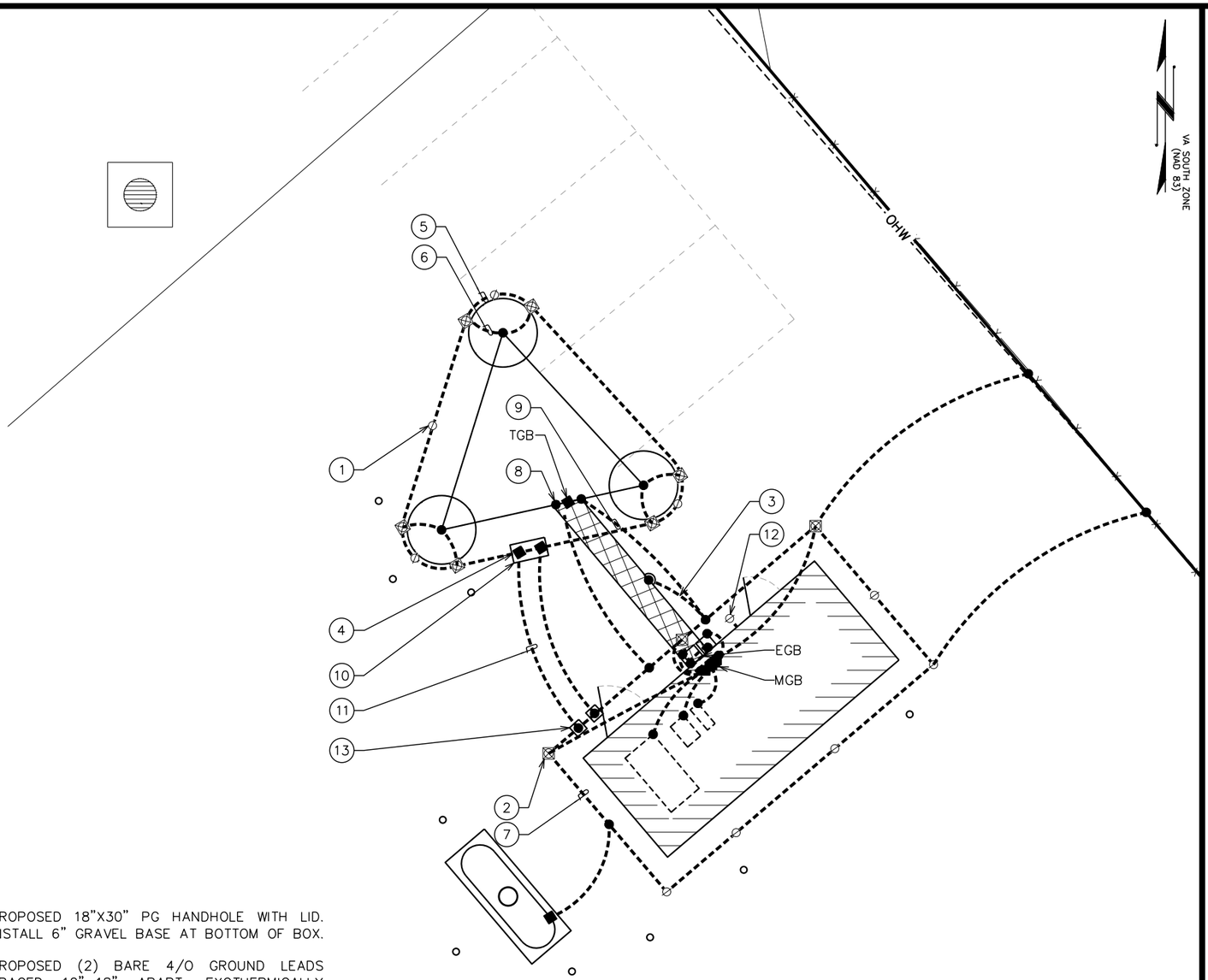
SHEET NUMBER: **E-4**

REVISION: 7

TEP#330654.843298

DOMINION GROUNDING NOTES:

1. ALL GROUND RODS TO BE 5/8"x10' COPPER CLAD GROUND ROD.
2. ALL BELOW GRADE CONNECTIONS SHALL BE EXOTHERMIC CONNECTIONS.
3. ALL BELOW GRADE EXOTHERMIC CADWELDS WILL HAVE 3M SCOTCHCOAT APPLIED OVER ALL EXPOSED BARE COPPER.
4. ALL GROUND WIRING TO BE 4/0, 19-STRAND TINNED COPPER WIRE.
5. ALL ABOVE GRADE CONNECTIONS TO A GROUND WIRE (LUGS) SHALL BE CRIMPED STYLE, (I.E...GROUND BARS).
6. ALL ABOVE GRADE MECHANICAL COMPRESSION CONNECTIONS SHALL BE TWO-BOLT HOLE STYLE AND HAVE A LIBERAL COATING OF DIOXIDE GREASE APPLIED.
7. IF GROUND RODS CANNOT BE DRIVEN VERTICALLY:
   - DRIVE GROUND RODS AT 45° ANGLE
   - IF GROUND RODS CANNOT BE DRIVEN AT A 45° ANGLE, LAY GROUND RODS DOWN HORIZONTALLY PERPENDICULAR TO THE GROUND RING
8. ALL GROUNDING CONDUCTORS TO BE BURIED AT A MINIMUM OF 18".
9. ALL GROUNDING SYSTEMS ARE TO BE MADE COMMON.
10. ALL BELOW GRADE GROUND WIRING TO BE 4/0, 19-STRAND TINNED COPPER WIRE.
11. ALL BARE 4/0, 19-STRAND TINNED COPPER GROUND WIRE ABOVE GRADE (I.E. GROUND RISERS) TO BE INSIDE NON-METALLIC LIQUIDTITE.
12. GROUNDING OF ALL COMMUNICATIONS EQUIPMENT (I.E. RACKS, CABINETS, ETC.) IS TO BE DESIGNED, FURNISHED AND INSTALLED BY OTHERS.
13. GROUNDING SYSTEM SHALL BE MEGGAR TESTED TO VERIFY SITE GROUND RESISTANCE AS FOLLOWS:
   - TOWER GROUND RING TO BE TESTED ISOLATED FROM TOWER. THIS TEST CAN ONLY BE DONE PRIOR TO CADWELDING TOWER LEGS AND TGB TO TOWER GROUND RING AND PRIOR TO CONNECTING TO SHELTER GROUND RING.
14. ALL TRENCHES MUST REMAIN OPEN FOR DOMINION VISUAL INSPECTIONS. TRENCHES CAN ONLY BE CLOSED AFTER INSPECTIONS HAVE BEEN COMPLETED AND APPROVED BY DOMINION.



DRAWING NOTES:

1. GROUND ROD 5/8"x10' COPPER CLAD GDOUND ROD (TYP)
2. GROUND ROD WITH INSPECTION WELL (TYP)
3. CADWELD (TYP)
4. 2-HOLE LUG MECHANICAL CONNECTION (TYP)
5. PROPOSED TOWER GROUND RING
6. GROUND LEAD FROM TOWER TO TOWER GROUND RING (TYP)
7. PROPOSED SHELTER GROUND RING
8. PROPOSED GROUND BAR
9. PROPOSED GROUND LEAD FROM GROUND BAR TO GROUND RING
10. PROPOSED 18"X30" PG HANDHOLE WITH LID. INSTALL 6" GRAVEL BASE AT BOTTOM OF BOX.
11. PROPOSED (2) BARE 4/0 GROUND LEADS SPACED 12"-18" APART, EXOTHERMICALLY WELDED TO EXISTING SHELTER GROUND RING AND MECHANICALLY CONNECTED TO TOWER GROUND RING USING (2) BURNDY VERSITAP TYPE QPX MECHANICAL CONNECTORS INSIDE PROPOSED HANDHOLE BOX.
12. AC NEUTRAL GROUND TO GROUND BAR INSIDE SHELTER WITH A #2 THHN COPPER GROUND LEAD EXOTHERMICALLY WELDED TO A SINGLE GROUND ROD OUTSIDE THE SHELTER THAT IS ISOLATED FROM DOMINION SHELTER RING.
13. 8" INSPECTION WELL OVER AN EXOTHERMIC CONNECTION WITH NO GROUND ROD PRESENT

TOWER GROUNDING PLAN

SCALE: 1" = 10'

0 10 20

SCALE IN FEET

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 22, 2024

REV	DATE	ISSUED FOR:
7	10-22-24	CONSTRUCTION
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

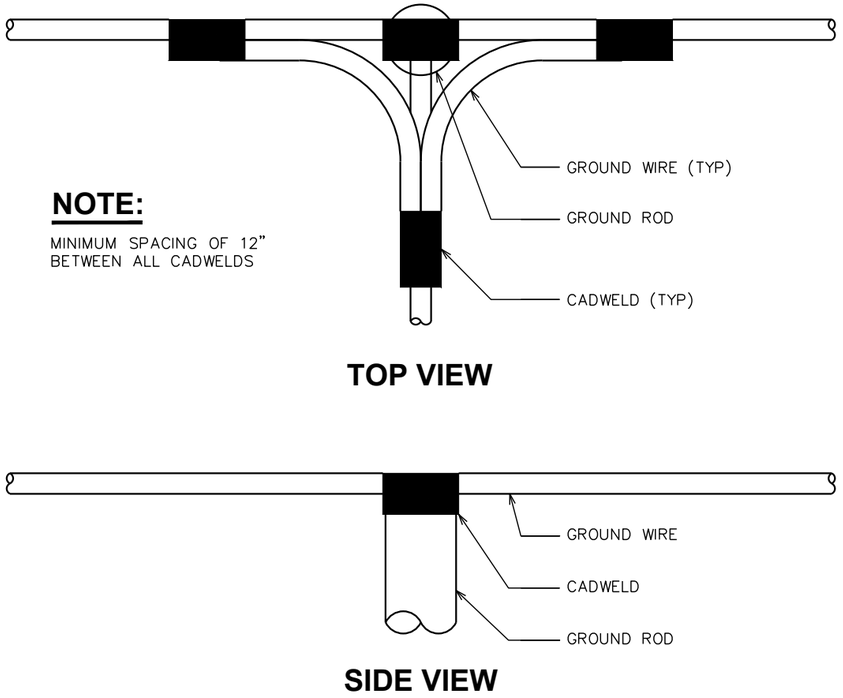
SHEET TITLE:

GROUNDING PLAN

SHEET NUMBER: **E-5**

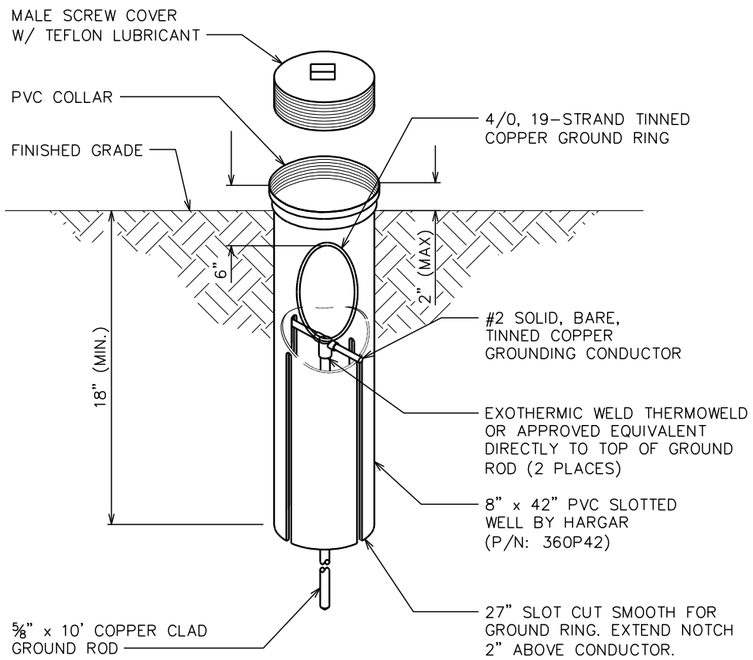
REVISION: 7

TEP#330654.843298



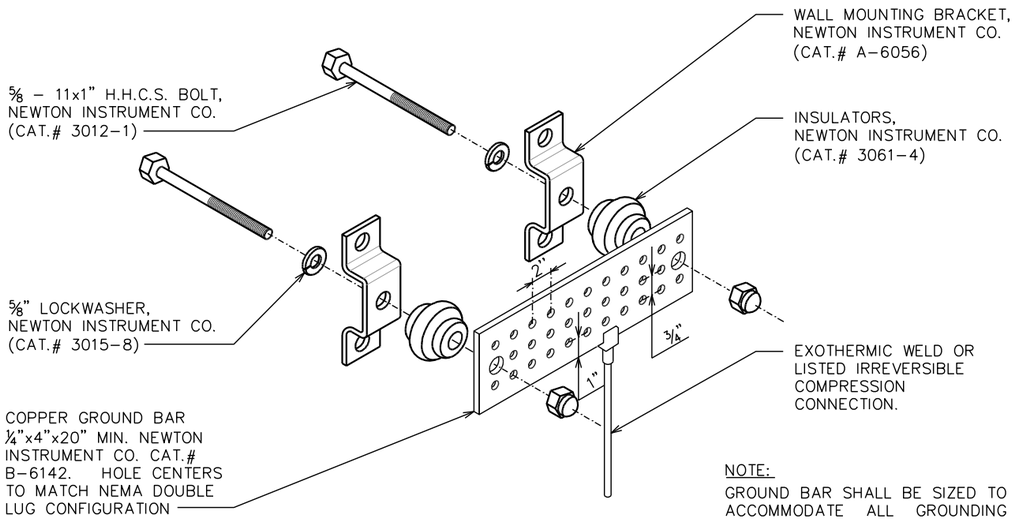
CADWELD GROUNDING DETAIL

SCALE: N.T.S.



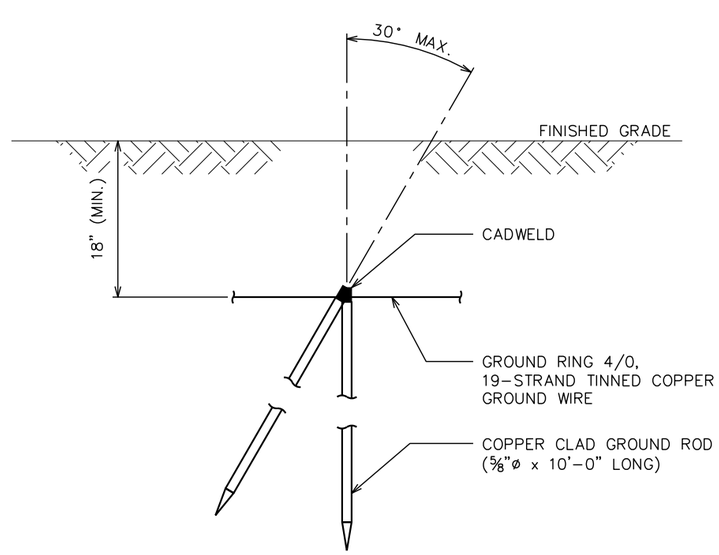
GROUND ROD WITH INSPECTION WELL DETAIL

SCALE: N.T.S.



STANDARD GROUND BAR DETAIL

SCALE: N.T.S.



COPPER-CLAD STEEL GROUND ROD DETAIL

SCALE: N.T.S.

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

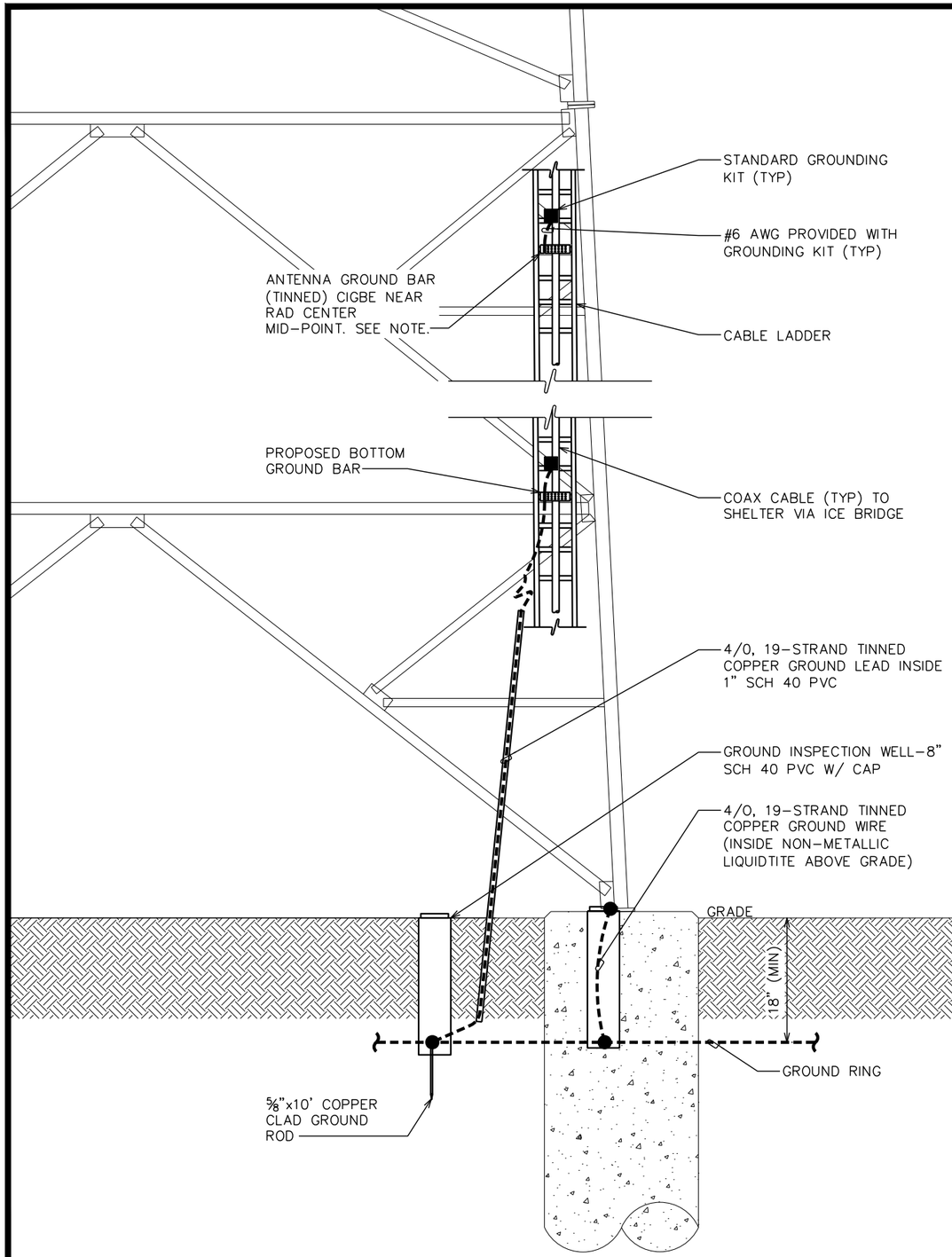
SHEET TITLE:

GROUNDING DETAILS I

SHEET NUMBER: **E-6**

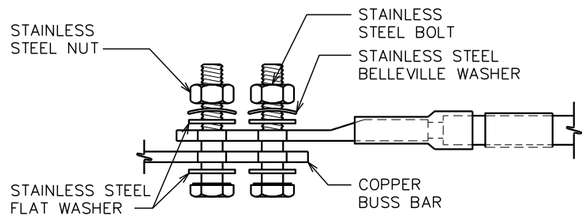
REVISION: 6

TEP #330654.843298



TOWER GROUNDING DETAIL

SCALE: N.T.S.



NOTES:

1. ALL HARDWARE SHALL BE 18-8 STAINLESS STEEL, INCLUDING THE BELLEVILLE WASHERS. COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN THE LUG AND STEEL. COAT ALL SURFACES WITH KOPR-SHIELD.

LUG DETAILS

SCALE: N.T.S.

PLANS PREPARED FOR:

Dominion Energy℠

DOMINION RESOURCES SERVICES, INC.
707 EAST MAIN STREET
RICHMOND, VA 23219

PROJECT INFORMATION:

HAMPTON OFFICE

902 G ST.
HAMPTON, VA 23661

PLANS PREPARED BY:

TEP

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net

TEP OPCO, LLC 407006712

SEAL:

COMMONWEALTH OF VIRGINIA
TYLER SHENK
Lic. No. 060894
PROFESSIONAL ENGINEER

October 15, 2024

REV	DATE	ISSUED FOR:
6	10-15-24	CONSTRUCTION
5	09-27-24	CONSTRUCTION
4	08-20-24	CONSTRUCTION
3	05-24-24	CONSTRUCTION

DRAWN BY: DJL | CHECKED BY: TDS

SHEET TITLE:

GROUNDING DETAILS II

SHEET NUMBER: **E-7**

REVISION: 6

TEP#330654.843298