LUNENBURG COUNTY BOARD OF SUPERVISORS
160 COURTHOUSE SQUARE
LUNENBURG COURTS BUILDING, LUNENBURG, VIRGINIA
June 13, 2024 Meeting

1. Call to Order – **6:00PM**
2. Invocation/Pledge of Allegiance: Supervisor Zava
3. Requests for Additions to the Agenda
4. Conflict of Interest Statements & Organizational Matters
5. Citizen Comment Period
6. Consent Agenda
   A) Minutes – May 9, 2024 Meeting and May 23, 2024 Public Hearing
   B) Warrants for Approval May 2024
   C) Treasurer's Report – April 2024
7. **JOINT PUBLIC HEARING with LUNENBURG COUNTY PLANNING COMMISSION:**
   A) CUP 11-23: Conditional Use Permit for Virginia Electric and Power Company dba Dominion Energy Virginia to construct and operate a major public utility (230/500kV Electric Transmission "Unity" Substation) on tax parcel 059-0A-0-18A, located Southeast of 251 Dusty Lane, Kenbridge, VA 23944, consisting of 213.45-acres (of which 49.740-acres has been subdivided for purchase and utilization by Virginia Electric and Power Company) in an A-1 Agricultural zone.
8. Offices and Departments
   A) Lunenburg County School Board
   B) VA Department of Transportation
   C) Enterprise Zone Tax Incentives
   D) Radiocache Surplus Request
   E) Treasurer's Office—Surplus
   F) Sheriff's Office—Vacancy Savings
9. FY202-2025 Budget Discussion and Adoption
10. Meherrin Fireworks Permit
11. County Administration – Monthly Report
    A) DEQ Notice of Landfill Vertical Expansion
12. County Attorney – Monthly Report
13. Closed Session Items—(if necessary)
14. Other Business (per Board approval)
15. Adjournment

- Advance inquiries about agenda items can be directed to the County Administrator prior to the meeting via e-mail tgee@lunenburgva.gov or phone at 434-696-2142.
-It is the intention of the Lunenburg County Board of Supervisors to comply with the Americans with Disabilities Act. Should you need special accommodations, please contact the County Administrator's Office at 434-696-2142 prior to the meeting date.

-- Tracy M. Gee, County Administrator

Consent Agenda

A) Minutes – May 9, 2024 Meeting and May 23, 2024 Public Hearing
B) Warrants for Approval May 2024
C) Treasurer's Report – April 2024

LUNENBURG COUNTY BOARD OF SUPERVISORS
GENERAL DISTRICT COURTROOM
LUNENBURG COURTS BUILDING
LUNENBURG, VIRGINIA

DRAFT

Minutes of May 9, 2024 Meeting

The regular meeting of the Lunenburg County Board of Supervisors was held on Thursday, May 9, 2024 at 6:00 pm in the General District Courtroom, Lunenburg Courts Building, Lunenburg, Virginia. The following members were present: Supervisors T. Wayne Hoover, Alvester Edmonds, Greg Currin, Frank W. Bacon, Mike Hankins, Robert Zava, Edward Pennington, County Administrator Tracy M. Gee, Deputy County Administrator Nicole Clark, and County Attorney Frank Rennie.

Chairman Edmonds called the regular meeting of the Board of Supervisors to order.

Chairman Edmonds led the Pledge of Allegiance and gave the invocation.

Chairman Edmonds requested additions to the agenda from the Board and the public. There were none.

Chairman Edmonds called for any conflicts of interest from any board members. There were none.

Chairman Edmonds called for any citizens wishing to speak during the citizen comment period.

Mr. Mike Campbell of 10663 Plank Road, Kenbridge, VA requested to speak regarding a nuisance issue with a dog kennel on an adjoining property. He indicated that C.H. Hall operates a dog kennel on the property beside his, which is owned by Mr. Hall's mother, Vicky Hall. The kennel is less than 200 feet from his back porch and houses thirty to forty dogs. Mr. Campbell shared that the dogs bark all hours of the day and night and he and his family can barely hear each other inside the house. Mr. Campbell stated that he believes his neighbor should be required to have some sort of permit from the County to operate. He also believes Mr. Hall is operating as a breeder but has not gotten the proper permitting required. Mr. Campbell shared a video on his cell phone of the noise created by the dogs barking with the Board. He advised that he has contacted the Sheriff's Office, Animal Control and his Board of Supervisor representative. Mr. Campbell is asking the County to help him in any way possible. Chairman Edmonds commented that the kennel is likely in violation of the noise ordinance and if he is a breeder, he should have a conditional use permit. Chairman Edmonds suggested that Administrator Gee and County Attorney Rennie research the issue and provide recommendations to the Board and advise Mr. Campbell.

Supervisor Hankins made motion, seconded by Supervisor Bacon, and unanimously approved, to accept the Consent Agenda to include the minutes of the April 11, 2024 Meeting, the Treasurer's March 2024 reports and the following Warrants for Approval:

April 2024:

Payroll: Direct Deposit	$ 192,617.72
Payroll Check #2045-48	$ 3,687.66
Payroll Taxes Federal:	$ 62,850.57
Payroll Taxes State:	$ 11,854.05
ACH Payroll Payments:	$ 46,512.44
ACH AP Payments:	$ 636.59
Accounts Payable: #84707-867	$ 617,406.19
Total:	$ 935,565.22

Ms. Jessica Nowlin provided the school report. She advised that the final ADM would be reported as 1,499.6. She shared that the recent pre-registration for kindergarten at both elementary schools went well. She noted that financial reports would be reviewed and approved by the School Board the following week and would be shared with the Board of Supervisors at the next meeting. Supervisor Hoover questioned if the School Board was actively searching

for a Finance Director. Mrs. Nowlin replied that she and Mr. Dalton Ashworth were currently serving in that capacity. Any future plans would be a School Board decision.

Mr. Kevin Smith of VDOT provided the monthly report. He shared that the construction project on Route 635 was upcoming soon and the project would require a road closure. Notice would be posted in advance of the closure. Mr. Smith advised that grass cutting on primary and secondary roads would begin in the next few weeks.

Administrator Gee shared a letter from Treasurer Wanda Barnes requesting a transfer from Comp Board vacancy savings in the amount of $8,070.25. Treasurer Barnes requests $2,000 be moved to postage and $6,075.25 to office supplies.

Supervisor Bacon made motion, seconded by Supervisor Pennington, and unanimously approved, to transfer Comp Board vacancy savings in the amount of $8,070.25 with $2,000 going to the Treasurer's Office postage line item and $6,075.25 to the Treasurer's Office office supplies line item.

Administrator Gee shared Change Order 5 from CTA Consultants regarding General Communications Consulting Services and outlining the billing rates for such services.

Consulting Agreement
Change Order 5
General Communications Consulting

Lunenburg County requests services and tasks associated with General Communications Consulting in addition to the Consulting Agreement between Lunenburg County and CTA Consultants dated April 30, 2020. The Consultant hereby agrees to provide such Services at the request of the Client upon agreement of services and payment stated in Exhibit A: Billing Rates.

IN WITNESS WHEREOF the Parties have duly affixed their signatures under hand and seal on this ____ day of March 2021.

_____ Tracy Gee, County Administrator

Lunenburg County, Virginia (Client)

Cheryl S. Giggetts — Cheryl S. Giggetts, Principal Consultant

CTA Consultants LLC

Lunenburg County, Virginia
Change Order 5: General Communications Consulting

EXHIBIT A : BILLING RATES

Category	Billing Rate
Principal Consultant / Project Manager	$180.00
RF Subject Matter Expert	$150.00
Sr. Communications Engineer	$140.00
911 Subject Matter Expert	$131.00
Deputy Project Manager	$130.00
Communications Engineer	$120.00
Jr. Communications Engineer	$100.00
Project Coordinator	$ 80.00

Supervisor Hoover made motion, seconded by Supervisor Bacon, and unanimously approved, to approve Change Order 5; General Communications Consulting and the Billing Rates outlined.

Ms. Patricia Harper-Tunley, who represents the County on the STEPS, Inc Board, reminded the Board of STEPS prior request of ARPA funds to support the initiative to construct a regional long-term housing facility for homelessness. They are requesting support from member counties to build a multi-unit complex. Their initial request was $50,000. They are now requesting $25,000 to support the initiative due to the Board's request to revisit prior usage by Lunenburg County. Ms. Harper-Tunley commented that, if supported, six housing units would be dedicated to Lunenburg residents. She requested the Board's consideration of the new request. Supervisor Hoover commented that this request is in line with usage and asked which other counties had agreed to participate. Ms. Harper-Tunley stated that Prince Edward has pledged funds and they are still working with other localities regarding the revised request. Supervisor Hoover asked if there would be a transportation component and who would be responsible for the maintenance and upkeep of the facility. Ms. Harper-Tunley replied that transportation would be provided to the facility. She advised that maintenance and upkeep would be supported by annual State and Federal grant funds. The initial investment is a one-time request to get the infrastructure in process.

Supervisor Hankins made motion, seconded by Supervisor Pennington, and unanimously approved, to provide $25,000 in ARPA funds to STEPS, Inc. to support their initiative to construct a long-term solution for homelessness.

Administrator Gee requested the Board consider increasing the debt service expense and appropriate for FY24 the amount of $506,600 to complete debt service for the Courthouse. She shared that by completing the debt service nine months early, the County will save $7,400 in interest. She said that remaining bonded funds from the Radio System project can be used towards the early payment in the amount of $139,510.22, plus interest accrued to a total of $224,089.51. She requested the Board authorize payment of debt service for the Courthouse in FY2024 to Benchmark Bank in the amount of $506,568.22 on May 10th and accept and appropriate use of bond funds in the amount of $224,089.51 toward debt expense. Supervisor Hoover advised that the Finance Committee fully supported the request and commended Administrator Gee on her forward-thinking in saving County funds.

Supervisor Hankins made motion, seconded by Supervisor Pennington, and unanimously approved, to authorize payment of debt service for the Courthouse in FY2024 to Benchmark Bank in the amount of $506,568.22 on May 10th and accept and appropriate use of bond funds in the amount of $224,089.51 toward debt expense.

Administrator Gee reviewed the proposed FY2024-2025 budget. She noted that increases are projected for both Real Estate and Personal Property tax revenue. Additionally, increases were projected in interest income, landfill host fees, and a 3% COLA increase from the Compensation Board for salaries. The proposal includes the use of $1.2 million in reserve funds. Administrator Gee listed several increases in expenses, to include increases in office expenses and postage, the cost of three elections, additional staff support for the Sheriff's Office and EMS, health insurance costs, utility increases, community partner requests, worker's compensation insurance, and school funding. Capital improvement expenses are increasing for the County facilities, as well as the cost to maintain aging equipment at Solid Waste sites. Administrator Gee noted that the State has yet to finalize their budget, so some figures remain unknown until they return to session on May 17th. Supervisor Hoover commented that the Finance Committee fully supports the proposal.

Supervisor Hoover made motion, seconded by Supervisor Zava, and unanimously approved, to advertise the proposed FY2024-2025 budget and hold a public hearing on May 23, 2024 at 6pm.

County Attorney Rennie provided an update on the opioid abatement settlement funds. He noted that initial amounts coming to the County were much smaller than expected. He added that they finally decided to pay out the remainder of the debt at one time. Lunenburg should receive another $10,000, bringing the total funds received to about $30,000. He commented that these funds were to be used to aid in the reduction of opioid addiction through health care providers, court services and educational purposes.

Administrator Gee provided her monthly report. She thanked Commissioner of the Revenue Liz Hamlett and Deputy Administrator Nicole Clark for their work with the Board of Equalization over the past few months. She advised the Commonwealth's Attorney Office has hired an Assistant Commonwealth's Attorney, who would start the first of July. Repairs to the tax building are on hold until after the June tax collection was completed, insurance adjustments are complete, and the rain leaks can be resolved. Administrator Gee advised that Director of Planning/Zoning Administrator Taylor King would be out on extended medical leave for her daughter's premature birth. She has spoken with previous Community Development Director Beverley Hawthorne and indicated she would be willing to serve as the Interim Planning Commission Clerk. Administrator Gee has also spoken with Building Official James Tuck about serving as the Interim Deputy Zoning Administrator in Mrs. King's absence. Mrs. King will continue to review and discuss any zoning requests with Mr. Tuck and prepare information for the Planning Commission.

Supervisor Pennington made motion, seconded by Supervisor Currin, and unanimously approved, to appoint Mrs. Beverley Hawthorne as the Interim Planning Commission Clerk.

Supervisor Zava made motion, seconded by Supervisor Bacon, and unanimously approved, to appoint Mr. James Tuck as the Interim Deputy Zoning Administrator.

Administrator Gee requested the Board hold a joint public hearing with the Planning Commission at the June meeting regarding the Dominion Energy Unity Substation Conditional Use Permit. The Board expressed consent to advertise as such.

Supervisor Hoover made motion, seconded by Supervisor Zava, and unanimously approved, to continue the meeting to May 23, 2024 at 6:00 p.m.

Tracy M. Gee, Clerk
County Administrator

Alvester L. Edmonds, Chairman
Board of Supervisors

LUNENBURG COUNTY BOARD OF SUPERVISORS
GENERAL DISTRICT COURTROOM
LUNENBURG COURTS BUILDING
LUNENBURG, VIRGINIA

DRAFT

Minutes of May 23, 2024 Public Hearing FY2024-2025 Budget

The continued meeting of the Lunenburg County Board of Supervisors was held on Thursday, May 23, 2024 at 6:00 p.m. in the General District Courtroom, Lunenburg Courts Building, Lunenburg, Virginia for the purpose of public hearing for the proposed FY2024-2025 County Budget. The following members were present: Supervisors Frank Bacon, Greg Currin, Alvester Edmonds, T. Wayne Hoover, Edward Pennington, Robert Zava, Mike Hankins, County Administrator Tracy M. Gee and Executive Assistant Gail Gregoric.

Chairman Edmonds called the continued meeting to order.

Supervisor Hoover spoke on behalf of the Finance Committee. He shared the following facts with the Board and the audience regarding the County funds provided to the school system.

- The Required Local Effort is for Standards of Quality mandated funds and the Required Local Match is for all budgeted programs.
- The School Board requested an increase of $1,120,918, based on Required Local Match, with an ADM of 1,500 and an additional $100,000 in contingency funds.
- The Board of Supervisors used the State-recommended ADM of 1,483 for Required Local Effort and proposed the School Board budget at $5,275,000, which is $176,567 short of Required Local Match.
- The School Board requested the Board of Supervisors allow the use of $313,715 in carryover funds to be placed in the School Construction Fund to assist with match.
- The updated recommended amount is 100% of the 1,483 ADM for Required Local Match made up of $640,643 in new local funds ($5,451,657 plus the carryover of $313,715 to equal $5,765,372).

Supervisor Hoover noted the following highlights in the proposed FY2024-2025 budget.

- Includes an early pay-off of debt, which saves $7,400 in increase.
- Added $40,000 for match and $103,000 in DCJS grant funds for two School Resource Officer positions.
- Includes a full year of support for the Sheriff's Department compensation and works toward 24-hour coverage.
- Adds $500,000 in new support for EMS, with $250,000 coming from General Fund reserve and $250,000 from a final use of ARPA funding.
- ARPA will be depleted in FY25.
- One-time solar siting agreement payments are being used to fund Emergency Services Capital, including $225,000 for fire apparatus.

Supervisor Hoover advised that Real Estate revenue is projected at $4 million, Personal Property is projected at $3 million and total school funding would be at $5,765,372. He added that three quarters of county taxes collected are going to school funding. He advised that in FY2025-2026, the County will not have savings from debt service to rollover or any ARPA funds. To maintain the same funding as the proposed 2024-2025 budget, the real estate tax rate would need to increase by eleven cents per hundred. The Finance Committee believes that not all tax payers would agree to such a large increase. Supervisor Hoover noted that Administrator Gee and the Finance Committee had worked many hours on the proposed budget.

Supervisor Pennington made motion, seconded by Supervisor Hankins and unanimously approved, to enter Public Hearing for the FY2024-25 Budget.

Administrator Gee directed the Board to the proposed FY2024-25 budget. She noted that the updated budget included taking $250,000 out of ARPA funds for EMS support. It also includes fund 250 $5,451,657 in funding for the school system, which is $640,000 over the current budget year amount. Landfill host fee revenues are increased to $650,000. She noted that $370,000 had been added to the total proposed budget from the advertised proposed budget, however, changes up to one percent of the total budget are allowed without having to readvertise and hold another public hearing. The updated proposed FY2024-2025 budget will be presented for a decision at the June meeting.

Chairman Edmonds asked if there was anyone from the public to speak. Administrator Gee read the Public Hearing Speaking Resolution for the record.

The following people spoke before the Board in favor of increasing funding to the school system:

Dawn Bacon, 2075 Bacon Fork Road, Kenbridge, VA 23944
Ricky Ramirez, 100 S. Commerce Street, Kenbridge, VA 23944
Geoff Seamster, 112 N. Grace Street, Kenbridge, VA 23944
Elveta Bridgeforth, 820 Dundas Road, Kenbridge, VA 23938
Micheal Bender, 316 E. 5th Avenue, Kenbridge, VA 23944
Patricia Harper-Tunley, Unity Road, Kenbridge, VA 23944
Lucy Hall, 11075 Plank Road, Kenbridge, VA 23944
Catherine Reid, 6373 Longview Drive, Kenbridge, VA 23944

The following people sent emails to the Board in favor of increasing funding to the school system:

Nikole M. Johnson, 247 County Club Road, Blackstone, VA 23824
Trudy Berry, 1662 Bethel Church Road, Green Bay, VA 23942
Kenbridge Town Mayor Wanda Morrison

Supervisor Hoover made motion, seconded by Supervisor Currin and unanimously approved, to exit Public Hearing for the proposed FY2024-25 Budget.

Supervisor Bacon made motion, seconded by Supervisor Pennington and unanimously approved, to adjourn.

Tracy M. Gee, Clerk
County Administrator

Alvester Edmonds, Chairman
Board of Supervisors

Lunenburg County Administration
11413 Courthouse Road
Lunenburg, VA 23952

Tracy M. Gee
County Administrator
tgee@lunenburgva.gov

Telephone: (434) 696-2142
Facsimile: (434) 696-1798

May 31, 2024

Lunenburg County Board of Supervisors
11413 Courthouse Road
Lunenburg, VA 23952

Honorable County Supervisors:

The following warrants, including accounting for all voided checks are listed according to Code of Virginia § 15.2-1243 and § 15.2-1244 requiring your approval:

May 2024:

Payroll: Direct Deposit	$ 199,318.44
Payroll Check #2049-52	$ 3,376.79
Payroll Taxes Federal:	$ 64,131.87
Payroll Taxes State:	$ 12,171.06
ACH Payroll Payments:	$ 48,334.19
AP WIRE Payments:	$ 160,821.25
Accounts Payable: #84868-992	$ 855,385.49
Total:	$ 1,343,539.09

Sincerely,

Tracy M. Gee
County Administrator

CHECK#	VEND#	VENDOR	CLASS	DATE	AMOUNT	DISCOUNT
84869	452	ABERNATHY, KEVIN	000	5/17/2024	242.88	.00
84870	1172	ACEWALL SCHOLARS	000	5/17/2024	1,500.00	.00
84871	283	ADAMS PATRICIA M	000	5/17/2024	619.36	.00
84872	1033	ALEXANDER RHONDA	000	5/17/2024	701.63	.00
84873	880	AMAZON CAPITAL SERVICES	000	5/17/2024	6,317.07	.00
84874	102	AMERICAN FEDERAL	000	5/17/2024	165.00	.00
84875	1091	BENCHMARK COM. BANK	000	5/17/2024	875.04	.00
84876	139	BENCHMARK COMMUNITY BANK	000	5/17/2024	6,611.88	.00
84877	1181	BERNHARDT JODI POWERS	000	5/17/2024	416.98	.00
84878	1051	BETTER CABLE SYSTEMS INC.	000	5/17/2024	3,132.00	.00
84879	1183	BLUE 360 MEDIA LLC	000	5/17/2024	1,951.43	.00
84880	8	BMS DIRECT,INC.	000	5/17/2024	2,914.23	.00
84881	10	BRIGHTSPEED	000	5/17/2024	741.00	.00
84882	371	BUG BUSTERS PEST CONT,INC	000	5/17/2024	248.00	.00
84883	746	CANON SOLUTIONS AMERICA	000	5/17/2024	126.62	.00
84884	551	CAS SEVERN, INC.	000	5/17/2024	113.00	.00
84885	1117	CCATT LLC	000	5/17/2024	824.00	.00
84886	785	CHAMPION MIKE	000	5/17/2024	612.77	.00
84887	291	CHUCK'S AUTO TRUCK REPAIR	000	5/17/2024	192.50	.00
84888	293	COMMISSIONER OF THE	000	5/17/2024	35.00	.00
84889	276	COR ASSOCIATION OF VA	000	5/17/2024	275.00	.00
84890	58	COWAN GATES PC	000	5/17/2024	5,828.30	.00
84891	124	CROSSROADS COMMUNITY	000	5/17/2024	14,409.25	.00
84892	446	CURRIN GREG	000	5/17/2024	37.52	.00
84893	119	DATACARE, INC.	000	5/17/2024	5,213.76	.00
84894	46	DOMINION ENERGY VIRGINIA	000	5/17/2024	5,839.67	.00
84895	642	FARMVILLE NEWSMEDIA	000	5/17/2024	453.25	.00
84896	690	FIELDS, JOSH DBA	000	5/17/2024	125.00	.00
84897	287	FIRE & SAFETY	000	5/17/2024	799.25	.00
84898	1180	FRANCOS ELECTRICAL SERVIC	000	5/17/2024	2,208.46	.00
84899	66	FUEL FREEDOM CARD	000	5/17/2024	4,623.47	.00
84900	467	HAMLETT ELIZABETH Y.	000	5/17/2024	335.02	.00
84901	1045	HANKINS MIKE	000	5/17/2024	52.26	.00
84902	150	HAWTHORNE BEVERLEY P	000	5/17/2024	484.86	.00
84903	807	HHM PORTA TOILET LLC	000	5/17/2024	450.00	.00
84904	294	ID NETWORKS	000	5/17/2024	2,424.00	.00
84905	1126	KEMPSVILLE CENTER	000	5/17/2024	2,970.00	.00
84906	77	KENBRIDGE SUPPLY COMPANY	000	5/17/2024	19.98	.00
84907	75	KENBRIDGE TIRE	000	5/17/2024	5,102.03	.00
84908	286	KEY OFFICE SUPPLY INC	000	5/17/2024	717.79	.00
84909	261	KIES, INC.	000	5/17/2024	1,160.00	.00
84910	996	KINEX TELECOM,INC.	000	5/17/2024	80.74	.00
84911	80	KUSTOM SIGNALS INC	000	5/17/2024	18,620.00	.00
84912	254	LEWIS WELDING &	000	5/17/2024	3,481.17	.00
84913	1119	LIFEPUSH,LLC	000	5/17/2024	9,150.00	.00
84914	407	L3HARRIS TECHNOLOGIES,INC	000	5/17/2024	12,587.40	.00
84915	1015	MOORE CHARLES OR	000	5/17/2024	330.00	.00
84916	1042	NEWTON RODNEY C.	000	5/17/2024	500.00	.00
84917	148	NOTTOWAY PUBLISHING	000	5/17/2024	225.75	.00
84918	1074	NOWLIN'S TOWING &	000	5/17/2024	150.00	.00
84919	1164	PAVION CORP	000	5/17/2024	2,174.28	.00
84920	360	PEGRAM, PHILLIP	000	5/17/2024	200.00	.00

CHECK#	VEND#	VENDOR	CLASS	DATE	AMOUNT	DISCOUNT
84921	94	PETTY CASH FUND	000	5/17/2024	8.73	.00
84922	96	PIEDMONT REGIONAL JUV.	000	5/17/2024	2,500.00	.00
84923	136	PITNEY BOWES BANK INC.	000	5/17/2024	800.00	.00
84924	1071	PRECISE DIGITAL	000	5/17/2024	700.00	.00
84925	466	PRINTELECT	000	5/17/2024	2,391.73	.00
84926	1099	RAHMA 2, LLC	000	5/17/2024	200.00	.00
84927	1001	RIVERMONT SCHOOLS	000	5/17/2024	57,898.00	.00
84928	506	ROCKY TOP LOCKSMITH &	000	5/17/2024	177.50	.00
84929	104	SECURE HAVEN	000	5/17/2024	8,370.00	.00
84930	1060	SHI INTERNATIONAL CORP	000	5/17/2024	512.95	.00
84931	511	SOUTHERN OFFICE MACHINES	000	5/17/2024	43.96	.00
84932	135	SOUTHSIDE ELECTRIC COOP,I	000	5/17/2024	995.12	.00
84933	107	STANDBY SYSTEMS INC	000	5/17/2024	3,229.18	.00
84934	337	STEPS, INC.	000	5/17/2024	128.40	.00
84935	530	TIMMONS GROUP	000	5/17/2024	325.00	.00
84936	209	TK ELEVATOR CORP	000	5/17/2024	5,158.48	.00
84937	899	TMDE CALIBRATION LABS, IN	000	5/17/2024	150.00	.00
84938	322	TOWN OF KENBRIDGE	000	5/17/2024	430.00	.00
84939	768	TOWNES TUANA	000	5/17/2024	71.65	.00
84940	172	US POSTAL	000	5/17/2024	272.00	.00
84941	113	VERIZON	000	5/17/2024	54.06	.00
84942	176	VIRGINIA TECH	000	5/17/2024	12,281.01	.00
84943	900	WAY LARRY	000	5/17/2024	400.00	.00
84944	173	WILCO JANITORIAL SUPPLIES	000	5/17/2024	739.22	.00
84945	933	WRIGHT AUTO SUPPLY,INC.	000	5/17/2024	89.98	.00
		CLASS TOTAL			227,295.57	.00
		ACH TOTAL			.00	
		CHECK TOTAL			227,295.57	
		EPY TOTAL			.00	
		FINAL TOTAL			227,295.57	.00

I HEREBY APPROVE THIS REGISTER FOR PAYMENT WITH EXCEPTIONS LISTED BELOW OR PREVIOUSLY DOCUMENTED.
THE TOTAL 227,295.57- EQUALS THE WEEKLY LOG SHEET TOTALS AS ADJUSTED.

5-20-24
DATE

COUNTY ADMINISTRATOR

5-20-24

Wire - USB DD-6-1-24

VEND. NO.	VENDOR NAME	* = DUP INVOICE NO.	G/L ACCT. NO.	INVOICE DATE	DUE DATE	GROSS AMOUNT	DESC /CLS	PO. NO.	SEQ. NO.
000692	BENCHMARK WIRING ACCOUNT	USB/2011-2/0624 1099-N	4420-095310-9100- - Debt Service School	5/10/2024 ACH DEBIT	5/17/2024	44625.00	USB/SCHL BD/DD0 000		1700
	INVOICE TOTAL	USB/2011-2/0624				44625.00	.00	44625.00	
001181	BERNHARDT JODI POWERS	APRIL 2024 1099-N	4132-012320-1711- - Board of Equalization Wages	5/10/2024	5/17/2024	416.98	BOE STIPEND 000		350
	INVOICE TOTAL	APRIL 2024				416.98	.00	416.98	
001051	BETTER CABLE SYSTEMS INC.	24LUNEBRAGG 1099-N	4280-053700-9010- - CARES Capital Improvements	1/23/2024	5/17/2024	3132.00	911 BRAGG & OLD 000		2010
	INVOICE TOTAL	24LUNEBRAGG				3132.00	.00	3132.00	
001183	BLUE 360 MEDIA LLC	2404228553 1099-N	4100-022100-6001- - Office Supplies	4/04/2024	5/17/2024	1951.43	LAW BOOKS 000		1970
	INVOICE TOTAL	2404228553				1951.43	.00	1951.43	
000008	BMS DIRECT,INC.	205469 1099-N	4100-012410-5210- - Postage	4/30/2024	5/17/2024	1124.61	1ST HALF/PP 202 000		220
	INVOICE TOTAL	205469				1124.61	.00	1124.61	
000008	BMS DIRECT,INC.	205470 1099-N	4100-012410-5210- - Postage	4/30/2024	5/17/2024	1789.62	1ST HALF RE 202 000		230
	INVOICE TOTAL	205470				1789.62	.00	1789.62	
000010	BRIGHTSPEED	3294/APR'24 1099-N	4100-031200-5230- - Telephone	5/03/2024	5/17/2024	56.07	309573294 SHERI 000		820
000010	BRIGHTSPEED	3294/APR'24 1099-N	4215-031400-5230- - Telephone	5/03/2024	5/17/2024	576.48	309573294 000		830
	INVOICE TOTAL	3294/APR'24				632.55	.00	632.55	
000010	BRIGHTSPEED	6005/APR24 1099-N	4100-035100-5230- - Telephone	4/30/2024	5/17/2024	108.45	6005/APR'24 000		750
	INVOICE TOTAL	6005/APR24				108.45	.00	108.45	
000371	BUG BUSTERS PEST CONT,INC	965838 1099-N	4100-043200-3310- - Repairs & Maintenance	5/03/2024	5/17/2024	248.00	CH COMPLEX-MAY 000		70
	INVOICE TOTAL	965838				248.00	.00	248.00	
000746	CANON SOLUTIONS AMERICA	4040810372 1099-N	4100-021700-3320- - Maintenance Contract	4/30/2024	5/17/2024	70.86	4040810372 000		1030
	INVOICE TOTAL	4040810372				70.86	.00	70.86	
000746	CANON SOLUTIONS AMERICA	4040810373 1099-N	4100-021700-3320- - Maintenance Contract	4/30/2024	5/17/2024	55.76	4040810373 000		1020
	INVOICE TOTAL	4040810373				55.76	.00	55.76	
000551	CAS SEVERN, INC.	445092 1099-N	4100-012510-4100- - Data Processing Expenses	4/30/2024	5/17/2024	113.00	BAI SYS ASSISTA 000		30
	INVOICE TOTAL	445092				113.00	.00	113.00	
001117	CCATT LLC	#858266/JUNE'24 1099-N	4215-031400-8209- - Capital Lease/Outlay Equip	5/10/2024	5/17/2024	824.00	TOWER LEASE PAY 000		130
	INVOICE TOTAL	#858266/JUNE'24				824.00	.00	824.00	

5-20-24

5-20-24

Approved
Charles L. Edmonds

Wire - USB DD-6-1-24

AP040 5/19/2024 LUNENBURG COUNTY ACCOUNTS PAYABLE EDIT COMPANY #-001 BATCH#- 673 PAGE 2

ACCOUNTING PERIOD - 2024/05

VEND. NO.	VENDOR NAME	* = DUP INVOICE NO.	G/L ACCT. NO.	INVOICE DATE	DUE DATE	GROSS AMOUNT	DESC /CLS	PO. NO.	SEQ. NO.
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-034000-5230- - - Telephone	5/01/2024	5/17/2024	45.31	7107 MAY 2024 000		1190
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-035100-5230- - - Telephone	5/01/2024	5/17/2024	90.62	7107 MAY 2024 000		1200
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-012100-5500- - - Travel	5/01/2024	5/17/2024	400.00	7107 MAY 2024 000		1210
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-034000-6001- - - Office Supplies	5/01/2024	5/17/2024	172.34	7107 MAY 2024 000		1220
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4132-012320-5100- - - Board of Equalization Travel	5/01/2024	5/17/2024	92.14	7107 MAY 2024 000		1230
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-012310-6001- - - Office Supplies	5/01/2024	5/17/2024	95.00	7107 MAY 2024 000		1240
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-012310-5230- - - Telephone	5/01/2024	5/17/2024	73.71	7107 MAY 2024 000		1250
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-012410-5230- - - Telephone	5/01/2024	5/17/2024	73.71	7107 MAY 2024 000		1260
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	100-000200-0620- - - HD/DSS Liability	5/01/2024	5/17/2024	98.70	7107 MAY 2024 000		1270
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-012100-5230- - - Telephone	5/01/2024	5/17/2024	73.71	7107 MAY 2024 000		1280
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-031200-5230- - - Telephone	5/01/2024	5/17/2024	134.92	7107 MAY 2024 000		1290
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	100-000200-0620- - - HD/DSS Liability	5/01/2024	5/17/2024	65.80	7107 MAY 2024 000		1300
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-021700-5230- - - Telephone	5/01/2024	5/17/2024	40.81	7107 MAY 2024 000		1310
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-021100-5230- - - Telephone	5/01/2024	5/17/2024	40.81	7107 MAY 2024 000		1320
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-021200-5230- - - Telephone	5/01/2024	5/17/2024	40.81	7107 MAY 2024 000		1330
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-021600-5230- - - Telephone	5/01/2024	5/17/2024	65.80	7107 MAY 2024 000		1340
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-013200-5230- - - Telephone	5/01/2024	5/17/2024	32.90	7107 MAY 2024 000		1350
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-022100-5230- - - Telephone	5/01/2024	5/17/2024	28.32	7107 MAY 2024 000		1360
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-021910-6001- - - Office Supplies	5/01/2024	5/17/2024	20.40	7107 MAY 2024 000		1370
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-021300-5230- - - Telephone	5/01/2024	5/17/2024	20.41	7107 MAY 2024 000		1380
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4221-040740-5230- - - Telephone	5/01/2024	5/17/2024	48.42	7107 MAY 2024 000		1390
000139	BENCHMARK COMMUNITY BANK	7107 MAY 2024 1099-N	4100-012510-4100- - - Data Processing Expenses	5/01/2024	5/17/2024	199.35	7107 MAY 2024 000		1400
	INVOICE TOTAL	7107 MAY 2024				6611.88	.00	6611.88	
000692	BENCHMARK WIRING ACCOUNT	USB/2010/JUNE24 1099-N	4420-095310-9100- - - Debt Service School	5/10/2024 ACH DEBIT	5/17/2024	85000.00	US BANK/SCHOOL 000		1680
000692	BENCHMARK WIRING ACCOUNT	USB/2010/JUNE24 1099-N	4420-095310-9100- - - Debt Service School	5/10/2024 ACH DEBIT	5/17/2024	31196.25	US BANK/SCHOOL 000		1690
	INVOICE TOTAL	USB/2010/JUNE24				116196.25	.00	116196.25	

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5-20-24 [illegible signature]

CHECK#	VEND#	VENDOR	CLASS	DATE	AMOUNT	DISCOUNT
84946	1182	A.B. HAIR CARPETS,INC.	000	5/31/2024	2,368.25	.00
84947	179	AFLAC	000	5/31/2024	1,452.99	.00
84948	711	ALLSTATE BENEFITS	000	5/31/2024	262.28	.00
84949	177	ANTHEM BCBS	000	5/31/2024	36,096.00	.00
84950	1140	AT&T MOBILITY (2ND-ADMI	000	5/31/2024	76.48	.00
84951	134	BLACKSTONE AREA BUS SYSTE	000	5/31/2024	593.25	.00
84952	10	BRIGHTSPEED	000	5/31/2024	59.96	.00
84953	999999	CITIZENS BANK & TRUST	000	5/31/2024	43.77	.00
84954	155	COFFEES CUSTOM EMBROIDERY	000	5/31/2024	126.36	.00
84955	496	CONCISE	000	5/31/2024	232.00	.00
84956	124	CROSSROADS COMMUNITY	000	5/31/2024	2,336.55	.00
84957	1144	CRYSTAL SPRINGS	000	5/31/2024	324.56	.00
84958	119	DATACARE, INC.	000	5/31/2024	3,204.75	.00
84959	191	DEARBORN NATIONAL LIFE	000	5/31/2024	184.59	.00
84960	46	DOMINION ENERGY VIRGINIA	000	5/31/2024	4,478.18	.00
84961	1162	ELK HILL FARM INC.	000	5/31/2024	12,690.00	.00
84962	527	ELLIOTT D. RAY	000	5/31/2024	231.82	.00
84963	30	GRAFTON SCHOOL INC	000	5/31/2024	8,054.45	.00
84964	865	GRANITE TELECOMMUNICATION	000	5/31/2024	674.96	.00
84965	1045	HANKINS MIKE	000	5/31/2024	184.25	.00
84966	751	HEALTH EQUITY	000	5/31/2024	53.10	.00
84967	294	ID NETWORKS	000	5/31/2024	5,000.00	.00
84968	1084	IRVIN'S WELL DRILLING, IN	000	5/31/2024	420.00	.00
84969	77	KENBRIDGE SUPPLY COMPANY	000	5/31/2024	20.29	.00
84970	286	KEY OFFICE SUPPLY INC	000	5/31/2024	51.64	.00
84971	651	LEGALSHIELD	000	5/31/2024	18.95	.00
84972	254	LEWIS WELDING &	000	5/31/2024	919.00	.00
84973	1119	LIFEPUSH,LLC	000	5/31/2024	675.00	.00
84974	1066	MECKLENBURG COUNTY TREASU	000	5/31/2024	155.08	.00
84975	649	MECKLENBURG ELECTRIC	000	5/31/2024	360.61	.00
84976	827	MINNESOTA LIFE INSURANCE	000	5/31/2024	110.60	.00
84977	999999	MORAN JEFF	000	5/31/2024	95.00	.00
84978	1185	NATURE VETERINARY CENTER	000	5/31/2024	103.12	.00
84979	138	PITNEY BOWES	000	5/31/2024	429.91	.00
84980	136	PITNEY BOWES BANK INC.	000	5/31/2024	3,000.00	.00
84981	1184	RICHARDS DICKIE	000	5/31/2024	154.10	.00
84982	221	ROBINSON,FARMER,COX ASSOC	000	5/31/2024	5,500.00	.00
84983	1031	SAVE OUR FUTURE INC.	000	5/31/2024	6,362.25	.00
84984	104	SECURE HAVEN	000	5/31/2024	15,930.00	.00
84985	511	SOUTHERN OFFICE MACHINES	000	5/31/2024	48.37	.00
84986	1186	SOUTHSIDE PLANNING DISTRI	000	5/31/2024	2,400.00	.00
84987	337	STEPS, INC.	000	5/31/2024	26.75	.00
84988	182	TREASURER OF VIRGINIA	000	5/31/2024	761.25	.00
84989	755	TREASURER OF VIRGINIA	000	5/31/2024	346.00	.00
84990	507	VACORP	000	5/31/2024	320.84	.00
84991	183	VALIC	000	5/31/2024	3,760.39	.00
84992	627	VERIZON WIRELESS	000	5/31/2024	824.00	.00
		CLASS TOTAL			121,521.70	.00
		ACH TOTAL			.00	
		CHECK TOTAL			121,521.70	
		EPY TOTAL			.00	
		FINAL TOTAL			121,521.70	.00

I HEREBY APPROVE THIS REGISTER FOR PAYMENT WITH EXCEPTIONS LISTED BELOW OR PREVIOUSLY DOCUMENTED.

(Orer)

THE TOTAL 121,521.70- EQUALS THE WEEKLY LOG SHEET TOTALS AS ADJUSTED.

5-31-24
DATE

Dragon Lee
COUNTY ADMINISTRATOR

5-31-24

Alberta L. Edmonds

CHECK#	VEND#	VENDOR	CLASS	DATE	AMOUNT	DISCOUNT
84868	999999	BENCHMARK COMMUNITY BANK	000	5/10/2024	506,568.22	.00
		CLASS TOTAL			506,568.22	.00
		ACH TOTAL			.00	
		CHECK TOTAL			506,568.22	
		EPY TOTAL			.00	
		FINAL TOTAL			506,568.22	.00

I HEREBY APPROVE THIS REGISTER FOR PAYMENT WITH EXCEPTIONS LISTED BELOW OR PREVIOUSLY DOCUMENTED.
THE TOTAL 506,568.22- EQUALS THE WEEKLY LOG SHEET TOTALS AS ADJUSTED.

5-10-24
DATE

Ora Sm Lee
COUNTY ADMINISTRATOR

5-10-24

Alberta B. Edmonds

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	PREVIOUS BALANCE	DEBIT	CREDIT	ENDING BALANCE
	** Treasurer Accountability **				
	** Assets **				
100-0001	Cash in Office	2,000.00			2,000.00
100-0010	Petty Cash	400.00			400.00
100-0100	Benchmark Checking	11,961,079.47	2,858,753.49	3,240,030.94-	11,579,802.02
100-0102	Caprin Investment - US Bank	1,257,756.68	567.53		1,258,324.21
100-0135	Benchmark-Landfill Mitigation	481,187.84	1,212.24		482,400.08
100-0355	SNAP Account - QSCB Trane				
100-0420	SNAP Account - VPSA Series 2020B				
100-1252	Benchmark - School Food	523,460.75	25,777.01		549,237.76
100-1253	Benchmark - School Textbook				
100-1355	SNAP Account - CHS Addition				
100-1705	Benchmark - IDA	461,560.76	56.75		461,617.51
100-1800	US Bank Series 2021C VPFP Unspent	312,631.73	1,457.78		314,089.51
	** Assets **	15,000,077.23	2,887,824.80	3,240,030.94-	14,647,871.09
	TOTAL ASSETS	15,000,077.23	2,887,824.80	3,240,030.94-	14,647,871.09
	** Cash Balances **				
300-0100	General Fund Cash Balance	8,557,255.82-	1,058,607.60	813,565.30-	8,312,213.52-
300-0132	Reassessment Fund Cash Balance	28,786.74	3,444.80	32,231.54-	
300-0135	Solid Waste Mgmt Cash Balance	509,389.43-	28,766.68	16,295.83-	496,918.58-
300-0136	S/W Construction Cash Balance				
300-0137	Landfill Sites Cash Balance	381,808.77-	1,955.26		379,853.51-
300-0213	Law Library Cash Balance	25,996.34-		109.30-	26,105.64-
300-0214	Asset Forfeiture Cash Balance	37,874.62-		4.73-	37,879.35-
300-0215	E911 Cash Balance	134,837.76-	24,036.36	15,768.28-	126,569.68-
300-0220	Cell Tower Cash Balance	25,914.30-			25,914.30-
300-0221	Airport Cash Balance	71,942.76	20,262.24		92,205.00
300-0225	Economic Development Cash Balance	979,819.32-	200.00		979,619.32-
300-0226	Economic Dev Grants Cash Balance	52,958.48-	1,500.00		51,458.48-
300-0250	School Cash Balance		2,165,144.71	2,165,144.71-	
300-0252	School Food Cash Balance	523,460.75-		25,777.01-	549,237.76-
300-0253	School Textbook Cash Balance	645,620.09-		12,937.12-	658,557.21-
300-0260	VPA Cash Balance		144,442.66	144,442.66-	
300-0262	CSA Cash Balance		115,052.55	115,052.55-	
300-0280	CARES Act Cash Balance	690,597.78-	4,904.61	170.83-	685,864.00-
300-0316	Fire/Rescue Cash Balance	526,247.02-	70,059.26		456,187.76-
300-0317	Project Lifesaver Cash Balance	1,761.83-		250.00-	2,011.83-
300-0319	Voting Machine Cash Balance	4,818.59-			4,818.59-
300-0320	Capital Outlay Cash Balance	1,538,968.05-	57,190.80	1,457.78-	1,483,235.03-
300-0355	School Construction Cash Balance				
300-0420	Debt Service Cash Balance				
300-0701	Special Welfare Cash Balance	1,917.02-	489.00	586.00-	2,014.02-
300-0705	IDA Cash Balance	461,560.76-		56.75-	461,617.51-
300-0715	Commonwealth Current Credit Accoun		16,905.10	16,905.10-	
	** Cash Balances **	15,000,077.23-	3,712,961.63	3,360,755.49-	14,647,871.09-
	TOTAL PRIOR YR FUND BALANCE	15,000,077.23-	3,712,961.63	3,360,755.49-	14,647,871.09-
	TOTAL REVENUE				
	TOTAL EXPENDITURE				
	TOTAL CURRENT FUND BALANCE				

LUNENBURG COUNTY
REVENUE SUMMARY
7/01/2023 - 4/30/2024

TIME 10:29

ACCT#	DESCRIPTION	BUDGET AMOUNT	APPR. AMOUNT	CURRENT AMOUNT	Y-T-D AMOUNT		BALANCE	% UNCOLLECTED
FUND #-100	** General Fund Revenue **							
11011	** RE Taxes **	3,700,000.00	3,700,000.00	127,838.90	1,933,988.45		1,766,011.55	47.73
11020	** Public Service **	250,000.00	250,000.00	162.75-	90,165.77		159,834.23	63.93
11030	** Personal Property **	2,974,000.00	2,974,000.00	102,745.04	1,781,136.03		1,192,863.97	40.10
11040	** Machinery & Tools **	285,000.00	285,000.00	645.84	183,578.33		101,421.67	35.58
11050	** Merchant's Capital (MR) **	80,000.00	80,000.00	167.64	73,883.14		6,116.86	7.64
11060	** Penalties & Interest **	100,000.00	100,000.00	8,021.67	119,230.79		19,230.79-	19.23-
12010	** Local Sales & Use Taxes **	530,000.00	530,000.00	52,906.96	448,145.02		81,854.98	15.44
12020	** Consumer Utility Taxes **	20,000.00	20,000.00	1,968.92	18,166.72		1,833.28	9.16
12070	** Taxes on Recordation & Wills **	70,000.00	70,000.00	17,390.36	85,417.98		15,417.98-	22.02-
13010	** Animal Licenses **	6,000.00	6,000.00	880.00	4,990.00		1,010.00	16.83
13020	** Animal Fines & Kennel Fees **	5,000.00	5,000.00	1,190.00	3,929.75		1,070.25	21.40
13030	** Permits & Other Licenses **	148,000.00	148,000.00	4,729.67	46,593.82		101,406.18	68.51
13033	** Local Landfill Revenue **	525,000.00	525,000.00	222,427.11	533,840.61		8,840.61-	1.68-
14010	** Fines & Forfeitures **	25,000.00	25,000.00	3,905.89	39,322.09		14,322.09-	57.28-
14040	** Processing Fees **	500.00	500.00	67.21	666.53		166.53-	33.30-
15010	** Revenue From Use of Money **	22,000.00	22,000.00	36,614.69	353,107.19		331,107.19-	505.03-
15020	** Revenue From Use of Property **	31,700.00	31,700.00	874.79	25,674.54		6,025.46	19.00
16010	** Court Costs **	2,800.00	2,800.00	204.72	2,693.33		106.67	3.80
16020	** Charges Commonwealth Attorney *	800.00	800.00	59.43	838.83		38.83-	4.85-
18030	** Refunds **	.00	.00	701.63	15,299.16		15,299.16-	100.00-
18990	** Miscellaneous Revenue **	30,000.00	30,000.00	34,965.33	97,029.99		67,029.99-	223.43-
22010	** Non-Categorical Aid **	1,083,500.00	1,083,500.00	179.08	1,034,800.27		48,699.73	4.49
23010	** Commonwealth's Attorney **	320,000.00	320,000.00	18,513.32	198,776.82		121,223.18	37.88
23020	** Sheriff **	920,000.00	920,000.00	80,586.87	681,901.98		238,098.02	25.88
23030	** Commissioner of Revenue **	126,000.00	126,000.00	12,261.97	96,345.62		29,654.38	23.53
23040	** Treasurer **	122,000.00	122,000.00	9,542.49	86,829.07		35,170.93	28.82
23060	** Registrar **	65,000.00	65,000.00	.00	.00		65,000.00	100.00
23070	** Clerk of Circuit Court **	258,000.00	423,284.00	82,350.72	307,937.18		115,346.82	27.25
24010	** Public Safety **	175,800.00	175,800.00	7,630.74	95,191.83		80,608.17	45.85
24020	** Fire and Rescue Services **	48,000.00	48,000.00	.00	40,927.00		7,073.00	14.73
33010	** Public Safety **	386,200.00	386,200.00	.00	413,322.94		27,122.94-	7.02-
41050	** Transfers In **	313,715.00	313,715.00	.00	.00		313,715.00	100.00
49999	** Use of Fund Balance **	1,722,634.00	1,722,634.00	.00	.00		1,722,634.00	100.00
	--FUND TOTAL--	14,346,649.00	14,511,933.00	829,208.24	8,813,730.78		5,698,202.22	39.26
FUND #-132	** Reassessment Revenue **							
41050	** Transfers In **	280,000.00	280,000.00	32,231.54	167,154.78		112,845.22	40.30
	--FUND TOTAL--	280,000.00	280,000.00	32,231.54	167,154.78		112,845.22	40.30
FUND #-135	** S/W Mgmt Revenue **							
12020	** Solid Waste Mgmt **	180,000.00	180,000.00	15,083.59	135,535.95		44,464.05	24.70
24030	** Public Works **	13,000.00	13,000.00	.00	28,903.79		15,903.79-	122.33-
41050	** Transfers In **	119,300.00	119,300.00	.00	.00		119,300.00	100.00
	--FUND TOTAL--	312,300.00	312,300.00	15,083.59	164,439.74		147,860.26	47.34

ACCT#	DESCRIPTION	BUDGET AMOUNT	APPR. AMOUNT	CURRENT AMOUNT	Y-T-D AMOUNT		BALANCE	% UNCOLLECTED
FUND #-137	** Landfill Sites Revenue **							
41050	** Transfers In **	114,000.00	114,000.00	.00	.00		114,000.00	100.00
	--FUND TOTAL--	114,000.00	114,000.00	.00	.00		114,000.00	100.00
FUND #-213	** Law Library Revenue **							
16010	** Court Costs **	1,000.00	1,000.00	109.30	668.30		331.70	33.17
	--FUND TOTAL--	1,000.00	1,000.00	109.30	668.30		331.70	33.17
FUND #-214	** Asset Forfeiture Revenue **							
15010	** Interest **	.00	.00	4.73	47.58		47.58-	100.00-
24010	** Asset Forfeiture - State **	.00	.00	.00	1,205.90		1,205.90-	100.00-
	--FUND TOTAL--	.00	.00	4.73	1,253.48		1,253.48-	100.00-
FUND #-215	** E911 Fund Revenue **							
22013	** Communications Tax **	193,000.00	193,000.00	15,768.28	125,443.65		67,556.35	35.00
41050	** Transfers In **	190,000.00	190,000.00	.00	.00		190,000.00	100.00
	--FUND TOTAL--	383,000.00	383,000.00	15,768.28	125,443.65		257,556.35	67.24
FUND #-221	** Airport Fund Revenue **							
15020	** Revenue from Use of Property **	2,600.00	2,600.00	.00	2,911.78		311.78-	11.99-
18990	** Miscellaneous Revenue **	25,000.00	25,000.00	.00	.00		25,000.00	100.00
24090	** Airport Grant **	872,700.00	872,700.00	.00	863,556.46		9,143.54	1.04
41050	** Transfers In **	77,100.00	77,100.00	.00	77,100.00		.00	.00
	--FUND TOTAL--	977,400.00	977,400.00	.00	943,568.24		33,831.76	3.46
FUND #-225	** Econ Dev Revenue **							
18990	** Local Revenue **	1,573,000.00	1,573,000.00	.00	1,176,997.36		396,002.64	25.17
	--FUND TOTAL--	1,573,000.00	1,573,000.00	.00	1,176,997.36		396,002.64	25.17
FUND #-226	** Economic Dev Grants Fund Rev **							
24090	** Tobacco Grants **	.00	.00	.00	25,000.00		25,000.00-	100.00-
	--FUND TOTAL--	.00	.00	.00	25,000.00		25,000.00-	100.00-
FUND #-250	** School Fund Revenue **							
16180	** Charges for Education **	216,822.00	216,822.00	5,900.07	46,820.28		170,001.72	78.40

ACCT#	DESCRIPTION	BUDGET AMOUNT	APPR. AMOUNT	CURRENT AMOUNT	Y-T-D AMOUNT		BALANCE	% UNCOLLECTED
24100	** Education-State **	16,495,841.00	16,495,841.00	1,674,901.06	13,278,352.81		3,217,488.19	19.50
33080	** Education-Federal **	4,468,663.00	4,468,663.00	.00	719,084.86		3,749,578.14	83.90
41050	** Transfers In **	4,811,014.00	4,811,014.00	337,268.67	5,035,501.00		224,487.00-	4.66-
	--FUND TOTAL--	25,992,340.00	25,992,340.00	2,018,069.80	19,079,758.95		6,912,581.05	26.59
FUND #-252	** School Food Fund Revenue **							
15010	** Revenue from Use of Money **	.00	.00	1,319.05	10,994.93		10,994.93-	100.00-
16180	** Charges for Education **	.00	.00	4,215.31	74,271.58		74,271.58-	100.00-
24100	School Food State	.00	.00	1,881.60	17,034.79		17,034.79-	100.00-
33080	School Food Federal	.00	.00	145,193.31	1,030,543.29		1,030,543.29-	100.00-
	--FUND TOTAL--	.00	.00	152,609.27	1,132,844.59		1,132,844.59-	100.00-
FUND #-253	** School Textbook Fund Revenue **							
24020	** Education-State **	.00	.00	12,937.12	120,664.74		120,664.74-	100.00-
	--FUND TOTAL--	.00	.00	12,937.12	120,664.74		120,664.74-	100.00-
FUND #-260	** VPA Fund Revenue **							
16110	** Charges for Welfare/Soc Serv **	.00	.00	.00	574.18-		574.18	100.00-
24060	** Welfare & Social Serv-State **	588,000.00	588,000.00	43,569.92	397,403.45		190,596.55	32.41
33010	** Welfare & Social Serv - Fed **	800,000.00	800,000.00	64,027.85	598,689.98		201,310.02	25.16
41050	** Transfers In **	217,000.00	217,000.00	36,844.89	195,305.60		21,694.40	9.99
	--FUND TOTAL--	1,605,000.00	1,605,000.00	144,442.66	1,190,824.85		414,175.15	25.80
FUND #-262	** CSA Fund Revenue **							
16110	** CSA - Local **	.00	.00	.00	970.00		970.00-	100.00-
24060	** CSA - State **	908,000.00	908,000.00	82,646.13	316,800.40		591,199.60	65.11
41050	** Transfers In **	224,000.00	224,000.00	32,406.42	126,767.45		97,232.55	43.40
	--FUND TOTAL--	1,132,000.00	1,132,000.00	115,052.55	444,537.85		687,462.15	60.72
FUND #-280	** CARES-ARPA Fund Revenue **							
15010	Interest on Checking	.00	.00	170.83	2,201.41		2,201.41-	100.00-
33030	** CARES Act - Federal **	15,000.00	15,000.00	.00	.00		15,000.00	100.00
41050	** Transfers In **	1,127,000.00	1,127,000.00	.00	.00		1,127,000.00	100.00
	--FUND TOTAL--	1,142,000.00	1,142,000.00	170.83	2,201.41		1,139,798.59	99.80
FUND #-316	** Revenue Emerg Services Capital**							
18990	** Miscellaneous Revenue 316 **	50,000.00	50,000.00	.00	.00		50,000.00	100.00

ACCT#	DESCRIPTION	BUDGET AMOUNT	APPR. AMOUNT	CURRENT AMOUNT	Y-T-D AMOUNT	BALANCE	% UNCOLLECTED
41050	** Transfers In **	410,000.00	410,000.00	.00	.00	410,000.00	100.00
	--FUND TOTAL--	460,000.00	460,000.00	.00	.00	460,000.00	100.00
FUND #-317	** Project Lifesaver Revenue **						
18990	Project Lifesaver	800.00	800.00	250.00	1,050.00	250.00-	31.25-
	--FUND TOTAL--	800.00	800.00	250.00	1,050.00	250.00-	31.25-
FUND #-319	** Voting Machine Fund Revenue **						
41050	** Transfers In **	5,000.00	5,000.00	.00	.00	5,000.00	100.00
	--FUND TOTAL--	5,000.00	5,000.00	.00	.00	5,000.00	100.00
FUND #-320	** Capital Outlay Revenue **						
15010	** Interest Income Bond 2021C **	.00	.00	1,457.78	53,831.45	53,831.45-	100.00-
24100	** School CIP Funds **	.00	.00	.00	1,439,108.00	1,439,108.00-	100.00-
41010	** Bond Proceeds **	1,200,000.00	1,200,000.00	.00	.00	1,200,000.00	100.00
41050	** Transfers In **	1,827,823.00	1,827,823.00	.00	.00	1,827,823.00	100.00
	--FUND TOTAL--	3,027,823.00	3,027,823.00	1,457.78	1,492,939.45	1,534,883.55	50.69
FUND #-420	** Revenue Debt Service Fund **						
33080	** Education **	143,000.00	143,000.00	.00	71,921.35	71,078.65	49.70
41050	** Transfers In **	1,504,000.00	1,504,000.00	.00	1,014,323.44	489,676.56	32.55
	--FUND TOTAL--	1,647,000.00	1,647,000.00	.00	1,086,244.79	560,755.21	34.04
FUND #-701	** Special Welfare Revenue **						
18030	** Charges for Social Services **	.00	.00	586.00	5,053.00	5,053.00-	100.00-
	--FUND TOTAL--	.00	.00	586.00	5,053.00	5,053.00-	100.00-
FUND #-705	** IDA Revenue **						
15010	** Revenue from Use of Money **	.00	.00	56.75	564.98	564.98-	100.00-
	--FUND TOTAL--	.00	.00	56.75	564.98	564.98-	100.00-
FUND #-715	** Commonwealth Fund Revenue **						
18990	** Sheriff Fees **	.00	.00	612.10	13,477.75	13,477.75-	100.00-
24000	** Estimated Taxes **	.00	.00	13,088.00	48,540.00	48,540.00-	100.00-

LUNENBURG COUNTY
REVENUE SUMMARY
7/01/2023 - 4/30/2024

TIME 10:29

ACCT#	DESCRIPTION	BUDGET AMOUNT	APPR. AMOUNT	CURRENT AMOUNT	Y-T-D AMOUNT		BALANCE	% UNCOLLECTED
25000	** State Income Taxes **	.00	.00	3,205.00	4,931.00		4,931.00-	100.00-
	--FUND TOTAL--	.00	.00	16,905.10	66,948.75		66,948.75-	100.00-
	--FINAL TOTAL--	52,999,312.00	53,164,596.00	3,354,943.54	36,041,889.69		17,122,706.31	32.20

ACCT#	DESCRIPTION	BUDGET AMOUNT	APPR. AMOUNT	CURRENT AMOUNT	Y-T-D AMOUNT	ENCUMBRANCE AMOUNT	UNENCUMBERED BALANCE	% REMAINING
FUND #-100	** General Fund Expense **							
11100	** Board of Supervisors **	55,070.00	55,070.00	4,092.54	46,641.05	.00	8,428.95	15.30
12100	** County Administration **	325,000.00	325,000.00	27,059.89	267,592.58	.00	57,407.42	17.66
12210	** Professional Services **	130,000.00	130,000.00	6,389.50	146,501.74	.00	16,501.74-	12.69-
12310	** Commissioner of Revenue **	254,100.00	254,100.00	22,016.99	221,988.54	.00	32,111.46	12.63
12410	** Treasurer **	271,000.00	271,000.00	20,576.52	227,146.07	.00	43,853.93	16.18
12510	** Data Processing **	82,000.00	82,000.00	3,292.22	135,205.60	.00	53,205.60-	64.88-
13100	** Electoral Board **	72,100.00	72,100.00	2,352.92	93,432.92	.00	21,332.92-	29.58-
13200	** Registrar **	157,750.00	157,750.00	13,889.16	152,066.69	.00	5,683.31	3.60
21100	** Circuit Court **	12,000.00	12,000.00	165.50	835.58	.00	11,164.42	93.03
21200	** General District Court **	2,500.00	2,500.00	286.51	2,018.02	.00	481.98	19.27
21300	** Magistrate **	1,550.00	1,550.00	150.36	1,215.16	.00	334.84	21.60
21600	** Juvenile/Domestic Court **	108,550.00	108,550.00	8,320.36	86,694.61	.00	21,855.39	20.13
21700	** Clerk of Circuit Court **	361,000.00	361,000.00	29,464.02	303,570.09	.00	57,429.91	15.90
21710	** Library of VA Grant **	.00	54,558.00	.00	54,558.00	.00	.00	.00
21752	** Clerk Technology Trust Funds **	.00	110,726.00	14,180.80	81,497.16	.00	29,228.84	26.39
21800	** Courthouse Security **	21,600.00	21,600.00	2,354.64	15,861.14	.00	5,738.86	26.56
21910	** Victim/Witness Coordinator **	69,350.00	69,350.00	6,549.11	58,842.35	.00	10,507.65	15.15
22100	** Commonwealth Attorney **	406,600.00	406,600.00	23,092.36	264,668.95	.00	141,931.05	34.90
31200	** Sheriff & Law Enforcement **	1,986,800.00	1,986,800.00	142,766.67	1,570,634.60	.00	416,165.40	20.94
32400	** Fire & Rescue Appropriations **	332,100.00	332,100.00	48,125.00	263,670.26	.00	68,429.74	20.60
33200	** Piedmont Regional Jail **	897,000.00	897,000.00	121,188.80	893,868.54	.00	3,131.46	.34
34000	** Building Official **	109,220.00	109,220.00	8,978.15	90,114.79	.00	19,105.21	17.49
35100	** Animal Control **	156,770.00	156,770.00	11,842.63	140,772.25	.00	15,997.75	10.20
43200	** Buildings & Grounds	256,700.00	256,700.00	17,569.25	222,373.59	.00	34,326.41	13.37
51200	** Health Dept Appropriation **	98,500.00	98,500.00	.00	85,066.00	.00	13,434.00	13.63
51500	** Medical Examiner **	200.00	200.00	20.00	100.00	.00	100.00	50.00
52500	** Crossroads CSB Appropriation **	57,700.00	57,700.00	.00	43,227.75	.00	14,472.25	25.08
53600	** Madeline's House **	3,000.00	3,000.00	.00	3,000.00	.00	.00	.00
81100	** Planning **	35,700.00	35,700.00	6,457.17	42,215.43	.00	6,515.43-	18.25-
81110	** Conditional Use Permits **	5,000.00	5,000.00	772.10	4,784.65	.00	215.35	4.30
81200	** Community Development **	302,230.00	302,230.00	55,309.18	305,763.40	.00	3,533.40-	1.16-
81500	** Econ/Community Development **	93,220.00	93,220.00	7,060.72	75,832.22	.00	17,387.78	18.65
81600	** Industrial Dev. Authority **	50,000.00	50,000.00	.00	.00	.00	50,000.00	100.00
83000	** Cooperative Extension **	55,510.00	55,510.00	430.00	22,983.31	.00	32,526.69	58.59
91001	** Fringe Benefits **	77,000.00	77,000.00	520.70	77,007.50	.00	7.50-	.00
91489	** DMV Stops Expense **	25,000.00	25,000.00	3,900.00	27,275.00	.00	2,275.00-	9.10-
94000	** Capital Improvements **	155,000.00	155,000.00	.00	2,300.90	.00	152,699.10	98.51
99000	** Transfers To Other Funds **	7,319,829.00	7,319,829.00	438,751.52	6,616,152.27	.00	703,676.73	9.61
	--FUND TOTAL--	14,346,649.00	14,511,933.00	1,047,925.29	12,647,478.71	.00	1,864,454.29	12.84
FUND #-132	** Reassessment Expense **							
12320	Board of Equalization Wages	280,000.00	280,000.00	3,444.80	270,815.60	.00	9,184.40	3.28
	--FUND TOTAL--	280,000.00	280,000.00	3,444.80	270,815.60	.00	9,184.40	3.28

ACCT#	DESCRIPTION	BUDGET AMOUNT	APPR. AMOUNT	CURRENT AMOUNT	Y-T-D AMOUNT	ENCUMBRANCE AMOUNT	UNENCUMBERED BALANCE	% REMAINING
FUND #-135	** S/W Mgmt Expense **							
40423	** Solid Waste Collection **	312,300.00	312,300.00	28,689.92	282,535.62	.00	29,764.38	9.53
	--FUND TOTAL--	312,300.00	312,300.00	28,689.92	282,535.62	.00	29,764.38	9.53
FUND #-137	** Landfill Expenses **							
40427	** Landfill Sites Expense **	114,000.00	114,000.00	1,955.26	20,439.50	.00	93,560.50	82.07
	--FUND TOTAL--	114,000.00	114,000.00	1,955.26	20,439.50	.00	93,560.50	82.07
FUND #-213	** Law Library Expense **							
21900	** Expenses **	1,000.00	1,000.00	.00	.00	.00	1,000.00	100.00
	--FUND TOTAL--	1,000.00	1,000.00	.00	.00	.00	1,000.00	100.00
FUND #-214	** Asset Forfeiture Expense **							
91400	** Asset Forfeiture **	.00	.00	.00	3,333.00	.00	3,333.00-	100.00-
	--FUND TOTAL--	.00	.00	.00	3,333.00	.00	3,333.00-	100.00-
FUND #-215	** 911 & E911 Expense **							
31400	** 911 & E911 Expenditures **	155,000.00	155,000.00	24,025.16	138,587.97	.00	16,412.03	10.58
31410	Radio System - LUIS	228,000.00	228,000.00	.00	.00	.00	228,000.00	100.00
	--FUND TOTAL--	383,000.00	383,000.00	24,025.16	138,587.97	.00	244,412.03	63.81
FUND #-220	** Cell Tower Expense **							
81110	Wireless Ecrow Expense	.00	.00	.00	2,500.00	.00	2,500.00-	100.00-
	--FUND TOTAL--	.00	.00	.00	2,500.00	.00	2,500.00-	100.00-
FUND #-221	** Airport Fund Expense **							
40740	** Airport **	977,400.00	977,400.00	20,230.29	1,035,172.72	.00	57,772.72-	5.91-
	--FUND TOTAL--	977,400.00	977,400.00	20,230.29	1,035,172.72	.00	57,772.72-	5.91-
FUND #-225	** Economic Dev Expenses **							
81000	** Econ Dev Expense Local **	1,023,000.00	1,023,000.00	200.00	198,531.50	.00	824,468.50	80.59
81110	** Solar Escrow - Expense **	450,000.00	450,000.00	.00	.00	.00	450,000.00	100.00
99000	** Transfers To Other Funds **	100,000.00	100,000.00	.00	.00	.00	100,000.00	100.00
	--FUND TOTAL--	1,573,000.00	1,573,000.00	200.00	198,531.50	.00	1,374,468.50	87.37

ACCT#	DESCRIPTION	BUDGET AMOUNT	APPR. AMOUNT	CURRENT AMOUNT	Y-T-D AMOUNT	ENCUMBRANCE AMOUNT	UNENCUMBERED BALANCE	% REMAINING
FUND #-226	** Econ Dev Grants Expenditures **							
81543	Sitework - C2C TROF	.00	.00	.00	25,000.00	.00	25,000.00-	100.00-
81553	** Tourism Funds **	.00	.00	1,500.00	1,750.00	.00	1,750.00-	100.00-
81570	** State Grants-Other **	.00	.00	.00	8,682.21	.00	8,682.21-	100.00-
	--FUND TOTAL--	.00	.00	1,500.00	35,432.21	.00	35,432.21-	100.00-
FUND #-250	** School Expenses **							
61000	Instruction	17,909,319.00	17,909,319.00	1,553,835.84	12,747,012.40	.00	5,162,306.60	28.82
62000	Administration	1,169,169.00	1,169,169.00	116,994.82	1,115,784.08	.00	53,384.92	4.56
63000	Transportation	1,483,556.00	1,483,556.00	162,375.54	1,155,510.13	.00	328,045.87	22.11
64000	Operations & Maintenance	3,109,921.00	3,109,921.00	138,210.54	1,546,735.34	.00	1,563,185.66	50.26
68000	School Technology	968,292.00	968,292.00	46,653.06	676,684.20	.00	291,607.80	30.11
99000	** Transfers to Other Funds **	1,352,083.00	1,352,083.00	.00	.00	.00	1,352,083.00	100.00
	--FUND TOTAL--	25,992,340.00	25,992,340.00	2,018,069.80	17,241,726.15	.00	8,750,613.85	33.66
FUND #-252	** School Food Fund Expense **							
65100	School Food Expenditures	.00	.00	126,832.26	1,224,765.54	.00	1,224,765.54-	100.00-
	--FUND TOTAL--	.00	.00	126,832.26	1,224,765.54	.00	1,224,765.54-	100.00-
FUND #-260	** VPA Expenses **							
11000	Disbursements-State & Federal	527,000.00	527,000.00	66,284.24	456,284.38	.00	70,715.62	13.41
50000	** BASE **	1,078,000.00	1,078,000.00	78,178.19	842,925.08	.00	235,074.92	21.80
	--FUND TOTAL--	1,605,000.00	1,605,000.00	144,462.43	1,299,209.46	.00	305,790.54	19.05
FUND #-262	** CSA Expenses **							
53500	** CSA Fund Expense **	1,120,000.00	1,120,000.00	115,052.55	800,924.55	.00	319,075.45	28.48
99000	** Transfers To Other Funds **	12,000.00	12,000.00	.00	.00	.00	12,000.00	100.00
	--FUND TOTAL--	1,132,000.00	1,132,000.00	115,052.55	800,924.55	.00	331,075.45	29.24
FUND #-280	** CARES-ARPA Fund **							
53900	** ARPA Fund Expenses **	1,142,000.00	1,142,000.00	4,904.61	410,200.43	.00	731,799.57	64.08
	--FUND TOTAL--	1,142,000.00	1,142,000.00	4,904.61	410,200.43	.00	731,799.57	64.08
FUND #-316	** Emerg Services CapitalExpense **							
32400	** Emerg Services Capital Fund **	460,000.00	460,000.00	70,059.26	342,325.28	.00	117,674.72	25.58
	--FUND TOTAL--	460,000.00	460,000.00	70,059.26	342,325.28	.00	117,674.72	25.58

ACCT#	DESCRIPTION	BUDGET AMOUNT	APPR. AMOUNT	CURRENT AMOUNT	Y-T-D AMOUNT	ENCUMBRANCE AMOUNT	UNENCUMBERED BALANCE	% REMAINING
FUND #-317	** Project Lifesaver Expenses **							
35700	Equipment Project Lifesaver	800.00	800.00	.00	1,084.26	.00	284.26-	35.53-
	--FUND TOTAL--	800.00	800.00	.00	1,084.26	.00	284.26-	35.53-
FUND #-319	** Voting Machine Fund Expenses **							
94440	** Voting Machine Fund **	5,000.00	5,000.00	.00	.00	.00	5,000.00	100.00
	--FUND TOTAL--	5,000.00	5,000.00	.00	.00	.00	5,000.00	100.00
FUND #-320	** Capital Outlay Courthouse **							
94370	** Capital Outlay Courthouse **	1,752,823.00	1,752,823.00	.00	.00	.00	1,752,823.00	100.00
94372	** Capital Outlay Radio System **	1,275,000.00	1,275,000.00	57,190.80	1,799,497.48	.00	524,497.48-	41.13-
	--FUND TOTAL--	3,027,823.00	3,027,823.00	57,190.80	1,799,497.48	.00	1,228,325.52	40.56
FUND #-420	** Debt Service Fund **							
95300	** Debt Service County **	662,600.00	662,600.00	.00	513,501.36	.00	149,098.64	22.50
95310	** Debt Service School **	984,400.00	984,400.00	.00	972,743.43	.00	11,656.57	1.18
	--FUND TOTAL--	1,647,000.00	1,647,000.00	.00	1,486,244.79	.00	160,755.21	9.76
FUND #-701	** Special Welfare Expenses **							
10000	** Special Welfare Expenses **	.00	.00	489.00	8,790.00	.00	8,790.00-	100.00-
	--FUND TOTAL--	.00	.00	489.00	8,790.00	.00	8,790.00-	100.00-
FUND #-705	** IDA Fund Expense **							
81600	** Industrial Dev Authority **	.00	.00	.00	1,456.00	.00	1,456.00-	100.00-
	--FUND TOTAL--	.00	.00	.00	1,456.00	.00	1,456.00-	100.00-
FUND #-715	** Commonwealth Fund Expense **							
91900	** Remittances to Commonwealth **	.00	.00	16,905.10	66,948.75	.00	66,948.75-	100.00-
	--FUND TOTAL--	.00	.00	16,905.10	66,948.75	.00	66,948.75-	100.00-
	--FINAL TOTAL--	52,999,312.00	53,164,596.00	3,681,936.53	39,317,999.52	.00	13,846,596.48	26.04

DEPT H CLS	TAXES	PPTRA	ABATEMENTS	NET TAX	PAYMENTS	OTHER ADJS	NET PAYMENTS	NET A/R	%COLLECTED
RE2011 1	3179753.87		3800.96-	3175952.91	3129494.34-	44417.73-	3173912.07-	2040.84	99.94
1 RE	32.40			32.40	32.40-		32.40-		100.00
HALF TOTALS=	3179786.27		3800.96-	3175985.31	3129526.74-	44417.73-	3173944.47-	2040.84	99.94
DEPT TOTALS=	3179786.27		3800.96-	3175985.31	3129526.74-	44417.73-	3173944.47-	2040.84	99.94
RE2012 1 RE	1600051.66		3723.20-	1596328.46	1586326.91-	9145.60-	1595472.51-	855.95	99.95
HALF TOTALS=	1600051.66		3723.20-	1596328.46	1586326.91-	9145.60-	1595472.51-	855.95	99.95
2 R2	1604714.92		7058.53-	1597656.39	1596110.59-	664.60-	1596775.19-	881.20	99.94
HALF TOTALS=	1604714.92		7058.53-	1597656.39	1596110.59-	664.60-	1596775.19-	881.20	99.94
DEPT TOTALS=	3204766.58		10781.73-	3193984.85	3182437.50-	9810.20-	3192247.70-	1737.15	99.95
RE2013 1 RE	1615975.85		7699.54-	1608276.31	1592621.81-	14772.52-	1607394.33-	881.98	99.95
HALF TOTALS=	1615975.85		7699.54-	1608276.31	1592621.81-	14772.52-	1607394.33-	881.98	99.95
2 R2	1615710.67		8946.15-	1606764.52	1604225.37-	1657.17-	1605882.54-	881.98	99.95
HALF TOTALS=	1615710.67		8946.15-	1606764.52	1604225.37-	1657.17-	1605882.54-	881.98	99.95
DEPT TOTALS=	3231686.52		16645.69-	3215040.83	3196847.18-	16429.69-	3213276.87-	1763.96	99.95
RE2014 1 RE	1621662.15		5116.59-	1616545.56	1603414.94-	12248.64-	1615663.58-	881.98	99.95
HALF TOTALS=	1621662.15		5116.59-	1616545.56	1603414.94-	12248.64-	1615663.58-	881.98	99.95
2 R2	1617319.15		6554.45-	1610764.70	1608608.40-	1274.32-	1609882.72-	881.98	99.95
HALF TOTALS=	1617319.15		6554.45-	1610764.70	1608608.40-	1274.32-	1609882.72-	881.98	99.95
DEPT TOTALS=	3238981.30		11671.04-	3227310.26	3212023.34-	13522.96-	3225546.30-	1763.96	99.95
RE2015 1 RE	1632536.00		4215.42-	1628320.58	1615478.21-	11916.69-	1627394.90-	925.68	99.94
HALF TOTALS=	1632536.00		4215.42-	1628320.58	1615478.21-	11916.69-	1627394.90-	925.68	99.94
2 R2	1624504.36		4838.43-	1619665.93	1616581.01-	2122.45-	1618703.46-	962.47	99.94
HALF TOTALS=	1624504.36		4838.43-	1619665.93	1616581.01-	2122.45-	1618703.46-	962.47	99.94
DEPT TOTALS=	3257040.36		9053.85-	3247986.51	3232059.22-	14039.14-	3246098.36-	1888.15	99.94
RE2016 1 RE	1639263.91		5470.26-	1633793.65	1617591.18-	15226.44-	1632817.62-	976.03	99.94
HALF TOTALS=	1639263.91		5470.26-	1633793.65	1617591.18-	15226.44-	1632817.62-	976.03	99.94
2 R2	1630250.23		6521.55-	1623728.68	1620218.48-	2534.17-	1622752.65-	976.03	99.94
HALF TOTALS=	1630250.23		6521.55-	1623728.68	1620218.48-	2534.17-	1622752.65-	976.03	99.94
DEPT TOTALS=	3269514.14		11991.81-	3257522.33	3237809.66-	17760.61-	3255570.27-	1952.06	99.94
RE2017 1 RE	1643831.43		3776.88-	1640054.55	1626266.22-	12773.17-	1639039.39-	1015.16	99.94
HALF TOTALS=	1643831.43		3776.88-	1640054.55	1626266.22-	12773.17-	1639039.39-	1015.16	99.94
2 R2	1643267.95		5328.57-	1637939.38	1635062.22-	1852.30-	1636914.52-	1024.86	99.94
HALF TOTALS=	1643267.95		5328.57-	1637939.38	1635062.22-	1852.30-	1636914.52-	1024.86	99.94
DEPT TOTALS=	3287099.38		9105.45-	3277993.93	3261328.44-	14625.47-	3275953.91-	2040.02	99.94

DEPT H CLS	TAXES	PPTRA	ABATEMENTS	NET TAX	PAYMENTS	OTHER ADJS	NET PAYMENTS	NET A/R	%COLLECTED
RE2018 1 RE	1753438.49		4763.99-	1748674.50	1737727.45-	9659.96-	1747387.41-	1287.09	99.93
HALF TOTALS=	1753438.49		4763.99-	1748674.50	1737727.45-	9659.96-	1747387.41-	1287.09	99.93
2 R2	1746313.47		6741.25-	1739572.22	1735524.03-	2737.57-	1738261.60-	1310.62	99.92
HALF TOTALS=	1746313.47		6741.25-	1739572.22	1735524.03-	2737.57-	1738261.60-	1310.62	99.92
DEPT TOTALS=	3499751.96		11505.24-	3488246.72	3473251.48-	12397.53-	3485649.01-	2597.71	99.93
RE2019 1 RE	1759888.01		2476.79-	1757411.22	1743837.43-	11932.76-	1755770.19-	1641.03	99.91
HALF TOTALS=	1759888.01		2476.79-	1757411.22	1743837.43-	11932.76-	1755770.19-	1641.03	99.91
2 R2	1748764.37		3984.63-	1744779.74	1740326.47-	2590.88-	1742917.35-	1862.39	99.89
HALF TOTALS=	1748764.37		3984.63-	1744779.74	1740326.47-	2590.88-	1742917.35-	1862.39	99.89
DEPT TOTALS=	3508652.38		6461.42-	3502190.96	3484163.90-	14523.64-	3498687.54-	3503.42	99.90
RE2020 1 RE	1767805.92		2178.66-	1765627.26	1745611.65-	16937.40-	1762549.05-	3078.21	99.83
HALF TOTALS=	1767805.92		2178.66-	1765627.26	1745611.65-	16937.40-	1762549.05-	3078.21	99.83
2 R2	1762276.34		3120.86-	1759155.48	1752987.37-	2902.20-	1755889.57-	3265.91	99.81
HALF TOTALS=	1762276.34		3120.86-	1759155.48	1752987.37-	2902.20-	1755889.57-	3265.91	99.81
DEPT TOTALS=	3530082.26		5299.52-	3524782.74	3498599.02-	19839.60-	3518438.62-	6344.12	99.82
RE2021 1 RE	1788877.00		1683.36-	1787193.64	1767584.54-	14747.55-	1782332.09-	4861.55	99.73
HALF TOTALS=	1788877.00		1683.36-	1787193.64	1767584.54-	14747.55-	1782332.09-	4861.55	99.73
2 R2	1773150.70		1692.90-	1771457.80	1761720.78-	4148.41-	1765869.19-	5588.61	99.68
HALF TOTALS=	1773150.70		1692.90-	1771457.80	1761720.78-	4148.41-	1765869.19-	5588.61	99.68
DEPT TOTALS=	3562027.70		3376.26-	3558651.44	3529305.32-	18895.96-	3548201.28-	10450.16	99.71
RE2022 1 RE	1800051.28		1867.99-	1798183.29	1775711.33-	13744.39-	1789455.72-	8727.57	99.51
HALF TOTALS=	1800051.28		1867.99-	1798183.29	1775711.33-	13744.39-	1789455.72-	8727.57	99.51
2 R2	1792704.36		4085.09-	1788619.27	1773377.48-	2960.45-	1776337.93-	12281.34	99.31
HALF TOTALS=	1792704.36		4085.09-	1788619.27	1773377.48-	2960.45-	1776337.93-	12281.34	99.31
DEPT TOTALS=	3592755.64		5953.08-	3586802.56	3549088.81-	16704.84-	3565793.65-	21008.91	99.41
RE2023 1									
1 RE	1806101.06		3912.79-	1802188.27	1758320.85-	19362.12-	1777682.97-	24505.30	98.64
HALF TOTALS=	1806101.06		3912.79-	1802188.27	1758320.85-	19362.12-	1777682.97-	24505.30	98.64
2 R2	1804407.96		5736.02-	1798671.94	1755310.23-	4958.33-	1760268.56-	38403.38	97.86
HALF TOTALS=	1804407.96		5736.02-	1798671.94	1755310.23-	4958.33-	1760268.56-	38403.38	97.86
DEPT TOTALS=	3610509.02		9648.81-	3600860.21	3513631.08-	24320.45-	3537951.53-	62908.68	98.25
RE2024 1 RE	1983889.84		2352.29-	1981537.55	1173591.31-	15924.23-	1189515.54-	792022.01	60.03
HALF TOTALS=	1983889.84		2352.29-	1981537.55	1173591.31-	15924.23-	1189515.54-	792022.01	60.03
2 R2	1983889.84		2483.09-	1981406.75	155035.68-	4013.16-	159048.84-	1822357.91	8.03
HALF TOTALS=	1983889.84		2483.09-	1981406.75	155035.68-	4013.16-	159048.84-	1822357.91	8.03
DEPT TOTALS=	3967779.68		4835.38-	3962944.30	1328626.99-	19937.39-	1348564.38-	2614379.92	34.03
RE TOTALS =	47940433.19		120130.24-	47820302.95	44828698.68-	257225.21-	45085923.89-	2734379.06	94.28

DEPT	H	CLS	TAXES	PPTRA	ABATEMENTS	NET TAX	PAYMENTS	OTHER ADJS	NET PAYMENTS	NET A/R	%COLLECTED
COMP TOTALS=			47940433.19		120130.24-	47820302.95	44828698.68-	257225.21-	45085923.89-	2734379.06	94.28

DEPT	H	CLS	TAXES	PPTRA	ABATEMENTS	NET TAX	PAYMENTS	OTHER ADJS	NET PAYMENTS	NET A/R	%COLLECTED
PP2019	1	MH	11713.18		62.36-	11650.82	11381.84-	104.75-	11486.59-	164.23	98.59
	1	MR	84830.33		20138.00-	64692.33	62197.11-	26.49-	62223.60-	2468.73	96.18
	1	MT	206262.74		12297.51-	193965.23	183207.52-	50.01-	183257.53-	10707.70	94.48
	1	PP	1817878.69	528545.97-	109783.61-	1179549.11	1155390.25-	6419.54-	1161809.79-	17739.32	98.50
	1	VL	252145.00		15490.00-	236655.00	232688.40-	688.28-	233376.68-	3278.32	98.61
	1	XX	511.35		128.10-	383.25	383.25-		383.25-		100.00
HALF TOTALS=			2373341.29	528545.97-	157899.58-	1686895.74	1645248.37-	7289.07-	1652537.44-	34358.30	97.96
	2	H2	11687.90		62.36-	11625.54	11448.31-	11.10-	11459.41-	166.13	98.57
	2	P2	1789666.93	521429.10-	108249.77-	1159988.06	1140196.55-	974.34-	1141170.89-	18817.17	98.38
	2	R2	44973.25		101.48-	44871.77	42379.05-		42379.05-	2492.72	94.44
	2	T2	166085.20		12297.49-	153787.71	143080.03-		143080.03-	10707.68	93.04
	2	X2	511.35		128.10-	383.25	383.25-		383.25-		100.00
HALF TOTALS=			2012924.63	521429.10-	120839.20-	1370656.33	1337487.19-	985.44-	1338472.63-	32183.70	97.65
DEPT TOTALS=			4386265.92	1049975.07-	278738.78-	3057552.07	2982735.56-	8274.51-	2991010.07-	66542.00	97.82
PP2020	1	MH	11631.06		36.29-	11594.77	11324.49-	94.84-	11419.33-	175.44	98.49
	1	MR	49968.66		418.45-	49550.21	49496.50-	41.71-	49538.21-	12.00	99.98
	1	MT	176473.48		4726.09-	171747.39	169672.96-	456.17-	170129.13-	1618.26	99.06
	1	PP	1781827.49	530343.90-	50626.23-	1200857.36	1174968.23-	9590.84-	1184559.07-	16298.29	98.64
	1	VL	260855.00		18300.00-	242555.00	238657.56-	302.90-	238960.46-	3594.54	98.52
	1	XX	14327.25		13944.00-	383.25	383.25-		383.25-		100.00
HALF TOTALS=			2295082.94	530343.90-	88051.06-	1676687.98	1644502.99-	10486.46-	1654989.45-	21698.53	98.71
	2	H2	11630.86		36.29-	11594.57	11384.18-	28.55-	11412.73-	181.84	98.43
	2	P2	1748453.22	524329.43-	44916.12-	1179207.67	1157541.94-	4237.24-	1161779.18-	17428.49	98.52
	2	R2	49872.42		473.17-	49399.25	49345.56-	41.69-	49387.25-	12.00	99.98
	2	T2	126685.04		4726.08-	121958.96	120328.56-	12.15-	120340.71-	1618.25	98.67
	2	X2	383.25			383.25	383.25-		383.25-		100.00
HALF TOTALS=			1937024.79	524329.43-	50151.66-	1362543.70	1338983.49-	4319.63-	1343303.12-	19240.58	98.59
DEPT TOTALS=			4232107.73	1054673.33-	138202.72-	3039231.68	2983486.48-	14806.09-	2998292.57-	40939.11	98.65
PP2021	1	MH	11671.68		19.57-	11652.11	10957.79-	414.38-	11372.17-	279.94	97.60
	1	MR	49485.22		184.09-	49301.13	49236.30-	64.23-	49300.53-	.60	100.00
	1	MT	207826.04		11907.83-	195918.21	185496.24-	9139.23-	194635.47-	1282.74	99.35
	1	PP	1946268.85	540773.76-	34798.27-	1370696.82	1337661.66-	12396.47-	1350058.13-	20638.69	98.49
	1	VL	220695.00		2755.00-	217940.00	213689.17-	1647.79-	215336.96-	2603.04	98.81
	1	XX	13996.50		13944.00-	52.50	52.50-		52.50-		100.00
HALF TOTALS=			2449943.29	540773.76-	63608.76-	1845560.77	1797093.66-	23662.10-	1820755.76-	24805.01	98.66
	2	H2	11671.48		19.57-	11651.91	11289.37-	67.97-	11357.34-	294.57	97.47
	2	P2	1902125.05	534137.45-	30135.37-	1337852.23	1309227.41-	1625.46-	1310852.87-	26999.36	97.98
	2	R2	49449.06		184.09-	49264.97	49240.18-	24.00-	49264.18-	.79	100.00
	2	T2	180933.59		11907.83-	169025.76	168854.51-	1111.48	167743.03-	1282.73	99.24
	2	X2	52.50			52.50	52.50-		52.50-		100.00
HALF TOTALS=			2144231.68	534137.45-	42246.86-	1567847.37	1538663.97-	605.95-	1539269.92-	28577.45	98.18
DEPT TOTALS=			4594174.97	1074911.21-	105855.62-	3413408.14	3335757.63-	24268.05-	3360025.68-	53382.46	98.44
PP2022	1	LE	44481.26			44481.26	44481.26-		44481.26-		100.00
	1	MH	11955.20		44.27-	11910.93	11448.68-	137.42-	11586.10-	324.83	97.27
	1	MR	77929.66		79.73-	77849.93	77745.34-	28.99-	77774.33-	75.60	99.90

DEPT	H	CLS	TAXES	PPTRA	ABATEMENTS	NET TAX	PAYMENTS	OTHER ADJS	NET PAYMENTS	NET A/R	%COLLECTED
PP2022	1	MT	146948.32		5700.94-	141247.38	139233.82-	399.72-	139633.54-	1613.84	98.86
	1	PP	2128707.23	554329.02-	57480.23-	1516897.98	1474370.69-	4929.21-	1479299.90-	37598.08	97.52
	1	VL	223055.00		2550.00-	220505.00	216144.90-	364.08-	216508.98-	3996.02	98.19
	1	XX	7607.25		7213.50-	393.75	183.75-		183.75-	210.00	46.67
HALF TOTALS=			2640683.92	554329.02-	73068.67-	2013286.23	1963608.44-	5859.42-	1969467.86-	43818.37	97.82
	2	H2	11940.56		44.27-	11896.29	11507.69-	62.80-	11570.49-	325.80	97.26
	2	L2	29441.77			29441.77	29212.62-		29212.62-	229.15	99.22
	2	P2	2097738.58	549308.39-	58312.54-	1490117.65	1443914.74-	3381.82-	1447296.56-	42821.09	97.13
	2	R2	52945.54		79.73-	52865.81	52727.10-	28.99-	52756.09-	109.72	99.79
	2	T2	143729.64		5700.94-	138028.70	136400.47-		136400.47-	1628.23	98.82
	2	X2	7607.25		7213.50-	393.75	183.75-		183.75-	210.00	46.67
HALF TOTALS=			2343403.34	549308.39-	71350.98-	1722743.97	1673946.37-	3473.61-	1677419.98-	45323.99	97.37
DEPT TOTALS=			4984087.26	1103637.41-	144419.65-	3736030.20	3637554.81-	9333.03-	3646887.84-	89142.36	97.61
PP2023	1	LE	20420.35			20420.35	19924.23-		19924.23-	496.12	97.57
	1	MH	12100.93		21.85-	12079.08	11397.06-	103.20-	11500.26-	578.82	95.21
	1	MR	72581.74		17.12-	72564.62	71496.61-	1028.22-	72524.83-	39.79	99.95
	1	MT	140366.49		4287.85-	136078.64	134202.82-	951.07-	135153.89-	924.75	99.32
	1	PP	2189570.70	529591.37-	51579.43-	1608399.90	1534079.19-	9432.02-	1543511.21-	64888.69	95.97
	1	VL	218910.00		2225.00-	216685.00	208924.86-	779.68-	209704.54-	6980.46	96.78
	1	XX	52.50			52.50	52.50-		52.50-		100.00
HALF TOTALS=			2654002.71	529591.37-	58131.25-	2066280.09	1980077.27-	12294.19-	1992371.46-	73908.63	96.42
	2	H2	12100.69		21.85-	12078.84	11213.64-	22.99-	11236.63-	842.21	93.03
	2	L2	20420.30			20420.30	19924.18-		19924.18-	496.12	97.57
	2	P2	2175793.23	526341.27-	52565.44-	1596886.52	1494092.84-	2346.81-	1496439.65-	100446.87	93.71
	2	R2	72557.54		17.12-	72540.42	71817.27-	146.96-	71964.23-	576.19	99.21
	2	T2	140366.22		4287.85-	136078.37	135134.23-		135134.23-	944.14	99.31
	2	X2	52.50			52.50	52.50-		52.50-		100.00
HALF TOTALS=			2421290.48	526341.27-	56892.26-	1838056.95	1732234.66-	2516.76-	1734751.42-	103305.53	94.38
DEPT TOTALS=			5075293.19	1055932.64-	115023.51-	3904337.04	3712311.93-	14810.95-	3727122.88-	177214.16	95.46
PP2024	1	MH	11304.16		12.28-	11291.88	5936.23-	69.15-	6005.38-	5286.50	53.18
	1	MR	74481.70		3.00-	74478.70	48153.53-	24.84-	48178.37-	26300.33	64.69
	1	MT	142388.69		299.54-	142089.15	27946.27-	552.73-	28499.00-	113590.15	20.06
	1	PP	2119378.03	527662.62-	13309.76-	1578405.65	632779.62-	11889.00-	644668.62-	933737.03	40.84
	1	VL	223165.00		990.00-	222175.00	92755.85-	751.68-	93507.53-	128667.47	42.09
	1	XX	52.50			52.50	52.50-		52.50-		100.00
HALF TOTALS=			2570770.08	527662.62-	14614.58-	2028492.88	807624.00-	13287.40-	820911.40-	1207581.48	40.47
	2	H2	11300.64		12.27-	11288.37	1437.57-		1437.57-	9850.80	12.73
	2	P2	2119280.54	527623.87-	13321.83-	1578334.84	108500.11-		108500.11-	1469834.73	6.87
	2	R2	74481.55		3.00-	74478.55	2442.78-		2442.78-	72035.77	3.28
	2	T2	142388.56		299.54-	142089.02	1257.66-		1257.66-	140831.36	.89
	2	X2	52.50			52.50	52.50-		52.50-		100.00
HALF TOTALS=			2347503.79	527623.87-	13636.64-	1806243.28	113690.62-		113690.62-	1692552.66	6.29
DEPT TOTALS=			4918273.87	1055286.49-	28251.22-	3834736.16	921314.62-	13287.40-	934602.02-	2900134.14	24.37
PP TOTALS =			28190202.94	6394416.15-	810491.50-	20985295.29	17573161.03-	84780.03-	17657941.06-	3327354.23	84.14

DEPT	H	CLS	TAXES	PPTRA	ABATEMENTS	NET TAX	PAYMENTS	OTHER ADJS	NET PAYMENTS	NET A/R	%COLLECTED
COMP TOTALS=			28190202.94	6394416.15-	810491.50-	20985295.29	17573161.03-	84780.03-	17657941.06-	3327354.23	84.14

Public Hearing

LUNENBURG COUNTY -PUBLIC NOTICE

The Lunenburg County Planning Commission and Board of Supervisors will hold a **Joint** public hearing on **Thursday, June 13, 2024,** beginning at **6:00 PM** in the 2nd floor Courtroom; Lunenburg Courts Building, Lunenburg, VA 23952 for public input on the following:

CUP 11-23: Conditional Use Permit for Virginia Electric and Power Company dba Dominion Energy Virginia to construct and operate a major public utility (230/500kV Electric Transmission "Unity" Substation) on tax parcel 059-0A-0-18A, located Southeast of 251 Dusty Lane, Kenbridge, VA 23944, consisting of 213.45-acres (of which 49.740-acres has been subdivided for purchase and utilization by Virginia Electric and Power Company) in an A-1 Agricultural zone..

It is the intention of the Lunenburg County Planning Commission to comply with the Americans with Disabilities Act. Should you need special Accommodations, please contact the County Administration office at 434-696-2142 prior to the meeting date.

The full applications are available for review at: www.lunenburgva.gov/government/planning_commission/pending_conditional_use_permit_applications.php (select the "2023 Pending Conditional Use Permit Applications"). Written comments will be appreciated, in lieu of oral presentations. Please send comments to taylor@lunenburgva.gov or Lunenburg County, Department of Planning and Economic Development, 11413 Courthouse Road, Lunenburg, VA 23952.

Unity Substation

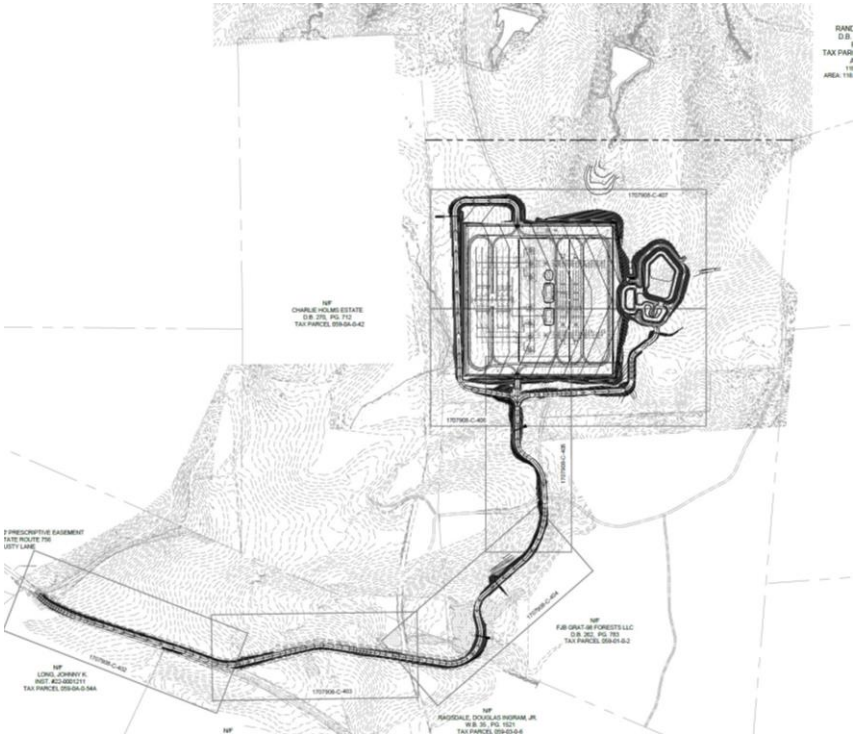
CUP Application
Lunenburg County
June 13, 2024

Dominion Energy®

Project Location

Project Location

Site Plan Overview



Project Scope

Representative Substation

Project Scope

Overview

- Build new 500 kV – 230 kV electric transmission substation to connect an existing 500 kV line to a new 230 kV transmission line in Lunenburg County

Details

- Substation size: 11.73 acres
- 20’ tall, double mesh fence
- Interface between 230 kV and 500 kV line

Project Drivers

- Serves new load sources in the area

Benefits

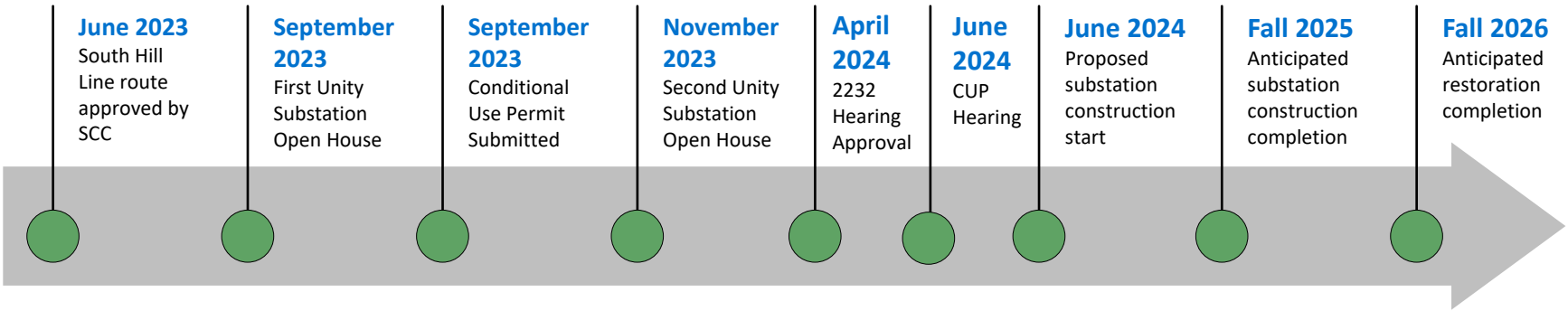
- Improves system reliability
- Creates grid redundancy

Impacts

- Temporary traffic increase during construction

Project Timeline

Unity Substation Project Development and Construction



Design and Development Considerations

The Unity Substation project is a proposed facility designed with consideration of Lunenburg County's comprehensive plan and zoning requirements.

- **Meets growing power demand in the area.**
- **Zoning code allows for major public utility infrastructure (electric substation) with a Conditional Use Permit.**
- **Project has 100' setbacks which meet and exceed A-1 (Agricultural) zoning setback requirements.**
- **Substation located off private road surrounded by existing vegetation buffers.**
- **No traffic increases to surrounding road networks once construction is complete.**
- **Substation will be unmanned with periodic maintenance only.**
- **No additional impacts on local services such as schools, public water, and sewer facilities.**

Questions?


Generic Location - Not Site Specific

CUP 11-23: Unity Substation

Lunenburg Planning Office
Application for Conditional Use Permit for **Solar Facilities**
Case Number: _____ (Office Use Only)

Section 1

Applicant Name: Virginia Electric and Power Company dba Dominion Energy Virginia

Owner Name: Kevin L. Fields - Authorized Representative

Owner Signature: KLF

Contact Name for Application: Chuck Weil

Physical and Mailing Address: 5000 Dominion BLVD, 3rd Floor, Glen Allen, VA 23060

Phone Number: (804) 239-6450

Email Address: Charles.H.Weil@Dominionenergy.com

Fax Number (if applicable):

Power of Attorney Name: Kevin L Fields

Power of Attorney Signature: KLF

As owner or authorized agent of this property, I certify that this application is complete and accurate to the best of my knowledge, and I authorize the Lunenburg County representative(s) entry on the property for purposes of reviewing this application.

Section 2
Property Information

Parcel Number(s): 059-0A-0-18A (SITE)

059-01-0-2 (ACCESS ROAD)

059-03-0-6 (ACCESS ROAD)

Area (ac./sq. ft.): 059-0A-0-18A (213.45 ac / 9297882 sq. ft.)

Magisterial District: COLUMBIAN GROVE

Address: 3832 LAUREL BRANCH ROAD, LUNENBURG COUNTY, VA

Existing Zoning: A-1 : Agriculture

Requested Use: Electrical Substation

Does this property have a historical designation? If yes, describe: NO

Parcel number(s), acreage, magisterial district and existing zoning can be located at: https://lunenburggis.timmons.com/#/mwl. The address can be typed into the "*By Parcel Address"* search bar followed by selecting search. This will pull up the information pertaining to the parcel.

The application deadline is the **1st of the month proceeding the month** in which the public hearing by the Planning Commission is to be held. The Planning Commission meeting is held on the 1st Thursday of the month at 7:00 p.m. Applications must be submitted in completed form a minimum of forty-five (45) days prior to scheduling a public hearing by the Planning Commission. Notice of incomplete applications will be sent to the applicant at the listed address in Section 1.

The site plan must be submitted as described in the site plan requirements at the time of the application.

Application fee is $2,500.00, which must be paid at the time of application submission. The applicant will be invoiced for any costs incurred, including but not limited to advertising, postage, legal fees, third-party consulting fees, etc.

Incomplete applications will be returned to the applicant and not docketed for a public hearing

Section 3
Certification of Adjoining Property Owners, Board of Supervisors, and Planning Commissioners

Applicants Certification:

I certify that I have notified all adjacent property owners, to the property which is the subject of this application request, that this application is being filed. Notifications were sent via first class mail.

Adjacent property includes all property touching the project parcel, across roadways, watercourses, railroads, and/or municipal boundaries.

I further certify that the names and addresses below are those of the adjacent property owners as listed in the tax records of the Commissioner of Revenue of Lunenburg County.

Applicant's Signature: _____

State of: _____.

County of: _____.

Before me, _____, on this _____ day of
Name of Notary Public

_____, 20____, _____, personally appeared, and
Applicant(s) Name

provided verification to be the person(s) whose name(s) is/are subscribed to the foregoing instrument and acknowledged to me that he/she/they executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this _____ day of _____, 20___.

_____
Notary Public's Signature

_____
Location of Commission

Registration #: _____

Commission Expiration: _____

Verification of Identity
[ ]Driver's License or Govt./State Identification Card:
State: _____ Number: _____
[ ] U. S. Passport: Number: _____
[ ] U. S. Military ID Card
[ ] Social Security Card
[ ] Birth Certificate
[ ] Other: _____

(Seal)

Adjacent Parcel (Property) Owners		
Parcel Number	**Name(s)**	**Address**
059-01-0-2	FBJ GRAT-98 FORESTS LLC,	PO BOX 1288 MOBILE AL 36633
059-01-0-3	FBJ GRAT-98 FORESTS LLC,	PO BOX 1288 MOBILE AL 36633
059-02-0-1	LONG RANDALL S	3173 BRICKLAND ROAD SOUTH HILL VA 23970
059-02-0-2A	LONG JOHNNY K	3502 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-03-0-5	RAGSDALE DOUGLAS INGRAM JR,	12113 CREEKWOOD TERRACE KNOXVILLE TN 37934
059-03-0-6	RAGSDALE DOUGLAS INGRAM JR,	12113 CREEKWOOD TERRACE KNOXVILLE TN 37934
059-03-0-9	LONG RANDALL S,	3173 BRICKLAND ROAD SOUTH HILL VA 23970
059-04-0-3	ARD CHRISTOPHER P	3899 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-04-0-4	CURLEY GEORGE W & SARA L	3899 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-18A	LONG RANDALL S,	3173 BRICKLAND ROAD SOUTH HILL VA 23970
059-0A-0-39	YEATTS CLAUDE WESLEY & JAMES WILEY &, JAMES ELLIOTT NASH & MELINDA CLAY NASH	4525 BRICKLAND ROAD KENBRIDGE VA 23944
059-0A-0-41	HARVILICZ RONALD M OR PATRICIA I	3963 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-41A	BOAZ DAVID A,	3832 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-41B	CURLEY SARA L OR GEORGE W CURLEY	3883 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-41C	REESE MARK S SR OR CONNIE W,	8507 CRAIG MILL ROAD KENBRIDGE VA 23944
059-0A-0-41D	LONG JOHNNY K	3502 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-42	HOLMES CHARLIE ESTATE	251 DUSTY LANE KENBRIDGE VA 23944
059-0A-0-43	REESE MARK S SR OR CONNIE W,	8507 CRAIG MILL ROAD KENBRIDGE VA 23944
059-0A-0-43A	BOAZ DAVID A	3832 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-44	LONG RONALD E OR PATRICIA A	3589 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-44A	LONG RONALD E OR PATRICIA A	3589 LAUREL BRANCH ROAD KENBRIDGE VA 23944

*If there are additional adjacent property owners, please include them on a separate sheet. Also, the letter that follows can be completed and mailed to adjacent property owners.

Adjacent Parcel (Property) Owners		
Parcel Number	**Name(s)**	**Address**
059-0A-0-44A1	REESE MARK S SR OR CONNIE W	8507 CRAIG MILL ROAD KENBRIDGE VA 23944
059-0A-0-44B1	REESE MARK S SR OR CONNIE W	8507 CRAIG MILL ROAD KENBRIDGE VA 23944
059-0A-0-44C	NOBLIN AMANDA R	3441 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-44C1	REESE MARK S SR OR CONNIE W,	8507 CRAIG MILL ROAD KENBRIDGE VA 23944
059-0A-0-46	HERRINGTON BRENDA REESE ET A	603 WINDSOR AVE LAWRENCEVILLE VA 23868
059-0A-0-53A	LONG JOHNNIE K,	3502 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-54	RAGSDALE DOUGLAS INGRAM JR,	12113 CREEKWOOD TERRACE KNOXVILLE TN 37934
059-0A-0-54A	LONG JOHNNY K OR LUCILLE S,	3502 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-55	CEMETERY	
071-0A-0-9	YANCEY ROSA LEE OR CARSON W &, GINGER LEE & JEAN ELIZABETH YANCEY	3653 BRICKLAND ROAD SOUTH HILL VA 23970
059-01-0-3	FBJ GRAT-98 FORESTS LLC,	PO BOX 1288 MOBILE AL 36633
059-02-0-1	LONG RANDALL S	3173 BRICKLAND ROAD SOUTH HILL VA 23970
059-02-0-2A	LONG JOHNNY K,	3502 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-03-0-5	RAGSDALE DOUGLAS INGRAM JR,	12113 CREEKWOOD TERRACE KNOXVILLE TN 37934
059-03-0-9	LONG RANDALL S	3173 BRICKLAND ROAD SOUTH HILL VA 23970
059-0A-0-18	MOORE ANN D,	351 RUBIN LANE KENBRIDGE VA 23944
059-0A-0-19	MARTIN DOROTHY S	13301 KINGSMILL ROAD MIDLOTHIAN VA 2311

*If there are additional adjacent property owners, please include them on a separate sheet. Also, the letter that follows can be completed and mailed to adjacent property owners.

Notification of Application Submittal to Adjacent Property Owners

To: Adjacent Property Owner of Parcel(s) _____

From: Dominion Energy Virginia

Date: _____

The following application will be submitted for review to the Lunenburg County Planning Office:

[ ] Rezoning

[X] Conditional Use Permit

[ ] Special Exception

Requested Use or Exception:

This application is for a Conditional Use Permit to construct a 230/500kV Electric Transmission Substation (a major public utility) on a parcel that is zoned A-1 Agricultural.

The application will be available for viewing at the Lunenburg County Planning Office. The Planning Office shall notify all adjacent property owner(s) of the time, day, and location of the public hearing(s) to be held on this application. Should you have questions and/or comments, please contact the Planning Office at 434.696.2142 or taylor@lunenburgva.gov.

Section 4
Applicant's Report
Section 8.3(b) of Lunenburg Zoning Ordinance

Every application for a Conditional Use Permit shall be accompanied by a report from the applicant describing the proposed Conditional Use and explaining the manner which it complies with the requirements and standards of this article.

The following questions address the basic issues. The Planning Commission and/or Board of Supervisors may request additional information.

1.) What type of use is being requested?
The construction and operation of A Dominion Energy 500/230KV substation.

2.) Describe how you plan to develop the property for the proposed use and any associated uses.
The site will be cleared and graded for the installation of the substation and associate electrical equipment. A wet pond will be constructed to address stormwater management. An access road will be constructed from Laurel Branch Road to the substation.

3.) Describe why the proposed use is desirable and appropriate for the area. What measures will be taken to assure that the proposed use will not have a negative impact on the surrounding vicinity?
The construction of the electrical utility substation will help meet growing power demands. The regulations of all local, state, or federal governmental bodies having jurisdiction over the project shall be observed at all times.

Also, address the following:

a. Details of Operations: The substation will be unmanned with personnel on site only when needed.
b. Hours of Operation: 24/7
c. Traffic: Because the substation is unmanned there will be no increase in traffic and will only have personnel on site when maintenance is needed.
d. Noise: We always work to design a new substation to meet the sound ordinance requirements of the locality where the substation resides which is typically specified as a specific "A" weighted sound level measured at the substation property line.
e. Dust/Smoke: There will be no generation of dust or smoke from the proposed substation once constructed.
f. Runoff: This project was analyzed for the 1-year and 10-year storm events to show compliance with VA DEQ IIB Stormwater Management Water Quantity Requirements. There is one wet pond on site.
g. Intensity of Use: The substation will have be low intensity due to it being an unmanned station.
h. Hazardous Materials: SF6 is the medium for the installed circuit breakers in the substation and has been listed as a hazardous material by OSHA but will not be a danger to the surrounding community.
i. Outside Storage: N/A

4.) Is the use location on a floodplain, wetland area, or dam break inundation zone? No
5.) Are there any deed restrictions concerning the type of use proposed? If so, provide the date the said restrictions expire. No

6.) Has a survey of the parcel(s) been conducted to include project parcel, property boundaries, existing roadways and structures, and adjoining parcels, as well as, the parcel owner? If so, is it included in the application packet? A combination of field run survey and GIS was used to show the existing conditions of the parcels. Site plan is included in submission packet.

7.) Has a site plan been included to note the information required on the survey, but also any new construction, parking, clearing, planting, etc.? A site plan is included with this application.

8.) Has a business plan been established? If so, please provide it with application submittal. N/A

9.) Describe how the proposed project complies or refutes the goals and objectives noted in the Kenbridge-Victoria-Lunenburg Comprehensive Plan. This can be located the Lunenburg County, Virginia website. The construction of the electrical utility substation will help meet growing power demands. This complies with goals such as "Promote the expansion of a diversified economy"

Requirements for telecom site plans can be found in Section 22 Article III, items 22-81 thru 22-112 of the Lunenburg County Code.

Section 5
Construction Traffic Management Plan (CTMP)

VDOT and the County have identified that the construction phase of solar energy projects have an increased impact on VDOT's secondary road network. These impacts occur as VDOT's secondary road system was not designed to accommodate large numbers of truck traffic that results from the transport of the needed materials for the solar project to the construction sites. The increase in number of employees, also, impacts the roadways. To assist VDOT and the County in mitigating the increased maintenance costs associated with the increased traffic, the County requires the submission and approval of a CTMP. The outline below includes the needed elements for the required CTMP.

Construction Traffic Haul Routes

- Identify the routes to be used to transport supplies to the construction site. The plan shall begin at a VDOT maintained primary route and include all secondary routes to be used to access the site.
- The plan shall, also, include any truck routes that may be used to dispose of excess materials, clearing and grubbing debris, timber harvesting, or other activities that generate truck traffic leaving the site.

Roadway Condition Survey

- The applicant shall document by either photos, videos, or other method acceptable to VDOT and the County, the condition of the secondary roadways identified as haul routes. This condition survey will be utilized to identify areas damaged by the construction traffic that will be required to be repaired to the pre-existing conditions or better.

On-Site Storage, Unloading, and Turn-Around Areas

- The applicant shall demonstrate that they have adequate areas available on-site to unload trucks, store the materials on-site, and provide an area where trucks can turn around on-site prior to entering the VDOT roadway.

On-Site Parking Areas for Construction Employees

- The applicant shall provide an estimated number of employees to be on-site during construction and demonstrate that adequate on-site parking areas are available for the anticipated employees. Employees will not be allowed to park along roadways or within VDOT Right-of-Way (ROW) adjacent to the construction areas.

Dominion Energy Virginia
Dominion Energy North Carolina
Electric Transmission
5000 Dominion Boulevard
Glen Allen, VA 23060
DominionEnergy.com

Sept. 20, 2023

Unity Substation Project (Part of the South Hill Electric Transmission Project)

Dear Neighbor:

At Dominion Energy, we are committed to keeping the communities we serve up-to-date on projects in their area.

To meet the increased energy demand of Lunenburg and surrounding counties, we are planning to build a new substation and related electric transmission infrastructure. This substation is part of a larger project, known as the South Hill Electric Transmission Line and Substation Project, which received approval from the Virginia State Corporation Commission (SCC) in June 2023. This project will allow Dominion Energy to continue providing secure and reliable electric service to the area.

You are receiving this letter because we are applying for a Conditional Use Permit and the substation is located in your area. Enclosed, you will find more information about the application. Pending all necessary approvals, construction is scheduled to begin in early 2024. We will continue to update you as activities progress. Thank you for your patience and understanding as we work to complete this important project.

Sincerely,

The Electric Transmission Project Team

Notification of Application Submittal to Adjacent Property Owners

To: Adjacent Property Owner of Parcel(s):

FBJ GRAT-98 FORESTS LLC
059-01-0-2
059-01-0-3

From: Dominion Energy Virginia

Date: _____

The following application will be submitted for review to the Lunenburg County Planning Office:

[] Rezoning

[X] Conditional Use Permit

[ ] Special Exception

Requested Use or Exception:

This application is for a Conditional Use Permit to construct a 230/500kV Electric Transmission Substation (a major public utility) on a parcel that is zoned A-1 Agricultural.

The application will be available for viewing at the Lunenburg County Planning Office. The Planning Office shall notify all adjacent property owner(s) of the time, day, and location of the public hearing(s) to be held on this application. Should you have questions and/or comments, please contact the Planning Office at 434.696.2142 or taylor@lunenburgva.gov.

Drawing Index

Project Contact Information

OWNER
DOMINION ENERGY VIRGINIA d/b/a
DOMINION ENERGY
KEVIN FIELDS
DIRECTOR-ELECTRIC TRANSMISSION
PROJECT MANAGEMENT
PO BOX 26666
RICHMOND, VA 23261
(804) 771-3769
kevin.l.fields@dominionenergy.com

APPLICANT
DOMINION ENERGY
CHUCK WEIL
SITE PERMITTING SPECIALIST
500 DOMINIONI BLVD, 3RD FLOOR
GLEN ALLEN, VA 23060
(804)-239-6450
CHARLES.H.WEIL@DOMINIONENERGY.COM

CIVIL ENGINEER
DEWBERRY ENGINEERS INC.
DEREK MARSHALL
4805 LAKE BROOK DR., SUITE 200
GLEN ALLEN, VA 23060
(804) 205-3337
dmarshall@dewberry.com

Site Statistics

SITE ADDRESS:	TBD, LUNENBURG COUNTY, VA
SITE LAT/LONG:	36.887696 / -78.141171
EXISTING USE:	AGRICULTURAL
PROPOSED USE:	ELECTRICAL SUBSTATION
SITE AREA:	213.45 AC
PARKING REQUIRED:	N/A (UNMANNED FACILITY)
PARKING PROVIDED:	
HANDICAP REQUIRED/PROVIDED:	N/A (UNMANNED FACILITY)
TOTAL IMPERVIOUS/% TOTAL:	15.98 AC/61%
TOTAL PERVIOUS/% TOTAL:	10.27 AC/39%
TOTAL DISTURBED AREA:	26.25 AC
ZONING:	A-1: AGRICULTURE
TAX MAP/GPIN NO.:	059-0A-0-18A 059-01-0-2 059-03-0-6

PROJECT DESCRIPTION:
THIS PROJECT IS FOR THE PROPOSED CONSTRUCTION OF DOMINION ENERGY 'S NEW 500/230KV SUBSTATION IN LUNENBURG COUNTY, VA.

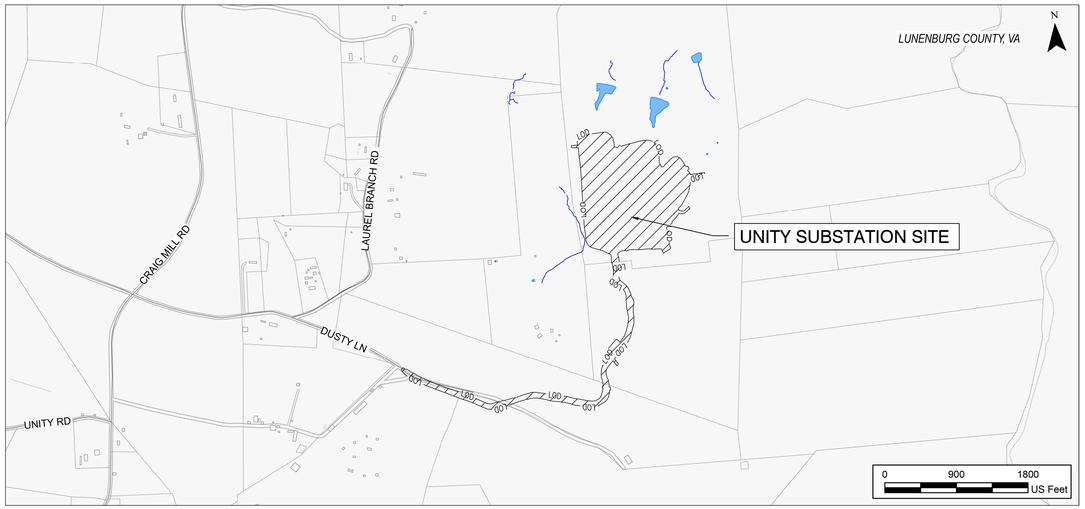
THIS PLAN SET IS THE SITE PLAN FOR THE NEW SUBSTATION, TO BE KNOWN AS UNITY SUBSTATION.

RESPONSIBLE LAND DISTURBER

THE DEWBERRY ENGINEERS INC. SEALING ENGINEER SHALL BE THE RESPONSIBLE LAND DISTURBER (RLD) FOR THIS PROJECT FOR APPROVAL PURPOSES ONLY. ONCE THE PROJECT HAS BEEN AWARDED, THE CONTRACTOR SHALL PROVIDE AN RLD AS NOTED ON PLAN SHEET 1707908-C-201.

IMPORTANT GRADING NOTE

ALL EXISTING AND PROPOSED GRADES SHOWN ON THE SITE PLAN ARE DIRT GRADES.



Unity Substation

Lunenburg County, VA

SITE PLAN
Permit Submission

REVISIONS

REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

COVER SHEET

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-101	
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-101.dwg	
APPROVED BY	KAS	8/18/23			

DOMINION SITE PREPARATION PERFORMANCE SPECIFICATIONS

PREFACE
It is the intent of these specifications to have a completely prepared site for the construction of an electrical facility at the completion of the "work" as indicated on the drawings, specifications, or other documents provided.

The regulations of all local, state, or federal governmental bodies having jurisdiction over the working areas shall be observed at all times.

Any specifications or instructions appearing on the drawings shall have precedence over the written specifications which appear herein. In the event that a discrepancy or omission has occurred, Dominion shall be consulted for resolutions.

All "work" shall be performed in a manner consistent with the best practices of the trades involved.

All "work" shall be performed within the limits of the property / rights-of-way shown on the drawings. The contractor will recognize and abide by all terms and conditions of permits, easements, and agreements relating to the project.

CLEARING AND GRUBBING
Limits for clearing and/or grubbing shall be as defined on the drawings.

Clearing shall consist of removal and disposal of brush, downed timber, logs, standing trees and snags, other growth and any items that would interfere with construction operations.

Grubbing shall consist of removal and disposal of stumps, buried logs, roots greater than ½" diameter, and any other organic material below the ground surface. All cleared areas will be grubbed unless otherwise noted.

Disposal of cleared/grubbed material by burning shall only be used when written approval is obtained from local authorities and Dominion. Otherwise, disposal shall be outside the limits of Dominion controlled land.

TOPSOIL
All topsoil and surface soils containing organic material shall be removed from the grubbed area. Topsoil shall be stockpiled for future use in approved locations unless otherwise shown on the drawings.

Topsoil shall not be used as, or mixed with, fill material in the construction of earth embankments unless otherwise shown on the drawings.

Topsoil material used as a surface dressing shall be reasonably free of cinders, debris, and stones. Unsuitable and excess topsoil material shall be disposed offsite.

EARTHWORK
Excavation:
Excavation shall be accomplished by cutting accurately to the cross sections, grades, and elevations shown on the drawings.

Soft, unstable, or otherwise unsatisfactory materials encountered at the required grades shall be removed as directed and replaced with approved, properly compacted material.

Common excavation shall include all material which can be removed by common earth excavation equipment, other than solid rock or boulders and detached pieces of rock, each exceeding 2 cubic yards in volume.

Rock excavation shall be material which requires the use of pneumatic hammers and/or explosives for removal.

Site Preparation:
If earthwork operations are performed during wet seasons, contractor shall avoid operating equipment on saturated soils. Any wet subgrade areas which receive compacted fill shall be drained and allowed to dry.

The exposed subgrades of the building pad and roadbeds shall be proofrolled to detect unsuitable soil conditions. Proofrolling shall be done after a suitable period of dry weather to avoid degrading the subgrade. Proofrolling shall be performed with a heavily loaded dump truck or with similar approved construction equipment. Soft materials encountered shall be completely excavated and replaced with approved fill materials.

Benching:
Benching shall consist of a series of horizontal cuts beginning at the toe of the existing sloped surface and continuing at each vertical intersection of the previous cut. satisfactory material removed during this operation shall be re-compacted along with the new embankment material as generally specified, except moisture content shall be maintained within 10 percent of the optimum.

Benching shall be required for all fill embankments placed on existing slopes as follows:
Slopes steeper than 4:1 but not steeper than 1 ½ :1, the bench shall be at least 6 ft. in width.

Embankment:
Embankment work shall consist of the placement and compaction of fill material above the natural ground or other surface in conformance with the drawings.

Materials:
Approved soils used in compacted fills shall be free of debris and fibrous organic material. Frozen material will not be permitted in the fill. Satisfactory materials shall comprise those classified in accordance with the unified soil system, ASTM D-2487 as GW, GP, SW, SP, SM, and SC. These materials shall possess a maximum dry density of 100 #/cu.ft. or greater referenced to ASTM D-698 standard proctor. Soils shall have a liquid limit less than 40 percent and a plasticity index less than 15.

Other materials, when approved by engineering, may be permitted in fill areas.

Unsatisfactory soils include those classified as PT, OH OR OL, CH, MH, CL, and ML, as referenced to ASTM D-2487.

THESE MATERIAL SPECIFICATIONS ARE DOMINION STANDARDS. SATISFACTORY AND UNSATISFACTORY MATERIAL USE SHOULD BE VERIFIED AGAINST SITE-SPECIFIC GEOTECHNICAL ENGINEERING REPORT AND RECOMMENDATIONS. REFER TO THE GEOTECHNICAL REPORT AND ITS ADDENDUMS FOR FINAL DETERMINATIONS.

Compaction:
Compaction equipment shall consist of vibratory or tamping rollers, sheepsfoot roller, pnuematic-tired rollers, three-wheel power rollers, walk behind vibratory rollers, vibratory plate or other approved equipment well suited to the soil being compacted.

Approved fill material shall be placed in uniform horizontal lifts of approximately 8" depth (loose measurement), except for road materials above subgrade elevation and the upper 12" of building pads which require 6" lifts. Where walk behind rollers and vibratory plate compactors are used, the lift thickness shall not exceed 4".

Generally, fills shall be compacted to at least 95 percent of the standard proctor maximum dry density (ASTM D-698), with moisture content ranging between less than 3 percent up to the optimum as determined by the proctor density test. The upper 12" of roadbeds and control enclosure building pads require 98 percent compaction referenced to ASTM D-698, with moisture content maintained within 2 percent of the optimum.

Each successive lift will be placed on firm approved subgrade or compacted fill. Where previous lifts are found to be unacceptable, the area will be scarified, aerated or moistened, re-compacted or removed, and replaced as required.

Drainage:
The fill surface shall be adequately maintained during construction. The surface shall be sloped to achieve sufficient drainage, and to prevent water from ponding on the fill. If precipitation is expected while fill construction is temporarily halted, the surface shall be rolled with rubber-tired or steel-drummed equipment to improve surface runoff. For placement during or after difficult weather conditions, wet or frozen material shall be removed.

Finished Grade Tolerances:
The top of earthwork for substation pad and roadway travel areas shall be within 0.10 ft. above or below the theoretical grade.
Earth Slopes:
Excavated slopes steeper than 3:1 shall be rough graded in a manner to provide horizontal ridges and grooves having an average deviation no greater than 0.75 ft. from the theoretical line of the typical cross section.

Excavated slopes 3:1 or flatter shall be uniformly finished and shall not deviate from the theoretical plane surface by more than 0.50 ft.

Embankment slopes steeper than 3:1 shall be rough graded in a manner to provide horizontal ridges and grooves not more than 0.50 ft. from the theoretical line of the typical cross section.

Embankment slopes 3:1 or flatter shall be uniformly finished and shall not deviate from the theoretical plane surface by more than 0.50 ft.

Rock Slopes:
Shall not deviate from a plane surface by more than 2.0 ft. and shall not deviate from their theoretical location by more than 2.0 ft. Measured along any line perpendicular to the theoretical slope line.

MATERIALS/INSTALLATION
VDOT:
Items referenced to the Virginia Department of Transportation shown on the drawings shall conform to the requirements of their latest standards and specifications.

Manufacturers' Items:
Items referenced to specific manufacturers or brand names shall be subject to any recommendations or limitations pertaining to their installation or use.

Requests for substitutions must be approved by engineering. Sufficient information regarding requests must be received by engineering 10 days in advance of approval.

GENERAL NOTES

GENERAL

1. The "Miss Utility Law" requires the contractor to call (1-800-552-7001) at least 3 working days in advance of the planned work to allow time for marking, that the marks be respected and protected, and that excavation be completed carefully.
2. The site work for this project shall meet or exceed the project specifications.
3. Contractor shall be responsible for site security and job safety. Construction work and materials shall comply with local regulations, Commonwealth of Virginia regulations and codes, and O.S.H.A. Standards.
4. Areas disturbed during construction and not restored with impervious surfaces (buildings, pavement, walks, gravel, etc.) shall follow detail provided by Virginia Erosion and Sediment Control Handbook for site specific seeding mixtures in accordance with standard & specification 3.32 unless otherwise stated in project specifications.
5. Contractor shall immediately report any discrepancies between existing conditions and contract documents to the owner and engineer.
6. Upon award of contract, contractor shall make necessary construction notifications and apply for and obtain necessary permits, pay fees, and post bonds associated with the work indicated on the drawings, in the specifications, and in the contract documents. Do not close or obstruct roadways, sidewalks and fire hydrants without appropriate permits.
7. Contractor shall be responsible for all relocations, (unless otherwise noted on plans) including but not limited to, all utilities, storm drainage, signs, traffic signals & poles, etc. As required. All work shall be in accordance with governing authorities requirements and project specifications and shall be approved by such. All cost shall be included in base bid.
8. Traffic signage shall conform to the Manual for Uniform Traffic Control Devices.
9. Areas outside the limits of proposed work disturbed by the contractor's operation shall be restored by the contractor to their original condition at the contractor's expense.
10. In the event that suspected contaminated soil, groundwater, and other media are encountered during excavation and construction activities based on visual, olfactory (smell), or other evidence, the contractor shall stop work in the vicinity of the suspect material to avoid further spreading of the material, and shall notify the engineer immediately so that the appropriate testing and subsequent action can be taken.
11. Contractor shall prevent dust, sediment, and debris from exiting the site and shall be responsible for cleanup, repairs and corrective action if such occurs.
12. Damage resulting from construction loads shall be repaired by the contractor at no additional cost to owner.
13. Contractor shall control stormwater runoff during construction to prevent adverse impacts to on site and off site areas, and shall be responsible to repair resulting damages, if any, at no cost to owner.
14. All contractor laydown areas shall be located within the limits of disturbance line as shown on this plan.
15. A properly zoned/permitted site containing horizontal and vertical control points (benchmarks) and substation control grid baselines will be furnished by Dominion.
16. Contractor shall notify the Dominion Project Engineer through Dominion's Construction Coordinator a minimum of 1 (one) week prior to completion of site grading and prior to installation of any fencing and below grade work to allow Dominion to perform in-place soil resistivity testing.
17. Field inspection service may be furnished by Dominion for its use in ensuring compliance with the plans and specifications. The contractor shall be fully responsible for compliance with the technical requirements of the project in all respects. The lack of inspection service at any time by Dominion will not constitute a waiver of this responsibility. Dominion reserves the right to determine compliance with specifications of the "work" being performed or performed at all times.

DEMOLITION

1. Contractor shall remove and dispose of existing manmade surface features (if present) within the limit of work including pavements, slabs, curbing, fences, utility poles, signs, etc. unless indicated otherwise on the drawings. Civil site plan does not include demolition of substation electrical components/equipment. See electrical plans, by others, for all electrical demolition.
2. Contractor shall dispose of demolition debris in accordance with applicable federal, state and local regulations, ordinances and statutes.

EXISTING CONDITIONS

1. Topography: Elevations based on NAVD 88 datum. Horizontal control is Virginia State Plane Coordinates, Zone 4502, NAD 83. Contour interval is one (1) foot. Survey prepared by Dewberry Engineers.
2. Geotechnical engineering report prepared by Schnabel Engineering and dated December 1, 2022.
3. Wetlands and USCOE streams are present onsite, delineation performed by C2 Environmental.
4. This project is located within FEMA zone "X" as shown on FEMA firm map number 51111C0175B, effective July 20, 2009.

GRADING

1. All cut or fill slopes shall be 3:1 or flatter unless otherwise noted. All grades shown within substation are "soil" grades.
2. Existing grade contours shown at one (1) foot intervals.
3. Proposed grade contours shown at one (1) foot intervals unless otherwise noted.
4. If any existing structures to remain are damaged during construction it shall be the contractor's responsibility to repair and/or replace the existing structure as necessary to return it to existing conditions or better.
5. Contractor shall assure positive drainage on all natural and graveled areas.
6. All unsurfaced areas disturbed by grading operation shall receive 6 inches of topsoil (except pad area). Contractor shall stabilize disturbed areas in accordance with governing specifications until a healthy stand of vegetation is obtained.
7. Contractor shall notify the Dominion project engineer through Dominion's construction coordinator a minimum of one (1) week prior to completion of site grading and prior to installation of any fencing and below grade work to allow Dominion to perform in-place soil resistivity testing.

DRAINAGE

1. Prior to start of construction, contractor shall verify existing ground elevations adjacent to drainage outlets to assure proper transitions between existing and proposed facilities.
2. Prior to job completion, ditches shall be cleaned out to remove all silt and debris build-up.
3. Set drainage ditches in accordance with elevations on the grading and drainage plans. Contractor is responsible for positive drainage.

LAYOUT AND MATERIALS

1. Dimensions are from the face of curb, face of building, face of wall and center line of pavement markings, unless otherwise noted.
2. Any property monumentation disturbed during construction shall be set or reset by a professional licensed surveyor paid by the contractor at no expense to the owner.
3. Prior to start of construction, contractor shall verify existing improvements to assure proper transitions between existing and proposed facilities.
4 Existing structures within construction limits are to be abandoned, removed or relocated as necessary. All costs shall be included in base bid.
5. Symbols and legends of project features are graphic representations and are not necessarily scaled to their actual dimensions or locations on the drawings. The contractor shall refer to the detail sheet dimensions, manufacturer's literature, shop drawings and field measurements of supplied products for layout of the project features.
6. Contractor shall not rely solely on electronic versions of plans, specifications and data files that are obtained from the designers, but shall verify location of project features in accordance with the paper copies of the plans and specifications that are supplied as part of the contract documents.

UTILITIES

1. The locations, size and types of existing utilities are shown as an approximate representation only. The owner or its representative(s) have not independently verified this information as shown on the plans. The utility information shown does not guarantee the actual existence, serviceability, or other data concerning the utilities, nor does it guarantee against the possibility that additional utilities may be present that are not shown on the plans. Prior to ordering materials and beginning construction, the contractor shall verify and determine the exact locations, sizes and elevations of the points of connections to existing utilities and shall confirm that there are no interferences with existing utilities and the proposed utility routes, including routes within public rights of way.
2. The contractor must call "Miss Utility" (1-800-552-7001) at least 72 hours before excavation to request field location of utilities.
3. Where an existing utility is found to conflict with the proposed work, or existing conditions differ from those shown such that the work cannot be completed as intended, the location, elevation, and size of the utility shall be accurately determined without delay by the contractor, and the information furnished in writing to the owner's representative(s) for the resolution of the conflict. Contractor's failure to notify prior to performing additional work releases owner from obligations for additional payments which otherwise may be warranted to resolve the conflict.
4. The location, size, depth, and specifications for construction of proposed private utility services shall be installed according to the requirements provided by, and approved by, Dominion.
5. All fill material is to be in place and compacted before installation of proposed utilities.
6. Lines underground shall be installed, inspected and approved prior to backfilling.
7. Contractor is responsible for all necessary inspections and/or certifications required by codes and/or utility service companies.
8. Contractors shall notify operators who maintain underground utility lines in the area of proposed excavation or blasting at least two working days, but not more than ten working days prior to commencement of excavation or demolition.

SITE STONE MAINTENANCE

1. The uniform 4 inch covering of VDOT No. 57 stone coarse aggregate site stone covering the substation fenced area (excluding equipment access road areas) must remain loose and non-compacted.
2. Local areas where the stone becomes embedded into the subgrade must be immediately repaired by having the stone removed, subbase re-graded, and an application of new or cleaned coarse aggregate.
3. The stone must always allow water to pass through for grounding protections and environmental water quality integrity.

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

DOMINION SPECIFICATIONS & GENERAL NOTES

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-102	
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-102.dwg	
APPROVED BY	KAS	8/18/23			

N

N/F
CHARLIE HOLMS ESTATE
D.B. 270, PG. 712
TAX PARCEL 059-0A-0-42
ZONING: A-1 AGRICULTURE
USE: AGRICULTURE

1707908-C-109

RANDALL S. LONG
D.B. 363, PG. 485
P.B. , PG.
TAX PARCEL 059-0A-0-18A
118.57± ACRES
ZONING: A-1 AGRICULTURE
USE: AGRICULTURE

N/F
FBJ GRAT-98 FORESTS LLC
D.B. 262, PG. 783
TAX PARCEL 059-01-0-3
ZONING: A-1 AGRICULTURE
USE: AGRICULTURE

1707908-C-108

1707908-C-107

N/F
JOHNNY K. LONG
D.B. 363, PG. 22
TAX PARCEL 059-02-0-2A
ZONING: A-1 AGRICULTURE
USE: AGRICULTURE

1707908-C-104

GATE

N/F
LONG. JOHNNY K.
INST. #22-0001211
TAX PARCEL 059-0A-0-54A
ZONING: A-1 AGRICULTURE
USE: AGRICULTURE

1707908-C-105

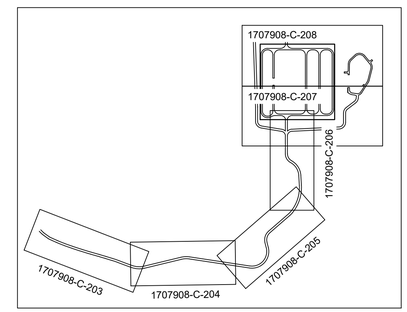
1707908-C-106

N/F
VIRGINIA ELECTRIC AND POWER COMPANY
INSTR. #240000009
TAX PARCEL 059-01-0-2
ZONING: A-1 AGRICULTURE
USE: AGRICULTURE

N/F
RAGSDALE, DOUGLAS INGRAM, JR.
W.B. 35 , PG. 1521
TAX PARCEL 059-03-0-6
ZONING: A-1 AGRICULTURE
USE: AGRICULTURE

N/F
YANCEY ROSA LEE OR CARSON W &,
GINGER LEE & JEAN ELIZABETH YANCEY
D.B. 304, PG. 473
TAX PARCEL 071-0A-0-9
ZONING: A-1 AGRICULTURE
USE: AGRICULTURE

0' 100' 200' 400'
SCALE: 1" = 200'



KEY PLAN

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

EXISTING CONDITIONS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	AS SHOWN
PROJECT	5017950	NAME	DATE	SHEET:	1707908-C-103
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		KAS	8/18/23		1707908-C-103.dwg

EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION
This project includes construction of a new Dominion Energy substation. The project also includes construction of a new stormwater management retention pond and retention forebay east of the substation, and a proposed access road south of the substation. The disturbed area is 26.25 AC.

EXISTING SITE CONDITIONS
The existing site is on an undeveloped grassy field.

ADJACENT AREAS
The project area is located east of Laurel Branch Road and to the northeast of Dusty Lane in Lunenburg County, Virginia. The site is bordered by wooded areas to the east and south, a residential property to the west, and an existing Dominion transmission easement to the north. The existing road beginning at Dusty Lane will be utilized for site access along with approximately 1000 LF of new 20' roadbed.

OFFSITE AREAS
Existing access across up to 4 parcels. Source of imported fill (if necessary) will be at the discretion of the contractor, not the engineer. Contractor shall only perform offsite activities that are covered under a separate VSMP permit.

SOILS
The soils on site are: Appling sandy loam, 2 to 7 percent slopes, moderately eroded (H.S.G. B); Appling sandy loam, 7 to 15 percent slopes, moderately eroded (H.S.G. B); Cecil sandy loam, 2 to 7 percent slopes, eroded (H.S.G. B).

CRITICAL AREAS
ESC measures shall be provided adjacent to wetlands and streams.

EROSION AND SEDIMENT CONTROL MEASURES
Construction Entrance (VESCH Std. & Spec. 3.02):
A stabilized stone pad with a filter fabric underliner located at points of vehicular ingress and egress on a construction site. The purpose is to reduce the amount of mud transported onto paved public roads by motor vehicles or runoff. Installed wherever traffic will be leaving a construction site and move directly onto a public road or other paved area.

Silt Fence (VESCH Std. & Spec. 3.05):
A temporary sediment barrier consisting of a filter fabric stretched across and attached to supporting posts and entrenched. Silt fence is installed to intercept and detain small amounts of sediment from disturbed areas during construction in order to prevent sediment from leaving the site and to decrease the velocity of sheet flows and low-to-moderate channel flows.

Inlet Protection (VESCH Std. & Spec. 3.07):
A sediment filter or excavated impounding area around a storm drain drop inlet or curb inlet to prevent sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

Culvert Inlet Protection (VESCH Std. & Spec. 3.08):
Prevents sediment from entering a culvert and associated drainage system prior to permanent stabilization of disturbed project area.

Diversion Ditch (VESCH Std. & Spec. 3.12):
A channel constructed across a slope with a supporting earthen ridge on the lower side. the purpose is to reduce slope length and to intercept and divert stormwater runoff to stabilized outlets at non-erosive velocities.

Temporary Sediment Trap (VESCH Std. & Spec. 3.13);
A temporary ponding area formed by constructing an earthen embankment with a stone outlet. he purpose is to detain sediment-laden runoff from small disturbed areas long enough to allow the majority of the sediment to settle out.

Temporary Sediment Basin (VESCH Std. & Spec. 3.14):
A temporary barrier or dam with a controlled stormwater release structure formed by constructing an embankment of compacted soil across a drainageway. The purpose is to detain sediment-laden runoff from disturbed areas in "wet" and "dry" storage long enough for the majority of the sediment to settle out.

Rock Check Dam (VESCH Std. & Spec. 3.20);
Small temporary stone dams constructed across a swale or drainage ditch. to reduce the velocity of concentrated stormwater flows, thereby reducing erosion of the swale or ditch.

Temporary Seeding (VESCH Std. & Spec. 3.31):
The establishment of a temporary vegetative cover on disturbed areas by seeding with appropriate rapidly growing annual plants. Temporary seeding reduces erosion and sedimentation by stabilizing disturbed areas that will not be brought to final grade for a period of more than 14 days. Temporary seeding reduces damage from sediment and runoff to downstream or off-site areas, and to provide protection to bare soils exposed during construction until permanent vegetation or other erosion control measures can be established. For use where exposed soil surfaces are not to be fine-graded for periods of longer than 14 days. Such areas include denuded areas, soil stockpiles, dikes, dams, sides of sediment basins, temporary roadbanks, etc. A permanent vegetative cover shall be applied to areas that will be left dormant for a period of more than one (1) year.

Permanent Seeding (VESCH Std. & Spec. 3.32):
The establishment of a perennial vegetative cover on disturbed areas by planting seed. Permanent seeding reduces erosion and decreases sediment yield from disturbed areas. Permanent seeding stabilizes disturbed areas in a manner that is economical, adaptable to site conditions, and allows selection of the most appropriate plant material. Permanent seeding also improves wildlife habitat and enhances natural beauty. For use in disturbed areas where permanent, long-lived vegetative cover is needed to stabilize the soil. For use where rough-graded areas will not be brought to final grade for one (1) year or more.

Mulching (VESCH Std. & Spec. 3.35):
Application of plant residues or other suitable materials to the soil surface. Mulching prevents erosion by protecting the soil surface from raindrop impact and reducing the velocity of overland flow. Mulching fosters the growth of vegetation by increasing available moisture and providing insulation against extreme heat and cold. For use in areas which have been permanently seeded. Mulching should occur immediately following seeding. Areas that cannot be seeded because of the season should be mulched with an organic mulch.

Tree Protection (VESCH Std. & Spec. 3.38):
Protects desirable trees from mechanical and other injury during land disturbing and construction activity.

Dust Control (VESCH Std. & Spec. 3.39):
Reducing surface and air movement of dust during land disturbing, demolition and construction activities. The purpose is to prevent surface and air movement of dust from exposed soil surfaces and reduce the presence of airborne substances which may present health hazards, traffic safety problems or harm animal or plant life.

TEMPORARY AND PERMANENT STABILIZATION
During construction: apply temporary and/or permanent seeding as grading operations are completed in areas not to receive pavement or other impervious surfaces.

Post construction: apply topsoil, permanent seeding per specifications and soil amendments (as necessary) to all disturbed surfaces not receiving pavement or other impervious surface.

Temporary seeding shall be applied within seven days to denuded areas that may not be at final grade, but will remain dormant for longer than 14 days and less than one year. This includes, but is not limited to, stockpiles and borrow areas.

Permanent seeding shall be applied and a perennial vegetative covering shall be established on disturbed areas within seven days of being brought to final grade on areas not otherwise protected. Selection of the seed mixture shall depend on the time of year it is to be applied.

Mulching shall be applied to all permanent seeding immediately upon completion of seed application. Mulch liberally during the mid-summer and winter seasons.

See Virginia Erosion and Sediment Control Technical Bulletin No. 4, Nutrient Management for Development Sites, for updated seed mixtures and schedules as well as updated liming, mulching, and fertilizing requirements. See Virginia Erosion and Sediment Control Handbook Std. and Spec. 3.35 for mulching specifications.

STORMWATER RUNOFF CONSIDERATIONS
A Construction General Permit (CGP) for the discharge of stormwater from construction activities is required for projects disturbing 1 acre or greater. Visit the Virginia Stormwater Management Program Permitting website for more information.

Water quantity requirements have been met by utilizing a Level 2 Wet Pond and decreasing the area going to outfall points. The wet pond is located on the south side of the pad.

Water quality requirement of 27.71 lbs/yr of phosphorous removal will be met with the combination of the Level 2 Wet Pond and the purchase of 6.28 lbs/yr of off-site nutrient credits.

CALCULATIONS
See pertinent detail sheets included in this plan set.

SOIL STOCKPILES AND BORROW AREAS
All soil stockpiles shall have silt fence installed on all sides. Stockpiles shall be temporary/permanently seeded depending on time frame for reuse or removal of soil material. All on-site borrow areas (if necessary) shall be delineated on the plan by contractor. Appropriate erosion and sediment control features (ex. silt fence, sediment traps/basins) shall be installed depending on locations and field conditions.

EROSION & SEDIMENT CONTROL MAINTENANCE

In general, the project area shall be checked during or immediately following installation of ESC controls, and at least once in every five days. Within 48 hours after any runoff producing storm event and at the completion of the project to ensure that all erosion and sediment control devices are in working order. Erosion control devices shall be maintained according to the following schedule:

1. Construction Entrance
The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto public right-of-way. This may require periodic top dressing with additional stone or the washing and reworking of existing stone as conditions demand and repair and/or cleanout of any structures used to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately. The use of water trucks to remove materials dropped, washed, or tracked outside the project area will not be permitted under any circumstances.

2. Silt Fence
Sediment deposits shall be removed when deposits reach approximately one-half the height of the barrier.
Fabric shall be replaced if it has decomposed or become ineffective.

3. Inlet Protection
The structure shall be inspected after each rain and repairs made as needed. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

4. Culvert Inlet Protection
The structure shall be inspected after each rain and repairs made as needed. Aggregate shall be replaced or cleaned when inspection reveals that clogged voids are causing ponding problems which interfere with on-site construction. Sediment shall be removed and the impoundment restored to its original dimensions when sediment has accumulated to one-half the design depth. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode and cause sedimentation problems. Temporary structures shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

5. Diversion Ditch
Before final stabilization, the diversion should be inspected after every rainfall and at least once every two weeks. Sediment shall be removed from the channel and repairs made as necessary. Seeded areas which fail to establish a vegetative cover shall be reseeded as necessary.

6. Rock Check Dam
Check dams should be checked for sediment accumulation after each runoff-producing storm event. Sediment should be removed when it reaches one half of the original height of the measure. Regular inspections should be made to insure that the center of the dam is lower than the edges. Erosion caused by high flows around the edges of the dam should be corrected immediately.

7. Seeding
The seeded areas shall be checked regularly to ensure that a good stand is maintained. Areas should be fertilized and re-seeded as needed.

8. Level Spreader
The level spreader shall be inspected after every rainfall and repairs made, if required. Level spreader lip must remain at 0% slope. The contractor should avoid the placement of any material on and prevent construction traffic across the structure. If the level spreader is damaged by construction traffic, it shall be repaired immediately.

9. Sediment Trap
Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half the design volume of the wet storage. Sediment removal from the basin shall be deposited in a suitable area and in such a manner that it will not erode and cause sedimentation problems. Filter stone shall be regularly checked to ensure that filtration performance is maintained. Stone choked with sediment shall be removed and cleaned or replaced. The structure should be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. The height of the stone outlet should be checked to ensure that the center is at least 1 foot below the top of the embankment.

10. Sediment Basin
The basin embankment should be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. The emergency spillway should be checked regularly to ensure that its lining is well established and erosion-resistant. The basin should be checked after each runoff-producing rainfall for sediment cleanout. When the sediment reaches the clean-out level, it shall be removed and properly disposed of.

The contractor shall be responsible for providing an employee who will be responsible in charge of the Erosion and Sediment Control Plan and requirements for the project that is certified by the Virginia Department of Environmental Quality (DEQ) as a Responsible Land Disturber (RLD). The name of the contractor's RLD and copy of his current certification shall be provided to the owner, engineer ,and ESC inspector prior to performing any land disturbing activity.

The contractor shall be responsible for preventing surface and air movement of dust from exposed soils which may present health hazards, traffic safety problems, or harm animal or plant life.

The contractor will maintain a log of inspections, maintenance performed, and repairs made for the inspection by the owner and plan approving authority.

No erosion and sediment control measures shall be removed without approval of the engineer or ESC inspector for the project. Sediment shall be placed in approved location.

PLANT PROTECTION

1. Trees and vegetation adjacent to the actual work area or borrow area are to be protected with temporary fencing (construction safety fence for vegetation) to preserve existing items indicated to remain and to prevent damage to property.

2. Underground utilities shall be located so that construction will not damage or destroy the plants to remain. Utility trenching shall not be located closer than 1'-0" for each 1" in diameter up to a maximum of 20'-0" for trees to remain.

3. The parking of vehicles and storage of any construction equipment or materials shall not occur under the drip line of trees to be protected.

EROSION & SEDIMENT CONTROL SEQUENCE

1. Upon implementation and installation of the following areas: trailer, parking, lay down, porta-potty, wheel wash, concrete washout, mason's area, fuel and material storage containers, solid waste containers, etc., immediately denote them on the Stormwater Pollution Prevention Plan (SWPPP) and note any changes in location as they occur throughout the construction process. In addition, note in the SWPPP all areas where fill is imported from or soil is exported to.

2. Contractor may complete construction-related activities concurrently only if all preceding ESC measures have been completely installed.

3. The actual schedule for implementing ESC measures will be determined by project construction progress.

4. No ESC measure(s) shall be removed without approval of the engineer or ESC inspector for the project.

5. Additional ESC measures may be required due to site conditions at time of construction activity. Contractor shall provide any additional ESC measures as needed to control sediment run-off at no additional cost to owner.

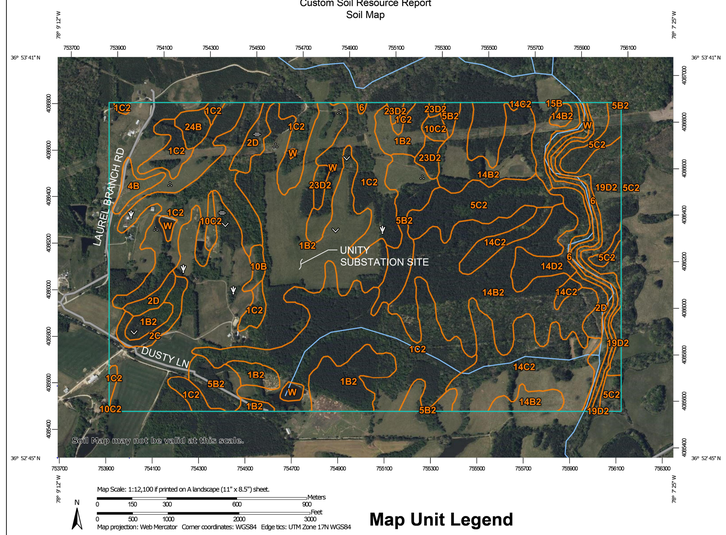
6. Contractor may locate stockpiles for topsoil, suitable fill, and debris within limits of construction. Contractor shall surround stock pile with silt fence, temporary/permanently seed and maintain the stockpile per the VESCH.

7. Contractor shall perform construction sequencing such that earth materials are exposed for the least amount of time before they are covered, seeded or otherwise stabilized to prevent erosion.

PHASE I
1. Install construction entrance, silt fence, tree protection, and inlet protection. Clear only those areas needed to install ESC measures.
2. Install diversion dikes, ditches, sediment basin, and sediment traps prior to land disturbance.

PHASE II
1. Clear trees and brush.
2. Perform demolition as noted on plan sheets.
3. Begin rough grading the site.
4. Install culverts and CIP.
5. Install check dams as ditches/channels are installed.
6. After installation of proposed storm drainage structures, install inlet protection.
7. Temporarily seed and mulch, throughout construction, within 7 days denuded areas that will be inactive for 14 days or more.
8. Permanently stabilize areas to be vegetated (6" topsoil and seed) as they are brought to final grade.
9. Prepare substation pad for gravel and install gravel.
10. Install electrical equipment and security fence.

Custom Soil Resource Report
Soil Map



Map Scale: 1:12,100 if printed on A landscape (11" x 8.5") sheet.
Meters 0 150 300 600 900
Feet 0 500 1000 2000 3000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1B2	Appling sandy loam, 2 to 7 percent slopes, moderately eroded	221.2	30.4%
1C2	Appling sandy loam, 7 to 15 percent slopes, moderately eroded	167.2	23.0%
2C	Ashlar loamy coarse sand, 7 to 15 percent slopes	5.8	0.8%
2D	Ashlar loamy coarse sand, 15 to 25 percent slopes	12.7	1.8%
4B	Caroline sandy loam, 1 to 7 percent slopes	4.5	0.6%
5B2	Cecil sandy loam, 2 to 7 percent slopes, eroded	32.6	4.5%
5C2	Cecil sandy loam, 7 to 15 percent slopes, eroded	33.5	4.6%
6	Chewacla, Toccoa, and Augusta loams, frequently flooded	17.0	2.3%
10B	Helena sandy loam, 1 to 6 percent slopes	2.6	0.4%
10C2	Helena sandy loam, 6 to 10 percent slopes, eroded	4.4	0.6%
14B2	Madison sandy loam, 2 to 7 percent slopes, eroded	101.7	14.0%
14C2	Madison sandy loam, 7 to 15 percent slopes, eroded	67.0	9.2%
14D2	Madison sandy loam, 15 to 30 percent slopes, eroded	12.0	1.6%
15B	Masada fine sandy loam, 2 to 7 percent slopes	0.0	0.0%
19D2	Pacolet sandy loam, 15 to 30 percent slopes, eroded	22.1	3.0%
23D2	Wedowee sandy loam, 15 to 30 percent slopes, eroded	7.3	1.0%
24B	Worsham loam, 0 to 4 percent slopes	4.3	0.6%
W	Water	11.0	1.5%
Totals for Area of Interest		**726.9**	**100.0%**

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lunenburg County, Virginia
Survey Area Data: Version 15, Aug 31, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 25, 2022—May 20, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

REVISIONS		
REV	DATE	DESCRIPTION

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DEWBERRY PROJECT NO.: 50157950

Dominion Energy

ESC NARRATIVE I

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	AS SHOWN
PROJECT	5017950	NAME	DATE	SHEET:	1707908-C-201
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	1707908-C-201.dwg
APPROVED BY		KAS	8/18/23		

MINIMUM STANDARDS (9VAC25-840-40)

A VESCP must be consistent with the following criteria, techniques and methods:

1. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain dormant for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.
2. During construction of the project, soil stock piles and borrow areas shall be stabilized or protected with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as borrow areas and soil intentionally transported from the project site.
3. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive and will inhibit erosion.
4. Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place.
5. Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation.
6. Sediment traps and sediment basins shall be designed and constructed based upon the total drainage area to be served by the trap or basin.
   a. The minimum storage capacity of a sediment trap shall be 134 cubic yards per acre of drainage area and the trap shall only control drainage areas less than three acres.
   b. Surface runoff from disturbed areas that is comprised of flow from drainage areas greater than or equal to three acres shall be controlled by a sediment basin. The minimum storage capacity of a sediment basin shall be 134 cubic yards per acre of drainage area. The outfall system shall, at a minimum, maintain the structural integrity of the basin during a 25-year storm of 24-hour duration. Runoff coefficients used in runoff calculations shall correspond to a bare earth condition or those conditions expected to exist while the sediment basin is utilized.
7. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected.
8. Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure.
9. Whenever water seeps from a slope face, adequate drainage or other protection shall be provided.
10. All storm sewer inlets that are made operable during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.
11. Before newly constructed stormwater conveyance channels or pipes are made operational, adequate outlet protection and any required temporary or permanent channel lining shall be installed in both the conveyance channel and receiving channel.
12. When work in a live watercourse is performed, precautions shall be taken to minimize encroachment, control sediment transport and stabilize the work area to the greatest extent possible during construction. Nonerodible material shall be used for the construction of causeways and cofferdams. Earthen fill may be used for these structures if armored by nonerodible cover materials.
13. When a live watercourse must be crossed by construction vehicles more than twice in any six-month period, a temporary vehicular stream crossing constructed of nonerodible material shall be provided.
14. All applicable federal, state and local requirements pertaining to working in or crossing live watercourses shall be met.
15. The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed.
16. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
   a. No more than 500 linear feet of trench may be opened at one time.
   b. Excavated material shall be placed on the uphill side of trenches.
   c. Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.
   d. Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.
   e. Restabilization shall be accomplished in accordance with this chapter.
   f. Applicable safety requirements shall be complied with.
17. Where construction vehicle access routes intersect paved or public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a paved or public road surface, the road surface shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner. This provision shall apply to individual development lots as well as to larger land-disturbing activities.
18. All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are no longer needed, unless otherwise authorized by the VESCP authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.
19. Properties and waterways downstream from development sites shall be protected from sediment deposition, erosion and damage due to increases in volume, velocity and peak flow rate of stormwater runoff for the stated frequency storm of 24-hour duration in accordance with the following standards and criteria. Stream restoration and relocation projects that incorporate natural channel design concepts are not man-made channels and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels:
   a. Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe or storm sewer system. For those sites where runoff is discharged into a pipe or pipe system, downstream stability analyses at the outfall of the pipe or pipe system shall be performed.
   b. Adequacy of all channels and pipes shall be verified in the following manner:

      (1) The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is one hundred times greater than the contributing drainage area of the project in question; or

      (2a) Natural channels shall be analyzed by the use of a two-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks.

      (2b) All previously constructed man-made channels shall be analyzed by the use of a 10-year storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and

      (2c) Pipes and storm sewer systems shall be analyzed by the use of a 10-year storm to verify that stormwater will be contained within the pipe or system.
   c. If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:

      (1) Improve the channels to a condition where a 10-year storm will not overtop the banks and a two-year storm will not cause erosion to the channel, the bed, or the banks; or

      (2) Improve the pipe or pipe system to a condition where the 10-year storm is contained within the appurtenances;

      (3) Develop a site design that will not cause the pre-development peak runoff rate from a two-year storm to increase when runoff outfalls into a natural channel or will not cause the pre-development peak runoff rate from a 10-year storm to increase when runoff outfalls into a man-made channel; or

      (4) Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the VESCP authority to prevent downstream erosion.
   d. The applicant shall provide evidence of permission to make the improvements.
   e. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development condition of the subject project.
   f. If the applicant chooses an option that includes stormwater detention, he shall obtain approval from the VESCP of a plan for maintenance of the detention facilities. The plan shall set forth the maintenance requirements of the facility and the person responsible for performing the maintenance.
   g. Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipators shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transition from the facility to the receiving channel.
   h. All on-site channels must be verified to be adequate.
   i. Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility.
   j. In applying these stormwater management criteria, individual lots or parcels in a residential, commercial or industrial development shall not be considered to be separate development projects. Instead, the development, as a whole, shall be considered to be a single development project. Hydrologic parameters that reflect the ultimate development condition shall be used in all engineering calculations.
   k. All measures used to protect properties and waterways shall be employed in a manner which minimizes impacts on the physical, chemical and biological integrity of rivers, streams and other waters of the state.
   l. Any plan approved prior to July 1, 2014, that provides for stormwater management that addresses any flow rate capacity and velocity requirements for natural or man-made channels shall satisfy the flow rate capacity and velocity requirements for natural or man-made channels if the practices are designed to (i) detain the water quality volume and to release it over 48 hours; (ii) detain and release over a 24-hour period the expected rainfall resulting from the one year, 24-hour storm; and (iii) reduce the allowable peak flow rate resulting from the 1.5, 2, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming it was in a good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition, and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels as defined in any regulations promulgated pursuant to § 62.1-44.15:54 or 62.1-44.15:65 of the Act.

EROSION & SEDIMENT CONTROL NOTES

ES-1: Unless otherwise indicated, all vegetative and structural erosion and sediment control practices will be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook and Virginia Regulations (9VAC25-840).

ES-2: The plan approving authority must be notified one week prior to the pre-construction conference, one week prior to the commencement of land disturbing activity, and one week prior to final inspection.

ES-3: All erosion and sediment control measures are to be placed prior to or as the first step in clearing.

ES-4: A copy of the approved erosion and sediment control plan shall be maintained on the site at all times.

ES-5: Prior to commencing land disturbing activities in areas other than indicated on these plans (including, but not limited to, off-site borrow or waste areas), the contractor shall submit a supplementary erosion control plan to the owner for review and approval by the plan approving authority.

ES-6: The contractor is responsible for installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the plan approving authority.

ES-7: All disturbed areas are to drain to approved sediment control measures at all times during land disturbing activities and during site development until final stabilization is achieved.

ES-8: During dewatering operations, water shall be pumped into an approved filtering device.

ES-9: The contractor shall inspect all erosion control measures periodically after each runoff-producing rainfall event. Any necessary repairs or cleanup to maintain the effectiveness of the erosion control devices shall be made immediately.

REVISIONS		
REV	DATE	DESCRIPTION

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1/29/24
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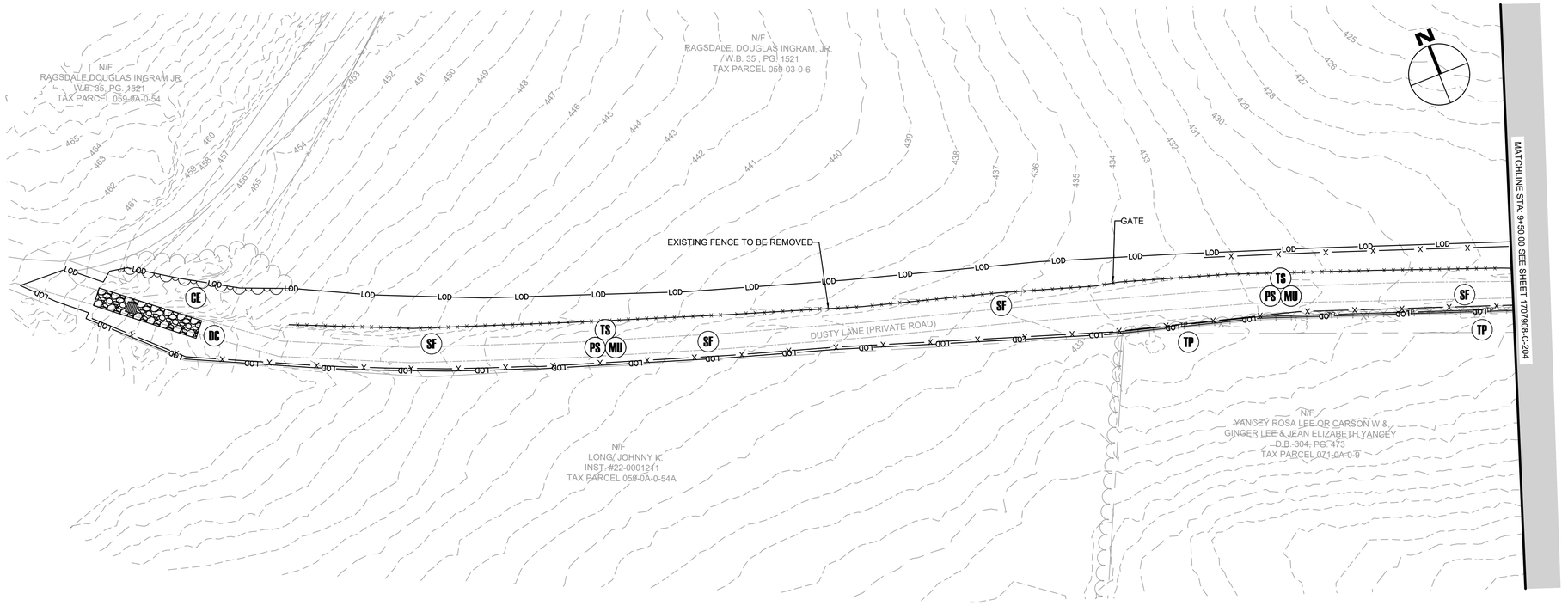
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

ESC NARRATIVE II

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

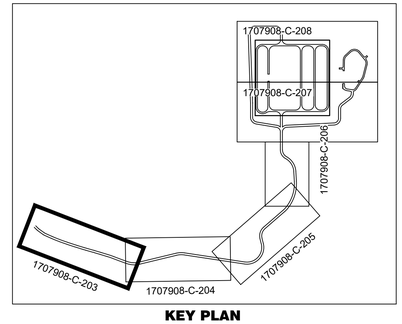
OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-202	
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-202.dwg	
APPROVED BY	KAS	8/18/23			



EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	SPEC*
CE		CONSTRUCTION ENTRANCE	3.02
SF	X	SILT FENCE	3.05
SSF	XX	SILT FENCE W/ WIRE SUPPORT	3.05
TS	TS	TEMPORARY SEEDING	3.31
PS	PS	PERMANENT SEEDING	3.32
MU	MU	MULCHING	3.35
TP	TP	TREE PROTECTION	3.38
DC	DC	DUST CONTROL	3.39
	LOD	LIMITS OF DISTURBANCE	

* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER



KEY PLAN

REVISIONS		
REV	DATE	DESCRIPTION

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COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
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1/29/24
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DEWBERRY PROJECT NO.: 50157950

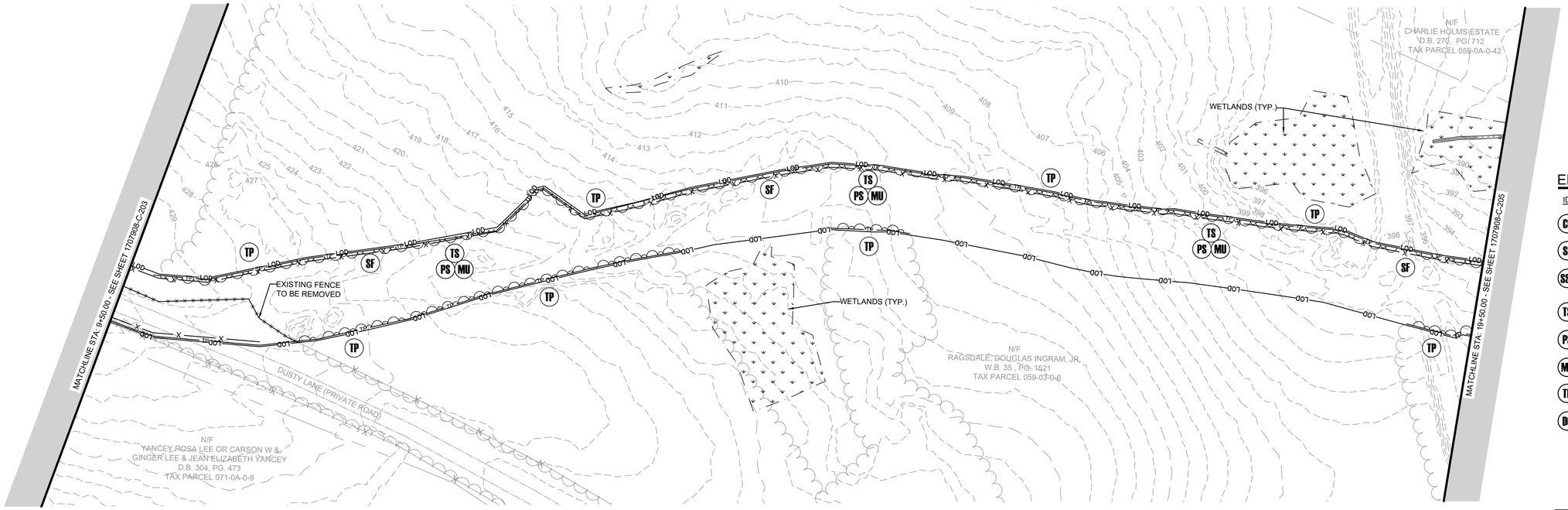
Dominion Energy

ESC PHASE 1 AND DEMOLITION
ACCESS ROAD STA. 0+00.00-9+50.00

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

0' 20' 40' 80'
SCALE: 1" = 40'

OPERATIONAL REGION		B/M No.		SCALE	
PROJECT	NAME	DATE	SHEET:	1707908-C-203	
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING:		
APPROVED BY	KAS	8/18/23	1707908-C-203.dwg		



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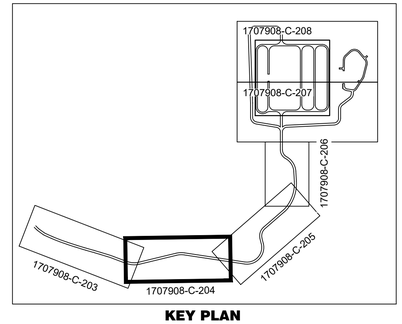
EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	SPEC*
CE		CONSTRUCTION ENTRANCE	3.02
SF	X	SILT FENCE	3.05
SSF	XX	SILT FENCE W/ WIRE SUPPORT	3.05
TS	TS	TEMPORARY SEEDING	3.31
PS	PS	PERMANENT SEEDING	3.32
MU	MU	MULCHING	3.35
TP	TP	TREE PROTECTION	3.38
DC	DC	DUST CONTROL	3.39
	LOD	LIMITS OF DISTURBANCE	

* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER



KEY PLAN

REVISIONS		
REV	DATE	DESCRIPTION

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DEWBERRY PROJECT NO.: 50157950

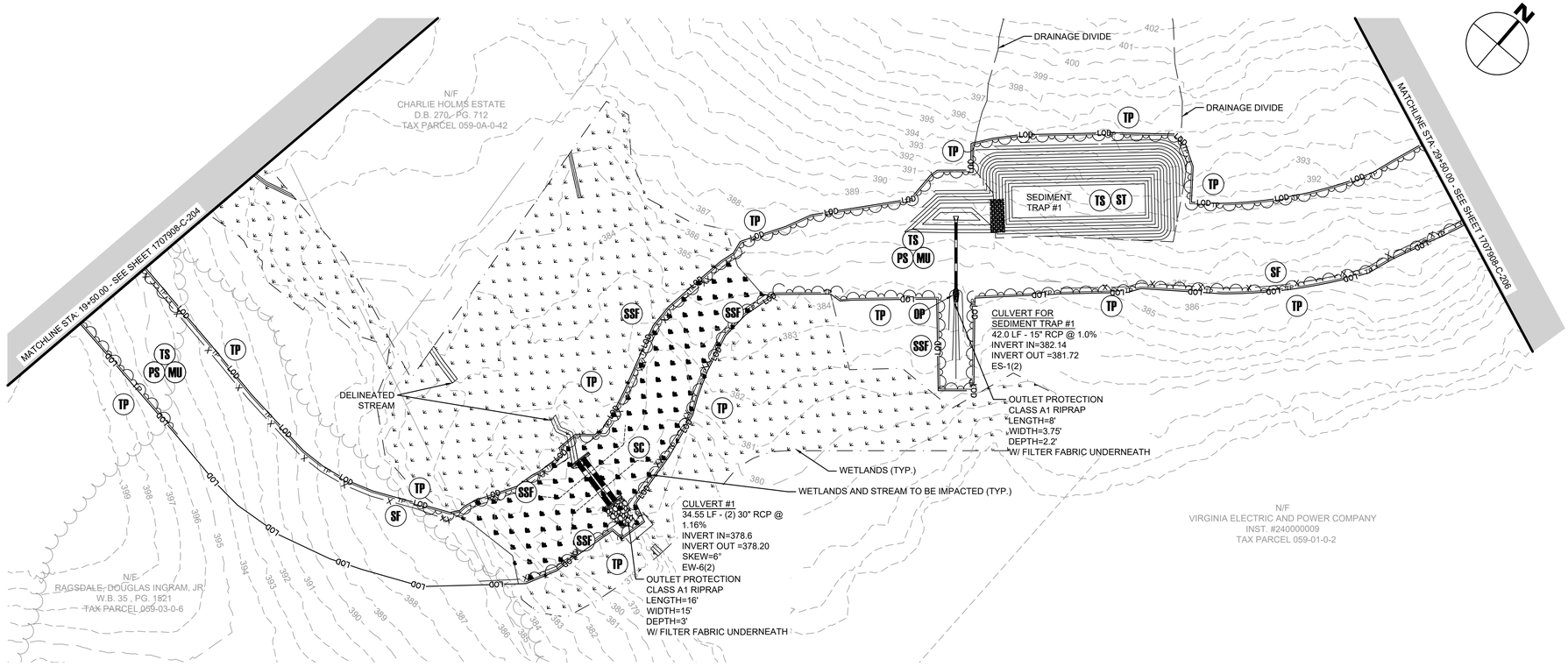
Dominion Energy

ESC PHASE 1 AND DEMOLITION
ACCESS ROAD STA. 9+50.00-19+50.00

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

0' 20' 40' 80'
SCALE: 1" = 40'

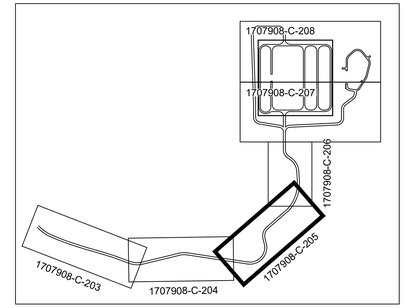
OPERATIONAL REGION		B/M No.		SCALE	
PROJECT	NAME	DATE	SHEET:	1707908-C-204	
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-204.dwg	
APPROVED BY	KAS	8/18/23			



EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	SPEC*
CE		CONSTRUCTION ENTRANCE	3.02
SF	X	SILT FENCE	3.05
SSF	XX	SILT FENCE W/ WIRE SUPPORT	3.05
TS	TS	TEMPORARY SEEDING	3.31
PS	PS	PERMANENT SEEDING	3.32
MU	MU	MULCHING	3.35
TP	TP	TREE PROTECTION	3.38
DC	DC	DUST CONTROL	3.39
SC		VEHICULAR STREAM CROSSING	3.24
	LOD	LIMITS OF DISTURBANCE	

* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER



KEY PLAN

0' 20' 40' 80'

SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

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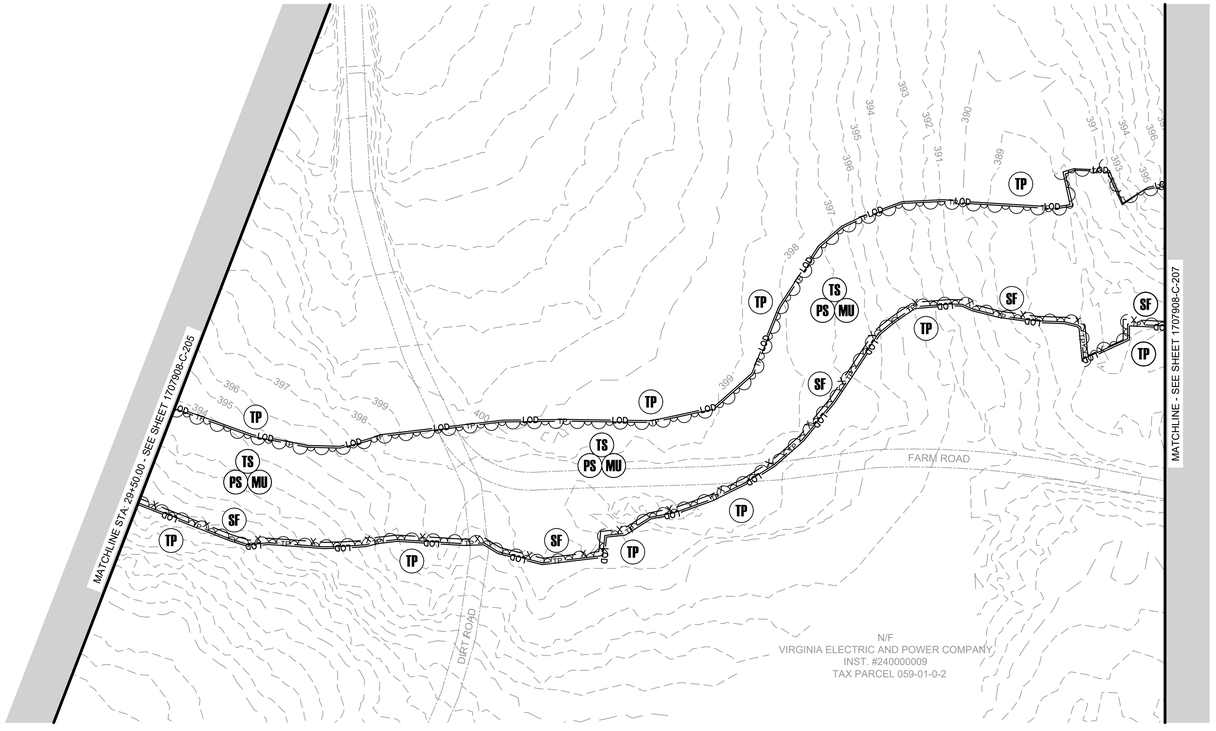
Dominion Energy

ESC PHASE 1 AND DEMOLITION
ACCESS ROAD STA. 19+50.00-29+50.00

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.		SCALE
PROJECT		NAME	DATE	SHEET:	1707908-C-205
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	1707908-C-205.dwg
APPROVED BY		KAS	8/18/23		

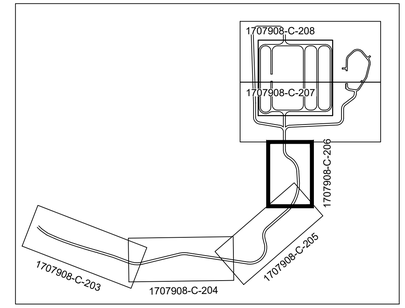


N

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	SPEC*
CE		CONSTRUCTION ENTRANCE	3.02
SF	X	SILT FENCE	3.05
SSF	XX	SILT FENCE W/ WIRE SUPPORT	3.05
TS	TS	TEMPORARY SEEDING	3.31
PS	PS	PERMANENT SEEDING	3.32
MU	MU	MULCHING	3.35
TP	TP	TREE PROTECTION	3.38
DC	DC	DUST CONTROL	3.39
	LOD	LIMITS OF DISTURBANCE	

* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER



KEY PLAN

0' 20' 40' 80'

SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060. (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

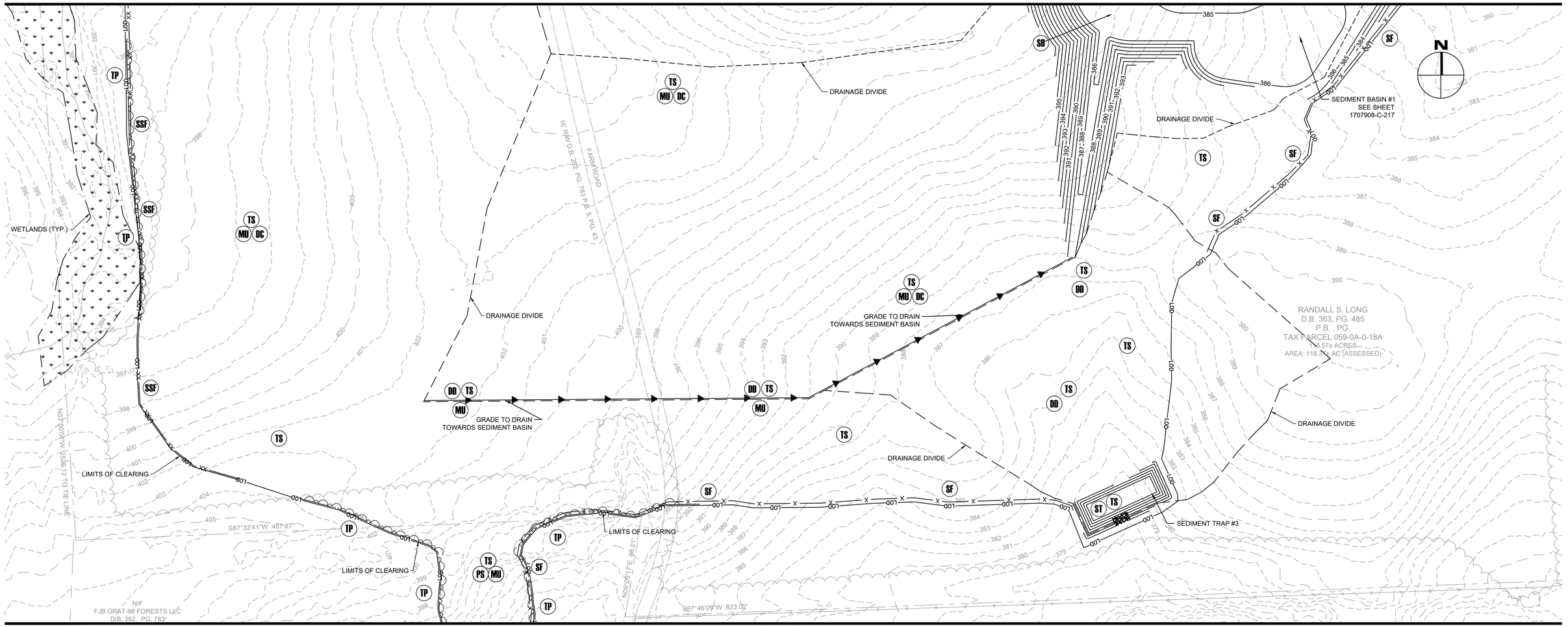
Dominion Energy

ESC PHASE 1 AND DEMOLITION
ACCESS ROAD STA. 29+50.00-38+50.00

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	
PROJECT		NAME	DATE	SHEET:	1707908-C-206
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	1707908-C-206.dwg
APPROVED BY		KAS	8/18/23		

MATCHLINE - SEE SHEET 1707908-C-208



MATCHLINE - SEE SHEET 1707908-C-206

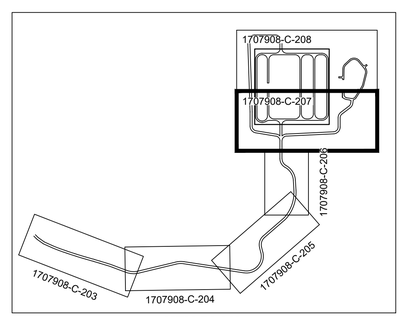
EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
SAF		SAFETY FENCE	3.01
CE		CONSTRUCTION ENTRANCE	3.02
SF	X	SILT FENCE	3.05
SSF	XX	SUPER SILT FENCE	N/A
IP		INLET PROTECTION	3.07
CIP		CULVERT INLET PROTECTION	3.08
DD		DIVERSION DIKE	3.09
ST	ST	SEDIMENT TRAP	3.13
SB	SB	SEDIMENT BASIN	3.14

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
CD		ROCK CHECK DAM	3.20
TS	TS	TEMPORARY SEEDING	3.31
PS	PS	PERMANENT SEEDING	3.32
MU	MU	MULCHING	3.35
BM	BM	BLANKET MATTING	3.36
TP	TP	TREE PROTECTION	3.38
DC	DC	DUST CONTROL	3.39
	LOD LOD	LIMITS OF DISTURBANCE	

* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER



KEY PLAN

0' 20' 40' 80'

SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
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1/29/24
PROFESSIONAL ENGINEER

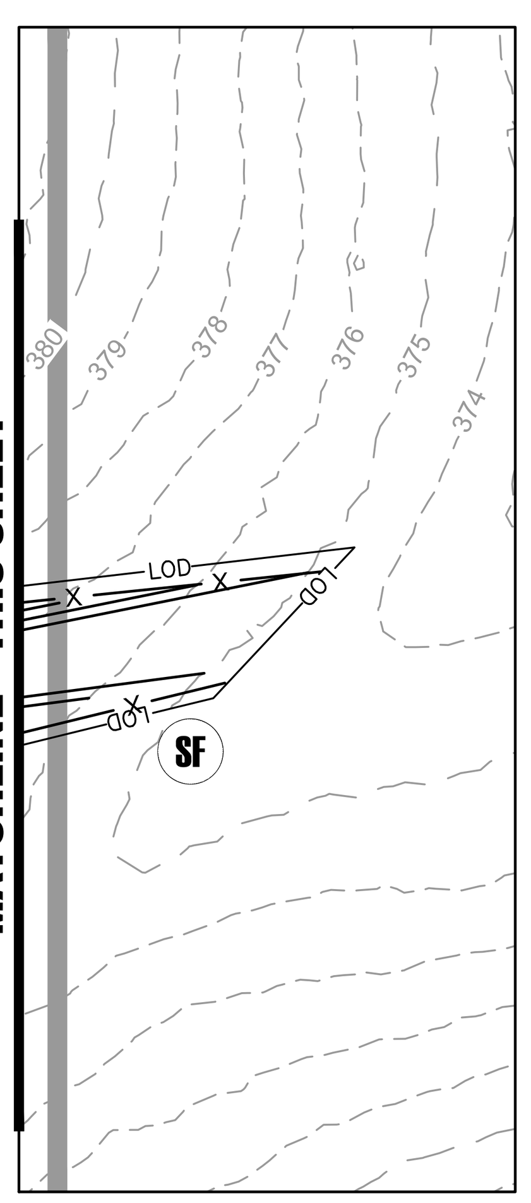
DEWBERRY PROJECT NO.: 50157950

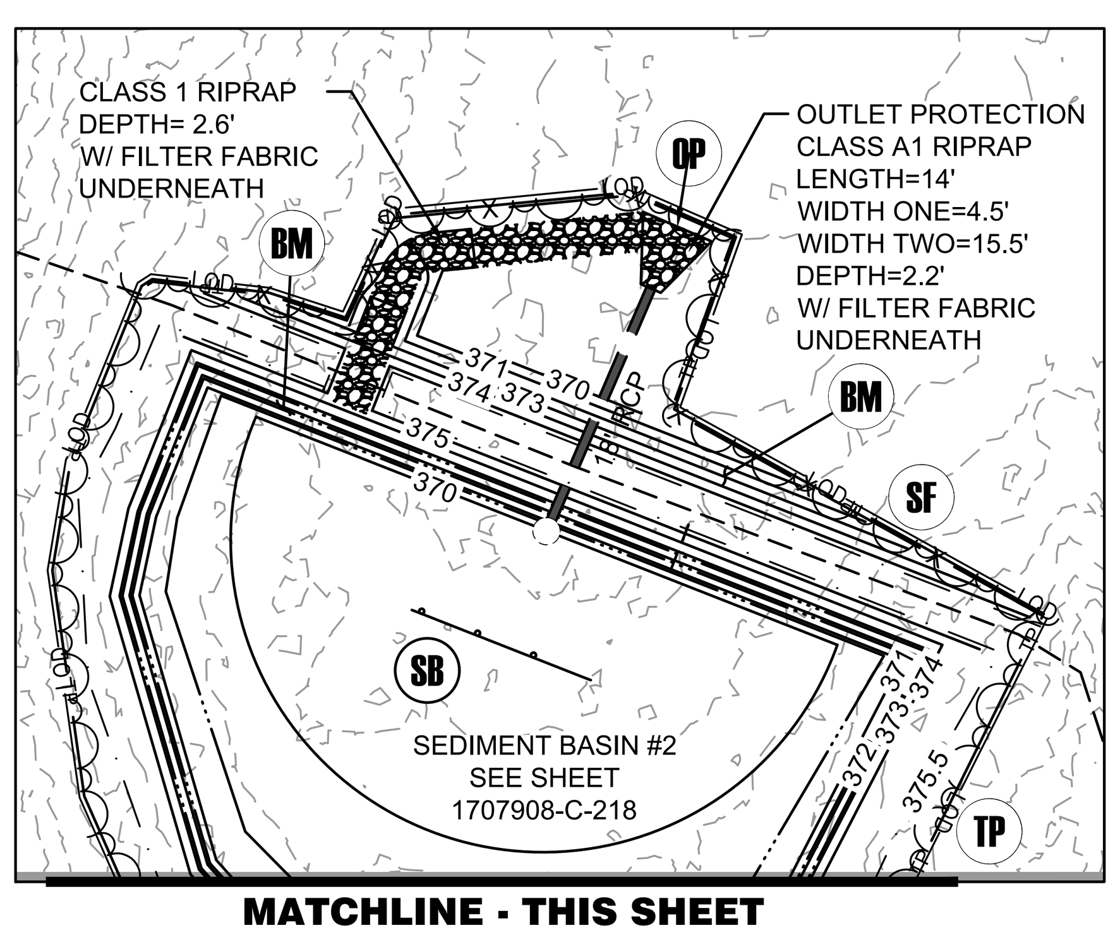
Dominion Energy

PHASE 1 ESC AND DEMOLITION PLAN 1

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-207	
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING:		
APPROVED BY	KAS	8/18/23	1707908-C-207.dwg		





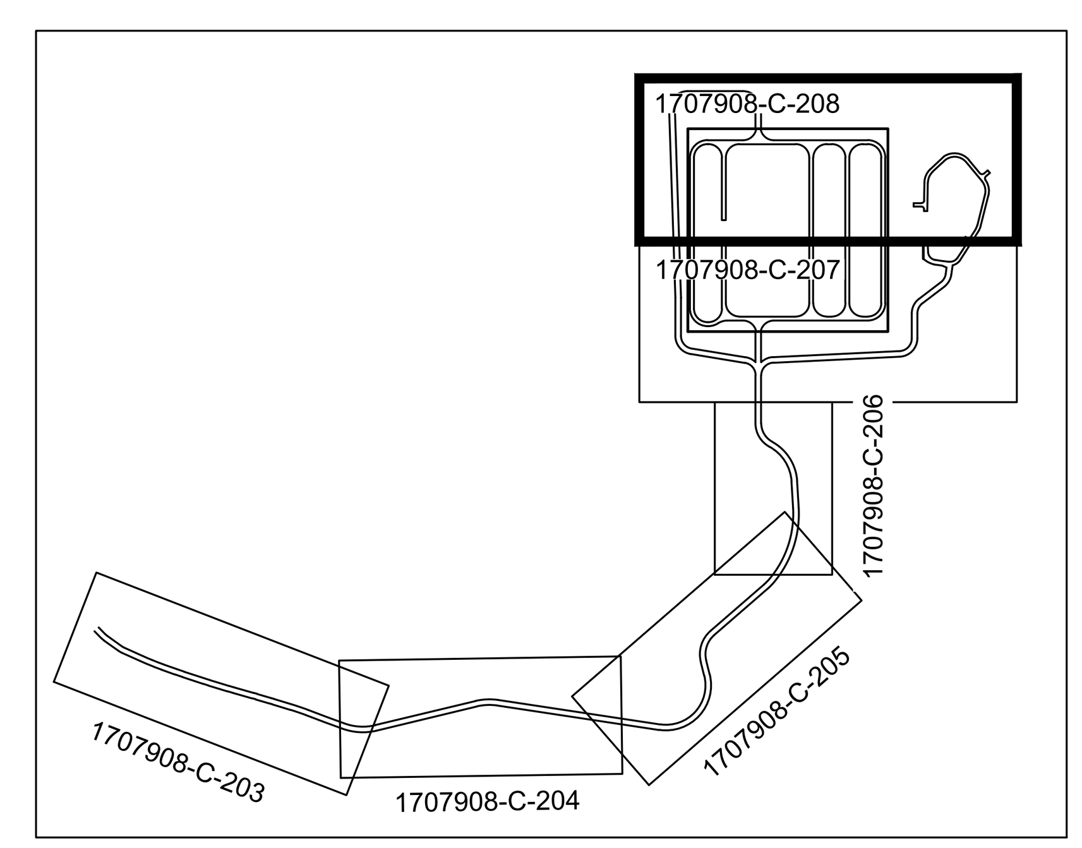
EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
SAF		SAFETY FENCE	3.01
CE		CONSTRUCTION ENTRANCE	3.02
SF	X	SILT FENCE	3.05
SSF	XX	SUPER SILT FENCE	N/A
IP		INLET PROTECTION	3.07
CIP		CULVERT INLET PROTECTION	3.08
DD		DIVERSION DIKE	3.09
ST	ST	SEDIMENT TRAP	3.13
SB	SB	SEDIMENT BASIN	3.14

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
CD		ROCK CHECK DAM	3.20
TS	TS	TEMPORARY SEEDING	3.31
PS	PS	PERMANENT SEEDING	3.32
MU	MU	MULCHING	3.35
BM	BM	BLANKET MATTING	3.36
TP	TP	TREE PROTECTION	3.38
DC	DC	DUST CONTROL	3.39
	LOD	LIMITS OF DISTURBANCE	

* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER



KEY PLAN

0' 20' 40' 80'
SCALE: 1" = 40'

REVISIONS

REV	DATE	DESCRIPTION

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Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

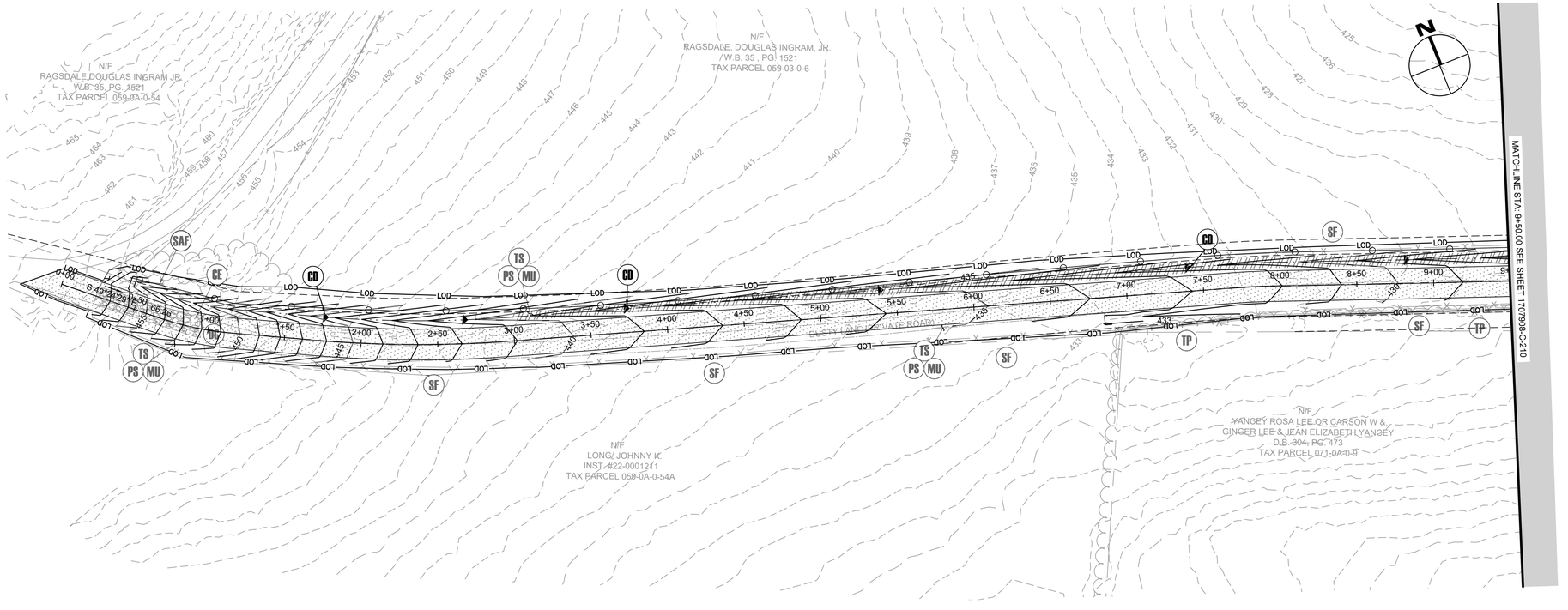
DEWBERRY PROJECT NO.: 50157950

Dominion Energy®

PHASE 1 ESC AND DEMOLITION PLAN 2

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT	5017950	NAME	DATE	SHEET: 1707908-C-208	
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		KAS	8/18/23	1707908-C-208.dwg	

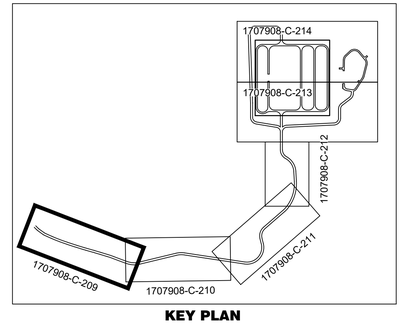


DITCH LINING LEGEND

EC-2 TY 2

EC-3-TY1

SOURCE: VDOT DRAINAGE MANUAL SECTION 7.4.6



KEY PLAN

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
SAF		SAFETY FENCE	3.01
CE		CONSTRUCTION ENTRANCE	3.02
SF	X	SILT FENCE	3.05
SSF	XX	SUPER SILT FENCE	N/A
IP		INLET PROTECTION	3.07
CIP		CULVERT INLET PROTECTION	3.08
DD		DIVERSION DIKE	3.09
ST	ST	SEDIMENT TRAP	3.13
SB	SB	SEDIMENT BASIN	3.14

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
CD		ROCK CHECK DAM	3.20
TS	TS	TEMPORARY SEEDING	3.31
PS	PS	PERMANENT SEEDING	3.32
MU	MU	MULCHING	3.35
TP	TP	TREE PROTECTION	3.38
DC	DC	DUST CONTROL	3.39
	LOD LOD	LIMITS OF DISTURBANCE	

* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER

0' 20' 40' 80'

SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

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KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

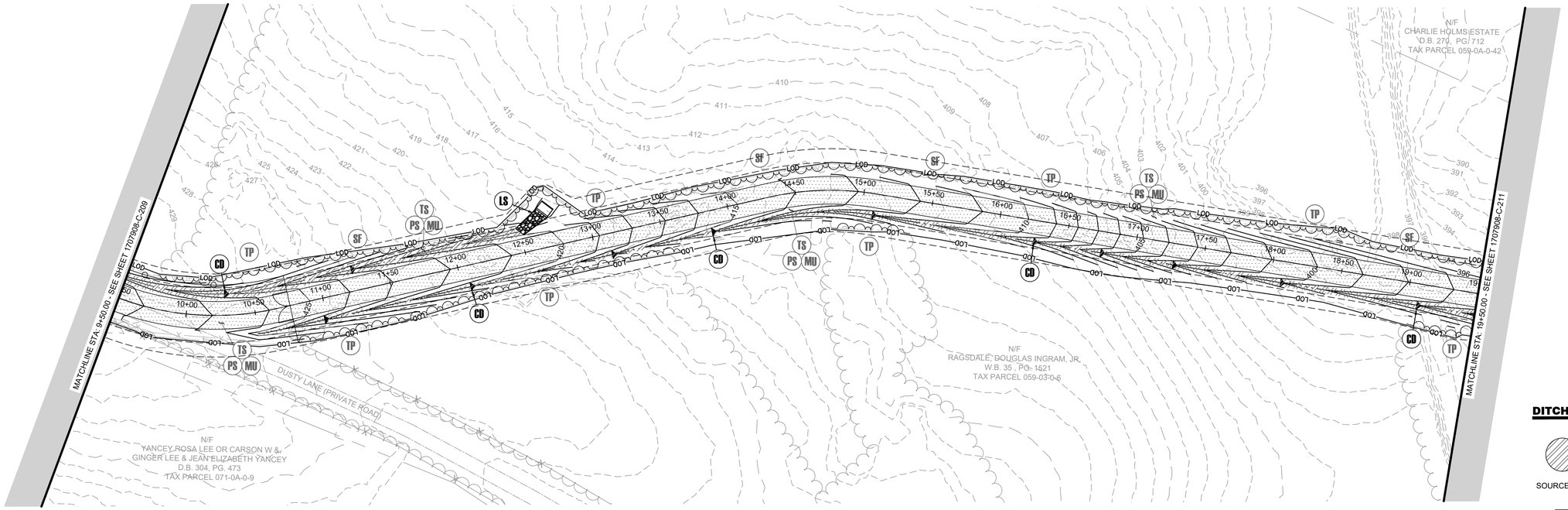
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

ESC PHASE 2 ACCESS ROAD
STA. 0+00.00-9+50.00

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	
PROJECT		NAME	DATE	SHEET:	1707908-C-209
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		KAS	8/18/23		1707908-C-209.dwg

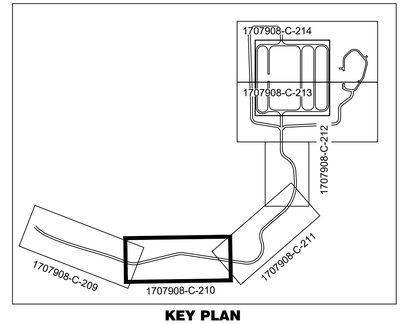


DITCH LINING LEGEND

EC-2 TY 2

EC-3-TY1

SOURCE: VDOT DRAINAGE MANUAL SECTION 7.4.6



KEY PLAN

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
SAF		SAFETY FENCE	3.01
CE		CONSTRUCTION ENTRANCE	3.02
SF	X	SILT FENCE	3.05
SSF	XX	SUPER SILT FENCE	N/A
IP		INLET PROTECTION	3.07
CIP		CULVERT INLET PROTECTION	3.08
DD		DIVERSION DIKE	3.09
ST	ST	SEDIMENT TRAP	3.13
SB	SB	SEDIMENT BASIN	3.14

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
CD		ROCK CHECK DAM	3.20
TS	TS	TEMPORARY SEEDING	3.31
PS	PS	PERMANENT SEEDING	3.32
MU	MU	MULCHING	3.35
TP	TP	TREE PROTECTION	3.38
DC	DC	DUST CONTROL	3.39
	LOD	LIMITS OF DISTURBANCE	

* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER

0' 20' 40' 80'

SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

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Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

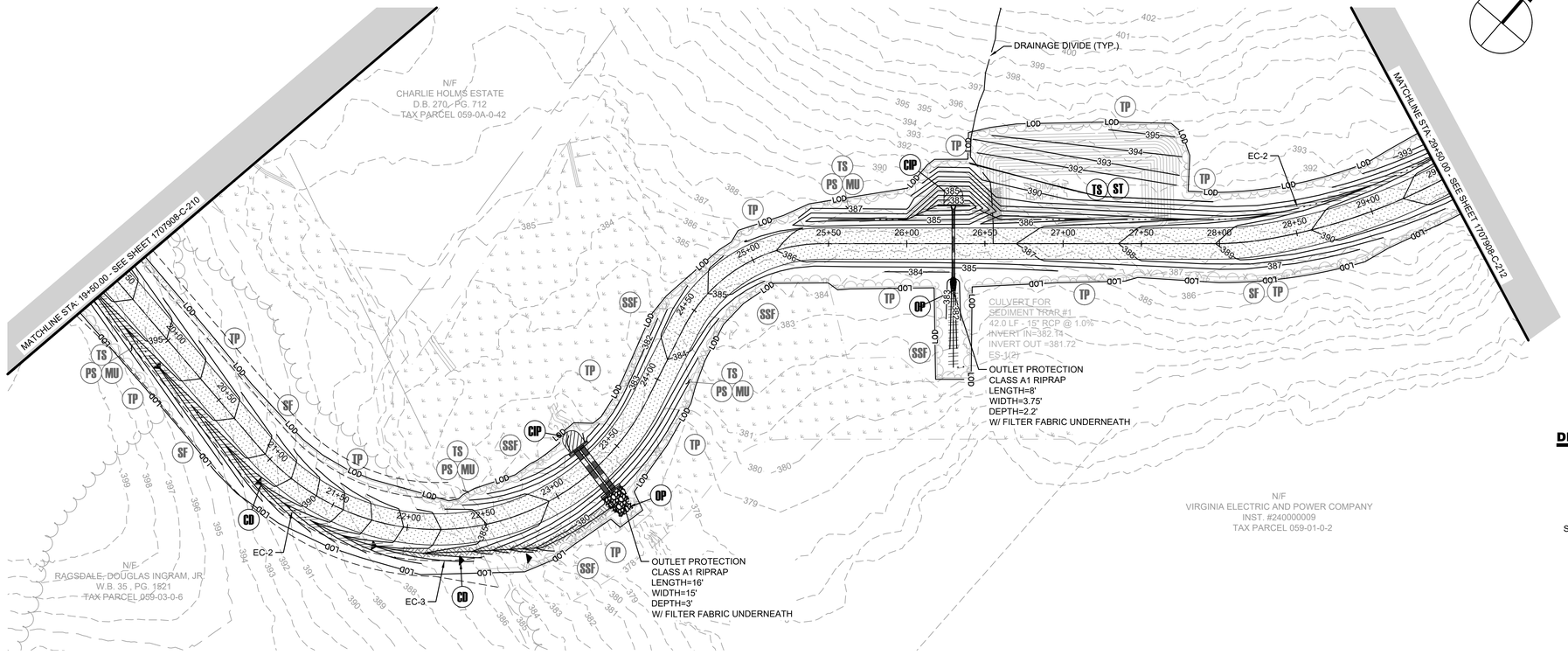
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

ESC PHASE 2 ACCESS ROAD
STA. 9+50.00-19+50.00

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	
PROJECT	NAME	DATE	SHEET:	1707908-C-210	
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-210.dwg	
APPROVED BY	KAS	8/18/23			

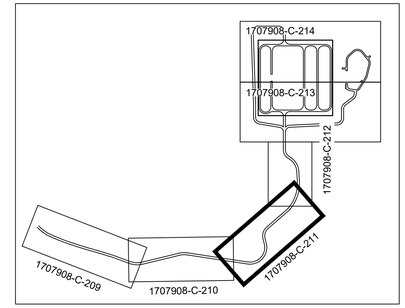


DITCH LINING LEGEND

EC-2 TY 2

EC-3-TY1

SOURCE: VDOT DRAINAGE MANUAL SECTION 7.4.6



KEY PLAN

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
SAF		SAFETY FENCE	3.01
CE		CONSTRUCTION ENTRANCE	3.02
SF	X	SILT FENCE	3.05
SSF	XX	SUPER SILT FENCE	N/A
IP		INLET PROTECTION	3.07
CIP		CULVERT INLET PROTECTION	3.08
DD		DIVERSION DIKE	3.09
ST	ST	SEDIMENT TRAP	3.13
SB	SB	SEDIMENT BASIN	3.14

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
CD		ROCK CHECK DAM	3.20
TS	TS	TEMPORARY SEEDING	3.31
PS	PS	PERMANENT SEEDING	3.32
MU	MU	MULCHING	3.35
TP	TP	TREE PROTECTION	3.38
DC	DC	DUST CONTROL	3.39
	LOD LOD	LIMITS OF DISTURBANCE	

* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER

0' 20' 40' 80'

SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
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Glen Allen, VA 23060. (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

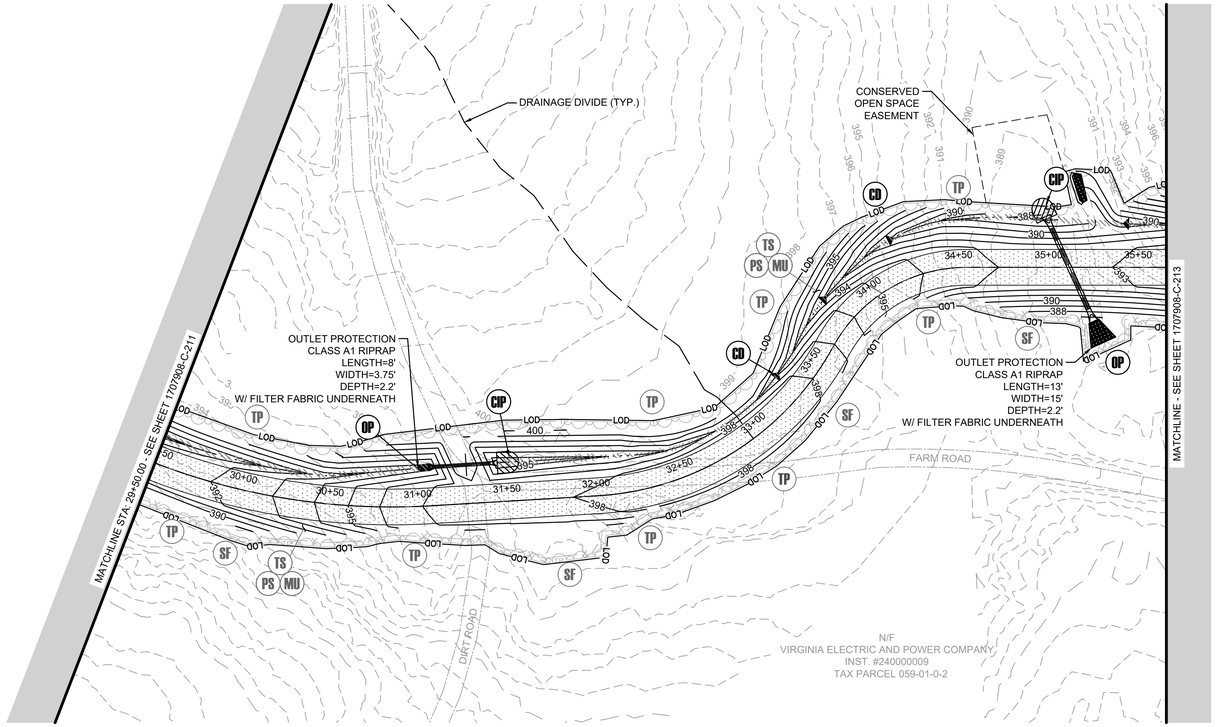
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

ESC PHASE 2 ACCESS ROAD
STA. 19+50.00-29+50.00

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.		SCALE
PROJECT		NAME	DATE	SHEET:	1707908-C-211
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	1707908-C-211.dwg
APPROVED BY		KAS	8/18/23		



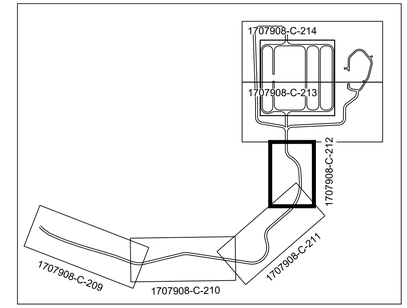
N

DITCH LINING LEGEND

EC-2 TY 2

EC-3-TY1

SOURCE: VDOT DRAINAGE MANUAL SECTION 7.4.6



KEY PLAN

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
SAF		SAFETY FENCE	3.01
CE		CONSTRUCTION ENTRANCE	3.02
SF	X	SILT FENCE	3.05
SSF	XX	SUPER SILT FENCE	N/A
IP		INLET PROTECTION	3.07
CIP		CULVERT INLET PROTECTION	3.08
DD		DIVERSION DIKE	3.09
ST	ST	SEDIMENT TRAP	3.13
SB	SB	SEDIMENT BASIN	3.14

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
CD		ROCK CHECK DAM	3.20
TS	TS	TEMPORARY SEEDING	3.31
PS	PS	PERMANENT SEEDING	3.32
MU	MU	MULCHING	3.35
TP	TP	TREE PROTECTION	3.38
DC	DC	DUST CONTROL	3.39
	LOD	LIMITS OF DISTURBANCE	

* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER

0' 20' 40' 80'

SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

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Glen Allen, VA 23060. (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

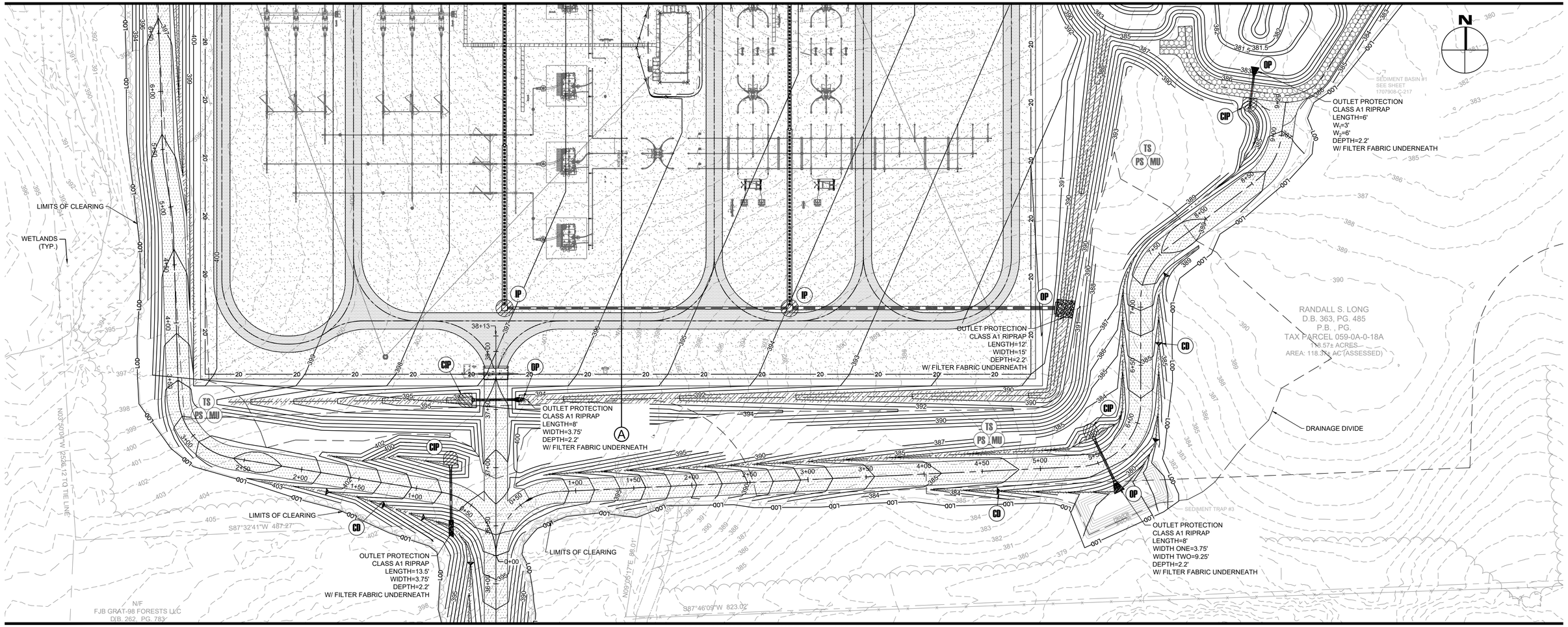
Dominion Energy

ESC PHASE 2 ACCESS ROAD
STA. 29+50.00-38+50.00

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	
PROJECT		NAME	DATE	SHEET:	1707908-C-212
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	1707908-C-212.dwg
APPROVED BY		KAS	8/18/23		

MATCHLINE - SEE SHEET 1707908-C-214



MATCHLINE - SEE SHEET 1707908-C-212

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
SAF		SAFETY FENCE	3.01
CE		CONSTRUCTION ENTRANCE	3.02
SF	X	SILT FENCE	3.05
SSF	XX	SUPER SILT FENCE	N/A
IP		INLET PROTECTION	3.07
CIP		CULVERT INLET PROTECTION	3.08
DD		DIVERSION DIKE	3.09
ST	ST	SEDIMENT TRAP	3.13
SB	SB	SEDIMENT BASIN	3.14

EROSION & SEDIMENT CONTROL LEGEND

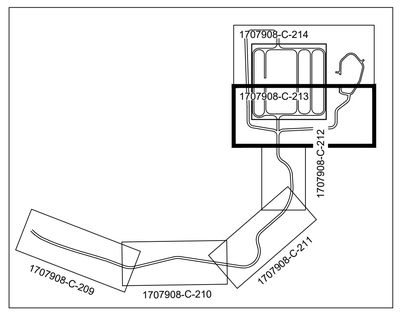
ID	SYMBOL	NAME OF E&S MEASURE	*
CD		ROCK CHECK DAM	3.20
TS	TS	TEMPORARY SEEDING	3.31
PS	PS	PERMANENT SEEDING	3.32
MU	MU	MULCHING	3.35
TP	TP	TREE PROTECTION	3.38
DC	DC	DUST CONTROL	3.39
	LOD LOD	LIMITS OF DISTURBANCE	

* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER

DITCH LINING LEGEND

EC-2 TY 2 EC-3-TY1

SOURCE: VDOT DRAINAGE MANUAL SECTION 7.4.6



KEY PLAN

0' 20' 40' 80'

SCALE: 1" = 40'

REVISIONS			
REV	DATE	DESCRIPTION	

Dewberry
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Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

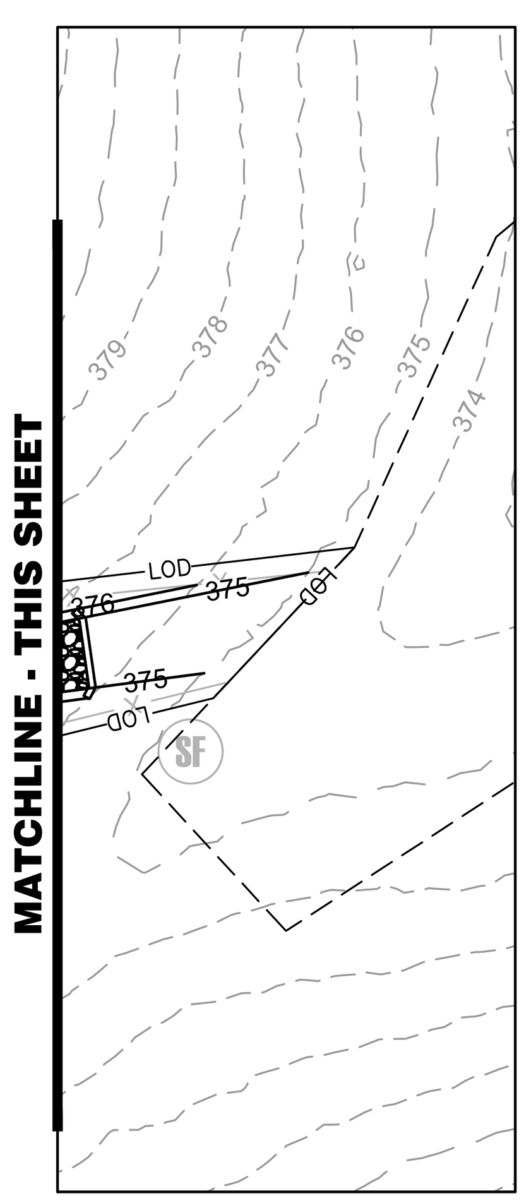
Dominion Energy

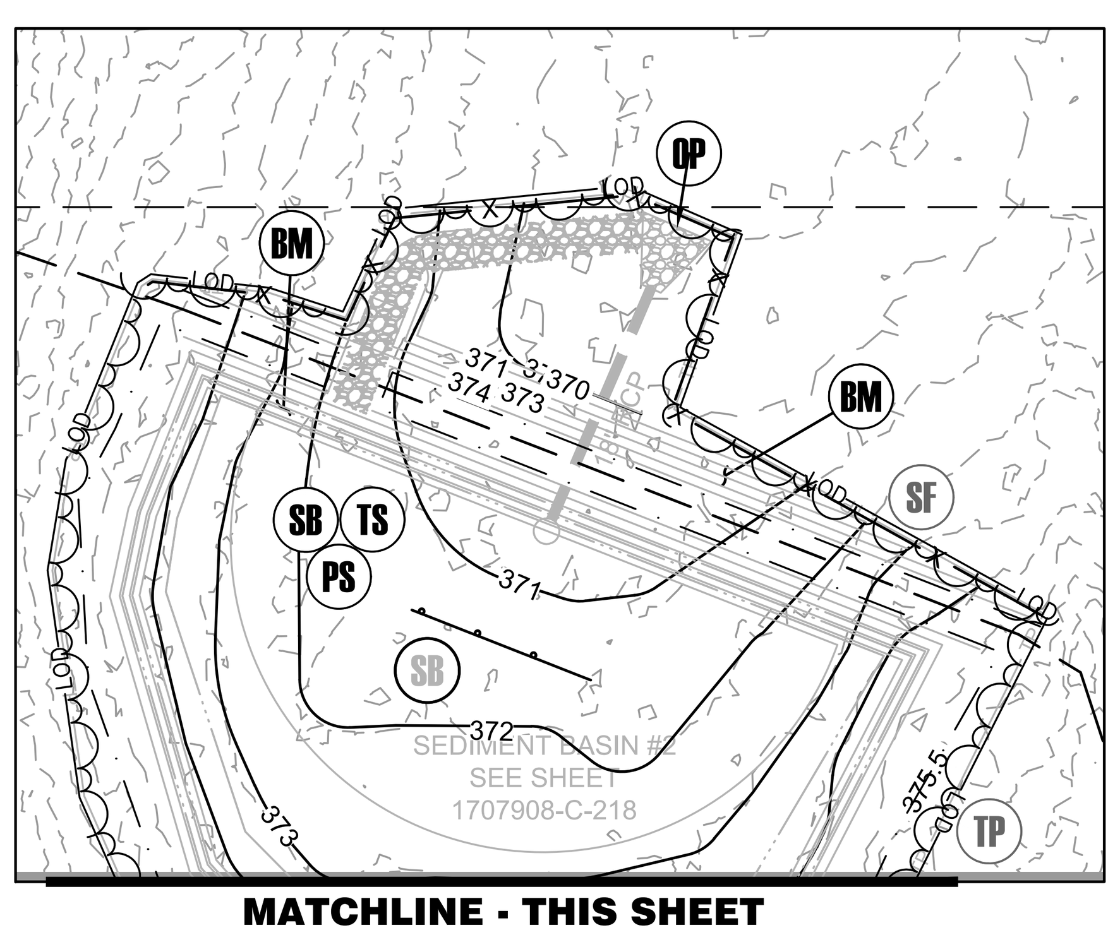
PHASE 2 ESC PLAN 1

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.		SCALE AS SHOWN
PROJECT 5017950		NAME	DATE	SHEET:	1707908-C-213
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		KAS	8/18/23		1707908-C-213.dwg

MATCHLINE - SEE SHEET 1707908-C-213





EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
SAF		SAFETY FENCE	3.01
CE		CONSTRUCTION ENTRANCE	3.02
SF	X	SILT FENCE	3.05
SSF	XX	SUPER SILT FENCE	N/A
IP		INLET PROTECTION	3.07
CIP		CULVERT INLET PROTECTION	3.08
DD		DIVERSION DIKE	3.09
ST	ST	SEDIMENT TRAP	3.13
SB	SB	SEDIMENT BASIN	3.14

EROSION & SEDIMENT CONTROL LEGEND

ID	SYMBOL	NAME OF E&S MEASURE	*
CD		ROCK CHECK DAM	3.20
TS	TS	TEMPORARY SEEDING	3.31
PS	PS	PERMANENT SEEDING	3.32
MU	MU	MULCHING	3.35
BM	BM	BLANKET MATTING	3.36
TP	TP	TREE PROTECTION	3.38
DC	DC	DUST CONTROL	3.39
	LOD LOD	LIMITS OF DISTURBANCE	

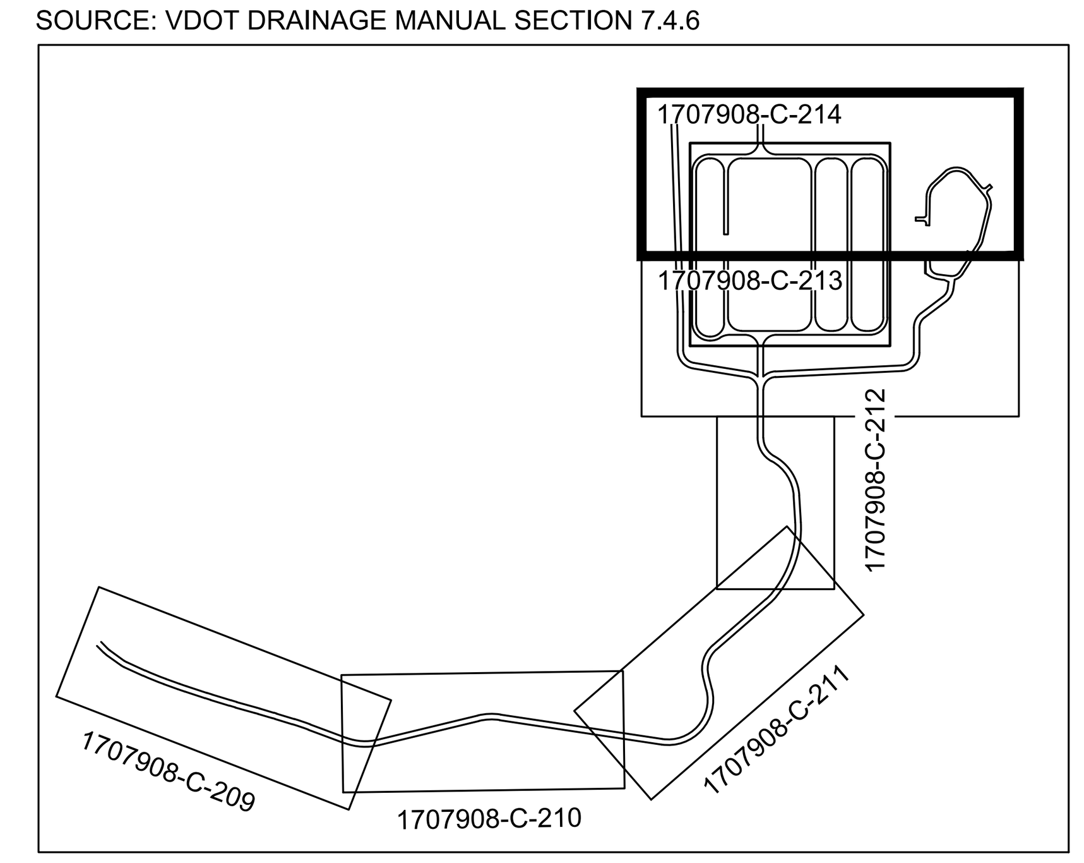
* VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK SPECIFICATION NUMBER

DITCH LINING LEGEND

EC-2 TY 2

EC-3-TY1

SOURCE: VDOT DRAINAGE MANUAL SECTION 7.4.6



KEY PLAN

0' 20' 40' 80'

SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry®
Dewberry Engineers Inc.
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Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy®

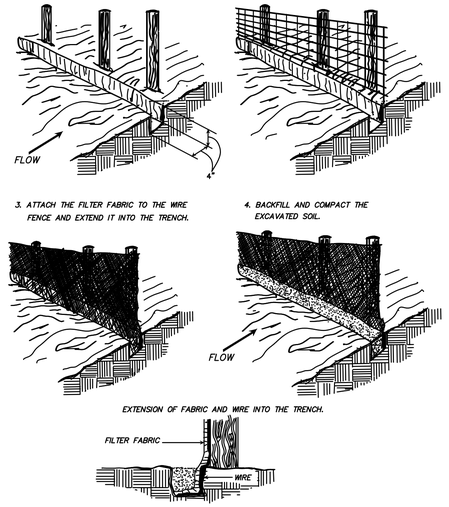
PHASE 2 ESC PLAN 2

UNITY SUBSTATION

LUNENBURG COUNTY VIRGINIA

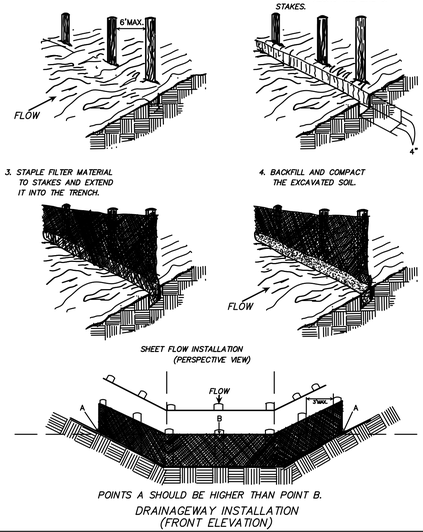
OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT	5017950	NAME	DATE	SHEET:	1707908-C-214
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		KAS	8/18/23		1707908-C-214.dwg

SSF CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)



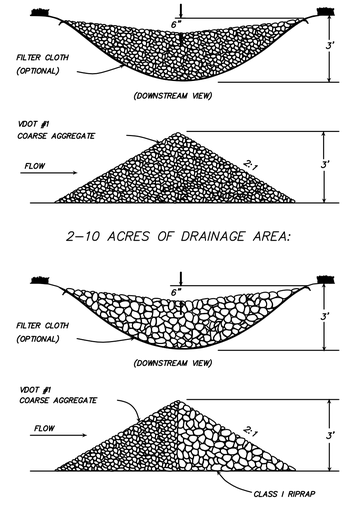
SOURCE: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood & Wyant — PLATE 3.05-1

SF CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)



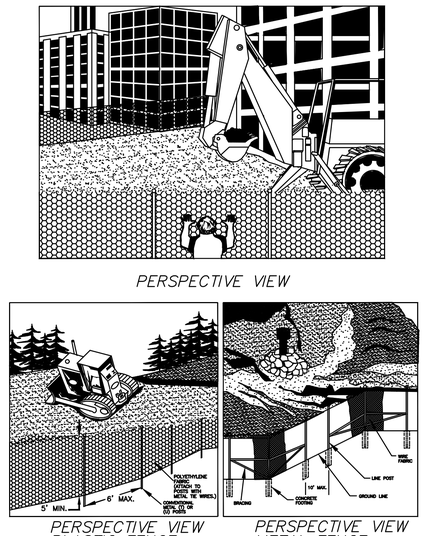
SOURCE: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control,VA. DSWC Sherwood and Wyant — PLATE 3.05-2

CD ROCK CHECK DAM



SOURCE: VA. DSWC — PLATE 3.20-1

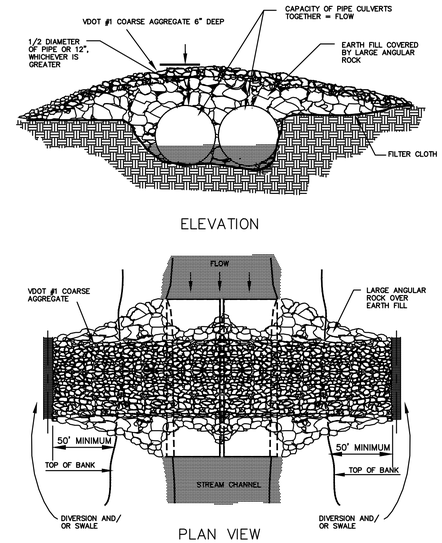
SAF SAFETY FENCE



SOURCE: CONWED PLASTICS, VDOT ROAD AND BRIDGE STANDARDS — PLATE 3.1-1

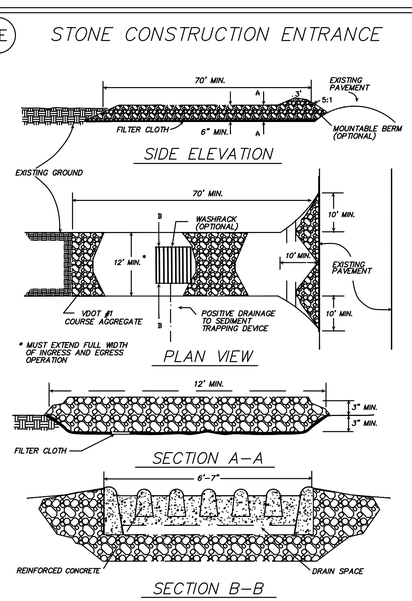
1992 3.24

SC TEMPORARY CULVERT CROSSING



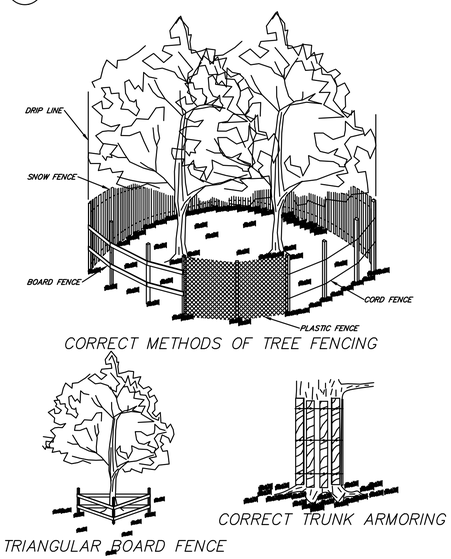
SOURCE: Va. DSWC — Plate 3.24-2

CE STONE CONSTRUCTION ENTRANCE

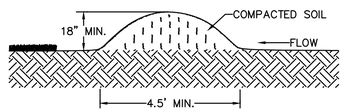


SOURCE: ADAPTED from 1983 Maryland Standards for Soil erosion and Sediment Control, and Va. DSWC — Plate 3.02-1

TP TREE FENCING AND ARMORING

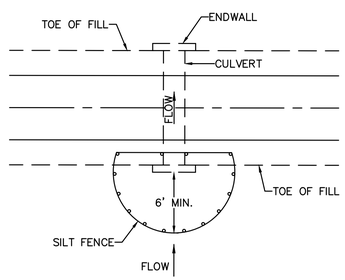


SOURCE: Va. DSWC — Plate 3.38-2



DD TEMPORARY DIVERSION DIKE (3.09-1)

NO SCALE



CIP SILT FENCE CULVERT INLET PROTECTION (3.08-1)

NO SCALE

REVISIONS		
REV	DATE	DESCRIPTION

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COMMONWEALTH OF VIRGINIA
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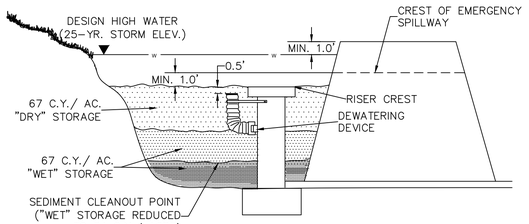
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

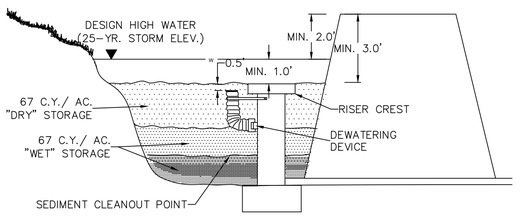
ESC DETAILS I

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-215
DESIGNER	MFR	8/18/23		
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-215.dwg
APPROVED BY	KAS	8/18/23		



DESIGN ELEVATIONS WITH EMERGENCY SPILLWAY

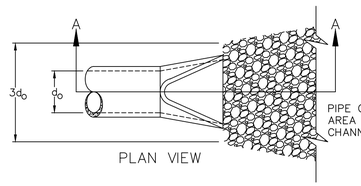


DESIGN ELEVATIONS WITHOUT EMERGENCY SPILLWAY
(RISER PASSES 25-YR. EVENT)

TEMPORARY SEDIMENT BASIN (SB) 3.14-2

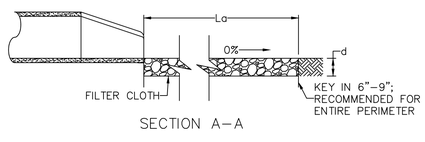
NO SCALE

NOTE:
1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE.
2. La IS THE LENGTH OF THE RIPRAP APRON AS CALCULATED USING PLATES 3.18-3 AND 3.18-4.
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAT 6 INCHES.

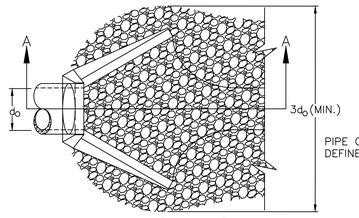


PLAN VIEW

PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL

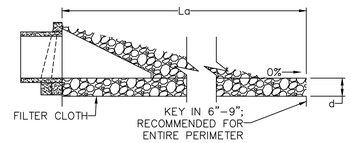


SECTION A-A



PLAN VIEW

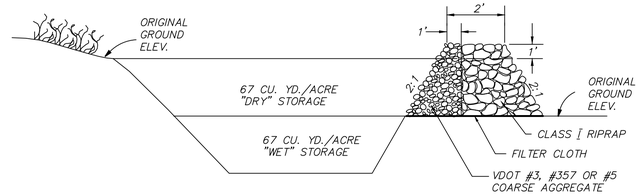
PIPE OUTLET TO WELL DEFINED CHANNEL



SECTION A-A

PIPE OUTLET CONDITIONS (OP) 3.18-1

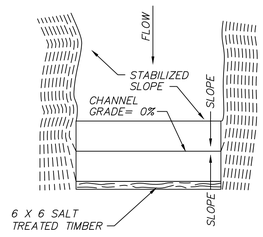
NO SCALE



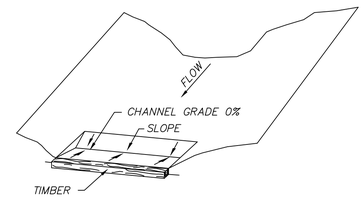
TEMPORARY SEDIMENT TRAP (ST) 3.13-2

NO SCALE

ST. NO.	MAX. AREA TO TRAP	VOLUME REQ'D	VOLUME PROVIDED	WET STORAGE	TOP OF EMBANK-MENT	WIDTH OF EMBANK-MENT	TOP OF RIP-RAP OUTLET	BOTTOM OF EXCAVA-TION	LENGTH OF OUTLET	LENGTH OF TRAP	WIDTH OF TRAP
1	2.8 AC.	381 CY	395CY @ 385.0	200 CY @ 383.4	386.0	6'	385.0	381.0	17'	85'	20'
2	1.0 AC.	134 CY	143CY @ 390.0	143 CY @ 388.7	391.0	6'	390.0	386.0	6	82'	2
3	1.4 AC.	188 CY	241CY @ 380.0	97 CY @ 378.1	381.0	6'	380.0	376.0	10'	60'	15'



PLAN VIEW



ISOMETRIC VIEW

NOTE:
LEVEL SPREADER DITCH MUST RECEIVE TEMPORARY SEEDING IMMEDIATELY AFTER INSTALLATION

LEVEL SPREADER DETAIL

NO SCALE

TABLE 3.32-D SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

SITE CONDITIONS	SEEDING MIXTURES	RATES PER ACRE	*SEASONAL NURSE CROP - DATES 2/16 TO 4/30	5/1 TO 8/15	8/16 TO 10/31	11/1 TO 2/15
HIGH MAINTENANCE LAWNS	TURF-TYPE TALL FESCUE OR KENTUCKY 31 FESCUE	200-250 LBS.				
MINIMUM CARE LAWN	KENTUCKY 31 FESCUE OR TURF-TYPE TALL FESCUE 95%-100%; IMPROVED PERENNIAL RYEGRASS 0%-5%; KENTUCKY BLUEGRASS 0%-5%	175-200 LBS.				
GENERAL SLOPE (3:1 OR LESS)	KENTUCKY 31 FESCUE 128 LBS.; RED TOP GRASS 2 LBS.; SEASONAL NURSE CROP * 20 LBS.	150 LBS.	ANNUAL RYE	FOXTAIL MILLET	ANNUAL RYE	WINTER RYE
LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)	KENTUCKY 31 FESCUE 108 LBS.; RED TOP GRASS 2 LBS.; SEASONAL NURSE CROP* 20 LBS.; CROWNVETCH** 20 LBS.	150 LBS.	ANNUAL RYE	FOXTAIL MILLET	ANNUAL RYE	WINTER RYE

* USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES A STATED BELOW:
FEBRUARY 16th THROUGH APRIL.....ANNUAL RYE
MAY 1st THROUGH AUGUST 15th.....FOXTAIL MILLET
AUGUST 16th THROUGH OCTOBER.....ANNUAL RYE
NOVEMBER THROUGH FEBRUARY 15th.....WINTER RYE

** SUBSTITUTE SERICEA LESPEDEZA FOR CROWNVETCH EAST OF FARMVILLE, VA. (MAY THROUGH SEPTEMBER USE HULLED SERICEA, ALL OTHER PERIODS, USE UNHULLED SERICEA). IF FLATPEA IS USED IN LIEU OF CROWNVETCH, INCREASE RATE TO 30 LBS./ACRE. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS./ACRE IN MIXES

MULCHING, Std. & Spec. 3.35

TABLE 3.35-A ORGANIC MULCH MATERIALS AND APPLICATION RATES

MULCHES:	RATES PER ACRE	RATES PER 1000 SQ. FT.	NOTES:
STRAW OR HAY	1½- 2 TONS (MINIMUM 2 TONS FOR WINTER COVER)	70-90 LBS.	FREE FROM WEEDS AND COARSE MATTER. MUST BE ANCHORED. SPREAD WITH MULCH BLOWER OR BY HAND.
FIBER MULCH	MINIMUM 1500 LBS.	35 LBS.	DO NOT USE AS MULCH FOR WINTER COVER OR DURING HOT, DRY PERIODS.* APPLY AS SLURRY.

*WHEN FIBER MULCH IS THE ONLY AVAILABLE MULCH DURING PERIODS WHEN STRAW SHOULD BE USED, APPLY AT A MINIMUM RATE OF 2000 LBS./AC. OR 45 LBS./1000 SQ. FT.

PERMANENT SEEDING, Std. & Spec. 3.32

Plant Selection
Refer to Table 3.32-D for Seeding Mixtures for the Piedmont Area.
Seedbed Preparation
1. Liming
In the Piedmont Region, apply 2 tons/acre pulverized agricultural grade limestone (90 lbs./1,000 sq, ft,).
2. Fertilizer
Shall be applied as 1000 lbs./acre of 10-20-10 (23 lbs./sq. ft.) or equivalent nutrients. Lime and Fertilizer shall be incorporated into the top 4-6 inches of the soil be discing or other means.
Seeding
1. Certified seed will be used for all permanent seeding whenever possible.
2. Legume seed should be inoculated with the inoculant appropriate to the species. Seed of the Lespedizas, the Clovers and the Crownvetch should be scarified to promote uniform germination.
3. Apply seed uniformly with a broadcast seeder, drill, culti-packer seeder, or hydroseeder on a firm, friable seedbed. Seeding depth should be 1/4 to 1/2 inch.
Mulching
All permanent seeding must be mulched immediately upon completion of seed application.
Irrigation
New seedings should be provided with adequate moisture.
Re-seeding
Inspect seeded areas for failure and make necessary repairs and re-seedings within the same season, if possible.

SEED		
APPLICATION DATES	SPECIES	APPLICATION RATES
SEPT. 1 - FEB. 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM) & CEREAL (WINTER) RYE (SECALE CEREALE)	50-100 (lbs./acre)
FEB. 16 - APR. 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	60-100 (lbs./acre)
MAY 1 - AUG. 31	GERMAN MILLET	50 (lbs./acre)

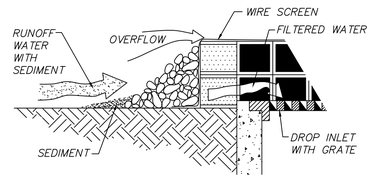
FERTILIZER & LIME

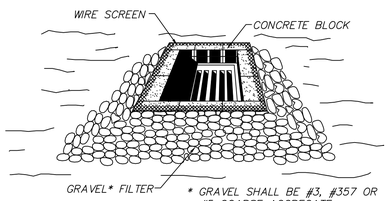
- APPLY 10-10-10 FERTILIZER AT A RATE OF 450 lbs./acre (OR 10 lbs./1,000 sq. ft.)
- APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE (OR 90 LBS./1,000 SQ. FT.)

NOTE:
1.)A SOIL TEST IS NECESSARY TO DETERMINE THE ACTUAL AMOUNT OF LIME REQUIRED TO ADJUST THE SOIL pH OF SITE.
2.) INCORPORATE THE LIME AND FERTILIZER INTO THE TOP 4-6 INCHES OF THE SOIL BY DISKING OR BY OTHER MEANS.
3.) WHEN APPLYING SLOWLY AVAILABLE NITROGEN USE RATES AVAILABLE IN EROSION & SEDIMENT CONTROL TECHNICAL BULLETIN #4, 2003 NUTRIENT MANAGEMENT FOR DEVELOPMENT SITES AT:
http://ww.dcr.state.va.us/sw/e&s.htm#pubs

TEMPORARY SEEDING SPECIFICATIONS QUICK REFERENCE FOR ALL REGIONS (TS)

TABLE 3.31-B
(REVISED JUNE 2003)





BLOCK & GRAVEL DROP INLET SEDIMENT FILTER (IP) 3.07-3

NO SCALE

REVISIONS			
REV	DATE	DESCRIPTION	

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COMMONWEALTH OF VIRGINIA
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DEWBERRY PROJECT NO.: 50157950

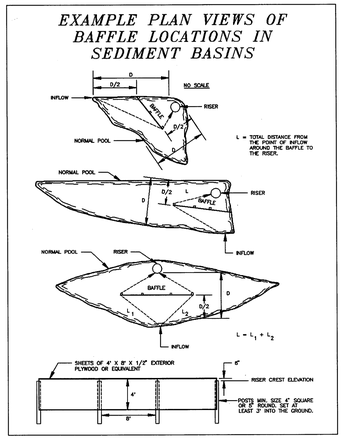
Dominion Energy

ESC DETAILS II

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

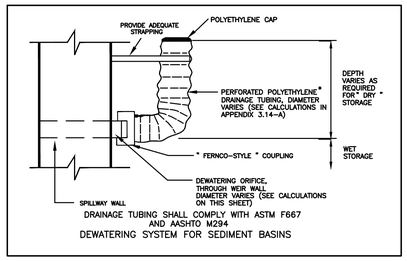
OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-216	
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-216.dwg	
APPROVED BY	KAS	8/18/23			

1992 3.14

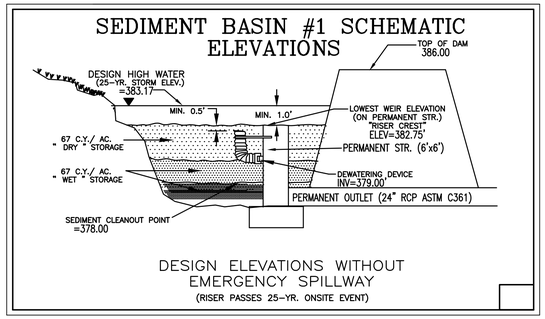


Source: USDA-SCS Plate 3.14-6

III - 94

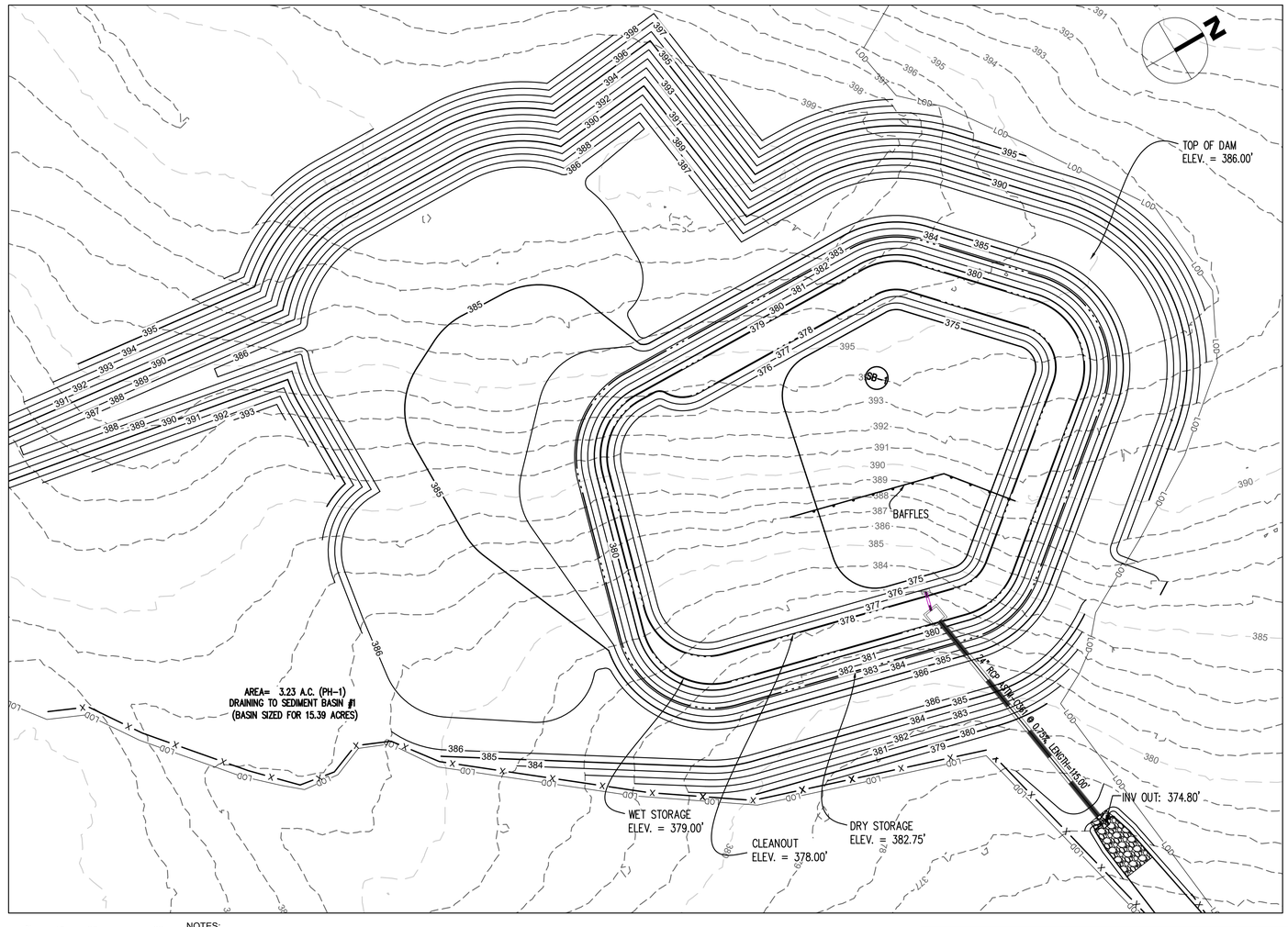


DEWATERING SYSTEM FOR SEDIMENT BASINS



DESIGN ELEVATIONS WITHOUT EMERGENCY SPILLWAY
(RISER PASSES 25-YR. ONSITE EVENT)

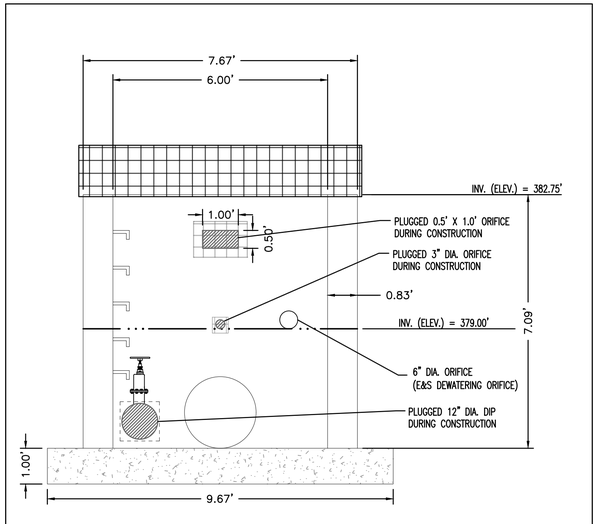
SEDIMENT BASIN 1 PLAN VIEW



0' 15' 30' 60'
SCALE: 1" = 30'

SEDIMENT BASIN SUMMARY TABLE

SEDIMENT BASIN	DRAINAGE AREA (acres)	WET STORAGE: VOLUME REQUIRED (Cu. Yd.)	WET STORAGE: VOLUME PROVIDED (Cu. Yd.)	DRY STORAGE: VOLUME REQUIRED (Cu. Yd.)	DRY STORAGE: VOLUME PROVIDED (Cu. Yd.)	BOTTOM ELEVATION	RISER CREST ELEVATION	DEWATERING ORIFICE DIAMETER (Inches)	DEWATERING DEVICE ELEVATION	CLEAN OUT ELEVATION	DESIGN HIGH WATER ELEVATION	EMERGENCY SPILLWAY ELEVATION	TOP OF DAM ELEVATION (MINIMUM)	BAFFLE: MINIMUM FLOW LENGTH FOR 2.0 WIDTH RATIO	BAFFLE: BAFFLE REQUIRED (Yes / No)
1	15.39	1031.13	3130.62	1031.13	5707.15	375.00	382.75	6	379.00	378.00	383.17	N/A	386.00	200	Yes



RISER CONFIGURATION DURING CONSTRUCTION
ACTING AS A TEMPORARY SEDIMENT BASIN #1
NOT TO SCALE

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Wet Pond (IN)	Post-Development 25 year	25	6.244	12.150	84.10	(N/A)	(N/A)
Wet Pond (OUT)	Post-Development 25 year	25	3.604	12.450	19.87	383.17	3.264

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
379.00	0.000
380.00	0.707
381.00	1.461
382.00	2.261
383.00	3.110
384.00	4.009
385.00	5.234
386.00	6.807

NOTE: SEDIMENT BASIN WAS ROUTED USING PONDPACK FOR THE 25-YEAR FREQUENCY STORM UNDER DENUDED SOIL CONDITIONS (CN = 89). THIS CONFIRMED THE POND IS SIZED TO SUFFICIENTLY PASS THE 25-YEAR STORM WITH THE PROPOSED 24" RCP BARREL.

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser Top	Forward	Culvert - 24"	382.75	386.00
Orifice-Circular	Orifice - Circular	Forward	Culvert - 24"	379.00	386.00
Culvert-Circular	Culvert - 24"	Forward	TW	375.66	386.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

NOTES:
1. NOTIFY AND COORDINATE WITH ESC INSPECTOR AT THE START OF EMBANKMENT CONSTRUCTION. A GEOTECHNICAL ENGINEER SHOULD BE PRESENT DURING AND AFTER CONSTRUCTION TO MONITOR, REPORT AND VERIFY STABILITY AND COMPACTION OF DAM.
2. SEDIMENT BASIN CALCULATIONS ARE PROVIDED ON THIS SHEET.
3. ALL FILL EMBANKMENTS SHALL BE CONSTRUCTED PER REQUIREMENTS IN GEOTECH REPORT.
4. BLANKET AND MATTING IS REQUIRED WHEREVER THE SLOPE EXCEEDS 3:1. SEE EROSION AND SEDIMENT CONTROL SHEETS.

SEQUENCE OF CONSTRUCTION NARRATIVE

STEP 1: INSTALL E&S PERIMETER CONTROLS PRIOR TO CONSTRUCTION, INCLUDING TEMPORARY DE-WATERING DEVICES AND STORMWATER DIVERSIONS. UTILIZE SWM POND AS TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION. EXCAVATE / GRADE UNTIL THE APPROPRIATE ELEVATIONS AND DESIRED CONTOURS ARE ACHIEVED FOR THE BOTTOM AND SIDE SLOPES OF THE SEDIMENT BASIN. INSTALLATION OF THE PERMANENT OUTLET PIPE AND RISER STRUCTURE SHOULD BE INITIATED DURING THE CONSTRUCTION PHASE.

STEP 2: INSTALL THE PERMANENT OUTLET PIPE AND CONCRETE CRADLE, INCLUDING THE DOWNSTREAM RIPRAP APRON. INSTALL THE RISER TO THE INVERT ELEVATIONS AS SHOWN ON SHEET 1707908-C-616 .

STEP 3: CONSTRUCT THE EMBANKMENT IN 8 INCH LIFTS AND COMPACT THE LIFTS PER THE SPECIFICATIONS OUTLINED IN THE GEOTECH REPORT.

STEP 4: AFTER COMPLETION OF CONSTRUCTION OF THE SITE, STABILIZE THE ENTIRE DRAINAGE AREA.

STEP 5: THE PERMANENT FACILITY SHALL ONLY BE CONSTRUCTED AFTER THE CONTRIBUTING DRAINAGE AREA TO THE POND IS COMPLETELY STABILIZED.

STEP 6: TO CONVERT SEDIMENT BASIN TO A PERMANENT FACILITY, DEWATER AND DREDGE THE SEDIMENT BASIN AFTER THE SITE CONSTRUCTION IS COMPLETE TO REMOVE SEDIMENT AS NECESSARY. DISPOSE OF SEDIMENT AT A LEGAL DISPOSAL SITE.

STEP 7: EXCAVATE/ GRADE UNTIL THE APPROPRIATE FINAL ELEVATIONS AND DESIRED CONTOURS ARE ACHIEVED FOR THE BOTTOM AND SIDE SLOPES OF THE POND AS SHOWN ON SHEET 1707908-C-614. INCORPORATE THE CLAY LINER AND TOP SOIL AS PART OF THE FINAL GRADING. INSTALL THE ACCESS ROAD. INSTALL ANY INTERNAL BERMS IN 8 LIFTS AND COMPACT TO THE APPROPRIATE ELEVATION.

STEP 8: CONVERT THE SEDIMENT BASIN RISER STRUCTURE TO THE PERMANENT RISER STRUCTURE CONFIGURATION AS SHOWN ON SHEET 1707908-C-616.

STEP 9: ALL AREAS SHOULD BE PERMANENTLY STABILIZED BY HYDROSEEDING OR SEEDING AND MULCHING.

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
EDWARD R UMBRELL
Lic. No. 038388
1/29/2024
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

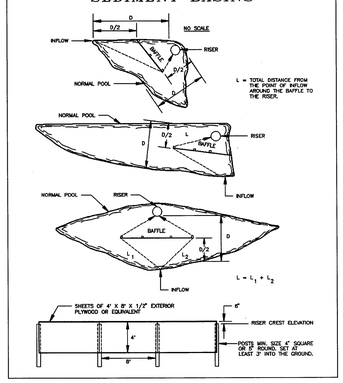
SEDIMENT BASIN

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-217	
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:		
APPROVED BY	KAS	01/29/24	1707908-C-217.dwg		

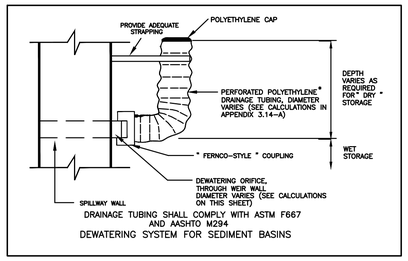
1992 3.14

EXAMPLE PLAN VIEWS OF BAFFLE LOCATIONS IN SEDIMENT BASINS



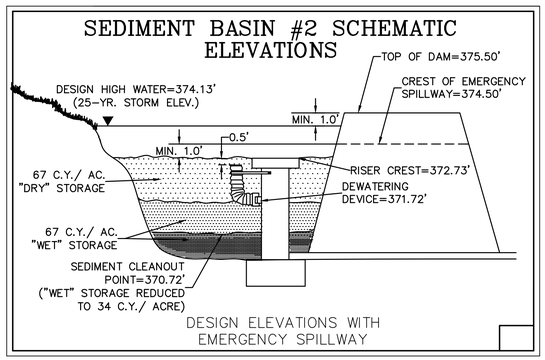
Source: USDA-SCS Plate 3.14-6

III - 94



DRAINAGE TUBING SHALL COMPLY WITH ASTM F667 AND AASHTO M294

DEWATERING SYSTEM FOR SEDIMENT BASINS

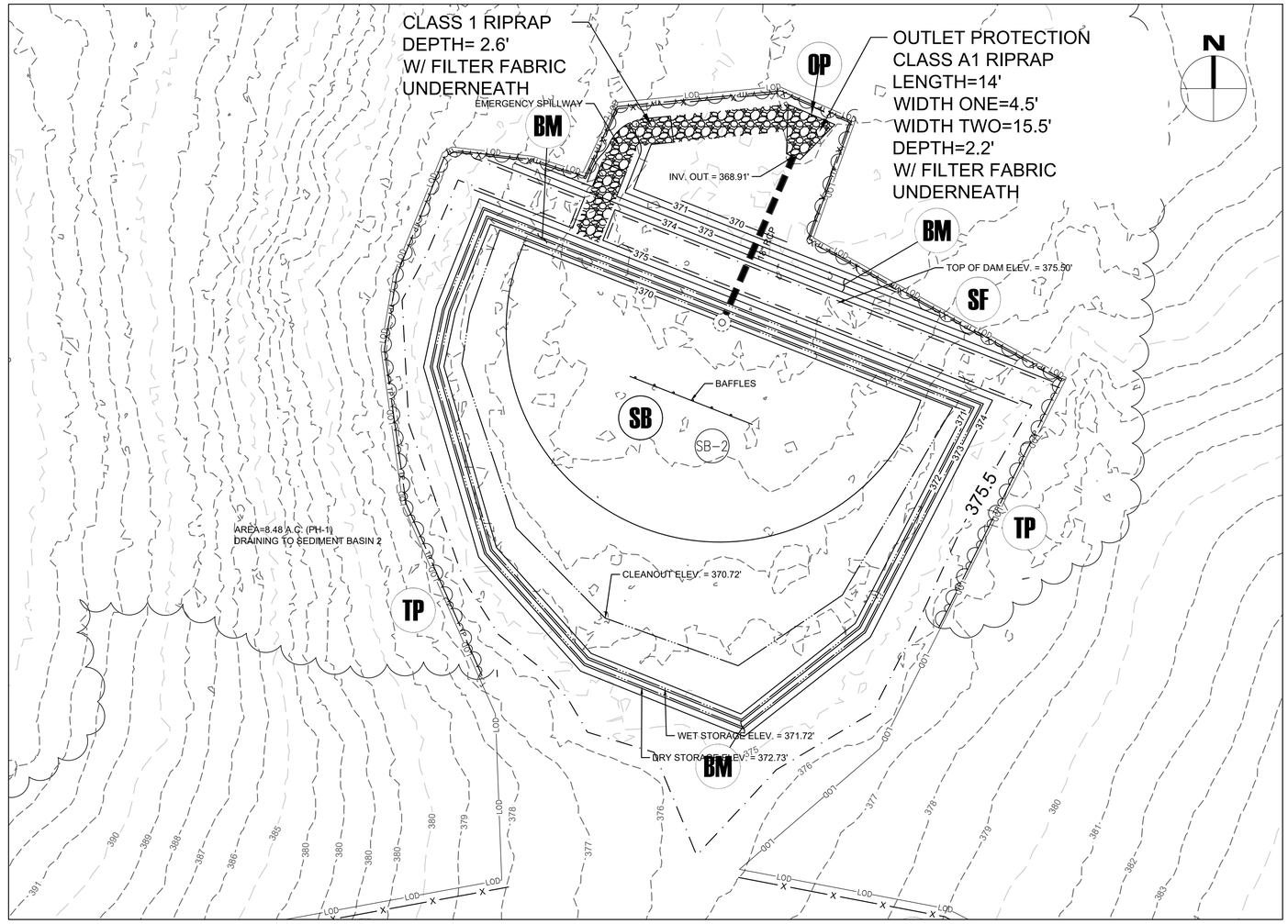


DESIGN ELEVATIONS WITH EMERGENCY SPILLWAY

SEDIMENT BASIN SUMMARY TABLE

SEDIMENT BASIN	DRAINAGE AREA (acres)	WET STORAGE VOLUME REQUIRED (Cu. Yd.)	WET STORAGE VOLUME PROVIDED (Cu. Yd.)	DRY STORAGE VOLUME REQUIRED (Cu. Yd.)	DRY STORAGE VOLUME PROVIDED (Cu. Yd.)	BOTTOM ELEVATION	RISER CREST ELEVATION	DEWATERING ORIFICE DIAMETER (Inches)	DEWATERING DEVICE ELEVATION	CLEAN OUT ELEVATION	DESIGN HIGH WATER ELEVATION	EMERGENCY SPILLWAY ELEVATION	TOP OF DAM ELEVATION (MINIMUM)	BAFFLE: MINIMUM FLOW LENGTH FOR 2.0 WIDTH RATIO	BAFFLE: BAFFLE REQUIRED (Yes / No)
2	8.48	568.16	779.59	568.16	573.12	369.35	372.73	3	371.72	370.72	374.13	374.50	375.50	165	YES

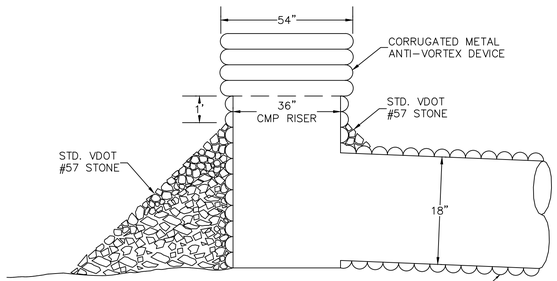
SEDIMENT BASIN 2 PLAN VIEW



0' 10' 20' 40'

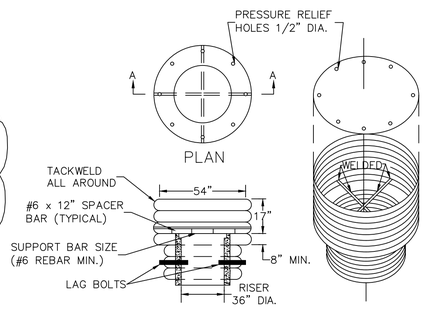
SCALE: 1" = 20'

ELEVATION - VOLUME				
ELEV	VOLUME	TOTAL VOLUME		
(ft)	(acre-ft)	(acre-ft)	(cubic ft)	(cubic yds)
370.0	0.000	0.000	0	0.00
371.0	0.200	0.200	8,725	323.15
372.0	0.313	0.513	22,355	827.96
373.0	0.334	0.847	36,915	1367.22
374.0	0.356	1.204	52,430	1941.85
375.0	0.406	1.609	70,105	2596.48



RISER AND BARREL DETAIL

NO SCALE



NOTES:

1. THE CYLINDER MUST BE FIRMLY FASTENED TO THE TOP OF THE RISER WITH LAG BOLTS AS SHOWN.
2. SUPPORT BARS ARE WELDED TO THE TOP OF THE RISER OR ATTACHED BY STRAPS BOLTED TO THE TOP OF THE RISER.
3. TOP IS 16 GAGE CORRUGATED METAL OR 1/8" STEEL PLATE. PRESSURE RELIEF HOLES MAY BE OMITTED, IF THE ENDS OF THE CORRUGATIONS ARE LEFT FULLY OPEN WHEN THE TOP IS ATTACHED.
4. CYLINDER IS 16 GAGE CORRUGATED METAL PIPE OR FABRICATED FROM 1/8" STEEL PLATE.

ANTI-VORTEX DEVICE DETAIL

NO SCALE

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
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Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

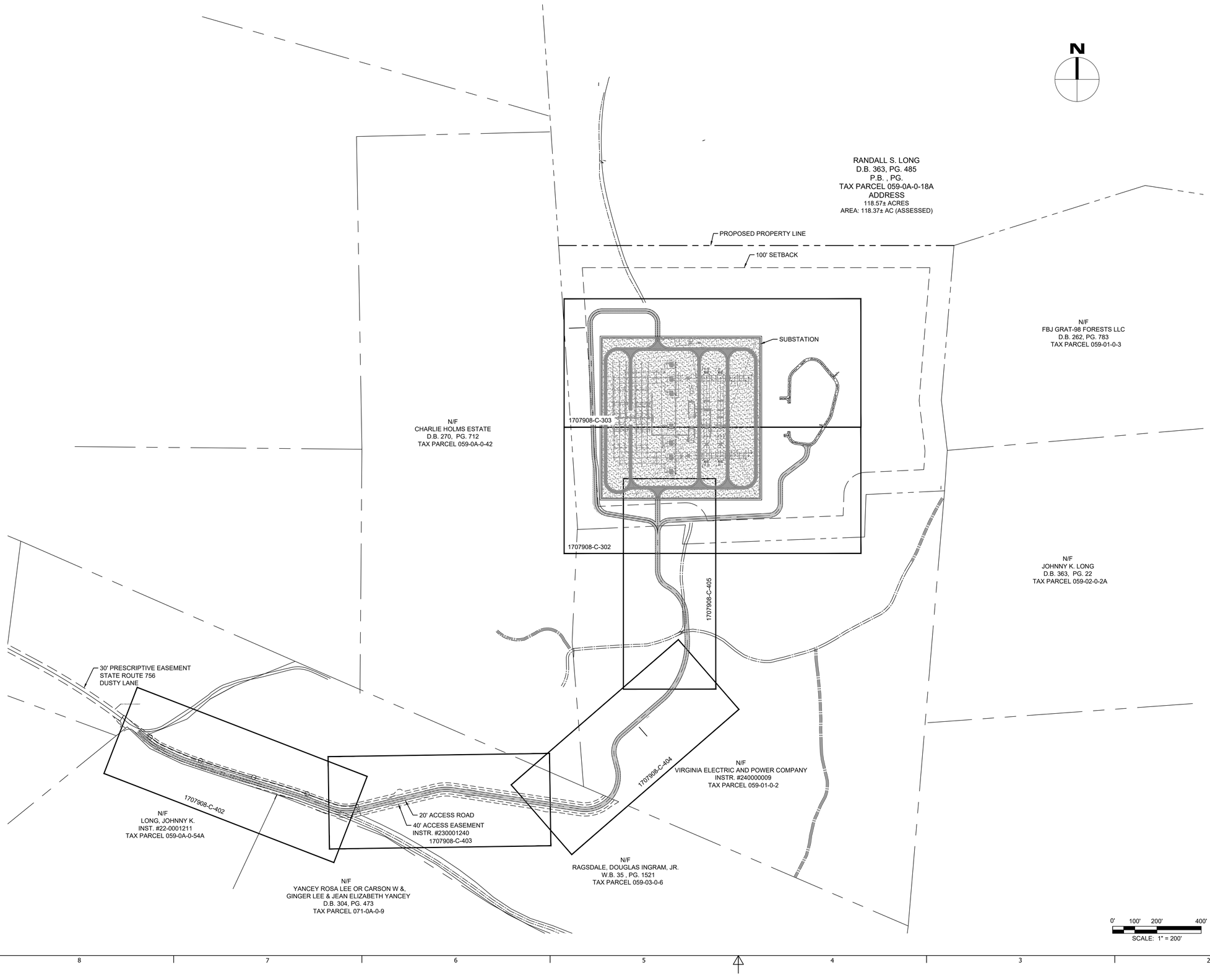
Dominion Energy

SEDIMENT BASIN 2

UNITY SUBSTATION

LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-218
DESIGNER	MFR	8/18/23		
PROJECT ENGINEER	GA	8/18/23	DRAWING:	
APPROVED BY	KAS	8/18/23		1707908-C-218.dwg



GENERAL NOTES

1. NOT ALL SUBSTATION COMPONENTS SHOWN FOR CLARITY.
2. ELECTRICAL GENERAL ARRANGEMENT PLANS BY OTHERS; SHOWN ON CIVIL PLANS FOR INFORMATION ONLY.
3. PROPOSED PARCEL ACREAGE IS 41.29 ACRES.

HATCH LEGEND

- EQUIPMENT PATHWAY — SEE DETAIL SHT. C-801
- ACCES ROADS — SEE DETAIL SHT. C-801
- SUBSTATION GRAVEL PAD — SEE DETAIL SHT. C-801
- DAM TOP ACCESS ROAD — SEE DETAIL SHT. C-801

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
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COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

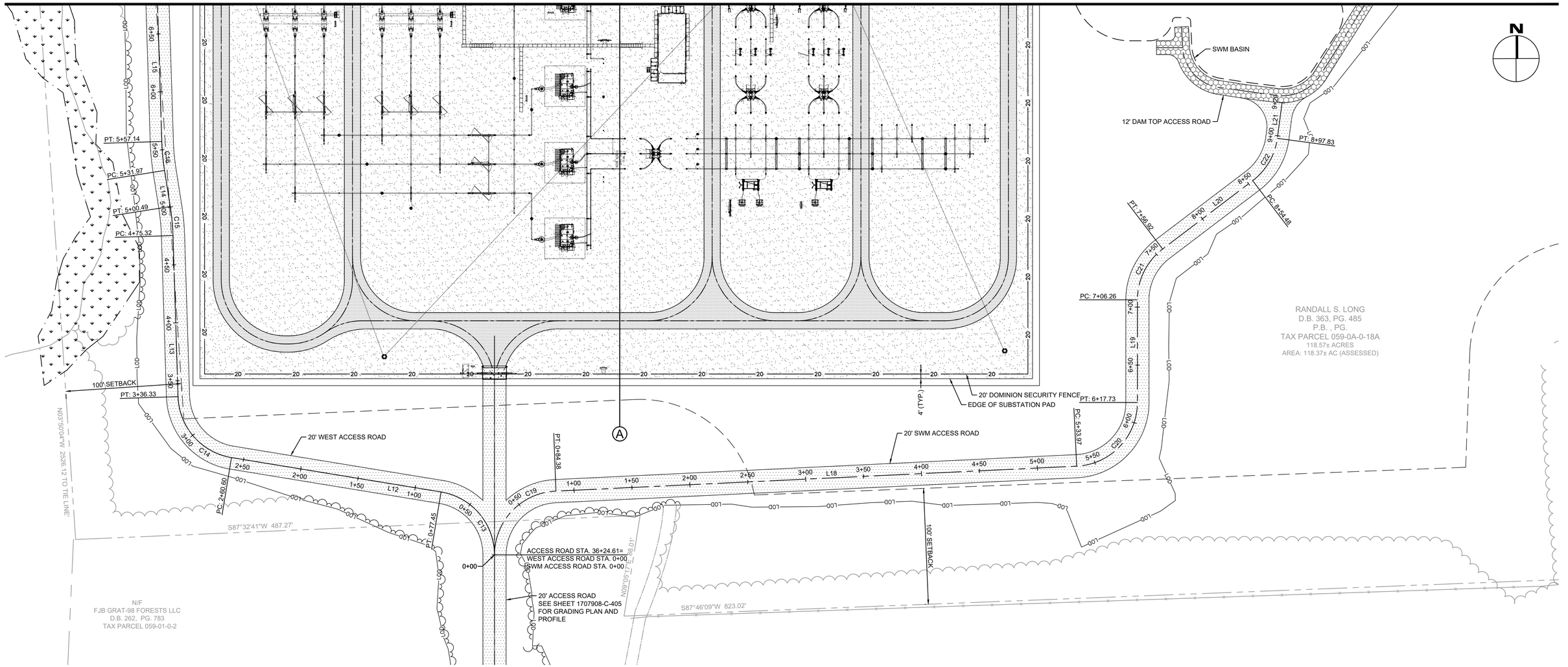
OVERALL SITE LAYOUT PLAN

UNITY SUBSTATION

LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.		SCALE AS SHOWN
PROJECT 5017950		NAME	DATE	SHEET:	1707908-C-301
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		KAS	8/18/23		1707908-C-301.dwg

MATCHLINE - SEE SHEET 1707908-C-303



WEST ACCESS ROAD ALIGNMENT TABLE					
NUMBER	BEARING	LENGTH (FT)	RADIUS	START POINT	END POINT
C13	N 40°20'48" W	77.44'	55.03'	PC:0+00.01 N:3482231.42 E:11587536.10	PT:0+77.45 N:3482285.69 E:11587490.00
C14	N 41°14'24" W	75.73'	55.00'	PC:2+60.60 N:3482315.33 E:11587309.27	PT:3+36.33 N:3482367.88 E:11587263.20
C15	N 5°23'55" W	25.17'	200.00'	PC:4+75.32 N:3482506.81 E:11587258.85	PT:5+00.49 N:3482531.85 E:11587256.48
C16	N 5°23'55" W	25.17'	200.00'	PC:5+31.97 N:3482562.94 E:11587251.56	PT:5+57.14 N:3482587.98 E:11587249.19
L12	N 80°41'13" W	183.14'		N:3482285.69 E:11587490.00	N:3482315.33 E:11587309.27
L13	N 1°47'36" W	138.99'		N:3482367.88 E:11587263.20	N:3482506.81 E:11587258.85
L14	N 9°00'14" W	31.48'		N:3482531.85 E:11587256.48	N:3482562.94 E:11587251.56
L15	N 1°47'36" W	586.57'		N:3482587.98 E:11587249.19	N:3483174.27 E:11587230.83

SWM ACCESS ROAD ALIGNMENT TABLE					
NUMBER	BEARING	LENGTH (FT)	RADIUS	START POINT	END POINT
C19	N 43°56'53" E	84.38'	55.00'	PC:0+00.00 N:3482231.42 E:11587536.10	PT:0+84.38 N:3482286.39 E:11587589.09
C20	N 43°37'41" E	83.76'	55.00'	PC:5+33.97 N:3482307.91 E:11588038.16	PT:6+17.73 N:3482362.85 E:11588090.53
C21	N 26°23'24" E	50.67'	55.00'	PC:7+06.26 N:3482451.37 E:11588090.53	PT:7+56.92 N:3482495.17 E:11588112.26
C22	N 30°12'11" E	43.34'	55.00'	PC:8+54.48 N:3482554.18 E:11588189.95	PT:8+97.83 N:3482590.68 E:11588211.19
L18	N 87°15'21" E	449.59'		N:3482286.39 E:11587589.09	N:3482307.91 E:11588038.16
L19	N 0°00'00" E	88.53'		N:3482362.85 E:11588090.53	N:3482451.37 E:11588090.53
L20	N 52°46'48" E	97.56'		N:3482495.17 E:11588112.26	N:3482554.18 E:11588189.95
L21	N 7°37'35" E	30.96'		N:3482590.68 E:11588211.19	N:3482621.36 E:11588215.30

GENERAL NOTES

1. NOT ALL SUBSTATION COMPONENTS SHOWN FOR CLARITY.
2. ELECTRICAL GENERAL ARRANGEMENT PLANS BY OTHERS; SHOWN ON CIVIL PLANS FOR INFORMATION ONLY.
3. LIMITS OF DISTURBANCE AND PROPOSED TREE LINE SHOWN SPACED FOR GRAPHICAL CLARITY. DO NOT CLEAR BEYOND LIMITS OF DISTURBANCE.
4. ALL GRADES SHOWN ARE SOIL GRADES AND PAVEMENT GRADES.
5. 20' HIGH SUBSTATION SECURITY FENCE:

   20 — 20

   SHOWN ON CIVIL PLANS FOR LOCATION ONLY. SEE CONFIDENTIAL FENCE PLANS (BY OTHERS) FOR DETAILED CONSTRUCTION PLANS.

HATCH LEGEND

- EQUIPMENT PATHWAY — SEE DETAIL SHT. C-801
- ACCES ROADS — SEE DETAIL SHT. C-801
- SUBSTATION GRAVEL PAD — SEE DETAIL SHT. C-801
- DAM TOP ACCESS ROAD — SEE DETAIL SHT. C-801

0' 20' 40' 80'
SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
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COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

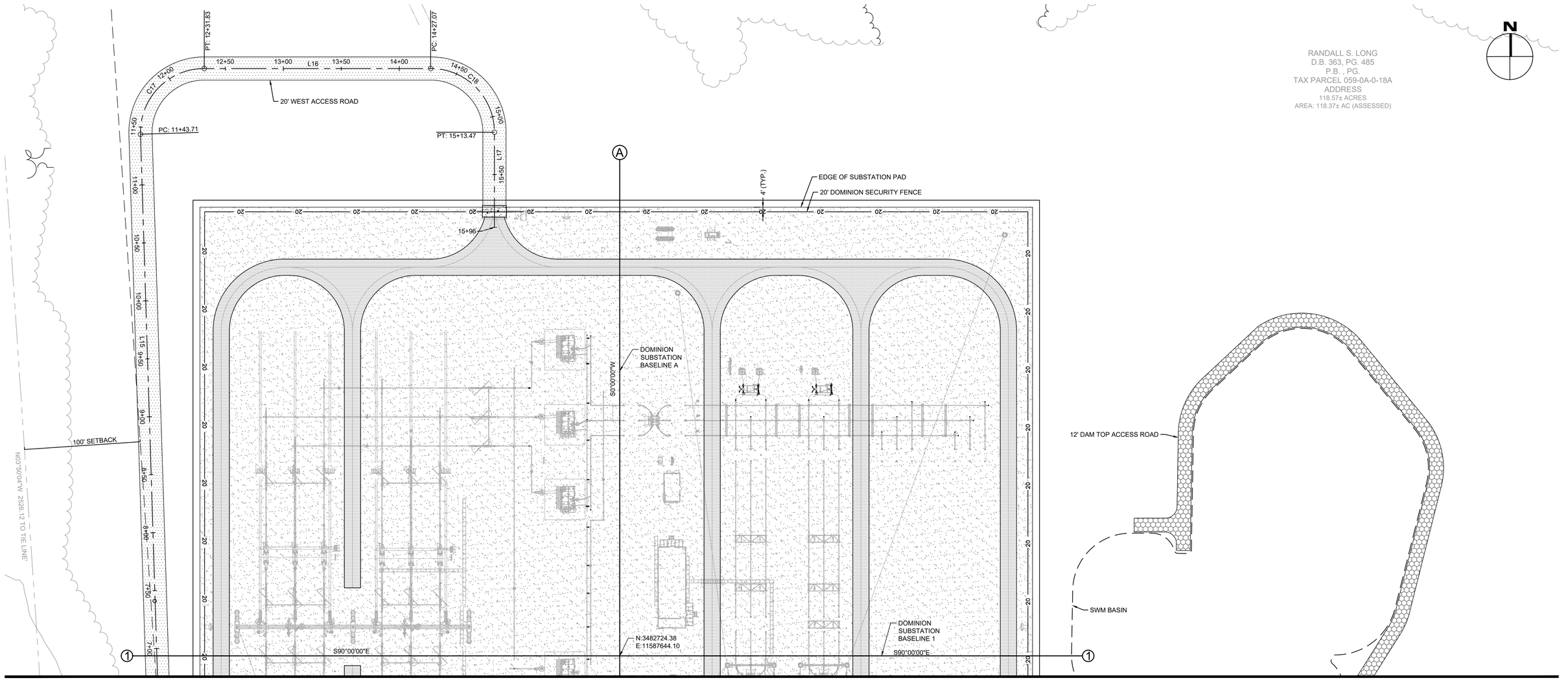
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

SUBSTATION SITE LAYOUT PLAN 1

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.		SCALE AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET: 1707908-C-302		
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING: 1707908-C-302.dwg		
APPROVED BY	KAS	8/18/23			



MATCHLINE - SEE SHEET 1707908-C-302

RANDALL S. LONG
D.B. 363, PG. 485
P.B. , PG.
TAX PARCEL 059-0A-0-18A
ADDRESS
118.57± ACRES
AREA: 118.37± AC (ASSESSED)

WEST ACCESS ROAD ALIGNMENT TABLE					
NUMBER	BEARING	LENGTH (FT)	RADIUS	START POINT	END POINT
C17	N 44°06'12" E	88.12'	55.00'	PC:11+43.71 N:3483174.27 E:11587230.83	PT:12+31.83 N:3483230.99 E:11587285.81
C18	S 45°00'00" E	86.39'	55.00'	PC:14+27.07 N:3483230.99 E:11587481.05	PT:15+13.47 N:3483175.99 E:11587536.05
L15	N 1°47'36" W	586.57'		N:3482587.98 E:11587249.19	N:3483174.27 E:11587230.83
L16	N 90°00'00" E	195.24'		N:3483230.99 E:11587285.81	N:3483230.99 E:11587481.05
L17	S 0°00'00" W	82.04'		N:3483175.99 E:11587536.05	N:3483093.95 E:11587536.05

GENERAL NOTES

1. NOT ALL SUBSTATION COMPONENTS SHOWN FOR CLARITY.
2. ELECTRICAL GENERAL ARRANGEMENT PLANS BY OTHERS; SHOWN ON CIVIL PLANS FOR INFORMATION ONLY.
3. LIMITS OF DISTURBANCE AND PROPOSED TREE LINE SHOWN SPACED FOR GRAPHICAL CLARITY. DO NOT CLEAR BEYOND LIMITS OF DISTURBANCE.
4. ALL GRADES SHOWN ARE SOIL GRADES AND PAVEMENT GRADES.
5. 20' HIGH SUBSTATION SECURITY FENCE:

   20 — 20

   SHOWN ON CIVIL PLANS FOR LOCATION ONLY. SEE CONFIDENTIAL FENCE PLANS (BY OTHERS) FOR DETAILED CONSTRUCTION PLANS.

HATCH LEGEND

- EQUIPMENT PATHWAY — SEE DETAIL SHT. C-801
- ACCES ROADS — SEE DETAIL SHT. C-801
- SUBSTATION GRAVEL PAD — SEE DETAIL SHT. C-801
- DAM TOP ACCESS ROAD — SEE DETAIL SHT. C-801

0' 20' 40' 80'
SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

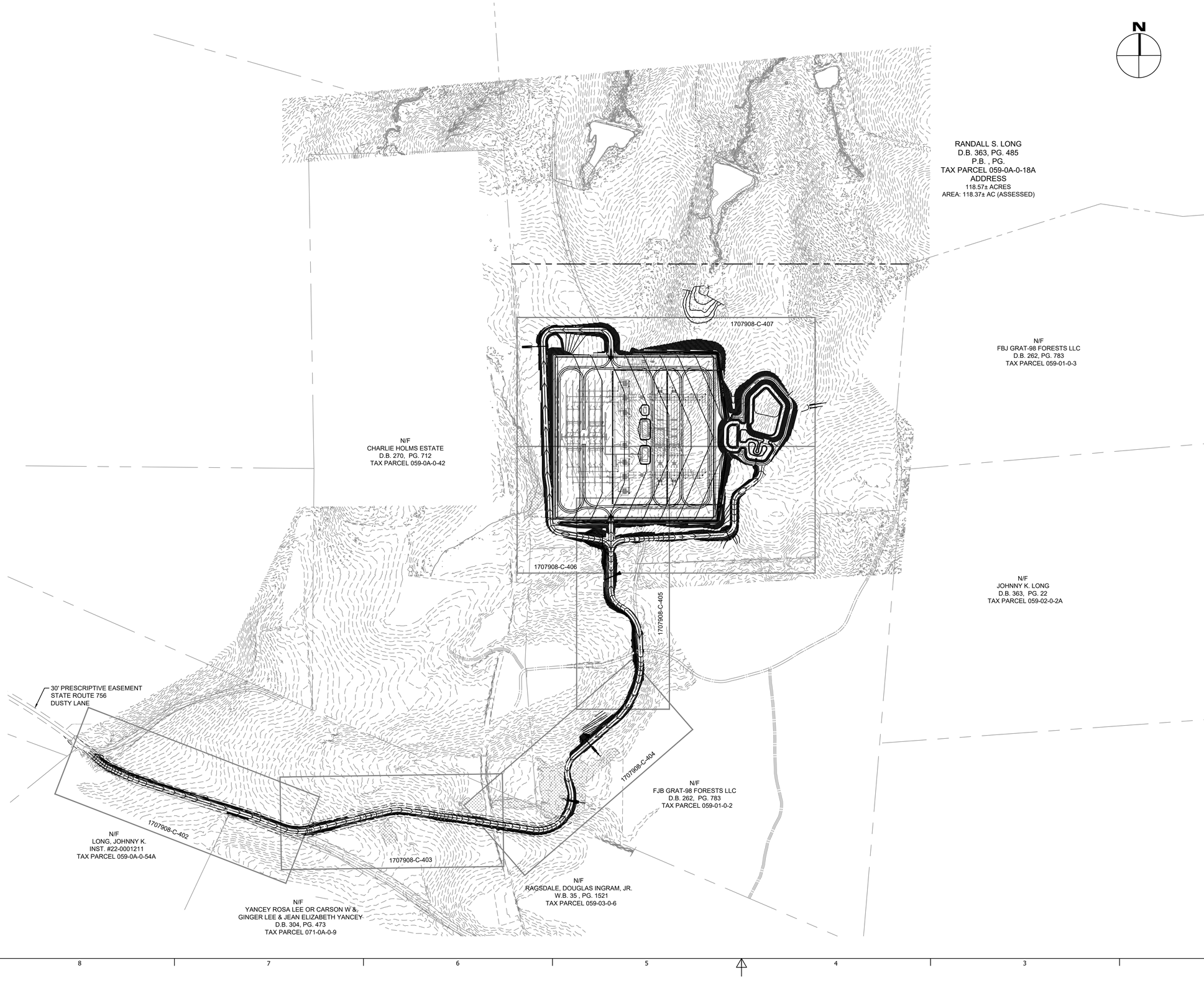
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

SUBSTATION SITE LAYOUT PLAN 2

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	AS SHOWN
PROJECT	5017950	NAME	DATE	SHEET:	1707908-C-303
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		KAS	8/18/23		1707908-C-303.dwg



GENERAL NOTES

1. NOT ALL SUBSTATION COMPONENTS SHOWN FOR CLARITY.
2. ELECTRICAL GENERAL ARRANGEMENT PLANS BY OTHERS; SHOWN ON CIVIL PLANS FOR INFORMATION ONLY.
3. LIMITS OF DISTURBANCE AND PROPOSED TREE LINE SHOWN SPACED FOR GRAPHICAL CLARITY. DO NOT CLEAR BEYOND LIMITS OF DISTURBANCE.
4. ALL GRADES SHOWN ARE SOIL GRADES AND PAVEMENT GRADES.

0' 100' 200' 400'

SCALE: 1" = 200'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
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Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

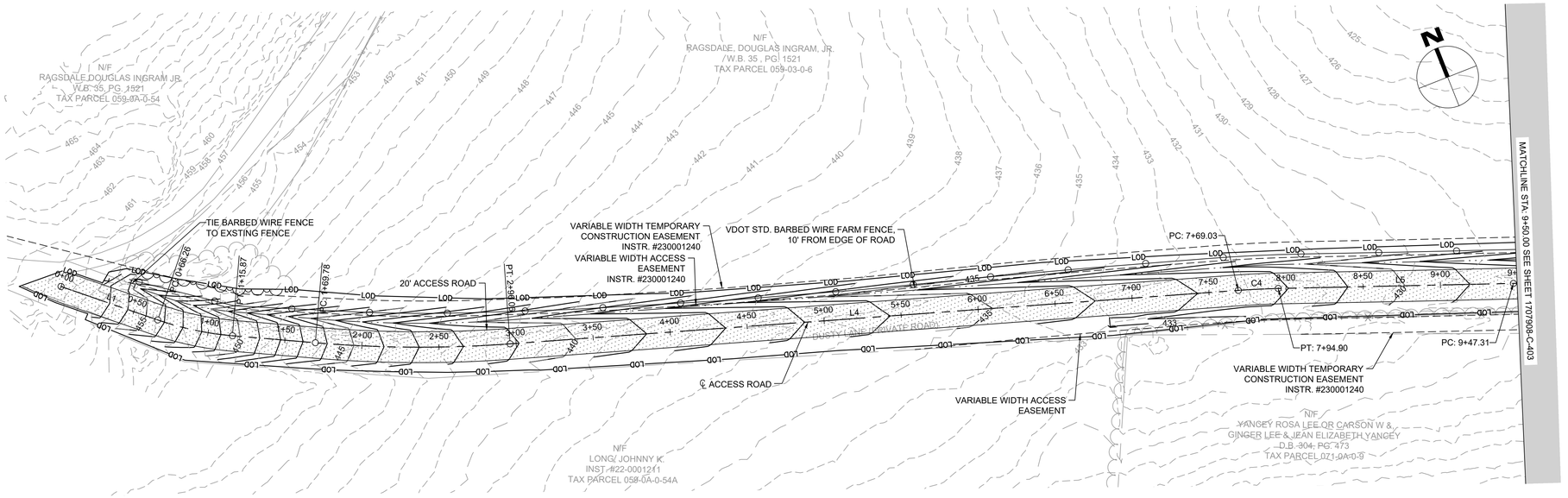
DEWBERRY PROJECT NO.: 50157950

Dominion Energy®

OVERALL GRADING AND DRAINAGE PLANS

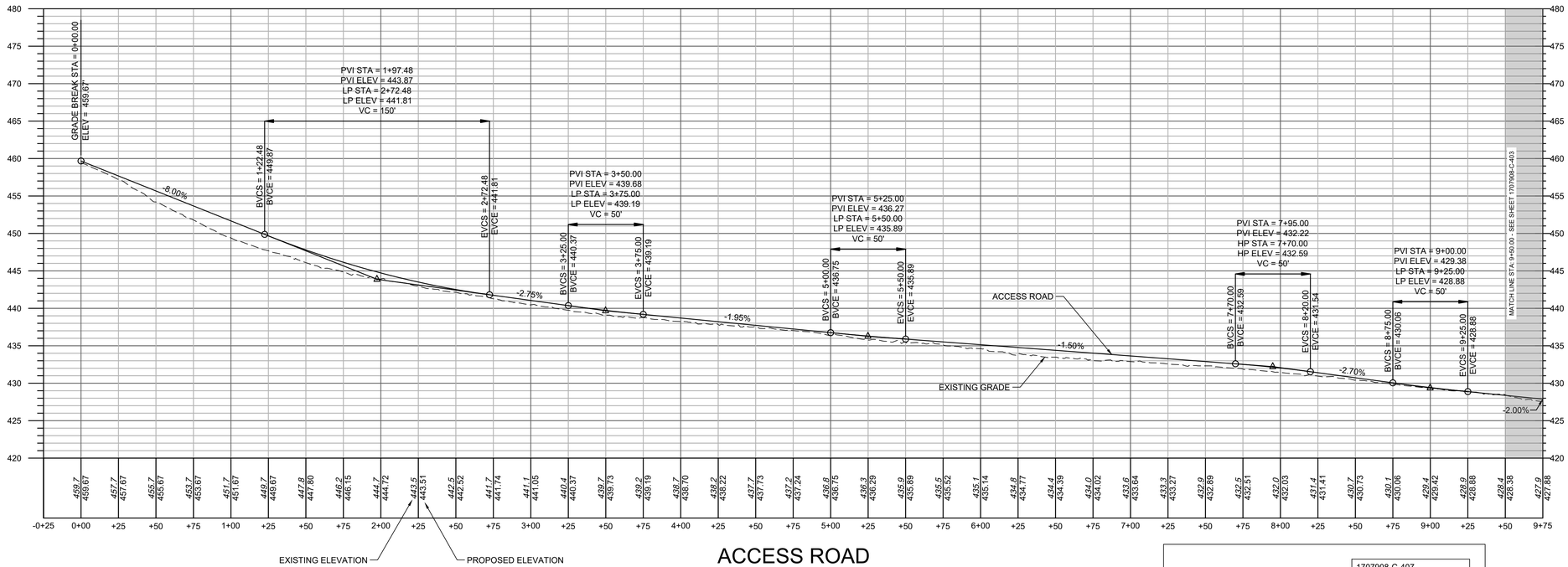
UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	AS SHOWN
PROJECT	5017950	NAME	DATE	SHEET:	1707908-C-401
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		KAS	8/18/23		1707908-C-401.dwg



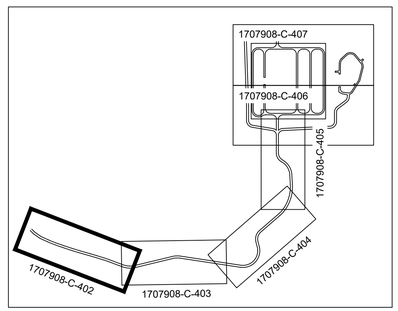
LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 320 PROPOSED MAJOR CONTOUR
- 338 PROPOSED MINOR CONTOUR
- PROPOSED STORM PIPE
- PERFORATED PIPE
- CHANNEL CENTERLINE
- ROAD CENTERLINE
- EXISTING TREELINE
- PROPOSED TREELINE
- PROPERTY LINE
- 20 — 20 20' HIGH SUBSTATION SECURITY FENCE
- ACCES ROADS SEE DETAIL SHT. C-801
- DAM TOP ACCESS ROAD SEE DETAIL SHT. C-801
- SUBSTATION GRAVEL PAD SEE DETAIL SHT. C-801
- EQUIPMENT PATHWAY SEE DETAIL SHT. C-801
- WETLANDS
- OUTLET PROTECTION



ACCESS ROAD

ACCESS ROAD ALIGNMENT TABLE					
NUMBER	BEARING	LENGTH (FT)	RADIUS	START POINT	END POINT
C4	S 71°10'53" E	25.88'	500.00'	PC:7+69.03 N:3481047.85 E:11585895.13	PT:7+94.90 N:3481039.50 E:11585919.62
L1	S 49°24'29" E	66.26'		N:3481330.11 E:11585186.69	N:3481287.00 E:11585237.00
L4	S 72°39'50" E	472.97'		N:3481188.78 E:11585443.65	N:3481047.85 E:11585895.13
L5	S 69°41'56" E	152.40'		N:3481039.50 E:11585919.62	N:3480986.62 E:11586062.56



KEY PLAN

0' 20' 40' 80'
HORIZONTAL SCALE: 1" = 40'

0' 4' 8' 16'
VERTICAL SCALE: 1" = 8'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
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Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

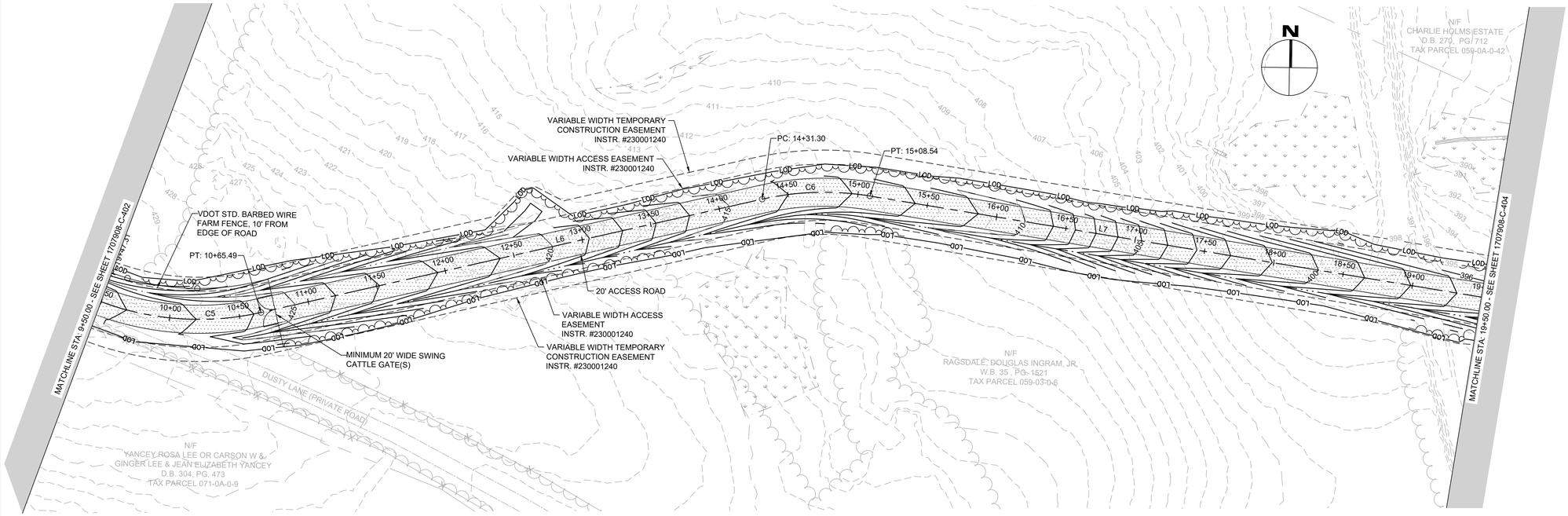
DEWBERRY PROJECT NO.: 50157950

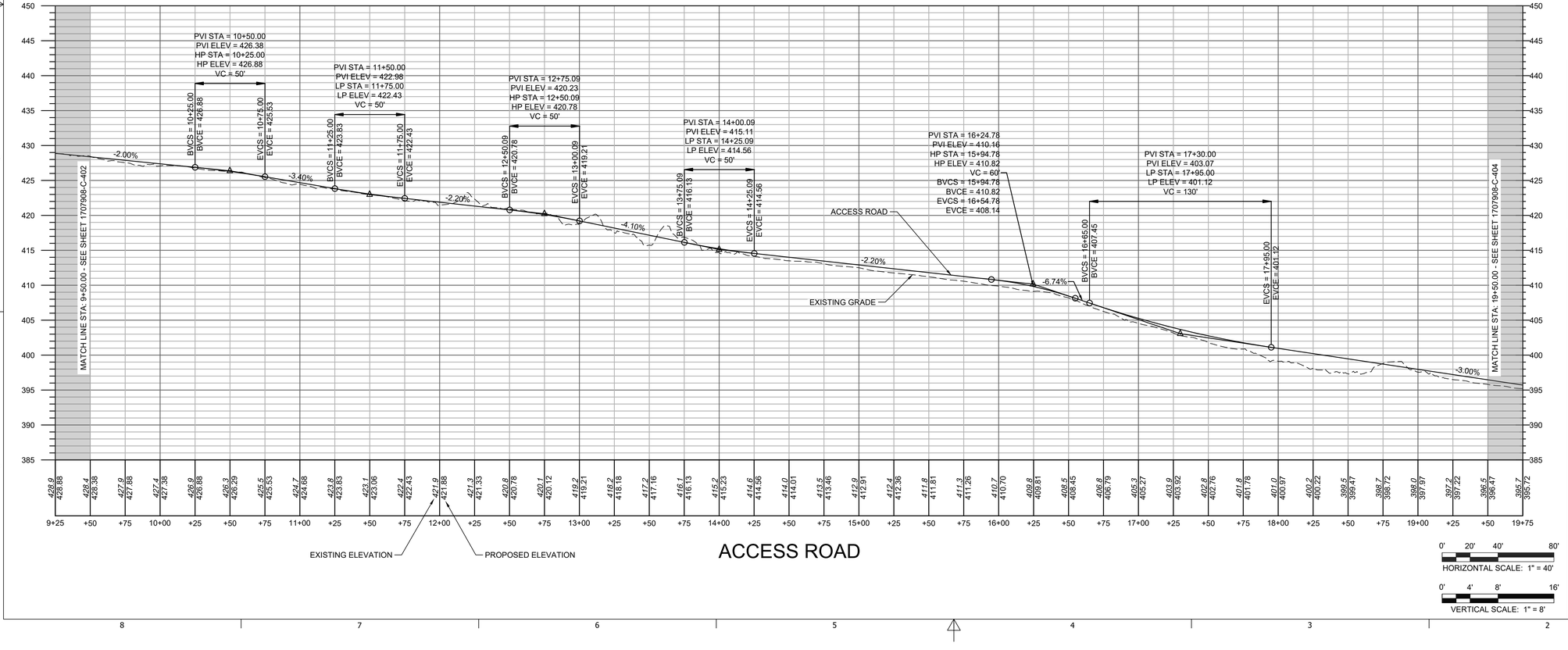
Dominion Energy

ACCESS ROAD PLAN & PROFILE
STA. 0+00.00-9+50.00

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	
PROJECT		NAME	DATE	SHEET:	1707908-C-402
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		KAS	8/18/23		1707908-C-402.dwg





ACCESS ROAD

HORIZONTAL SCALE: 1" = 40'

VERTICAL SCALE: 1" = 8'

LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 320 PROPOSED MAJOR CONTOUR
- 338 PROPOSED MINOR CONTOUR
- PROPOSED STORM PIPE
- PERFORATED PIPE
- CHANNEL CENTERLINE
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- 20 — 20 20' HIGH SUBSTATION SECURITY FENCE
- ACCES ROADS SEE DETAIL SHT. C-801
- DAM TOP ACCESS ROAD SEE DETAIL SHT. C-801
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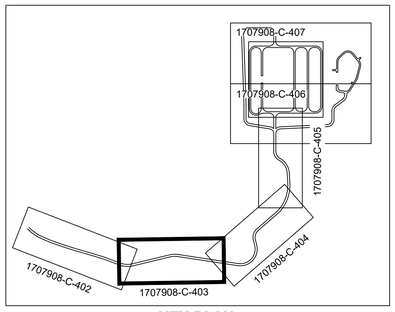
- WETLANDS
- OUTLET PROTECTION



KEY PLAN

ACCESS ROAD ALIGNMENT TABLE

NUMBER	BEARING	LENGTH (FT)	RADIUS	START POINT	END POINT
C5	S 86°37'39" E	118.18'	200.00'	PC:9+47.31 N:3480986.62 E:11586062.56	PT:10+65.49 N:3480979.77 E:11586178.83
C6	N 87°30'28" E	77.24'	200.00'	PC:14+31.30 N:3481065.51 E:11586534.44	PT:15+08.54 N:3481068.85 E:11586611.13
L6	N 76°26'38" E	365.80'		N:3480979.77 E:11586178.83	N:3481065.51 E:11586534.44
L7	S 81°25'42" E	581.18'		N:3481068.85 E:11586611.13	N:3480982.23 E:11587185.82

REVISIONS

REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

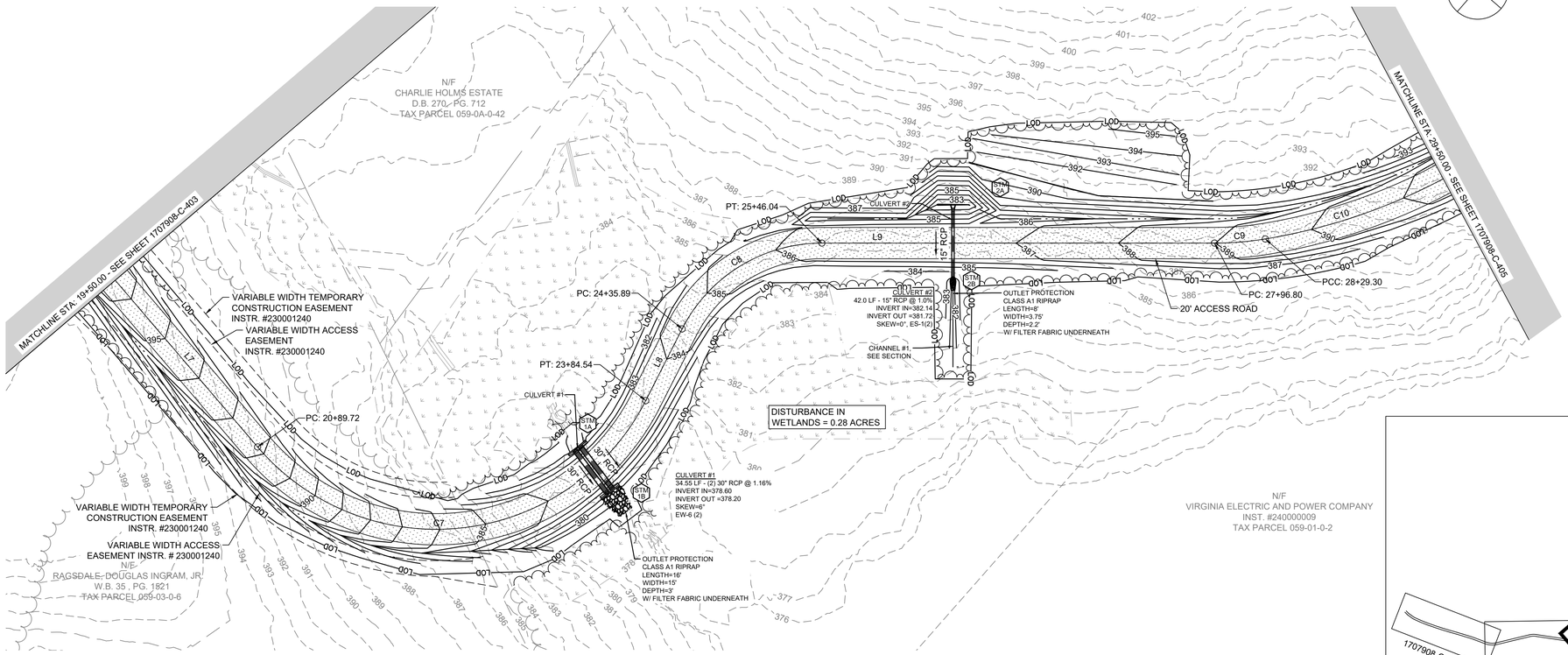
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

ACCESS ROAD PLAN & PROFILE
STA. 9+50.00-19+50.00

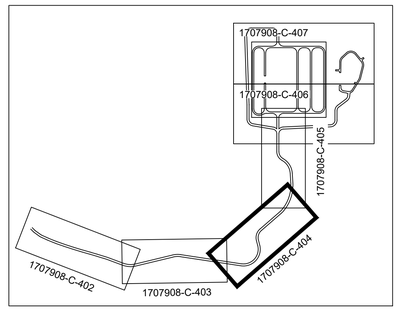
UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	
PROJECT		NAME	DATE	SHEET:	1707908-C-403
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		KAS	8/18/23		1707908-C-403.dwg

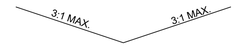


LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 320 PROPOSED MAJOR CONTOUR
- 338 PROPOSED MINOR CONTOUR
- PROPOSED STORM PIPE
- PERFORATED PIPE
- CHANNEL CENTERLINE
- ROAD CENTERLINE
- EXISTING TREELINE
- PROPOSED TREELINE
- PROPERTY LINE
- 20 — 20 20' HIGH SUBSTATION SECURITY FENCE
- ACCES ROADS SEE DETAIL SHT. C-801
- DAM TOP ACCESS ROAD SEE DETAIL SHT. C-801
- SUBSTATION GRAVEL PAD SEE DETAIL SHT. C-801
- EQUIPMENT PATHWAY SEE DETAIL SHT. C-801
- WETLANDS
- OUTLET PROTECTION



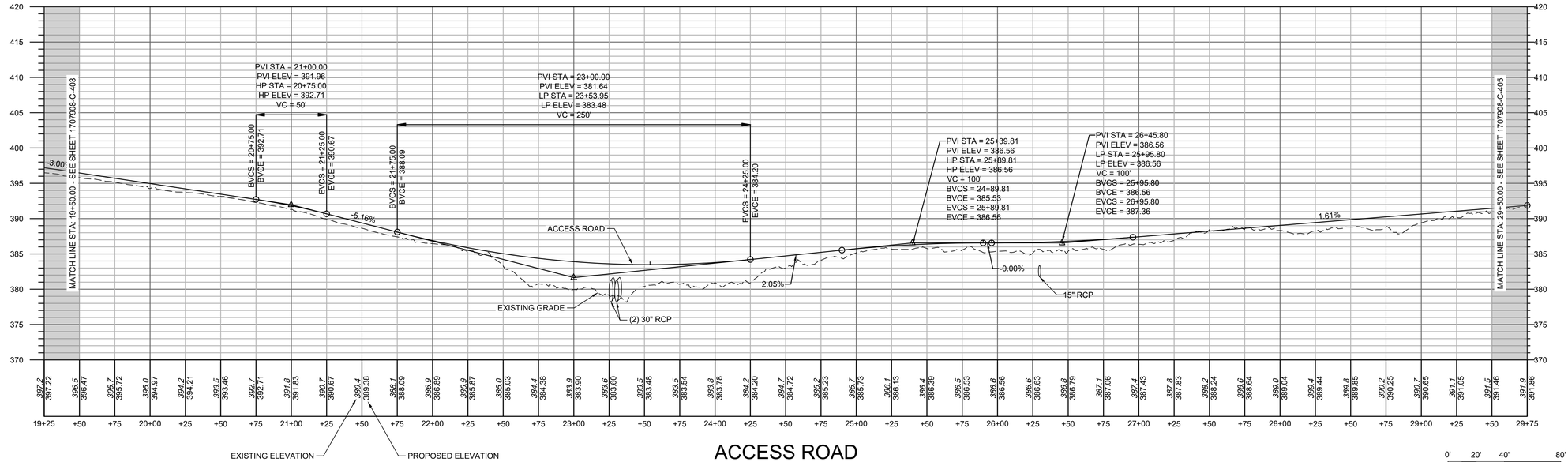
KEY PLAN



2-EC-2 TY 2 LINED CHANNEL
LONGITUNDINAL SLOPE=1% MIN.

CHANNEL 1 CROSS-SECTION

ACCESS ROAD ALIGNMENT TABLE					
NUMBER	BEARING	LENGTH (FT)	RADIUS	START POINT	END POINT
C7	N 42°15'55" E	294.82'	150.00'	PC:20+89.72 N:3480982.23 E:11587185.82	PT:23+84.54 N:3481166.95 E:11587353.69
C8	N 17°30'49" E	110.15'	100.00'	PC:24+35.89 N:3481216.77 E:11587341.23	PT:25+46.04 N:3481316.58 E:11587372.73
C9	N 44°24'46" E	32.50'	200.00'	PC:27+96.80 N:3481480.87 E:11587562.18	PT:28+29.30 N:3481504.06 E:11587584.90
C10	N 18°14'41" E	276.80'	368.61'	PC:28+29.30 N:3481504.06 E:11587584.90	PT:31+06.10 N:3481760.81 E:11587669.53
L7	S 81°25'42" E	581.18'		N:3481068.85 E:11586611.13	N:3480982.23 E:11587185.82
L8	N 14°02'28" W	51.35'		N:3481166.95 E:11587353.69	N:3481216.77 E:11587341.23
L9	N 49°04'05" E	250.76'		N:3481316.58 E:11587372.73	N:3481480.87 E:11587562.18



ACCESS ROAD

HORIZONTAL SCALE: 1" = 40'

VERTICAL SCALE: 1" = 8'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

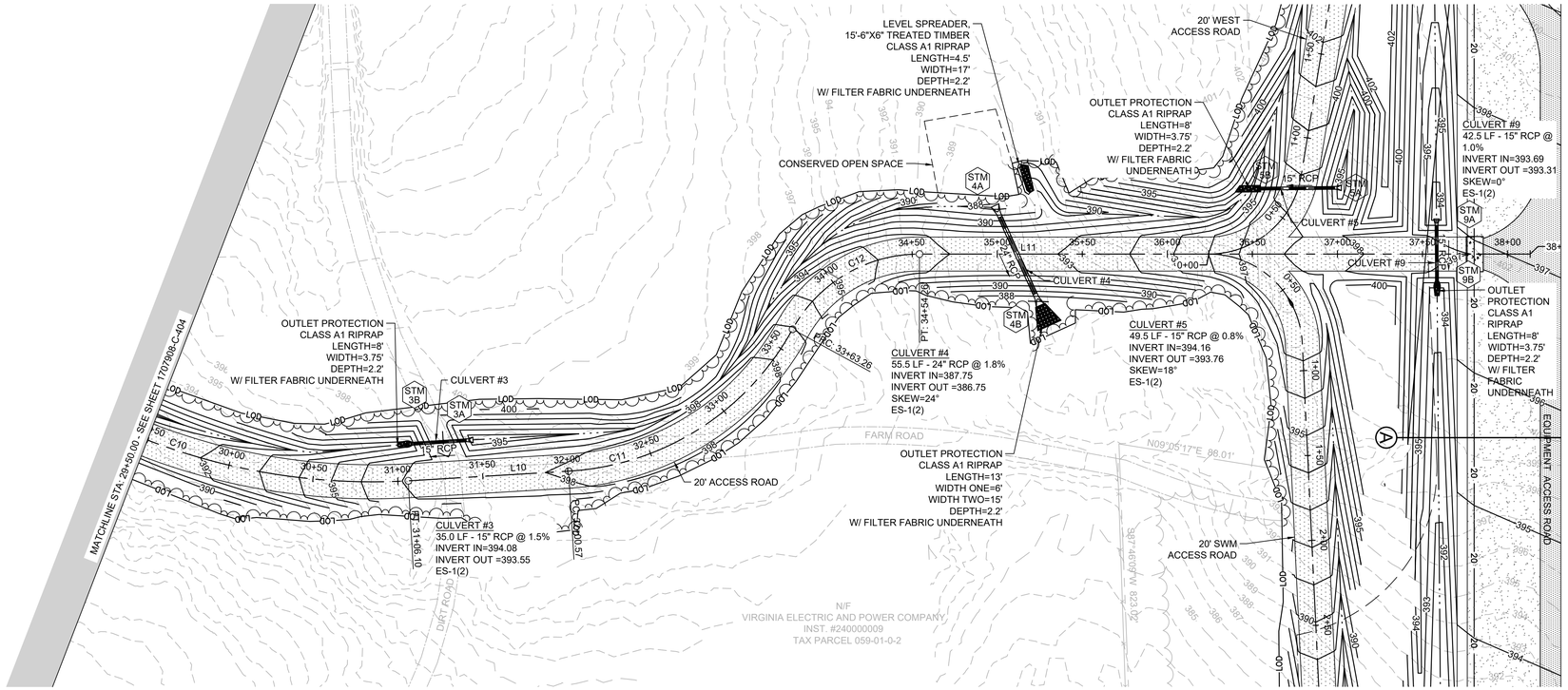
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

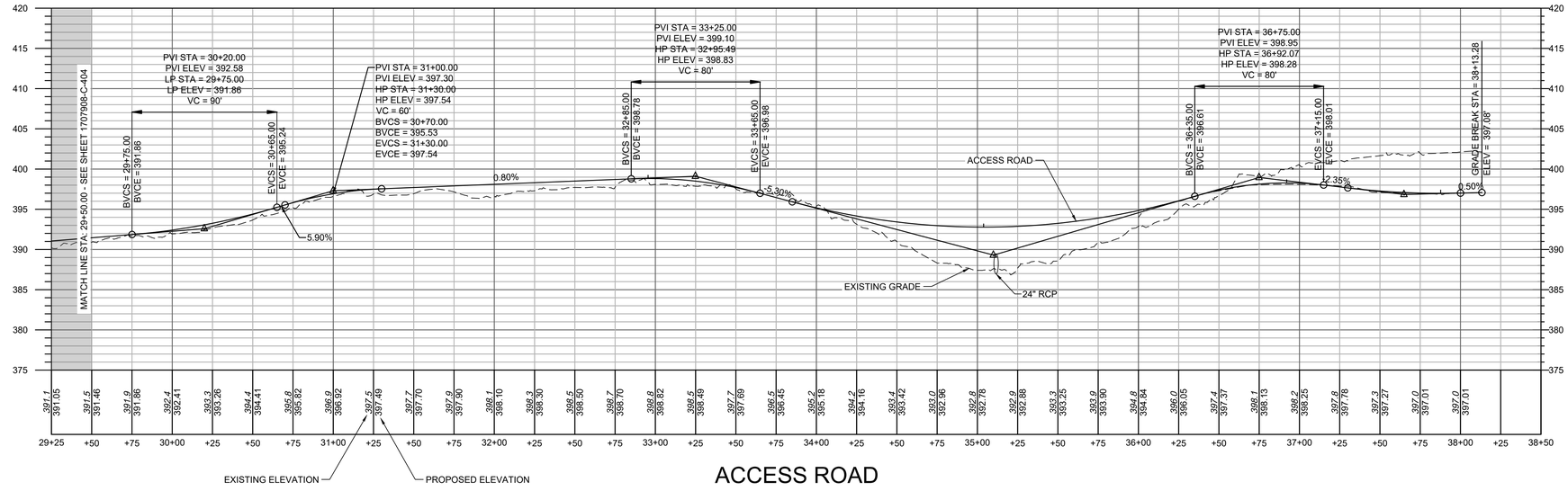
ACCESS ROAD PLAN & PROFILE
STA. 19+50.00-29+50.00

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.		SCALE
PROJECT		NAME	DATE	SHEET:	1707908-C-404
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	1707908-C-404.dwg
APPROVED BY		KAS	8/18/23		

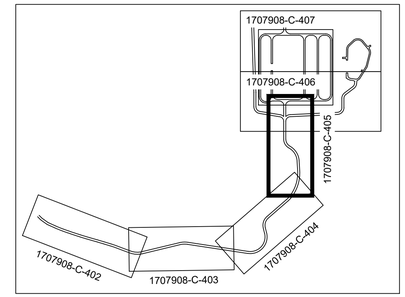


SEE SHEET 1707908-C-406 FOR SUBSTATION GRADING PLAN



LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 320 PROPOSED MAJOR CONTOUR
- 338 PROPOSED MINOR CONTOUR
- PROPOSED STORM PIPE
- PERFORATED PIPE
- CHANNEL CENTERLINE
- ROAD CENTERLINE
- EXISTING TREELINE
- PROPOSED TREELINE
- PROPERTY LINE
- 20 — 20 — 20' HIGH SUBSTATION SECURITY FENCE
- ACCES ROADS SEE DETAIL SHT. C-801
- DAM TOP ACCESS ROAD SEE DETAIL SHT. C-801
- SUBSTATION GRAVEL PAD SEE DETAIL SHT. C-801
- EQUIPMENT PATHWAY SEE DETAIL SHT. C-801
- WETLANDS
- OUTLET PROTECTION



KEY PLAN

ACCESS ROAD ALIGNMENT TABLE

NUMBER	BEARING	LENGTH (FT)	RADIUS	START POINT	END POINT
C10	N 18°14'41" E	276.80'	368.61'	PC:28+29.30 N:3481504.06 E:11587584.90	PT:31+06.10 N:3481760.81 E:11587669.53
C11	N 32°23'46" W	162.69'	160.99'	PC:32+00.57 N:3481855.11 E:11587663.85	PT:33+63.26 N:3481986.70 E:11587580.35
C12	N 30°40'30" W	91.00'	85.00'	PC:33+63.26 N:3481986.70 E:11587580.35	PT:34+54.26 N:3482061.29 E:11587536.11
L10	N 3°26'48" W	94.47'		N:3481760.81 E:11587669.53	N:3481855.11 E:11587663.85
L11	N 0°00'15" W	359.02'		N:3482061.29 E:11587536.11	N:3482420.31 E:11587536.09

REVISIONS

REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

ACCESS ROAD PLAN & PROFILE
STA. 29+50.00-38+50.00

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

HORIZONTAL SCALE: 1" = 40' (0' 20' 40' 80')
VERTICAL SCALE: 1" = 8' (0' 4' 8' 16')

OPERATIONAL REGION		B/M No.		SCALE	
PROJECT	NAME	DATE	SHEET:	1707908-C-405	
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING:		
APPROVED BY	KAS	8/18/23	1707908-C-405.dwg		

MATCHLINE - SEE SHEET 1707908-C-407

SEE SHEET 1707908-C-408 FOR ENCLOSURE GRADING

SUBSTATION SECURITY FENCE

18" HDPE

24" HDPE

DOMINION SUBSTATION BASELINE A

S0°00'00"W

1.00%

1.40%

24" RCP

24" X 38" ELLIPTICAL RCP

EQUIPMENT ACCESS ROAD

CULVERT #2
32.5 LF - 15" RCP @ 1.0%
INVERT IN=393.65
INVERT OUT =393.33
SKEW=0°
ES-1(2)

OUTLET PROTECTION
CLASS A1 RIPRAP
LENGTH=8'
WIDTH=3.75'
DEPTH=2.2'
W/ FILTER FABRIC UNDERNEATH

CULVERT #3
15" RCP

CULVERT #4
15" RCP

WEST ACCESS ROAD

CULVERT #5
43.5 LF - 15" RCP @ 1.3%
INVERT IN=394.11
INVERT OUT =393.54
SKEW=18°
ES-1(2)

OUTLET PROTECTION
CLASS A1 RIPRAP
LENGTH=13.5'
WIDTH=3.75'
DEPTH=2.2'
W/ FILTER FABRIC UNDERNEATH

OUTLET PROTECTION
CLASS A1 RIPRAP
LENGTH=12'
WIDTH=15'
DEPTH=2.2'
W/ FILTER FABRIC UNDERNEATH

SWM ACCESS ROAD

CULVERT #7
36.0 LF - 15" RCP @ 1.1%
INVERT IN=379.13
INVERT OUT =378.73
SKEW=0°
ES-1(2)

OUTLET PROTECTION
CLASS A1 RIPRAP
LENGTH=6'
WIDTH ONE=3.75'
WIDTH TWO=9.25'
DEPTH=2.2'
W/ FILTER FABRIC UNDERNEATH

CULVERT #8
29 LF - 12" RCP @ 1.72%
INVERT IN=383.50
INVERT OUT =383.00
SKEW=0°
ES-1(2)

SWM BASIN ACCESS ROAD

OUTLET PROTECTION
CLASS A1 RIPRAP
LENGTH=6'
W_1=3'
W_2=6'
DEPTH=2.2'
W/ FILTER FABRIC UNDERNEATH

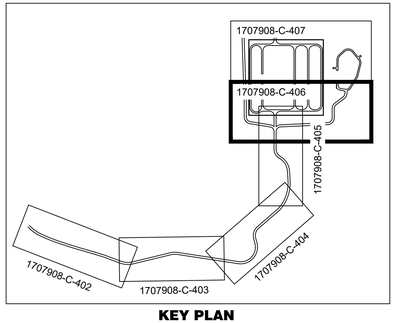
RANDALL S. LONG
D.B. 363, PG. 485
P.B. , PG.
TAX PARCEL 059-0A-0-18A
118.57± ACRES
AREA: 118.37± AC (ASSESSED)

N/F
FJB GRAT-98 FORESTS LLC
D/B. 262, PG. 783
TAX PARCEL 059-01-0-2

MATCHLINE - SEE SHEET 1707908-C-405

LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 320 PROPOSED MAJOR CONTOUR
- 338 PROPOSED MINOR CONTOUR
- PROPOSED STORM PIPE
- PERFORATED PIPE
- CHANNEL CENTERLINE
- ROAD CENTERLINE
- EXISTING TREELINE
- PROPOSED TREELINE
- PROPERTY LINE
- 20 — 20 20' SUBSTATION SECURITY FENCE
- ACCES ROADS SEE DETAIL SHT. C-801
- DAM TOP ACCESS ROAD SEE DETAIL SHT. C-801
- SUBSTATION GRAVEL PAD SEE DETAIL SHT. C-801
- EQUIPMENT PATHWAY SEE DETAIL SHT. C-801
- WETLANDS
- OUTLET PROTECTION



KEY PLAN

GENERAL NOTES

1. NOT ALL SUBSTATION COMPONENTS SHOWN FOR CLARITY.
2. ELECTRICAL GENERAL ARRANGEMENT PLANS BY OTHERS; SHOWN ON CIVIL PLANS FOR INFORMATION ONLY.
3. LIMITS OF DISTURBANCE AND PROPOSED TREE LINE SHOWN SPACED FOR GRAPHICAL CLARITY. DO NOT CLEAR BEYOND LIMITS OF DISTURBANCE.
4. 20' HIGH SUBSTATION SECURITY FENCE:
   20 — 20
   SHOWN ON CIVIL PLANS FOR LOCATION ONLY. SEE CONFIDENTIAL FENCE PLANS (BY OTHERS) FOR DETAILED CONSTRUCTION PLANS.
5. ALL GRADES SHOWN ARE SOIL GRADES AND PAVEMENT GRADES.

GRADING LEGEND

SP = GROUND ELEVATION
EP = EDGE OF PAVEMENT ELEVATION
FL = DITCH FLOWLINE ELEVATION

0' 20' 40' 80'
SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

SUBSTATION GRADING AND DRAINAGE PLAN 1

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	AS SHOWN
PROJECT 5017950		NAME	DATE	SHEET:	1707908-C-406
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		~~BRS~~	~~XX/XX/23~~		1707908-C-406.dwg

MATCHLINE - THIS SHEET

CULVERT #6
39.0 LF-15" RCP @ 0.90%
INVERT IN=388.37
INVERT OUT =388.02
SKEW=0°
ES-1(2)

CULVERT #6

15" RCP

CHANNEL #2, SEE SECTION

OUTLET PROTECTION CLASS A1 RIPRAP
LENGTH=8'
WIDTH=3.75'
DEPTH=2.2'
W/ FILTER FABRIC UNDERNEATH

EQUIPMENT ACCESS ROAD

24" RCP

24" X 38" ELLIPTICAL RCP

OUTLET PROTECTION CLASS A1 RIPRAP
LENGTH=15'
WIDTH=15'
DEPTH=2.2'
W/ FILTER FABRIC UNDERNEATH

24" HDPE

18" HDPE

1.00%

1.40%

SEE SHEET 1707908-C-408 FOR ENCLOSURE GRADING

SWM BASIN
SEE SWM SHEETS

OUTLET PROTECTION CLASS A1 RIPRAP
LENGTH=30'
WIDTH=12.5'
DEPTH=2.2'
W/ FILTER FABRIC UNDERNEATH

N03°30'04"W, 258.12' TO TIE LINE

MATCHLINE - THIS SHEET

MATCHLINE - SEE SHEET 1707908-C-406

MATCHLINE - THIS SHEET

CONSERVED OPEN SPACE

MATCHLINE - THIS SHEET

LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR (320)
- PROPOSED MINOR CONTOUR (338)
- PROPOSED STORM PIPE
- PERFORATED PIPE
- CHANNEL CENTERLINE
- ROAD CENTERLINE
- EXISTING TREELINE
- PROPOSED TREELINE
- PROPERTY LINE
- 20' SUBSTATION SECURITY FENCE
- ACCES ROADS SEE DETAIL SHT. C-801
- DAM TOP ACCESS ROAD SEE DETAIL SHT. C-801
- SUBSTATION GRAVEL PAD SEE DETAIL SHT. C-801
- EQUIPMENT PATHWAY SEE DETAIL SHT. C-801
- WETLANDS
- OUTLET PROTECTION

3:1 MAX, 3:1 MAX

2-EC-2 TY 2 LINED CHANNEL
LONGITUNDINAL SLOPE=1% MIN.

CHANNEL 2 CROSS-SECTION

KEY PLAN

1707908-C-407
1707908-C-406
1707908-C-405
1707908-C-404
1707908-C-403
1707908-C-402

GENERAL NOTES

1. NOT ALL SUBSTATION COMPONENTS SHOWN FOR CLARITY.
2. ELECTRICAL GENERAL ARRANGEMENT PLANS BY OTHERS; SHOWN ON CIVIL PLANS FOR INFORMATION ONLY.
3. LIMITS OF DISTURBANCE AND PROPOSED TREE LINE SHOWN SPACED FOR GRAPHICAL CLARITY. DO NOT CLEAR BEYOND LIMITS OF DISTURBANCE.
4. 20' HIGH SUBSTATION SECURITY FENCE:
   20 — 20
   SHOWN ON CIVIL PLANS FOR LOCATION ONLY. SEE CONFIDENTIAL FENCE PLANS (BY OTHERS) FOR DETAILED CONSTRUCTION PLANS.
5. ALL GRADES SHOWN ARE SOIL GRADES AND PAVEMENT GRADES.

GRADING LEGEND

SP = GROUND ELEVATION
EP = EDGE OF PAVEMENT ELEVATION
FL = DITCH FLOWLINE ELEVATION

0' 20' 40' 80'
SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060. (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

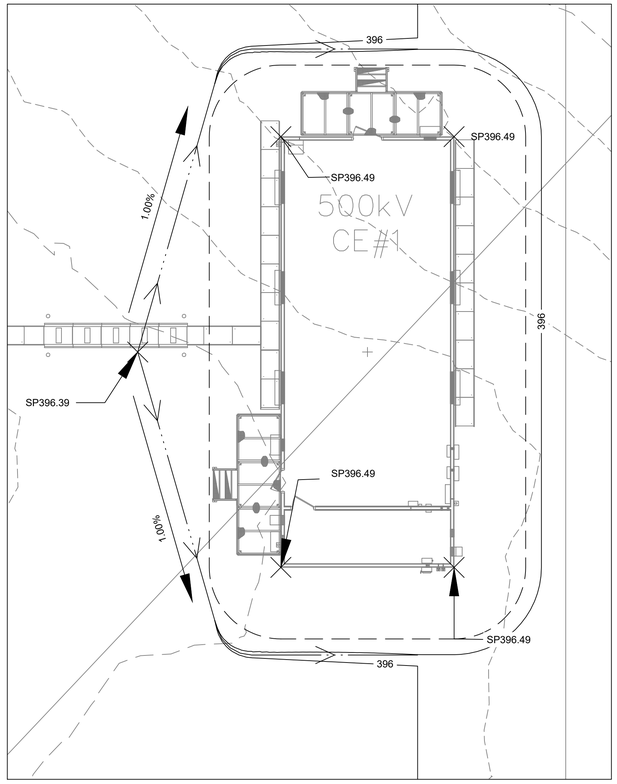
DEWBERRY PROJECT NO.: 50157950

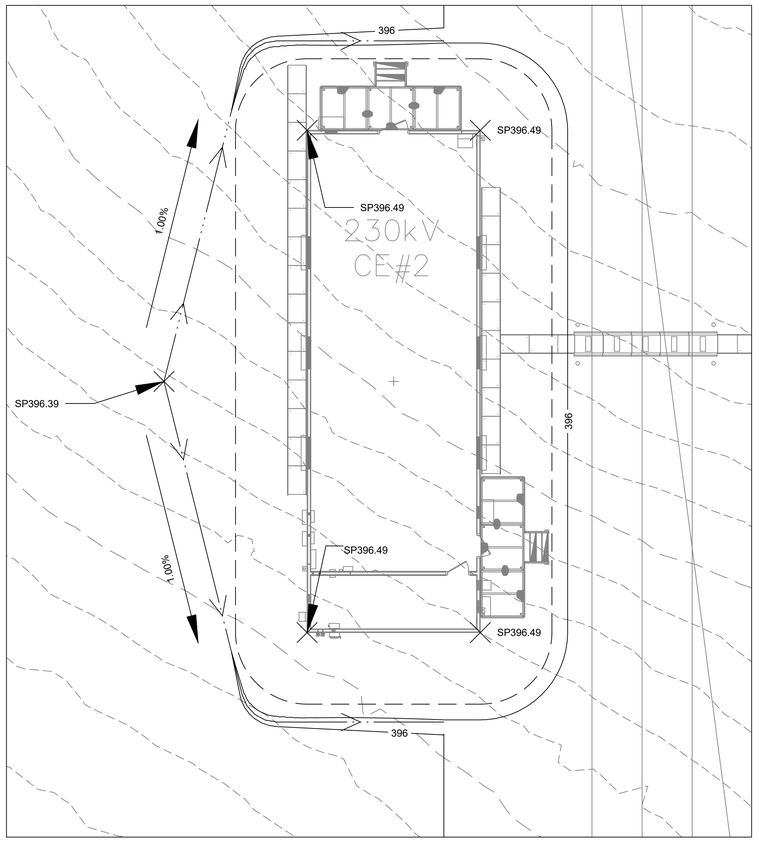
Dominion Energy

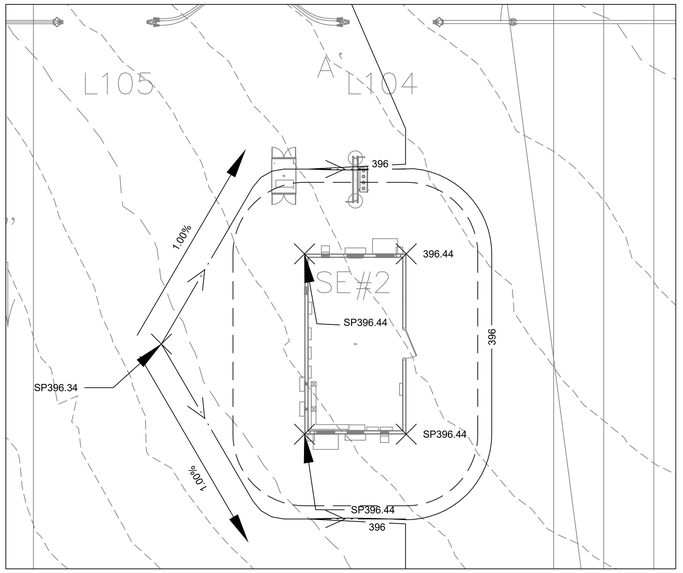
SUBSTATION GRADING AND DRAINAGE PLAN 2

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-407	
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-407.dwg	
APPROVED BY	KAS	8/18/23			







GENERAL NOTES

1. NOT ALL SUBSTATION COMPONENTS SHOWN FOR CLARITY.
2. ELECTRICAL GENERAL ARRANGEMENT PLANS BY OTHERS; SHOWN ON CIVIL PLANS FOR INFORMATION ONLY.

GRADING LEGEND

SP = GROUND ELEVATION
EP = EDGE OF PAVEMENT ELEVATION
FL = DITCH FLOWLINE ELEVATION

0' 5' 10' 20'
SCALE: 1" = 10'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

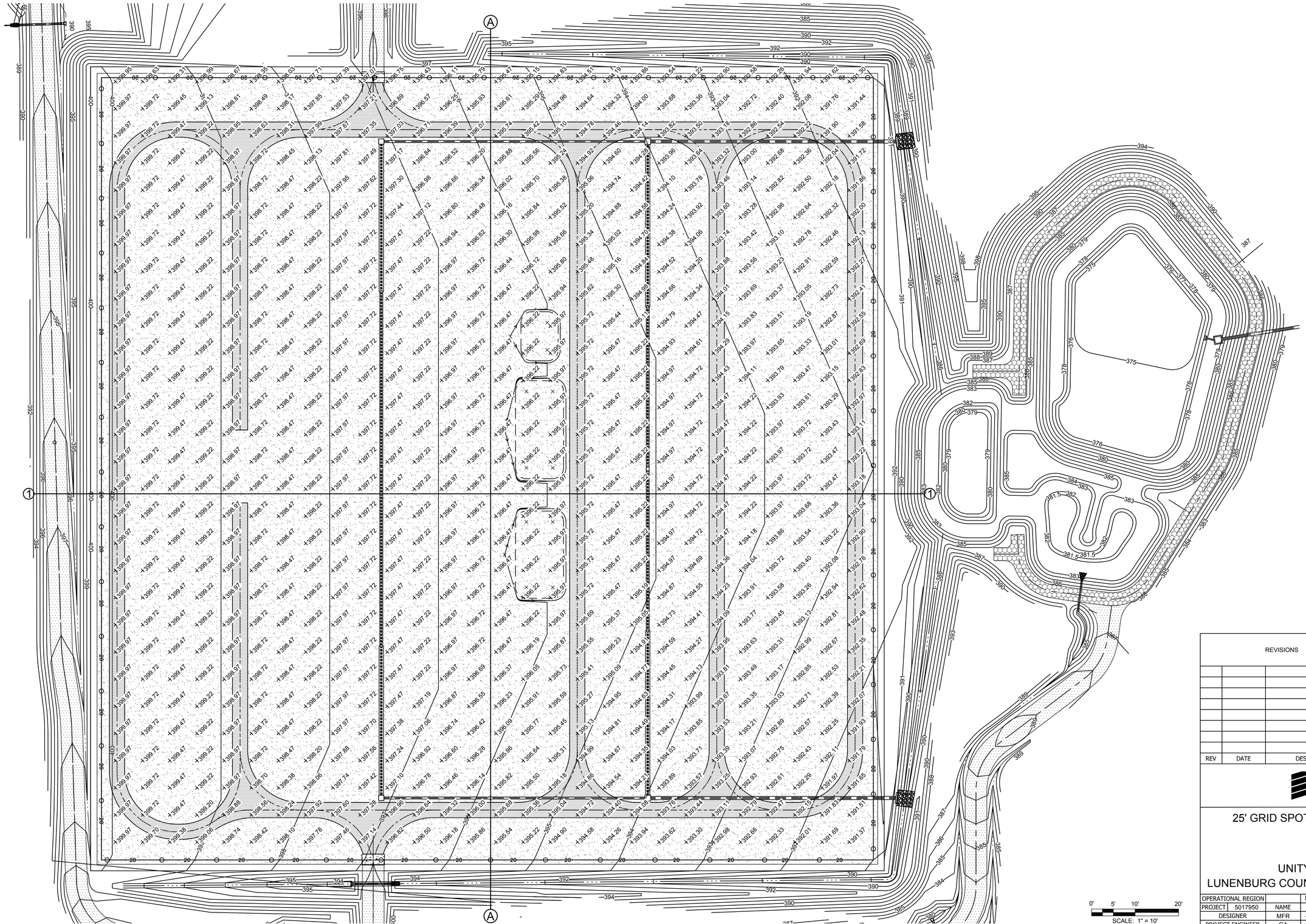
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

ENCLOSURES FINE GRADING PLAN

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.		SCALE AS SHOWN
PROJECT 5017950		NAME	DATE	SHEET:	1707908-C-408
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	1707908-C-408.dwg
APPROVED BY		KAS	8/18/23		



REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

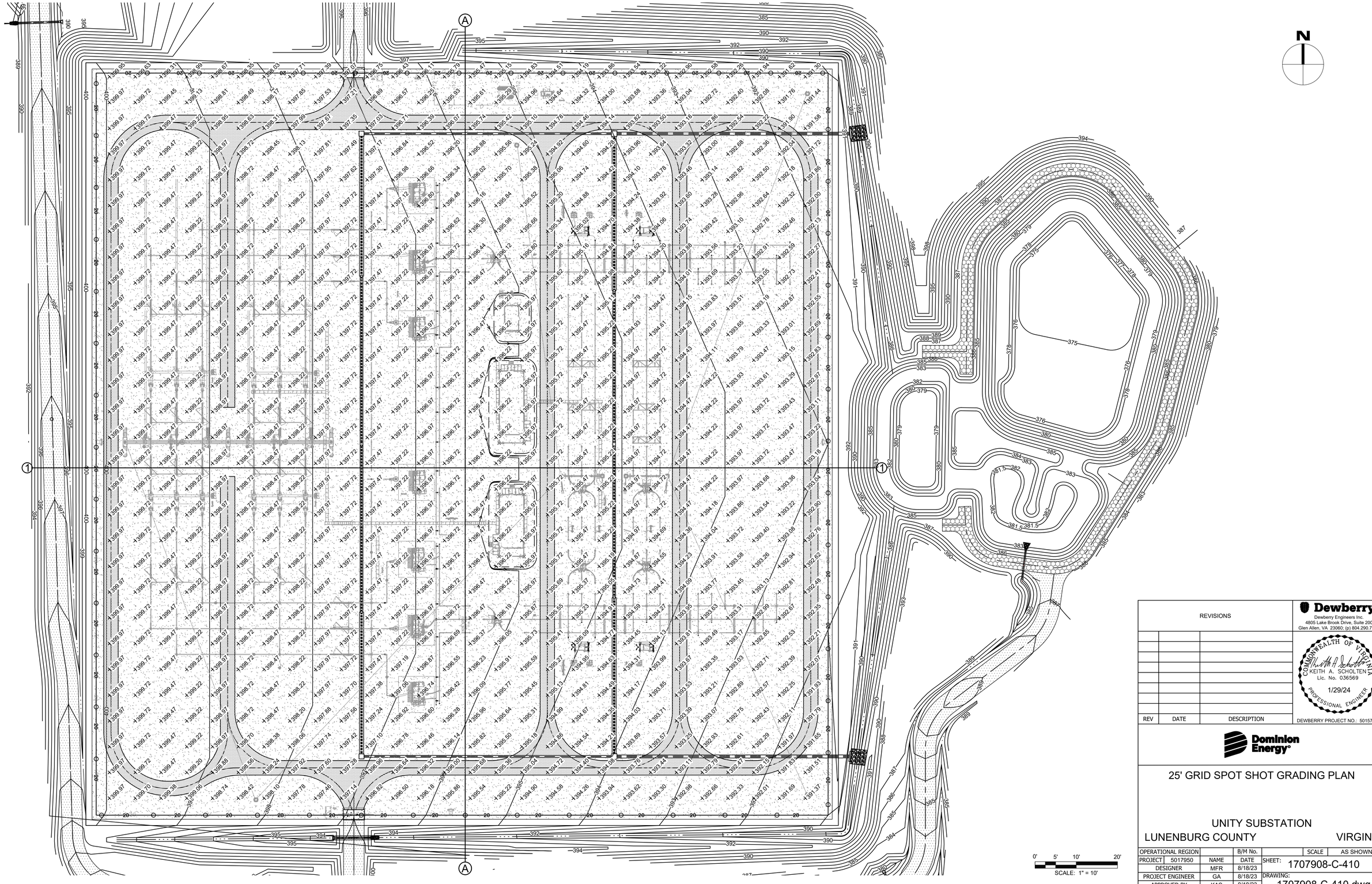
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

25' GRID SPOT SHOT GRADING PLAN

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.		SCALE AS SHOWN
PROJECT 5017950		NAME	DATE	SHEET:	1707908-C-409
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		KAS	8/18/23		1707908-C-409.dwg



REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy®

25' GRID SPOT SHOT GRADING PLAN

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-410	
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-410.dwg	
APPROVED BY	KAS	8/18/23			

CULVERTS #1, #2, #3, AND #4

LEGEND

DRAINAGE AREA
Tc PATH

0' 50' 100' 200'
SCALE: 1" = 100'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

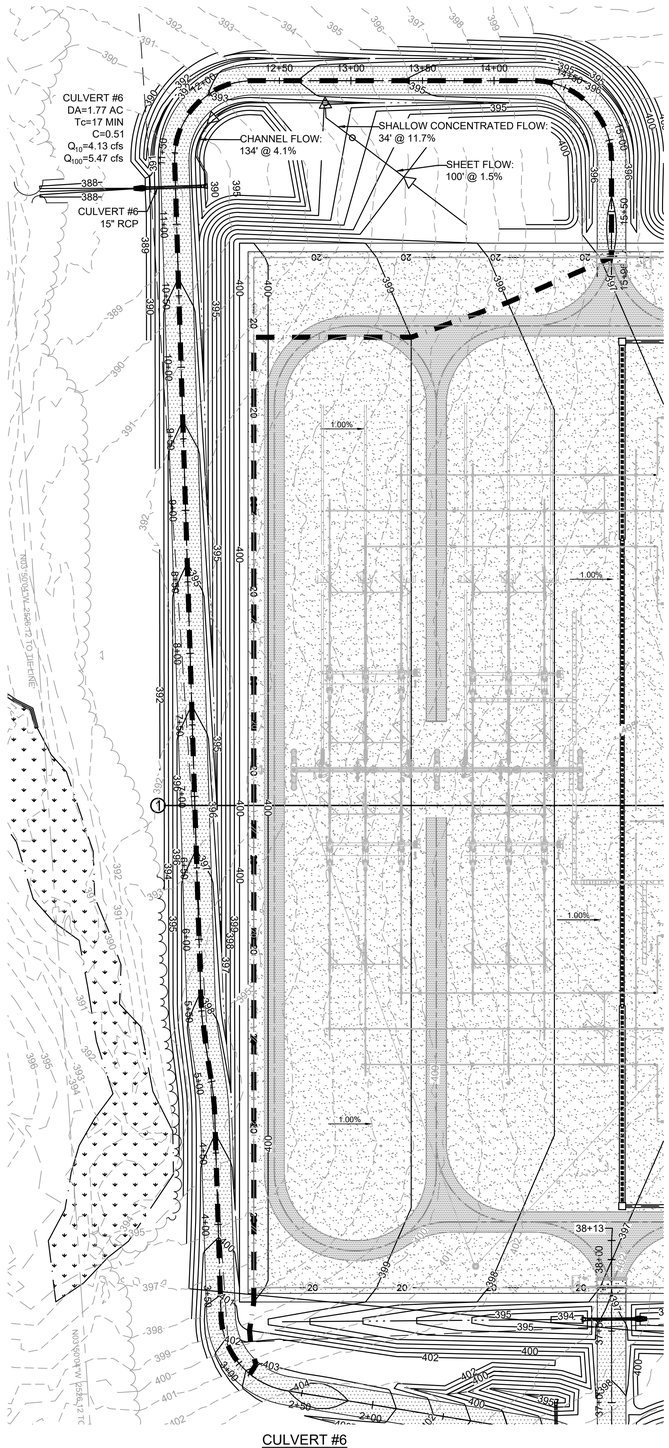
Dominion Energy

CULVERT DRAINAGE AREAS

UNITY SUBSTATION

LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	AS SHOWN
PROJECT 5017950		NAME	DATE	SHEET:	1707908-C-411
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	
APPROVED BY		KAS	8/18/23		1707908-C-411.dwg



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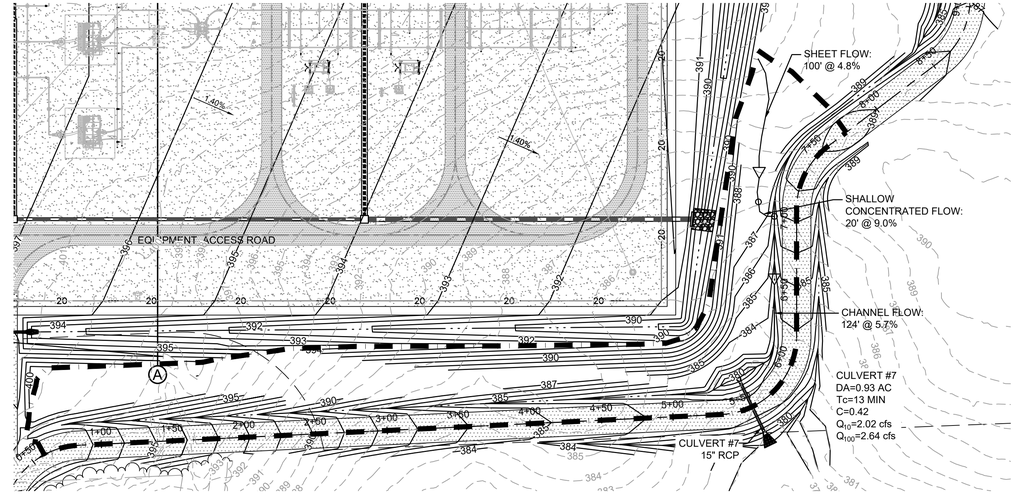

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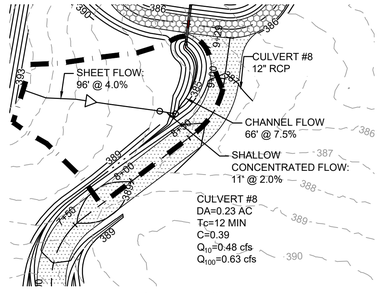

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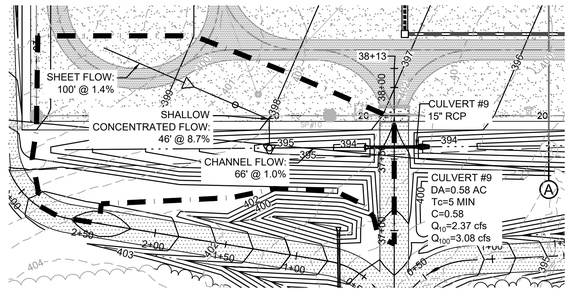

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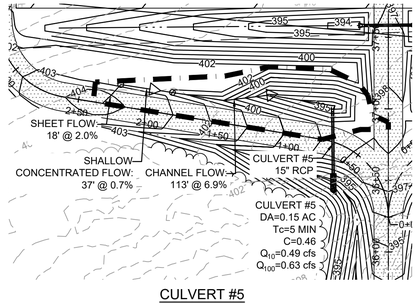

CULVERT #5

LEGEND

DRAINAGE AREA
Tc PATH

0' 25' 50' 100'
SCALE: 1" = 50'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
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COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

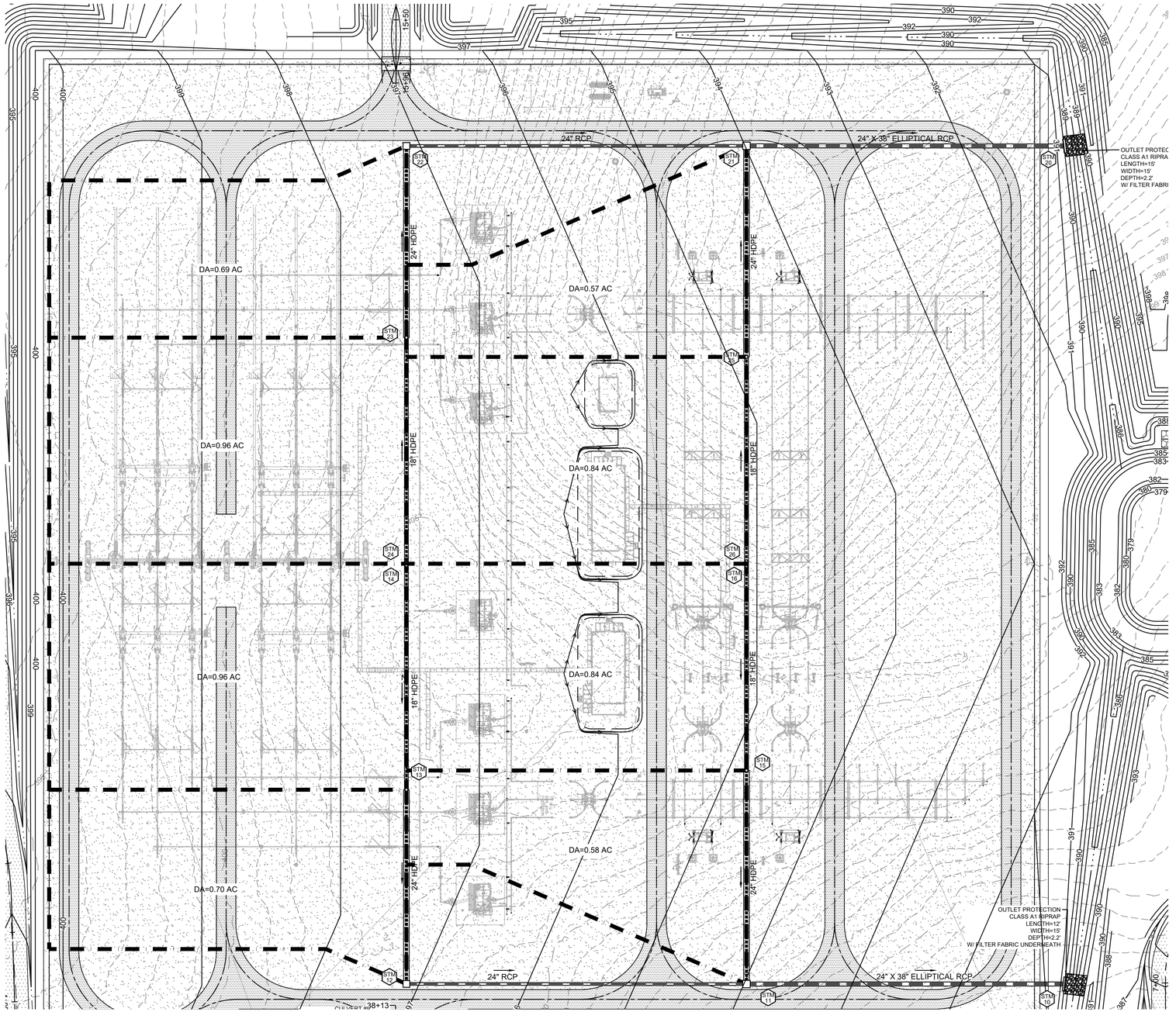
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

CULVERT DRAINAGE AREAS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	AS SHOWN
PROJECT 5017950		NAME	DATE	SHEET:	1707908-C-412
DESIGNER		MFR	8/18/23		
PROJECT ENGINEER		GA	8/18/23	DRAWING:	1707908-C-412.dwg
APPROVED BY		KAS	8/18/23		



N

DRAINAGE AREAS*

STRUCTURE	AREA (AC)
11	0.00
12	0.00
13	0.70
14	0.96
15	0.58
16	0.84
21	0.00
22	0.00
23	0.69
24	0.96
25	0.57
26	0.84

* ALL SWITCHING STATION DRAINAGE AREAS ARE IMPERVIOUS AND USE A "C" VALUE OF 0.9 AND A "Tc" VALUE OF 5 MINUTES.

LEGEND

DRAINAGE AREA

0' 20' 40' 80'

SCALE: 1" = 40'

REVISIONS		
REV	DATE	DESCRIPTION

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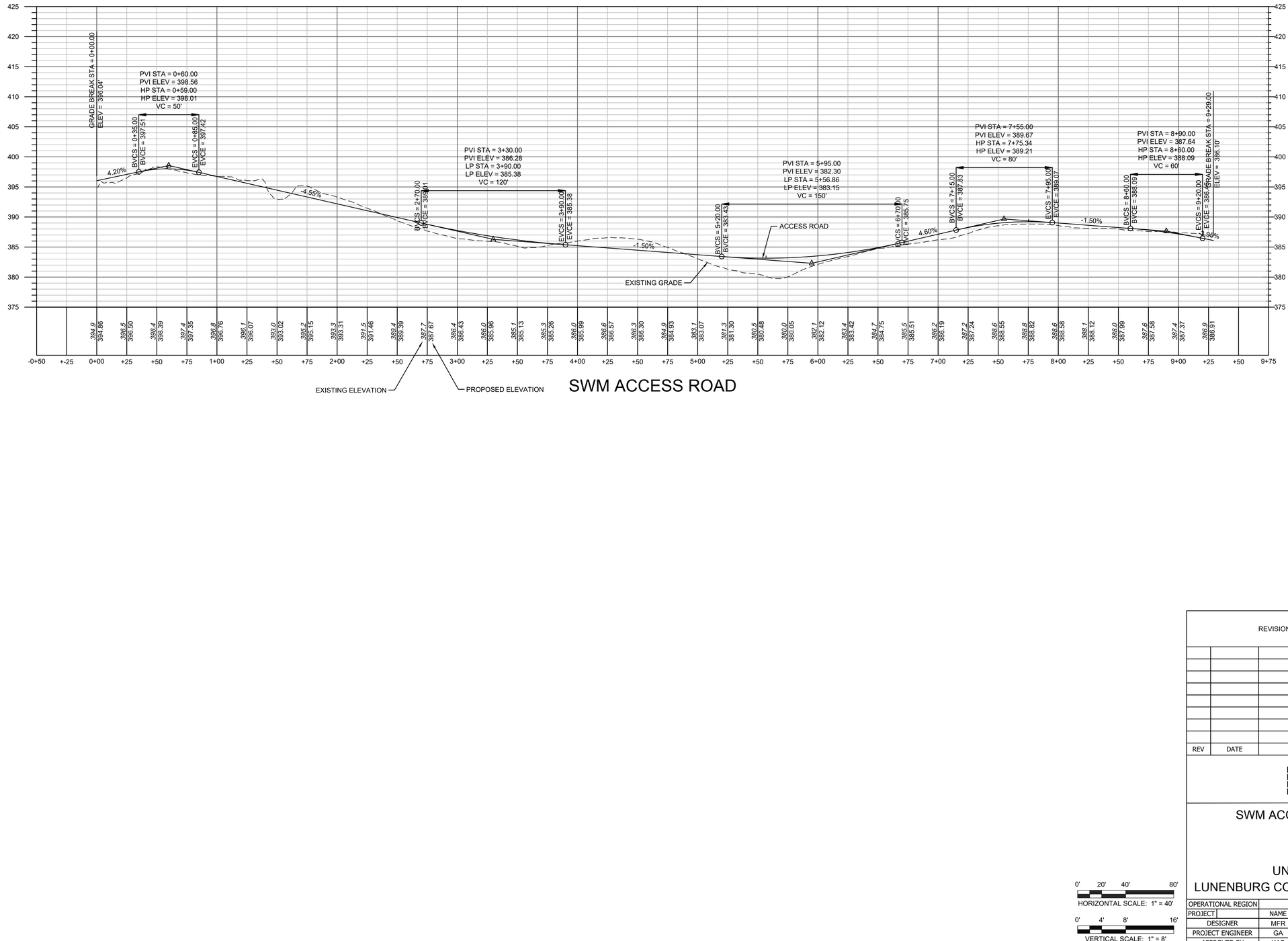
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

SUBSTATION STORM SEWER DRAINAGE AREAS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.	SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-413
DESIGNER	MFR	8/18/23		
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-413.dwg
APPROVED BY	KAS	8/18/23		



SWM ACCESS ROAD

0' 20' 40' 80'
HORIZONTAL SCALE: 1" = 40'

0' 4' 8' 16'
VERTICAL SCALE: 1" = 8'

REVISIONS		
REV	DATE	DESCRIPTION

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PROFESSIONAL ENGINEER

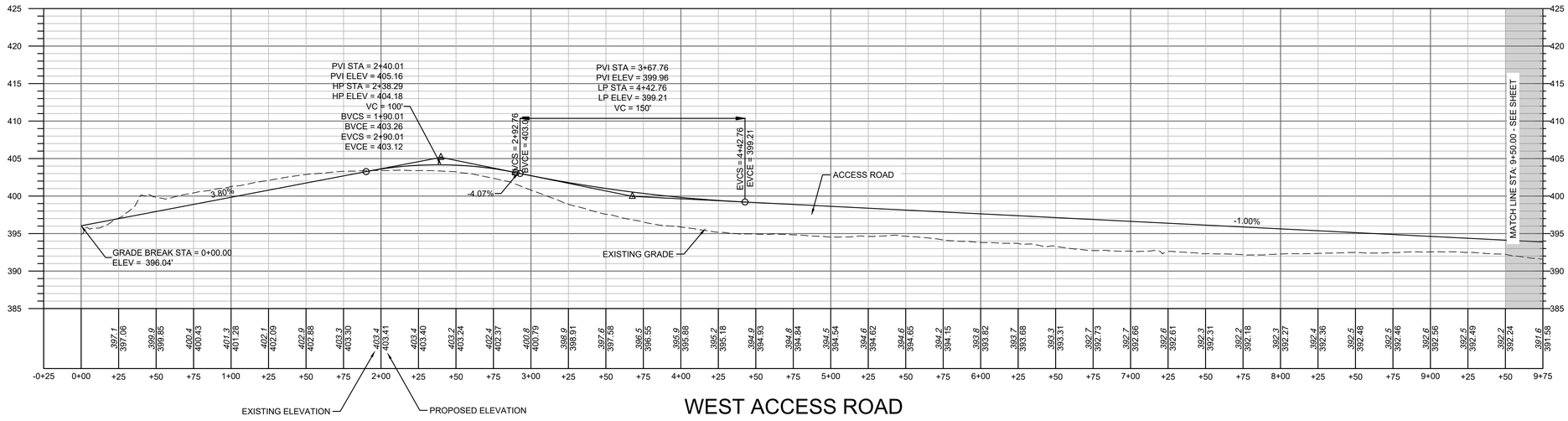
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

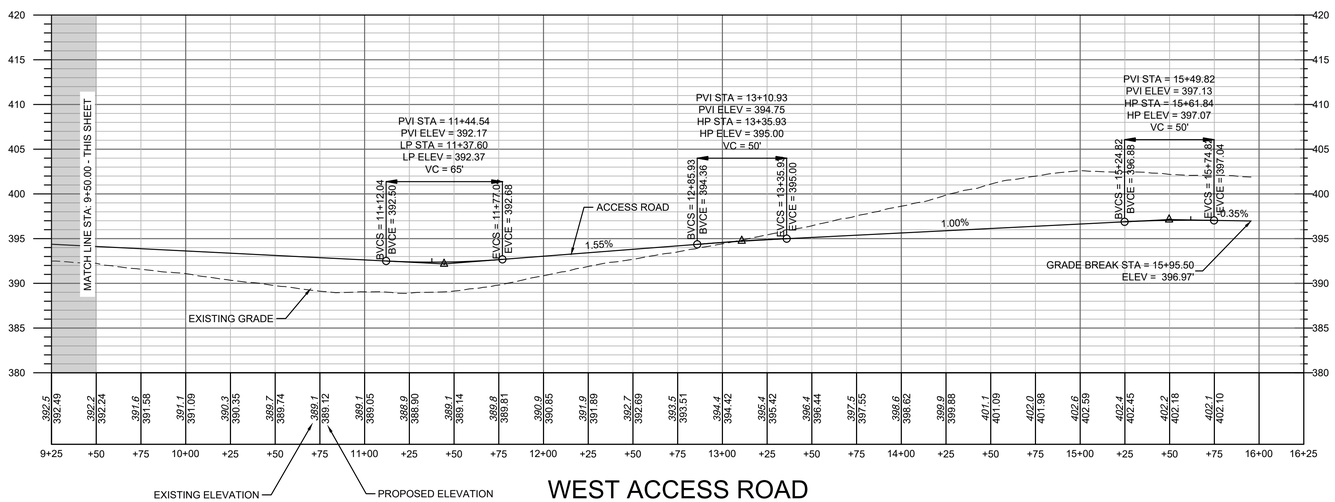
SWM ACCESS ROAD PROFILE

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE
PROJECT	NAME	DATE	SHEET:	1707908-C-501
DESIGNER	MFR	8/18/23		
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-501.dwg
APPROVED BY	KAS	8/18/23		



WEST ACCESS ROAD



WEST ACCESS ROAD

HORIZONTAL SCALE: 1" = 40'

VERTICAL SCALE: 1" = 8'

REVISIONS		
REV	DATE	DESCRIPTION

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DEWBERRY PROJECT NO.: 50157950

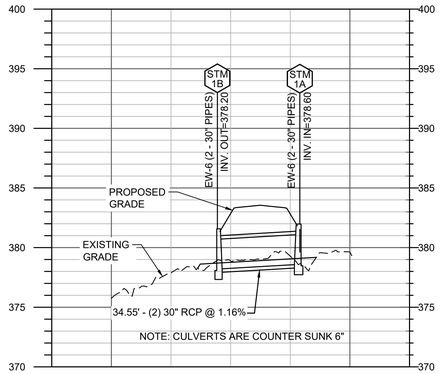
Dominion Energy

WEST ACCESS ROAD PROFILE

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE
PROJECT	NAME	DATE	SHEET:	1707908-C-502
DESIGNER	MFR	8/18/23		
PROJECT ENGINEER	GA	8/18/23	DRAWING:	
APPROVED BY	KAS	8/18/23		1707908-C-502.dwg

CULVERT 1



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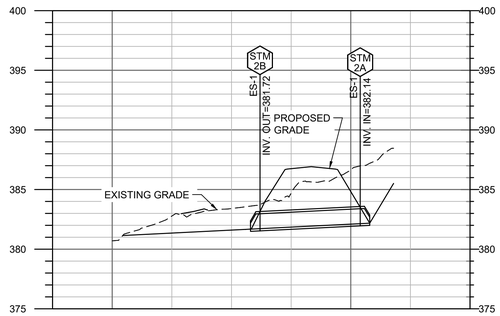

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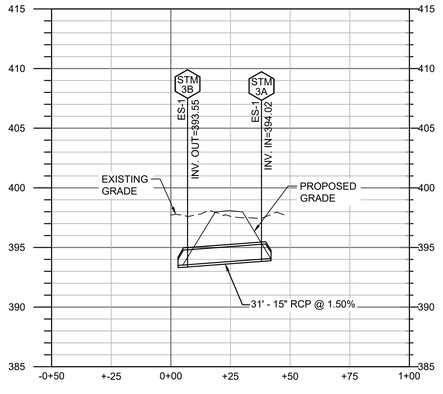

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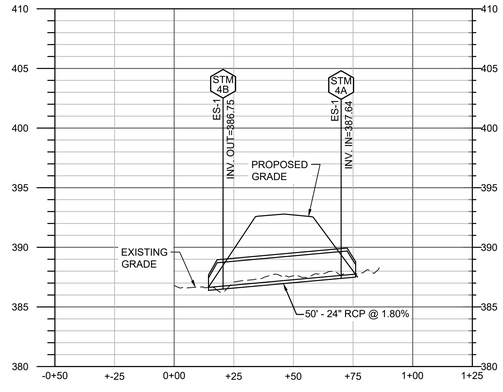

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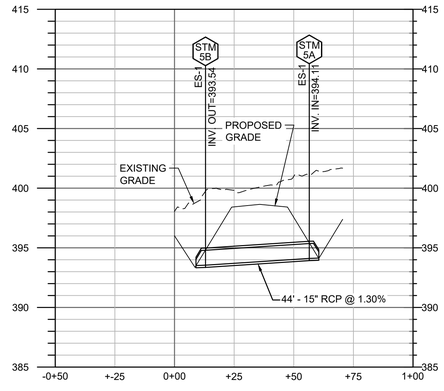

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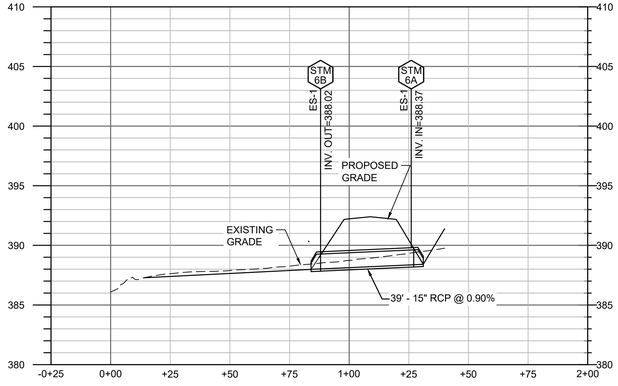

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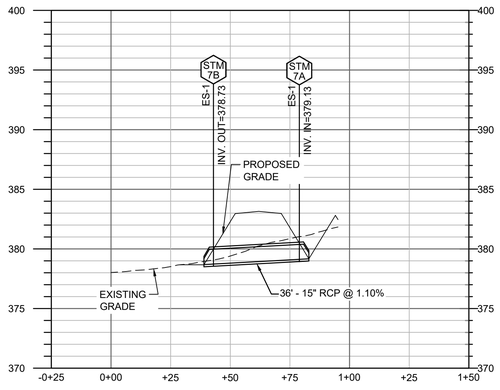

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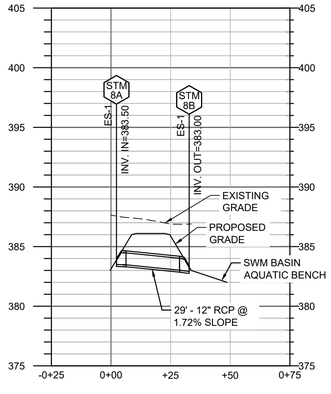

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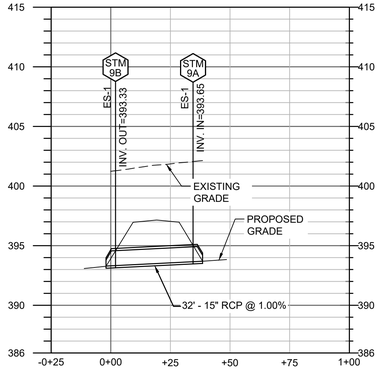

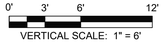

REVISIONS		
REV	DATE	DESCRIPTION

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COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

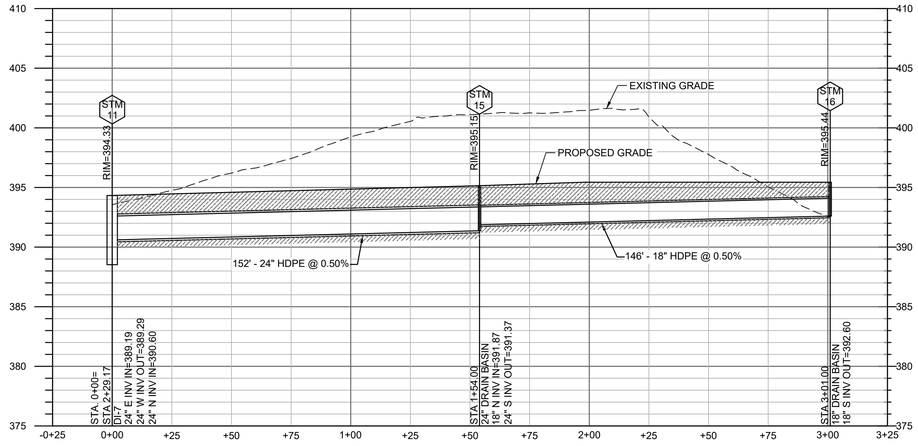
Dominion Energy

CULVERT PROFILES

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

		B/M No.		SCALE
PROJECT	NAME	DATE	SHEET:	1707908-C-503
DESIGNER	MFR	8/18/23		
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-503.dwg
APPROVED BY	KAS	8/18/23		

STR 11 TO STR 16



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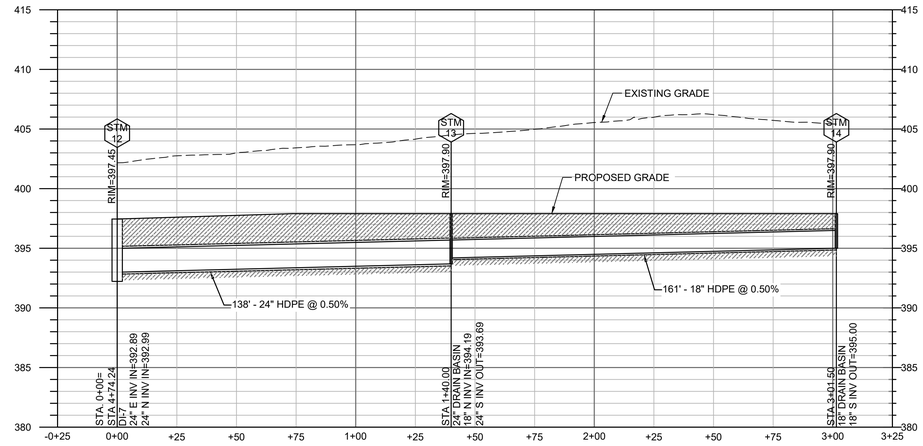

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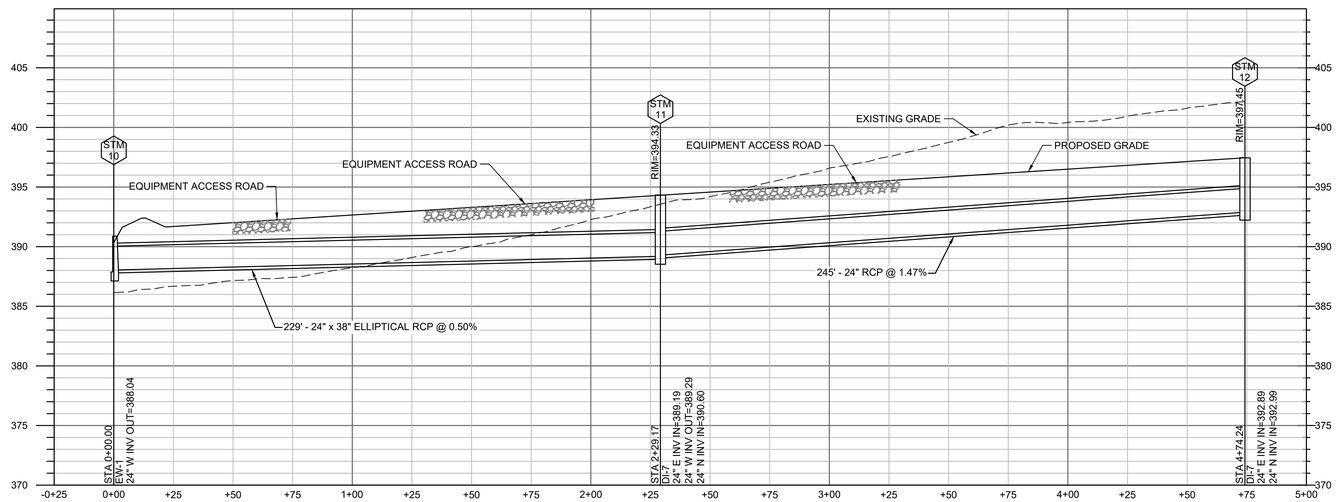

0' 15' 30' 60'
HORIZONTAL SCALE: 1" = 30'

0' 3' 6' 12'
VERTICAL SCALE: 1" = 6'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
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DEWBERRY PROJECT NO.: 50157950

Dominion Energy

SUBSTATION INTERIOR
STORM SEWER PROFILES 1

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE
PROJECT	NAME	DATE	SHEET:	1707908-C-504
DESIGNER	MFR	8/18/23		
PROJECT ENGINEER	GA	8/18/23	DRAWING:	
APPROVED BY	KAS	8/18/23		1707908-C-504.dwg

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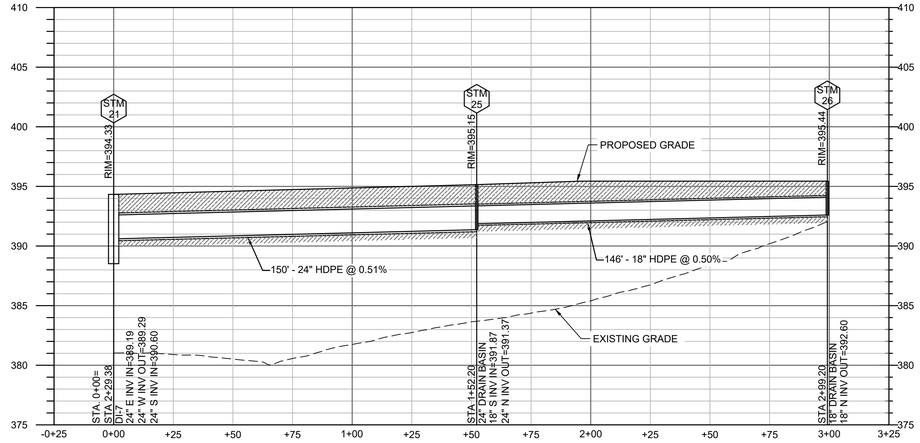

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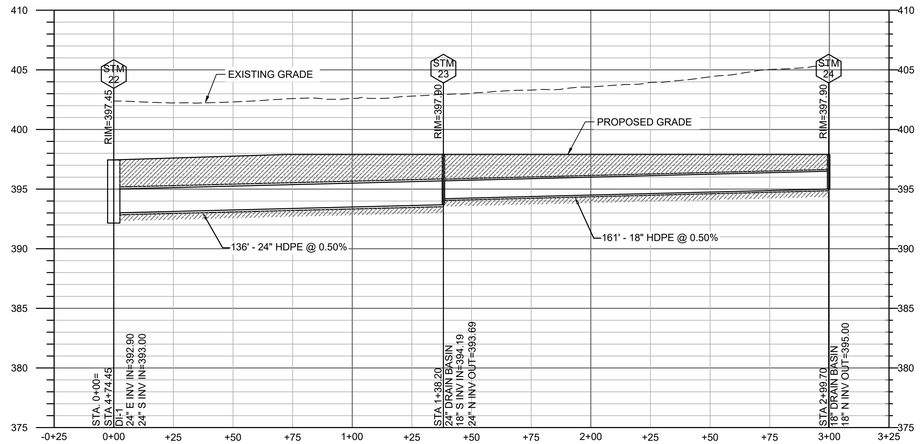

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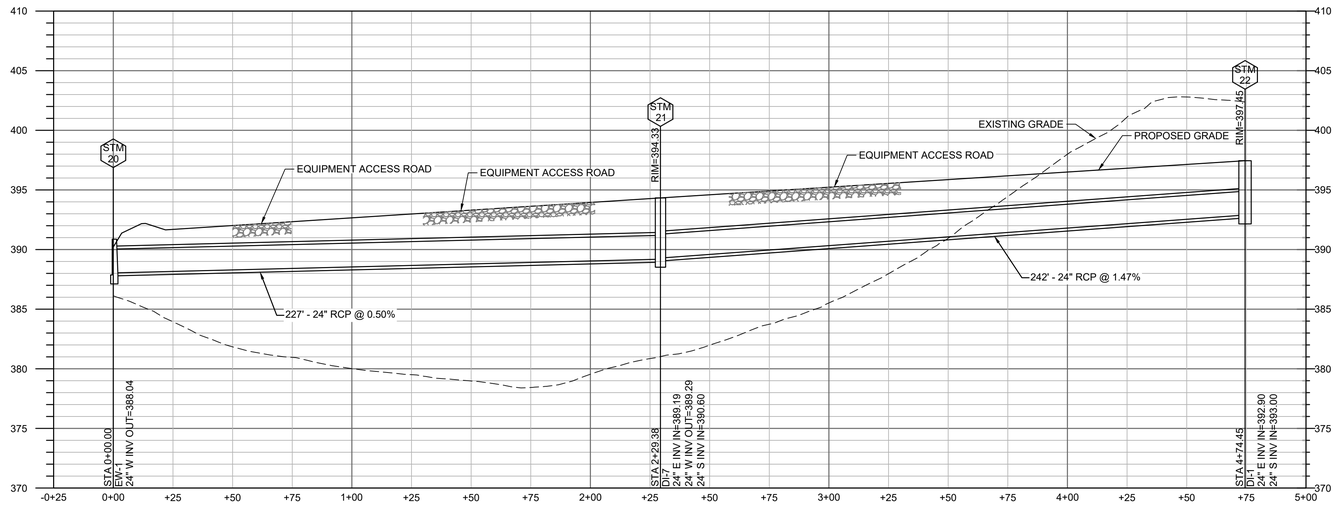

0' 15' 30' 60'
HORIZONTAL SCALE: 1" = 30'

0' 3' 6' 12'
VERTICAL SCALE: 1" = 6'

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
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KEITH A. SCHOLTEN
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1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

SUBSTATION INTERIOR
STORM SEWER PROFILES 2

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE
PROJECT	NAME	DATE	SHEET:	1707908-C-505
DESIGNER	MFR	8/18/23		
PROJECT ENGINEER	GA	8/18/23	DRAWING:	
APPROVED BY	KAS	8/18/23		1707908-C-505.dwg

STORMWATER MANAGEMENT & BMP NARRATIVE

PROJECT BACKGROUND & SUMMARY

Dominion Energy Virginia ("Dominion") will be constructing an electrical utility substation in Lunenburg County, Virginia to meet growing power demand in the area and increase reliability. The proposed substation will be on a 213.45 ac parcel of land acquired by Dominion. The substation will be accessed by way of a proposed gravel access road connecting to Dusty Ln.

LIMITS OF DISTURBANCE & FLOW PATTERNS

The limits of disturbance for this project are 25.78 acres. The existing site has one main outfall point. The Pre-Development Drainage Map shows five drainage areas, but all five ultimately flow to the same point further downstream in Flat Rock Creek. The main outfall point is located next to a swale on the east side of the property where the concentrated flow from the pond's outfall is converted to sheetflow with the a level spreader and enters the existing natural channel. The drainage area that flows into the stream in the middle of the property consists of 2-15% slopes.

A Level 2 Wet Pond will be placed east of the substation pad, directly west of the stream (N36° 53′ 15.59000″, E281° 51′ 36.13000″). The proposed SWM basin will capture 16.02 acres, while 0.16 acres within project limits will bypass the basin to reach the main outfall point as uncontrolled runoff. Stormwater coming from the substation pad will be directed through the pretreatment forebay by two grass-lined channels. From the forebay, the majority of the stormwater will flow through a wetland cell and then into the permanent pool. The basin outfalls through a riser structure with a 3" orifice, 1ft x 0.5ft orifice, 6ft x 6ft riser, and 24" RCP culvert. The discharge from the wet pond is directly converted to sheetflow using a level spreader.

HYDROLOGIC METHODS

Stormwater management design for the site has been developed in accordance with Virginia Stormwater Management Program Regulations Part II-B criteria, 9VAC25-870-62 through 9VAC25-870-92. Rainfall-frequency-depth values for 24-hr storm events for Lunenburg County were obtained from NOAA Atlas 14 Precipitation Frequency Data Server. Soil groups were obtained from the National Resources Conservation Service (NRCS) Web Soil Survey. Times of concentration, runoff curve numbers, and routing of the stormwater management basin were determined with the SCS method. The required phosphorous load reduction was calculated using the Virginia Runoff Reduction Method (VRRM). Time of concentration calculations use a maximum sheet flow length of 100', before conversion to another flow type, as required by TR-55 User Manual, January 2009.

NOTE - RUNOFF CURVE NUMBERS

Runoff curve numbers were determined based on soil type and land cover. All gravel stone, compacted and non-compacted, were considered impervious for water quality. A curve number of 98 was used for the impervious areas. For water quantity, a CN value of 85 for B Soils (89 for C Soils) was used for the non-compacted substation pad gravel. This CN value is referenced in Dominion's Technical Memo, "Non- Compacted Stone - Pervious versus Impervious Substation Engineering - SWM Guidance" dated October 9, 2014.

WATER QUANTITY

This project was analyzed for the 1-year and 10-year storm events to show compliance with VA DEQ IIB Stormwater Management Water Quantity Requirements. There are 5 outfalls on this project. See sheets 1707908-C-606 and 1707908-C-607 for the pre and post developed drainage area maps. There is 1 stormwater quantity control structure provided for the project (Wet Pond) with the addition of two level spreaders.

Outfall 1
Pre-development outfall 1 outfalls along the east side of the project site into an unnamed tributary of Flat Rock Creek primarily as shallow concentrated/sheet flow. Post-development outfall 1 includes controlled runoff from Wet Pond #1 which is comprised of onsite runoff and some uncontrolled sheet flow. The controlled runoff discharging from Wet Pond #1 flows through a level spreader and is returned to sheet flow before exiting the project site into conserved open space. This allows for runoff reduction credit to be taken, and in turn, produces a curve number reduction for the drainage area for the 1-, 10-, and 100-year events. The curve number reduction is shown on the energy balance spreadsheet for outfall 1 on Sheet 1707908-C-602. Since the runoff is being converted to sheetflow, per Virginia code section 9VAC25-870-66 D, no further water quantity controls are required.

The level spreader was sized per GM 22-2012 3.305.2. See Sheet 1707908-C-617 for the computed level spreader design results. The 10-year velocity from the wet pond outfall of 0.37 fps was determined to be non-erosive with an allowable velocity of 1.7 fps from VESCH Table 5-14 (GM 22-2012 3.305.2.C.1). The receiving area was deemed to be in good condition. The level spreader was designed based on a sheet flow depth of 0.1 feet. The length of sheetflow to the down-gradient natural stormwater conveyance system of 75 feet was less than the allowable maximum sheet flow length of 78 feet.

The Outfall 1 level spreader was also designed based on additional design criteria outlined in the VA DEQ Stormwater Design Specifications for Sheet Flow to Conserved Open Space. The required minimum sheetflow length of 50 feet to the down-gradient SWM Conveyance System was met with a length of 75 feet. In addition, a more conservative level spreader length requirement of 13 feet for every 1 cfs results in a design length of 15 feet.

One- and ten-year discharges for outfall 1 are summarized below in table 1.

DA 1				
Return Event	Q_{pre}"outfall	$Q_{post\text{-}pond}$	$Q_{post\text{-}uncont}$	$Q_{post\text{-}outfall}$
	CFS	*CFS*	*CFS*	*CFS*
1-year	0.40	0.19	0.03	0.19
10-year	4.07	1.14	0.28	1.15

100-YR STORM EVENT:
The basin has greater than 2 foot of freeboard for the 100-yr storm conditions: the 100-yr storm elevation is 383.04, while the top of dam elevation is 386.0'.
See 1707908-C-612 for basin routing calculations. See 1707908-C-614 for basin detail.

Outfall 2
Stormwater exits the property in pre-development as a combination of sheet flow/concentrated flow and discharges into the unnamed tributary of Flat Rock Creek on the north-east side of the Substation. Post-development outfall 2 includes concentrated runoff. An allowable discharge for the 10-year flood protection event is achieved, with the post-development peak flow rate computed at the outfall being less than the pre-development peak flow rate.

The energy balance flow rate (i.e. 1-year event) was met for outfall 2. Refer to energy balance computations on Sheet 1707908-C-602 .

One- and ten-year discharges for outfall 2 are summarized below in table 2.

DA 2				
Return Event	Q_{pre}"outfall	$Q_{allowable}$	$Q_{undist.}$	$Q_{post\text{-}outfall}$
	CFS	*CFS*	*CFS*	*CFS*
1-year	0.79	0.79	--	0.22
10-year	14.64	14.64	5.76	7.65

Outfall 3
Stormwater exits the property in pre-development as a combination of sheet flow/concentrated flow and discharges into the unnamed tributary of Flat Rock Creek on the west side of the Substation. Post-development outfall 3 includes shallow concentrated runoff. Attenuation from the road culvert was accounted for in the model. See Sheet 1707908-C-613 for the routing results. An allowable discharge for the 10-year flood protection event is achieved, with the post-development peak flow rate computed at the outfall being less than the pre-development peak flow rate.

The energy balance flow rate (i.e. 1-year event) was met for outfall 3. Refer to energy balance computations on Sheet 1707908-C-602 .

One- and ten-year discharges for outfall 3 are summarized below in table 3.

DA 3					
Return Event	Q_{pre}"outfall	$Q_{allowable}$	$Q_{post\text{-}culvert}$	$Q_{post\text{-}uncont}$	$Q_{post\text{-}outfall}$
	CFS	*CFS*	*CFS*	*CFS*	*CFS*
1-year	1.01	1.01	0.73	0.58	1.01
10-year	10.53	10.53	2.19	1.91	3.42

Outfall 4
Stormwater exits the property in pre-development as a combination of sheet flow/concentrated flow and discharges into the unnamed tributary of Flat Rock Creek on the south side of the Substation. Post-development outfall 4 includes concentrated runoff. An allowable discharge for the 10-year flood protection event is achieved, with the post-development peak flow rate computed at the outfall being less than the pre-development peak flow rate.

The energy balance flow rate (i.e. 1-year event) was met for outfall 4. Refer to energy balance computations on Sheet 1707908-C-602 .

One- and ten-year discharges for outfall 4 are summarized below in table 4.

DA 4				
Return Event	Q_{pre}"outfall	$Q_{allowable}$	$Q_{undist.}$	$Q_{post\text{-}outfall}$
	CFS	*CFS*	*CFS*	*CFS*
1-year	0.68	0.68	--	0.68
10-year	7.61	7.61	0.71	3.67

Outfall 5
Stormwater exits the property in pre-development as a combination of sheet flow/concentrated flow and discharges into the unnamed tributary of Flat Rock Creek on the south side of the Substation. Post-development outfall 5 includes concentrated runoff which flows through a level spreader and is returned to sheet flow before exiting the project site into conserved open space. Since the runoff is being converted to sheetflow, per Virginia code section 9VAC25-870-66 D, no further water quantity controls are required. See Sheet 1707908-C-617 for the computed level spreader design results.

The level spreader was sized per GM 22-2012 3.305.2. The 10-year velocity from the wet pond outfall of 1.16 fps was determined to be non-erosive with an allowable velocity of 1.7 fps from VESCH Table 5-14 (GM 22-2012 3.305.2.C.1). The receiving area was deemed to be in good condition. The level spreader was designed based on a sheet flow depth of 0.1 feet. The level spreader length of 15 feet was longer than the design length of 13.6 feet. The length of sheetflow to the down-gradient natural stormwater conveyance system of 20 feet was less than the allowable maximum sheet flow length of 90.3 feet.

DA 5		
Return Event	$Q_{pre\text{-}dev}$	$Q_{post\text{-}dev}$
--	*CFS*	*CFS*
1-year	0.01	0.38
10-year	0.21	1.42

Outfall 1A
Outfall 1A includes the onsite, uncontrolled portion of drainage area 1 that cannot be represented by a concentrated flow rate at a specific location, but rather discharges as disconnected sheet flow over a width of approximately 430 ft and is analyzed independently from outfall 1. See Table 1A for a summary of the results.

DA 1A - Uncontrolled Sheet Flow		
Return Event	Q_{pre}	$Q_{post\text{-}pond}$
	CFS	*CFS*
2-year	0.11	0.33
10-year	0.43	0.74

Per the code of Virginia, Section 9VAC25-870-66D, the sheet flow for the 2- and 10-year events has increased for the post-development conditions. Considering the 10-year post-development flow rate of 0.74 cfs, which discharges over a total width of 430 feet, the resulting velocity is 0.1 fps. The sheet flow has been analyzed according to VESCH Table 5-14 (GM 22-2012 3.305.1.B.1) and it was determined that the velocities are non-erosive and that the receiving area is in good condition. In addition, it was verified that the sheetflow depth was less than 0.1 feet for the entire length of the flow path with a depth of 0.01 feet. The length of sheetflow of 100 feet was determined to be less than the maximum allowable of 242 feet. See this sheet for the disconnected sheetflow computations.

Outfall 3A
Outfall 3A includes the onsite, uncontrolled portion of drainage area 3 that cannot be represented by a concentrated flow rate at a specific location, but rather discharges as sheet flow over a width of approximately 900 ft and is analyzed independently from outfall 3. See Table 3A for a summary of the results.

DA 3A - Uncontrolled Sheet Flow		
Return Event	Q_{pre}	$Q_{post\text{-}pond}$
	CFS	*CFS*
2-year	0.24	0.83
10-year	1.00	1.81

Per the code of Virginia, Section 9VAC25-870-66D, the sheet flow for the 2- and 10-year events has increased for the post-development conditions. Considering the 10-year post-development flow rate of 1.81 cfs, which discharges over a total width of 900 feet, the resulting velocity is 0.1 fps. The sheet flow has been analyzed according to VESCH Table 5-14 (GM 22-2012 3.305.1.B.1) and it was determined that the velocities are non-erosive and that the receiving area is in good condition. In addition, it was verified that the sheetflow depth was less than 0.1 feet for the entire length of the flow path with a depth of 0.02 feet. The length of sheetflow of 140 feet was determined to be less than the maximum allowable of 142 feet. See this sheet for the disconnected sheetflow computations.

Outfall 4A
Outfall 4A includes the onsite, uncontrolled portion of drainage area 4 that cannot be represented by a concentrated flow rate at a specific location, but rather discharges as sheet flow over a width of approximately 500 ft and is analyzed independently from outfall 4. See Table 4A for a summary of the results.

DA 4A - Uncontrolled Sheet Flow		
Return Event	Q_{pre}	$Q_{post\text{-}pond}$
	CFS	*CFS*
2-year	0.09	0.54
10-year	0.43	1.12

Per the code of Virginia, Section 9VAC25-870-66D, the sheet flow for the 2- and 10-year events has increased for the post-development conditions. Considering the 10-year post-development flow rate of 1.12 cfs, which discharges over a total width of 500 feet, the resulting velocity is 0.1 fps. The sheet flow has been analyzed according to VESCH Table 5-14 (GM 22-2012 3.305.1.B.1) and it was determined that the velocities are non-erosive and that the receiving area is in good condition. In addition, it was verified that the sheetflow depth was less than 0.1 feet for the entire length of the flow path with a depth of 0.02 feet. The length of sheetflow of 110 feet was determined to be less than the maximum allowable of 154 feet. See this sheet for the disconnected sheetflow computations.

WATER QUALITY

As calculated by the Virginia Runoff Reduction Method Spreadsheet v3.0, the required phosphorous removal of 27.32 lbs/yr will be addressed through a combination of the Level 2 Wet Pond and a level spreader discharging to conserved open space, achieving a removal of 27.55 lbs/yr.

See Sheet 1707908-C-602 for water quality calculations. See Sheet 1707908-C-603 for VRRM land cover maps.

STORMWATER MANAGEMENT FOREBAY

A metered rod will be installed in the wet pond forebays to measure the depth of sediment. The rod should be placed within the flow path. See Sheet 1707908-C-618 for a metered rod detail.

MAINTENANCE PLAN AND SCHEDULE

The purpose of this section is to present a general maintenance program for the Level 2 Wet Pond. It should be noted that the maintenance tasks presented herein will not eliminate the possibility that a structural or subsurface deficiency may develop in the future, nor will they eliminate all potential for dam failure. However, they significantly reduce the risk of future problems and make it possible to catch potential problems early, before they can develop into serious threats to SWM facility. The owner is responsible for maintenance to the extent not maintained by the County.

1. EMBANKMENT

The purpose of the tasks described below is to maintain a thick, healthy grass cover over the embankment which is free from brush and trees. This type of cover will assist in the inspection of the dam.

A. The embankment should be mowed at least twice during the growing season with the last cutting occurring at the end of the growing season. The grass cover should not be cut to less than 4" in height.
B. The embankment should be limed, fertilized and seeded at least once every two years in the fall after the growing season. Consulting with the Virginia Tech Cooperative Extension Service or the local soil and water conservation district office is recommended to determine the precise lime and fertilizer requirements.
C. All erosion gullies and pathways noted during the growing season should be backfilled with topsoil, reseeded, and protected (e.g. mulched) until revegetated.
D. All bare areas and pathways on the embankment should be properly seeded and protected in order to eliminate the potential for erosion.
E. All animal burrows noted during mowing operations should be backfilled and compacted. Measures should be taken to eliminate the animals from the area.
F. Any vine cover or brush should be removed from the dam embankment, riser structure and downstream culvert outlet and outlet items (e.g. endwalls, wingwalls, etc.) at least twice per year. This will allow for proper inspection of the concrete in the spillway.

2. OUTLET STRUCTURE

A. The outlet structure should be kept clear of debris which could impede flow into the structure. Clearing in the spring and fall of each year is recommended. In addition, the structure should be inspected after significant storm events to check for possible damage, and to remove any significant debris accumulation.
B. Each year the concrete in the outlet structure and outlet culvert should be checked for cracks, spalling and broken or loose sections. At this time, any cracked or spalled areas should be cleaned and refilled with an appropriate patching concrete. Any broken or loose sections should be removed along with any loose debris underneath. Replacement concrete should match the existing contour of the concrete, and fill the void underneath. If any extensive spalling or fractured areas are noted they should be inspected by a qualified structural engineer prior to repair.
C. Each year the outlet structure and culvert should be inspected to determine if any water is entering the spillway through any joints or cracks. If any significant leakage is encountered it should be inspected by a qualified professional engineer. If recommended by the engineer, pressure grouting the cracks with an appropriate hydroactive joint or crack sealer should be performed.

3. PONDING AREA

A. The entire ponding area should be inspected annually for erosion or significant debris accumulation. Considerations should be given to stabilizing severely eroded areas with vegetative measures or other forms of shoreline revetment such as riprap. Significant debris build-up should be removed from the ponding area.

4. LEVEL SPREADER

A. Level spreaders should be inspected annually for any required repairs during the non-growing season. During the inspection, buildup of excess sediment should be removed to ensure an even distribution of flow. Level spreader lip must remain at 0% slope to function properly.

5. CONSERVED OPEN SPACE

A. No major disturbance shall occur within the Conserved Open Space during or after construction (i.e., no clearing or grading is allowed except temporary disturbances associated with incidental utility construction, restoration operations, or management of nuisance vegetation). The Conserved Open Space area shall not be stripped of topsoil. Some light grading may be needed at the boundary to establish a level entry into the Conserved Open Space. This shall be accomplished using tracked vehicles to prevent compaction.
B. The limits of disturbance shall be clearly shown on all construction drawings and protected by acceptable signage and erosion control measures.
C. A long term vegetation management plan must be prepared to maintain the Conserved Open Space in a natural vegetative condition. Generally, Conserved Open Space management plans do not encourage or even allow any active management. However, a specific plan should be developed to manage the unintended consequences of passive recreation, control invasive species, provide for tree and understory maintenance, etc.
D. The Conserved Open Space must be protected by a perpetual easement or deed restriction that assigns the responsible party to ensure that no future development, disturbance, or clearing may occur within the area.
E. The existence and purpose of the open space shall be noted on the deed of record, and the owners shall be provided a simple document that explains the purpose of the open space and routine maintenance needs.

CONSERVED OPEN SPACE CONSTRUCTION SEQUENCE

The Conserved Open Space must be fully protected during the construction stage of development and kept outside the limits of disturbance on the Erosion and Sediment (E&S) Control Plan

A. No clearing, grading or heavy equipment access is allowed except temporary disturbances associated with incidental utility construction, restoration operations or management of nuisance vegetation.
B. The perimeter of the Conserved Open Space shall be protected from construction sediment by super silt fence, since the area is down gradient from areas of construction.
C. The limits of disturbance should be clearly shown on all construction drawings and identified and protected in the field by acceptable signage, and chain link fence, orange safety fence,snow fence or other protective barrier to keep unnecessary construction activity out of the area.
D. Construction of the level spreaders shall not commence until the contributing drainage area has been stabilized and perimeter E&S controls have been removed and cleaned out.
E. Some light grading may be needed at the Conserved Open Space boundary; this should be done with tracked vehicles to prevent compaction.
F. Stormwater should not be diverted into the Conserved Open Space until the Level Spreaders are installed and stabilized.

DISCONNECTED SHEETFLOW CALCULATIONS

Sheetflow Computations Spreadsheet

Step #	Step Descriptions	Units	DA 1A	DA 3A	DA 4A
1	Discharge (Q)	cfs	0.74	1.81	1.12
	Outfall Slope (S)	ft/ft	0.09	0.08	0.09
	Flow Width (b)	ft	430	900	500
	Velocity (v)	fps	**0.1**	**0.1**	**0.1**
	Allowable Velocity Land Cover	--	Reed Canarygrass		
	Allowable Velocity (GM 22-2012 3.305.1.B.1)		3.0	3.0	3.0
2	Depth (d)	ft	**0.01**	**0.02**	**0.02**
	Allowable Depth	ft	0.10	0.10	0.10
3	N-value (n) Land Cover	--	Mix of Asphalt, Dense Grasses (Inside LOD), and Range (Natural)	Mix of Asphalt, Dense Grasses (Inside LOD), Range (Natural) and Light Underbrush	Mix of Asphalt, Dense Grasses (Inside LOD), Range (Natural) and Light Underbrush
	Weighted N-value (n) (GM 22-2012 3.305.1.B.3)	--	0.13	0.20	0.20
	L_w (Maximum Length of Sheetflow)	ft	242	142	154
	Length to down-gradient SW Convenance System	ft	**100**	**140**	**110**

ADEQUATE OUTFALL CALCULATIONS

Dewberry

Adequate Outfall Flood Protection Summary
Outfall Number: 2 Project: Unity Substation

Outfall Type: Channel
Channel Type: Natural

Flood Protection - 10-year post < pre

Existing 10-yr Discharge (cfs)	Proposed 10-yr Discharge (cfs)
14.64	7.65

Is the outfall adequate? YES

Notes / Remarks:
The channel is adequate for flood protection because the post 10-year discharge is less than the pre 10-year discharge.

Dewberry

Adequate Outfall Flood Protection Summary
Outfall Number: 3 Project: Unity Substation

Outfall Type: Channel
Channel Type: Natural

Flood Protection - 10-year post < pre

Existing 10-yr Discharge (cfs)	Proposed 10-yr Discharge (cfs)
10.53	3.42

Is the outfall adequate? YES

Notes / Remarks:
The channel is adequate for flood protection because the post 10-year discharge is less than the pre 10-year discharge.

Dewberry

Adequate Outfall Flood Protection Summary
Outfall Number: 4 Project: Unity Substation

Outfall Type: Channel
Channel Type: Natural

Flood Protection - 10-year post < pre

Existing 10-yr Discharge (cfs)	Proposed 10-yr Discharge (cfs)
7.61	3.67

Is the outfall adequate? YES

Notes / Remarks:
The channel is adequate for flood protection because the post 10-year discharge is less than the pre 10-year discharge.

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
EDWARD R. UMBRELL
Lic. No. 038388
PROFESSIONAL ENGINEER
1/29/2024

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

SWM NARRATIVE

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-601	
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:	1707908-C-601.dwg	
APPROVED BY	KAS	01/29/24			

ADEQUATE OUTFALL CALCULATIONS

Unity Sub Station — Outfall: 1 — Engineer: KZ
Lunden County — Channel Type: Natural — Checker: EU
Dewberry
Site-Civil Engineering

STEP 1: Determine the Pre Developed, Forested, and Post Developed Conditions within the disturbed area and the offsite area draining to project BMPs.

Pre Developed Conditions	Forested Conditions	Post Developed Conditions	Offsite Conditions
Weighted CN = 61.0	Weighted CN = 55.0	Weighted CN = 81.5	Weighted CN = 55.0
Area (ac) = 2.72	Area (ac) = 2.72	Area (ac) = 16.02	Area (ac) = 0.00
P (in.) = 2.73	P (in.) = 2.73	P (in.) = 2.73	P (in.) = 2.73

STEP 2: Determine the peak discharge for each area. The total predevelopment discharge combines offsite and pre developed conditions.

Pre Developed Discharge	Forested Conditions Discharge	Post Development Discharge	Offsite Conditions Discharge
S 6.4	S 8.2	S 2.3	S 8.2
Ia 1.3	Ia 1.6	Ia 0.5	Ia 1.6
Q (in) 0.3 in	Q (in) 0.1 in	Q (in) 1.1 in	Q (in) 0.1 in
Volume 0.061 ac-ft	Volume 0.029 ac-ft	Volume 1.519 ac-ft	Volume 0.000 ac-ft

Total Forested Peak Discharge: **0.09** cfs (From PondPack)
Total Predevelopment Discharge: **0.40** cfs (From PondPack)

STEP 3: Calculate Adjusted CN value using Runoff Reduction provided in BMPs

BMP	Runoff Reduction
Sheetflow to CO	34138.8 ft³
	ft³
	ft³
	ft³
	ft³
Total =	34139 ft³

Qpost without RR = 1.1
Qpost with RR = 0.6
Adjusted CN = 69.5

STEP 4: Calculate $Q_{allowable}$ using the energy balance equation. Only apply the improvement factor to the disturbed area.

Energy Balance Equation: $Q_{Developed} \leq I.F. x (Q_{Pre\text{-}Developed} \times RV_{Pre\text{-}Developed}) / RV_{Developed}$
Improvement Factor 0.8

$Q_{allowable} \leq$ [Total Predevelopment Discharge (Offsite Volume + (Improvement Factor x Pre-Developed Volume) / (Post-Development Volume + Offsite Volume)]
$Q_{allowable}$ 0.03 cfs

NOTE - ENERGY BALANCE SPREADSHEET FOR OUTFALL 1 ONLY USED TO DETERMINE ADJUSTED CN

STEP 5: Calculated Maximum Allowable Peak Discharge.

Maximum Allowable Peak Discharge = Maximum (Q_{forest} or $Q_{allowable}$)
Maximum Allowable Peak Discharge cannot be greater than Total Predevelopment Discharge
Q_{forest} = Total Forest Peak Discharge x (Forest Volume + Offsite Volume)/(Post-Development Volume + Offsite Volume)
Q_{forest} 0.00 cfs

Maximum Allowable Peak Discharge **0.03** cfs

STEP 6: Ensure $Q_{post\text{-}developed}$ is less than the Maximum Allowable Peak Discharge

$Q_{post\text{-}developed}$ (from Pond Pack) **0.19** cfs

Channel is Inadequate **See SWM Narrative on Sheet C-601 for level spreader sheetflow analysis*

Unity Sub Station — Outfall: 2 — Engineer: KZ
Lunden County — Channel Type: Natural — Checker: EU
Dewberry
Site-Civil Engineering

STEP 1: Determine the Pre Developed, Forested, and Post Developed Conditions within the disturbed area and the offsite area draining to project BMPs.

Pre Developed Conditions	Forested Conditions	Post Developed Conditions	Offsite Conditions
Weighted CN = 60.4	Weighted CN = 55.0	Weighted CN = 61.0	Weighted CN = 61.0
Area (ac) = 6.48	Area (ac) = 6.48	Area (ac) = 1.22	Area (ac) = 0.00
P (in.) = 2.73	P (in.) = 2.73	P (in.) = 2.73	P (in.) = 2.73

STEP 2: Determine the peak discharge for each area. The total predevelopment discharge combines offsite and pre developed conditions.

Pre Developed Discharge	Forested Conditions Discharge	Post Development Discharge	Offsite Conditions Discharge
S 6.5	S 8.2	S 6.4	S 6.4
Ia 1.3	Ia 1.6	Ia 1.3	Ia 1.3
Q (in) 0.3 in	Q (in) 0.1 in	Q (in) 0.3 in	Q (in) 0.3 in
Volume 0.137 ac-ft	Volume 0.070 ac-ft	Volume 0.027 ac-ft	Volume 0.000 ac-ft

Total Forested Peak Discharge: **0.20** cfs (From PondPack)
Total Predevelopment Discharge: **0.79** cfs (From PondPack)

STEP 3: Calculate Adjusted CN value using Runoff Reduction provided in BMPs

BMP	Runoff Reduction
	ft³
	ft³
	ft³
	ft³
	ft³
Total =	0 ft³

Qpost without RR = 0.3
Qpost with RR = 0.3
Adjusted CN = 61.0

STEP 4: Calculate $Q_{allowable}$ using the energy balance equation. Only apply the improvement factor to the disturbed area.

Energy Balance Equation: $Q_{Developed} \leq I.F. x (Q_{Pre\text{-}Developed} \times RV_{Pre\text{-}Developed}) / RV_{Developed}$
Improvement Factor 0.8

$Q_{allowable} \leq$ [Total Predevelopment Discharge (Offsite Volume + (Improvement Factor x Pre-Developed Volume) / (Post-Development Volume + Offsite Volume)]
$Q_{allowable}$ 3.17 cfs

STEP 5: Calculated Maximum Allowable Peak Discharge.

Maximum Allowable Peak Discharge = Maximum (Q_{forest} or $Q_{allowable}$)
Maximum Allowable Peak Discharge cannot be greater than Total Predevelopment Discharge
Q_{forest} = Total Forest Peak Discharge x (Forest Volume + Offsite Volume)/(Post-Development Volume + Offsite Volume)
Q_{forest} 0.51 cfs

Maximum Allowable Peak Discharge **0.79** cfs

STEP 6: Ensure $Q_{post\text{-}developed}$ is less than the Maximum Allowable Peak Discharge

$Q_{post\text{-}developed}$ (from Pond Pack) **0.22** cfs

Channel is Adequate

Unity Sub Station — Outfall: 3 — Engineer: KZ
Lunden County — Channel Type: Natural — Checker: EU
Dewberry
Site-Civil Engineering

STEP 1: Determine the Pre Developed, Forested, and Post Developed Conditions within the disturbed area and the offsite area draining to project BMPs.

Pre Developed Conditions	Forested Conditions	Post Developed Conditions	Offsite Conditions
Weighted CN = 61.0	Weighted CN = 55.0	Weighted CN = 70.4	Weighted CN = 61.0
Area (ac) = 6.83	Area (ac) = 6.83	Area (ac) = 2.25	Area (ac) = 0.00
P (in.) = 2.73	P (in.) = 2.73	P (in.) = 2.73	P (in.) = 2.73

STEP 2: Determine the peak discharge for each area. The total predevelopment discharge combines offsite and pre developed conditions.

Pre Developed Discharge	Forested Conditions Discharge	Post Development Discharge	Offsite Conditions Discharge
S 6.4	S 8.2	S 4.2	S 6.4
Ia 1.3	Ia 1.6	Ia 0.8	Ia 1.3
Q (in) 0.3 in	Q (in) 0.1 in	Q (in) 0.6 in	Q (in) 0.3 in
Volume 0.153 ac-ft	Volume 0.073 ac-ft	Volume 0.110 ac-ft	Volume 0.000 ac-ft

Total Forested Peak Discharge: **0.22** cfs (From PondPack)
Total Predevelopment Discharge: **1.01** cfs (From PondPack)

STEP 3: Calculate Adjusted CN value using Runoff Reduction provided in BMPs

BMP	Runoff Reduction
	ft³
	ft³
	ft³
	ft³
	ft³
Total =	0 ft³

Qpost without RR = 0.6
Qpost with RR = 0.6
Adjusted CN = 70.4

STEP 4: Calculate $Q_{allowable}$ using the energy balance equation. Only apply the improvement factor to the disturbed area.

Energy Balance Equation: $Q_{Developed} \leq I.F. x (Q_{Pre\text{-}Developed} \times RV_{Pre\text{-}Developed}) / RV_{Developed}$
Improvement Factor 0.8

$Q_{allowable} \leq$ [Total Predevelopment Discharge (Offsite Volume + (Improvement Factor x Pre-Developed Volume) / (Post-Development Volume + Offsite Volume)]
$Q_{allowable}$ 1.12 cfs

STEP 5: Calculated Maximum Allowable Peak Discharge.

Maximum Allowable Peak Discharge = Maximum (Q_{forest} or $Q_{allowable}$)
Maximum Allowable Peak Discharge cannot be greater than Total Predevelopment Discharge
Q_{forest} = Total Forest Peak Discharge x (Forest Volume + Offsite Volume)/(Post-Development Volume + Offsite Volume)
Q_{forest} 0.15 cfs

Maximum Allowable Peak Discharge **1.01** cfs

STEP 6: Ensure $Q_{post\text{-}developed}$ is less than the Maximum Allowable Peak Discharge

$Q_{post\text{-}developed}$ (from Pond Pack) **1.01** cfs

Channel is Adequate

Unity Sub Station — Outfall: 4 — Engineer: KZ
Lunden County — Channel Type: Natural — Checker: EU
Dewberry
Site-Civil Engineering

STEP 1: Determine the Pre Developed, Forested, and Post Developed Conditions within the disturbed area and the offsite area draining to project BMPs.

Pre Developed Conditions	Forested Conditions	Post Developed Conditions	Offsite Conditions
Weighted CN = 60.9	Weighted CN = 55.0	Weighted CN = 68.5	Weighted CN = 61.0
Area (ac) = 5.11	Area (ac) = 5.11	Area (ac) = 1.25	Area (ac) = 0.00
P (in.) = 2.73	P (in.) = 2.73	P (in.) = 2.73	P (in.) = 2.73

STEP 2: Determine the peak discharge for each area. The total predevelopment discharge combines offsite and pre developed conditions.

Pre Developed Discharge	Forested Conditions Discharge	Post Development Discharge	Offsite Conditions Discharge
S 6.4	S 8.2	S 4.6	S 6.4
Ia 1.3	Ia 1.6	Ia 0.9	Ia 1.3
Q (in) 0.3 in	Q (in) 0.1 in	Q (in) 0.5 in	Q (in) 0.3 in
Volume 0.113 ac-ft	Volume 0.055 ac-ft	Volume 0.053 ac-ft	Volume 0.000 ac-ft

Total Forested Peak Discharge: **0.16** cfs (From PondPack)
Total Predevelopment Discharge: **0.68** cfs (From PondPack)

STEP 3: Calculate Adjusted CN value using Runoff Reduction provided in BMPs

BMP	Runoff Reduction
	ft³
	ft³
	ft³
	ft³
	ft³
Total =	0 ft³

Qpost without RR = 0.5
Qpost with RR = 0.5
Adjusted CN = 68.5

STEP 4: Calculate $Q_{allowable}$ using the energy balance equation. Only apply the improvement factor to the disturbed area.

Energy Balance Equation: $Q_{Developed} \leq I.F. x (Q_{Pre\text{-}Developed} \times RV_{Pre\text{-}Developed}) / RV_{Developed}$
Improvement Factor 0.8

$Q_{allowable} \leq$ [Total Predevelopment Discharge (Offsite Volume + (Improvement Factor x Pre-Developed Volume) / (Post-Development Volume + Offsite Volume)]
$Q_{allowable}$ 1.16 cfs

STEP 5: Calculated Maximum Allowable Peak Discharge.

Maximum Allowable Peak Discharge = Maximum (Q_{forest} or $Q_{allowable}$)
Maximum Allowable Peak Discharge cannot be greater than Total Predevelopment Discharge
Q_{forest} = Total Forest Peak Discharge x (Forest Volume + Offsite Volume)/(Post-Development Volume + Offsite Volume)
Q_{forest} 0.17 cfs

Maximum Allowable Peak Discharge **0.68** cfs

STEP 6: Ensure $Q_{post\text{-}developed}$ is less than the Maximum Allowable Peak Discharge

$Q_{post\text{-}developed}$ (from Pond Pack) **0.68** cfs

Channel is Adequate

VRRM SPREADSHEET

DEQ Virginia Runoff Reduction Method New Development Compliance Spreadsheet - Version 3.0

☐ 2011 BMP Standards and Specifications ⊙ 2013 Draft BMP Standards and Specifications

CLEAR ALL

data input cells | constant values | calculation cells | final results

Project Name: Unity Sub Station
Date: 1/24/2024
BMP Design Specifications List: 2013 Draft Stds & Specs

Site Information

Post-Development Project (Treatment Volume and Loads)

Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	1.17	0.00	0.00	1.17 *
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	10.27	0.00	0.00	10.27
Impervious Cover (acres)	0.00	15.51	0.00	0.00	15.51
					26.95

** Forest/Open Space areas must be protected in accordance with the Virginia Runoff Reduction Method*

Constants

Annual Rainfall (inches)	43
Target Rainfall Event (inches)	1.00
Total Phosphorus (TP) EMC (mg/L)	0.26
Total Nitrogen (TN) EMC (mg/L)	1.86
Target TP Load (lb/acre/yr)	0.41
Pj (unitless correction factor)	0.90

Runoff Coefficients (Rv)

	A Soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr): 27.32

LAND COVER SUMMARY -- POST DEVELOPMENT

Land Cover Summary	
Forest/Open Space Cover (acres)	1.17
Weighted Rv (forest)	0.03
% Forest	4%
Managed Turf Cover (acres)	10.27
Weighted Rv (turf)	0.20
% Managed Turf	38%
Impervious Cover (acres)	15.51
Rv (impervious)	0.95
% Impervious	58%
Site Area (acres)	26.95
Site Rv	0.62

Treatment Volume and Nutrient Loads	
Treatment Volume (acre-ft)	1.4021
Treatment Volume (cubic feet)	61,076
TP Load (lb/yr)	38.37
TN Load (lb/yr) (Informational Purposes Only)	274.52

Drainage Area A

Drainage Area A Land Cover (acres)

CLEAR BMP AREAS

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres)	0.00	3.29	0.00	0.00	3.29	0.20
Impervious Cover (acres)	0.00	12.89	0.00	0.00	12.89	0.95
				Total	16.18	

Total Phosphorus Available for Removal in D.A. A (lb/yr): 29.43
Post Development Treatment Volume in D.A. A (ft³): 46,847

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists--

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft³)	Runoff Reduction (ft³)	Remaining Runoff Volume (ft³)	Total BMP Treatment Volume (ft³)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
13. Wet Ponds (no RR)													
13.a. Wet Pond #1 (Spec #14)	0			0	0	0	0	50	0.00	0.00	0.00	0.00	
13.b. Wet Pond #1 (Coastal Plain) (Spec #14)	0			0	0	0	0	45	0.00	0.00	0.00	0.00	
13.c. Wet Pond #2 (Spec #14)	0	3.13	12.89	0	0	46,735	46,735	75	0.00	29.33	22.00	7.33	9.a. Sheetflow to A/B Soil Conservation Area
13.d. Wet Pond #2 (Coastal Plain) (Spec #14)	0			0	0	0	0	65	0.00	0.00	0.00	0.00	
9. Sheetflow to Filter/Open Space (RR)													
9.a. Sheetflow to Conservation Area, A/B Soils (Spec #2)	75	0.16		46,735	35,135	11,712	46,847	0	7.33	0.07	5.55	1.85	
9.b. Sheetflow to Conservation Area, C/D Soils (Spec #2)	50			0	0	0	0	0	0.00	0.00	0.00	0.00	
9.c. Sheetflow to Vegetated Filter Strip, A Soils or Compost Amended B/C/D Soils (Spec #2 & #4)	50			0	0	0	0	0	0.00	0.00	0.00	0.00	

	Nitrogen Removal Efficiency (%)	Nitrogen Load from Upstream Practices (lbs)	Untreated Nitrogen Load to Practice (lbs)	Nitrogen Removed By Practice (lbs)	Remaining Nitrogen Load (lbs)
13. Wet Ponds (no RR)					
	30	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00
	40	0.00	209.82	83.93	125.89
	30	0.00	0.00	0.00	0.00
9. Sheetflow to Filter/Open Space (RR)					
	0	125.89	0.51	94.80	31.60
	0	0.00	0.00	0.00	0.00
	0	0.00	0.00	0.00	0.00

Site Results (Water Quality Compliance)

Area Checks	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST/OPEN SPACE (ac)	0.00	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER (ac)	12.89	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	12.89	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	3.29	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	3.29	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft³)	61,076

Runoff Reduction Volume and TP By Drainage Area	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOLUME ACHIEVED (ft³)	35,135	0	0	0	0	35,135
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	29.43	0.00	0.00	0.00	0.00	29.43
TP LOAD REDUCTION ACHIEVED (lb/yr)	27.55	0.00	0.00	0.00	0.00	27.55
TP LOAD REMAINING (lb/yr)	1.88	0.00	0.00	0.00	0.00	1.88
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	178.73	0.00	0.00	0.00	0.00	178.73

Total Phosphorus	
FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	38.37
TP LOAD REDUCTION REQUIRED (lb/yr)	27.32
TP LOAD REDUCTION ACHIEVED (lb/yr)	27.55
TP LOAD REMAINING (lb/yr):	10.82
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.00 **

** TARGET TP REDUCTION EXCEEDED BY 0.23 LB/YEAR **

Total Nitrogen (For Information Purposes)	
POST-DEVELOPMENT LOAD (lb/yr)	274.52
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	178.73
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	95.79

TOTAL IMPERVIOUS COVER TREATED (ac): 12.89 — AREA CHECK: OK.
TOTAL MANAGED TURF AREA TREATED (ac): 3.29 — AREA CHECK: OK.

TOTAL PHOSPHORUS REMOVAL REQUIRED ON SITE (lb/yr): 27.32

TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. A (lb/yr): 29.43
TOTAL PHOSPHORUS REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr): 22.00
TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr): 5.55
TOTAL PHOSPHORUS LOAD REDUCTION ACHIEVED IN D.A. A (lb/yr): 27.55
TOTAL PHOSPHORUS REMAINING AFTER APPLYING BMP LOAD REDUCTIONS IN D.A. A (lb/yr): 1.88

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

NITROGEN REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr): 94.80
NITROGEN REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr): 83.93
TOTAL NITROGEN REMOVED IN D.A. A (lb/yr): 178.73

REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA — EDWARD R. UMBRELL — Lic. No. 038388 — PROFESSIONAL ENGINEER — 1/29/2024

DEWBERRY PROJECT NO.: 50157950

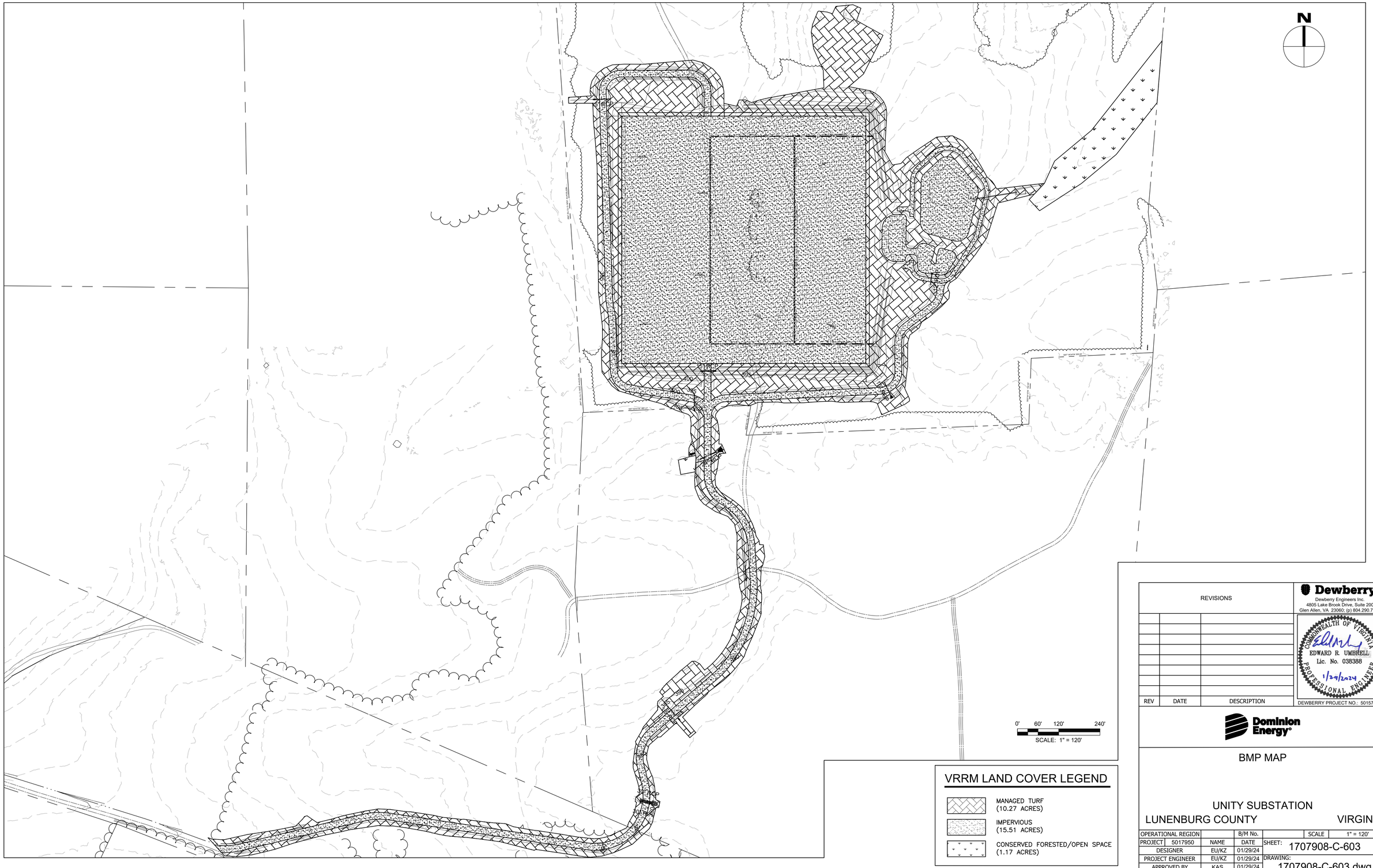
Dominion Energy

BMP COMPS

UNITY SUBSTATION
LUNENBURG COUNTY — VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-602	
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:	1707908-C-602.dwg	
APPROVED BY	KAS	01/29/24			

VRRM LAND USE MAP



VRRM LAND COVER LEGEND

- MANAGED TURF (10.27 ACRES)
- IMPERVIOUS (15.51 ACRES)
- CONSERVED FORESTED/OPEN SPACE (1.17 ACRES)

REVISIONS		
REV	DATE	DESCRIPTION

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EDWARD R. UMBRELL
Lic. No. 038388
1/29/2024
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

BMP MAP

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	1" = 120'
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-603	
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:		
APPROVED BY	KAS	01/29/24	1707908-C-603.dwg		

PRE DEVELOPMENT LAND USE MAP

PRE DEVELOPMENT LAND COVER LEGEND

- FORESTED (2.60 ACRES)
- PASTURE (24.69 ACRES)

REVISIONS		
REV	DATE	DESCRIPTION

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1/29/2024
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

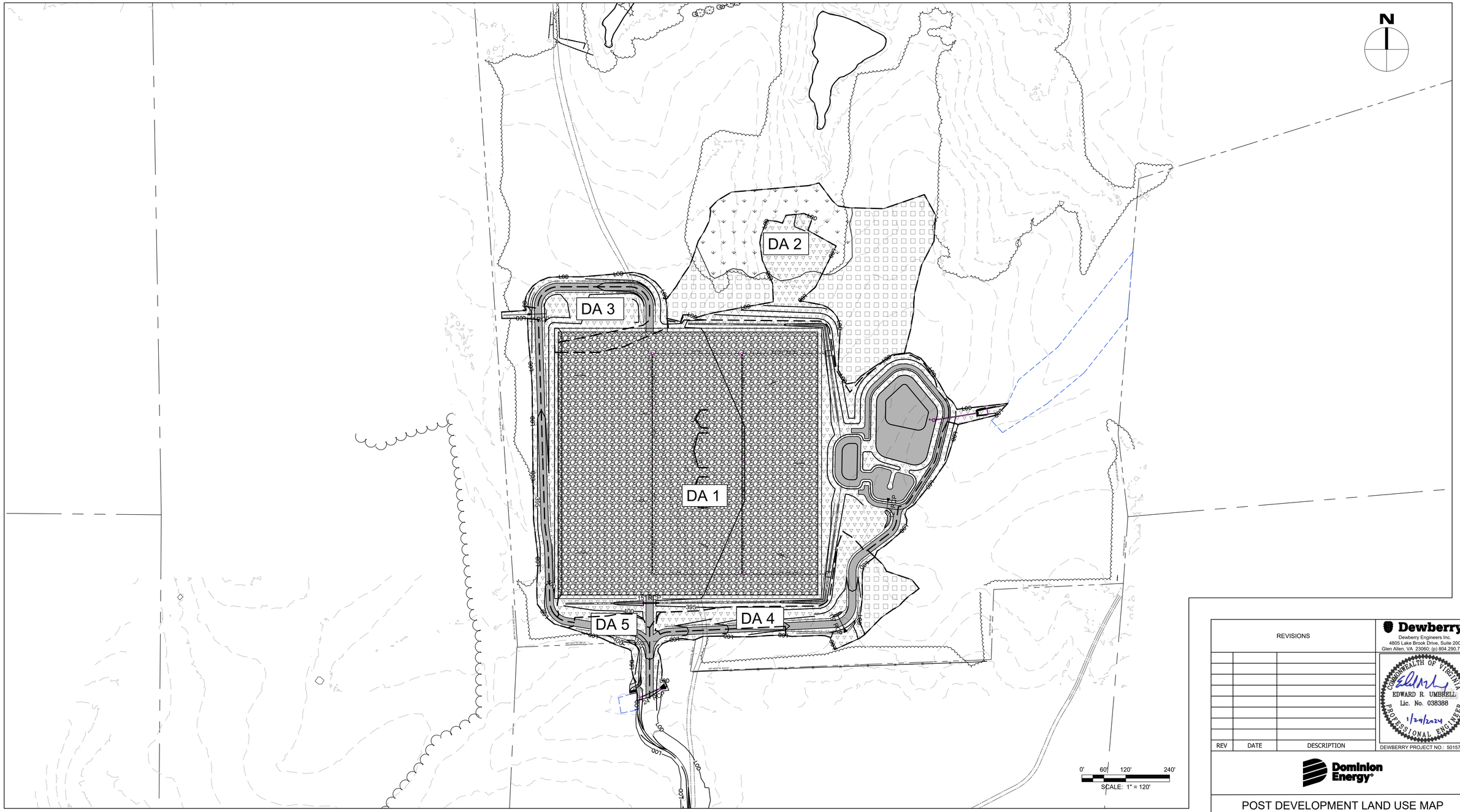
Dominion Energy

PRE DEVELOPMENT LAND USE MAP

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.	SCALE	1" = 120'
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-604
DESIGNER	EU/KZ	01/29/24		
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:	1707908-C-604.dwg
APPROVED BY	KAS	01/29/24		

POST DEVELOPMENT LAND USE MAP



POST DEVELOPMENT LAND COVER LEGEND

- IMPERVIOUS (2.63 ACRES)
- FORESTED (1.44 ACRES)
- MANAGED TURF (8.11 ACRES)
- PASTURE (3.37 ACRES)
- GRAVEL (11.74 ACRES)

REVISIONS		
REV	DATE	DESCRIPTION

DEWBERRY PROJECT NO.: 50157950

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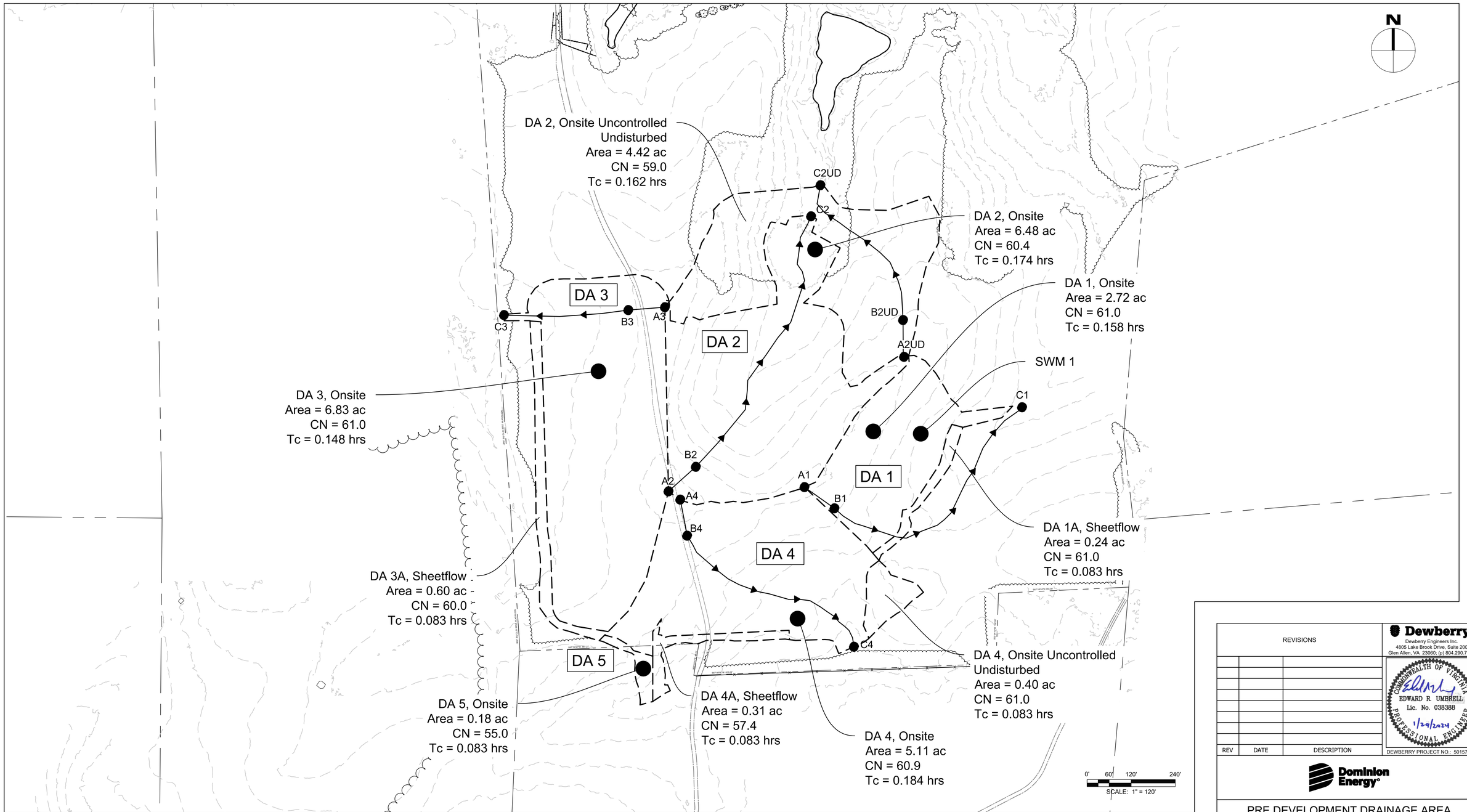
POST DEVELOPMENT LAND USE MAP

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	1" = 120'
PROJECT	5017950	NAME	DATE	SHEET:	1707908-C-605
DESIGNER		EU/KZ	01/29/24		
PROJECT ENGINEER		EU/KZ	01/29/24	DRAWING:	
APPROVED BY		KAS	01/29/24		1707908-C-605.dwg

PRE DEVELOPMENT DRAINAGE DIVIDE MAP



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1/29/2024

DEWBERRY PROJECT NO.: 50157950

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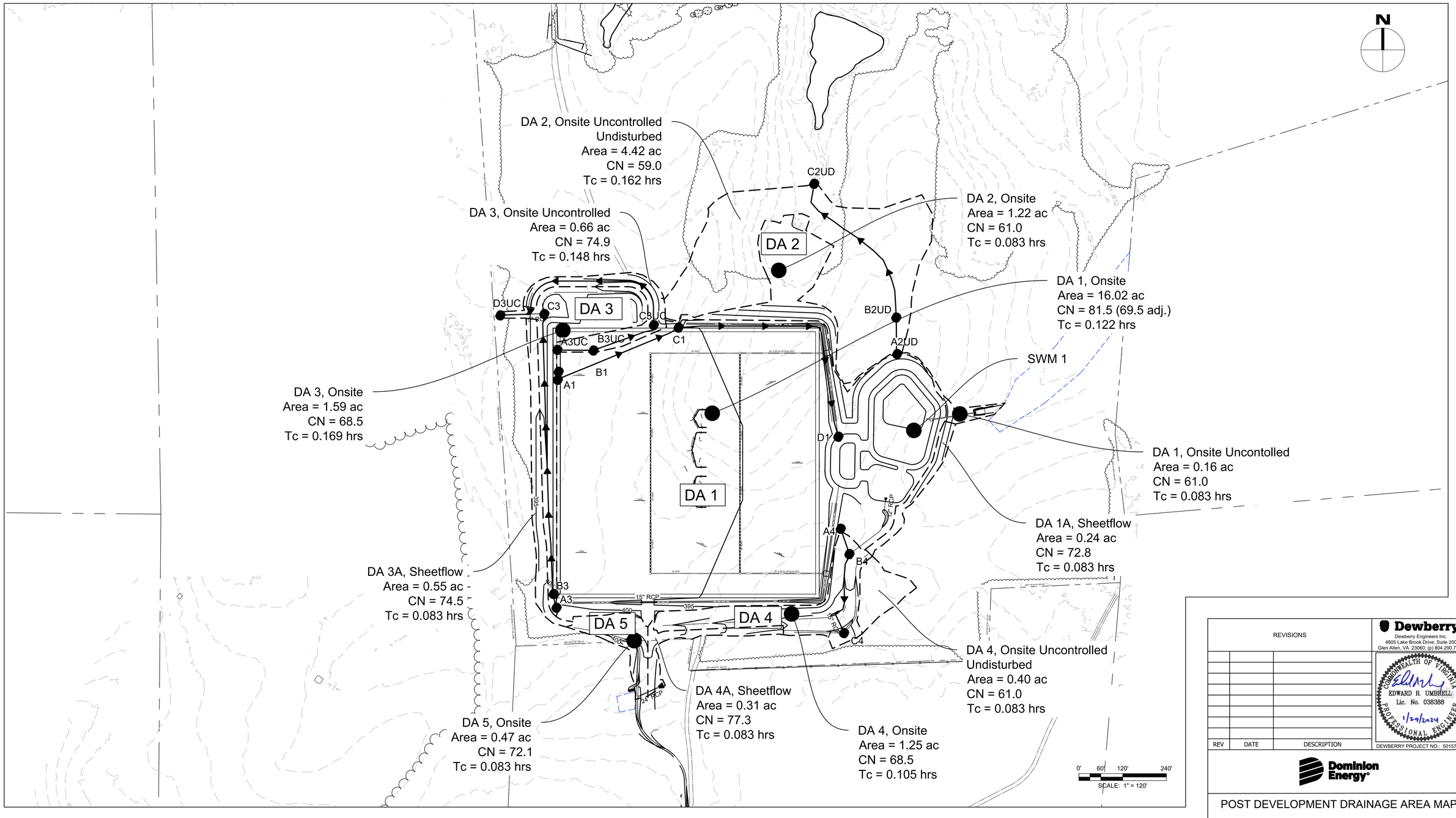
PRE DEVELOPMENT DRAINAGE AREA

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE 1" = 120'
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-606
DESIGNER	EU/KZ	01/29/24		
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:	
APPROVED BY	KAS	01/29/24		1707908-C-606.dwg

POST DEVELOPMENT DRAINAGE DIVIDE MAP



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POST DEVELOPMENT DRAINAGE AREA MAP

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	1" = 120'
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-607	
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:		
APPROVED BY	KAS	01/29/24	1707908-C-607.dwg		

DRAINAGE AREA 1

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 1, Onsite | Checked: EU | Date: 1/24/2024
Check one: [X] Present: [ ] Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Pasture - Good Condition	61	2.72	166.1
[1]Use only one CN source per line	Totals →		2.72	166.1
			0.0043	sq. miles
CN (weighted) = total product / total area =	Use CN →		61.0	

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.17	0.32	0.92	2.40	3.98

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 1 FORESTED

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 1, Onsite Forested | Checked: EU | Date: 1/24/2024
Check one: [X] Present: [ ] Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Woods - Good Condition	55	2.72	149.8
[1]Use only one CN source per line	Totals →		2.72	149.8
			0.0043	sq. miles
CN (weighted) = total product / total area =	Use CN →		55.0	

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.17	0.32	0.92	2.40	3.98

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 1 SHEETFLOW

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 1, Onsite Sheetflow | Checked: EU | Date: 1/24/2024
Check one: [X] Present: [ ] Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Pasture - Good Condition	61	0.24	14.7
[1]Use only one CN source per line	Totals →		0.24	14.7
			0.0004	sq. miles
CN (weighted) = total product / total area =	Use CN →		61.0	

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.17	0.32	0.92	2.40	3.98

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 2

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 2, Onsite | Checked: EU | Date: 1/24/2024
Check one: [X] Present: [ ] Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Forested - Good Condition	55	0.60	33.0
B	Pasture - Good Condition	61	5.88	358.7
[1]Use only one CN source per line	Totals →		6.48	391.8
			0.0101	sq. miles
CN (weighted) = total product / total area =	Use CN →		60.4	

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.16	0.31	0.89	2.35	3.91

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 2 UNCONTROLLED UNDISTURBED

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 2, Onsite Uncont. Undist. | Checked: EU | Date: 1/24/2024
Check one: [X] Present: [ ] Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Pasture - Good Condition	61	2.98	181.8
B	Woods - Good Condition	55	1.44	79.2
[1]Use only one CN source per line	Totals →		4.42	261.0
			0.0069	sq. miles
CN (weighted) = total product / total area =	Use CN →		59.0	

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.16	0.31	0.89	2.35	3.91

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 3

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 3, Onsite | Checked: EU | Date: 1/24/2024
Check one: [X] Present: [ ] Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Forested - Good Condition	55	0.01	0.6
B	Pasture - Good Condition	61	6.82	415.8
[1]Use only one CN source per line	Totals →		6.83	416.4
			0.0107	sq. miles
CN (weighted) = total product / total area =	Use CN →		61.0	

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.17	0.32	0.92	2.40	3.98

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 3 SHEETFLOW

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 3, Onsite Sheetflow | Checked: EU | Date: 1/24/2024
Check one: [X] Present: [ ] Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Forested - Good Condition	55	0.10	5.6
B	Pasture - Good Condition	61	0.50	30.3
[1]Use only one CN source per line	Totals →		0.60	35.9
			0.0009	sq. miles
CN (weighted) = total product / total area =	Use CN →		60.0	

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.17	0.32	0.92	2.40	3.98

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 4

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 4, Onsite | Checked: EU | Date: 1/24/2024
Check one: [X] Present: [ ] Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Forested - Good Condition	55	0.09	4.8
B	Pasture - Good Condition	61	5.03	306.6
[1]Use only one CN source per line	Totals →		5.11	311.4
			0.0080	sq. miles
CN (weighted) = total product / total area =	Use CN →		60.9	

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.17	0.32	0.91	2.39	3.97

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 4 UNCONTROLLED UNDISTURBED

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 4, Onsite Uncont. Undist. | Checked: EU | Date: 1/24/2024
Check one: [X] Present: [ ] Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Pasture - Good Condition	61	0.40	24.4
[1]Use only one CN source per line	Totals →		0.40	24.4
			0.0006	sq. miles
CN (weighted) = total product / total area =	Use CN →		61.0	

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.17	0.32	0.91	2.39	3.97

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 4 SHEETFLOW

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 4, Onsite Sheetflow | Checked: EU | Date: 1/24/2024
Check one: [X] Present: [ ] Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Forested - Good Condition	55	0.18	10.1
B	Pasture - Good Condition	61	0.12	7.6
[1]Use only one CN source per line	Totals →		0.31	17.6
			0.0005	sq. miles
CN (weighted) = total product / total area =	Use CN →		57.4	

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.17	0.32	0.91	2.39	3.97

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 5

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 5, Onsite | Checked: EU | Date: 1/24/2024
Check one: [X] Present: [ ] Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Forested - Good Condition	55	0.18	9.8
B	Pasture - Good Condition	61	0.00	0.0
[1]Use only one CN source per line	Totals →		0.18	9.8
			0.0003	sq. miles
CN (weighted) = total product / total area =	Use CN →		55.0	

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.07	0.17	0.61	1.86	3.27

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

REVISIONS		
REV	DATE	DESCRIPTION

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COMMONWEALTH OF VIRGINIA
EDWARD R. UMBRELL
Lic. No. 038388
1/29/2024
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

PRE DEVELOPMENT CN COMPS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT	5017950	NAME	DATE	SHEET:	1707908-C-608
DESIGNER		EU/KZ	01/29/24		
PROJECT ENGINEER		EU/KZ	01/29/24	DRAWING:	
APPROVED BY		KAS	01/29/24		1707908-C-608.dwg

DRAINAGE AREA 1 – ONSITE

Unity Sub Station - Drainage Area 1 Onsite - Existing Conditions

Worksheet 3: Time of Concentration (Tc) or Travel Time (Tt)
Time of Concentration Computations for Predeveloped Conditions

Sheet flow		A1 - B1
Surface description		Short Grass Prarie
Manning's roughness coeff., n		0.15
Flow length, L	(ft)	100
Two-yr 24-hr rainfall, P2	(in)	3.31
Land slope, s	(ft/ft)	0.07
Tt = [0.007(nL)^0.8]/[(P2^0.5)(s^0.4)]	(hr)	0.097
Shallow concentrated flow		**B1 - C1**
Surface description		Unpaved
Flow length, L	(ft)	709
Watercourse slope, s	(ft/ft)	0.04
Average velocity, V	(fps)	3.2
Tt = L/(3600*V)	(hr)	0.061
Watershed time of concentration, Tc	(hrs)	**0.158**
Lag Tc, Tlag = (0.6*Tc)	(hrs)	**0.095**

DRAINAGE AREA 2 – ONSITE

Unity Sub Station - Drainage Area 2 Onsite - Existing Conditions

Worksheet 3: Time of Concentration (Tc) or Travel Time (Tt)
Time of Concentration Computations for Predeveloped Conditions

Sheet flow		A1 - B1
Surface description		Short Grass Prarie
Manning's roughness coeff., n		0.15
Flow length, L	(ft)	100
Two-yr 24-hr rainfall, P2	(in)	3.31
Land slope, s	(ft/ft)	0.06
Tt = [0.007(nL)^0.8]/[(P2^0.5)(s^0.4)]	(hr)	0.107
Shallow concentrated flow		**B1 - C1**
Surface description		Unpaved
Flow length, L	(ft)	789
Watercourse slope, s	(ft/ft)	0.04
Average velocity, V	(fps)	3.2
Tt = L/(3600*V)	(hr)	0.067
Watershed time of concentration, Tc	(hrs)	**0.174**
Lag Tc, Tlag = (0.6*Tc)	(hrs)	**0.104**

DRAINAGE AREA 2 – UNCONTROLLED UNDISTURBED

Unity Sub Station - Drainage Area 2 Onsite - Uncontrolled Undisturbed

Worksheet 3: Time of Concentration (Tc) or Travel Time (Tt)
Time of Concentration Computations for Predeveloped Conditions

Sheet flow		A1 - B1
Surface description		Short Grass Prarie
Manning's roughness coeff., n		0.15
Flow length, L	(ft)	100
Two-yr 24-hr rainfall, P2	(in)	3.31
Land slope, s	(ft/ft)	0.04
Tt = [0.007(nL)^0.8]/[(P2^0.5)(s^0.4)]	(hr)	0.128
Shallow concentrated flow		**B1 - C1**
Surface description		Unpaved
Flow length, L	(ft)	470
Watercourse slope, s	(ft/ft)	0.06
Average velocity, V	(fps)	3.9
Tt = L/(3600*V)	(hr)	0.034
Watershed time of concentration, Tc	(hrs)	**0.162**
Lag Tc, Tlag = (0.6*Tc)	(hrs)	**0.097**

DRAINAGE AREA 3 – ONSITE

Unity Sub Station - Drainage Area 3 Onsite - Existing Conditions

Worksheet 3: Time of Concentration (Tc) or Travel Time (Tt)
Time of Concentration Computations for Predeveloped Conditions

Sheet flow		A - B
Surface description		Short Grass Prarie
Manning's roughness coeff., n		0.15
Flow length, L	(ft)	100
Two-yr 24-hr rainfall, P2	(in)	3.31
Land slope, s	(ft/ft)	0.05
Tt = [0.007(nL)^0.8]/[(P2^0.5)(s^0.4)]	(hr)	0.116
Shallow concentrated flow		**B - C**
Surface description		Unpaved
Flow length, L	(ft)	339
Watercourse slope, s	(ft/ft)	0.03
Average velocity, V	(fps)	3.0
Tt = L/(3600*V)	(hr)	0.032
Watershed time of concentration, Tc	(hrs)	**0.148**
Lag Tc, Tlag = (0.6*Tc)	(hrs)	**0.089**

DRAINAGE AREA 4 – ONSITE

Unity Sub Station - Drainage Area 4 Onsite - Existing Conditions

Worksheet 3: Time of Concentration (Tc) or Travel Time (Tt)
Time of Concentration Computations for Predeveloped Conditions

Sheet flow		A1 - B1
Surface description		Short Grass Prarie
Manning's roughness coeff., n		0.15
Flow length, L	(ft)	100
Two-yr 24-hr rainfall, P2	(in)	3.31
Land slope, s	(ft/ft)	0.03
Tt = [0.007(nL)^0.8]/[(P2^0.5)(s^0.4)]	(hr)	0.137
Shallow concentrated flow		**B1 - C1**
Surface description		Unpaved
Flow length, L	(ft)	579
Watercourse slope, s	(ft/ft)	0.04
Average velocity, V	(fps)	3.4
Tt = L/(3600*V)	(hr)	0.047
Watershed time of concentration, Tc	(hrs)	**0.184**
Lag Tc, Tlag = (0.6*Tc)	(hrs)	**0.110**

REVISIONS

REV	DATE	DESCRIPTION

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COMMONWEALTH OF VIRGINIA
EDWARD R. UMBRELL
Lic. No. 038388
PROFESSIONAL ENGINEER
1/29/2024

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

PRE DEVELOPMENT TC COMPS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.		SCALE AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-609	
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:		
APPROVED BY	KAS	01/29/24	1707908-C-609.dwg		

DRAINAGE AREA 1

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 1, Onsite Treated | Checked: EU | Date: 1/24/2024
Check one: ☐ Present: ☒ Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Open Space - Good Condition	61	3.13	190.9
B	Gravel	85	11.48	975.4
--	Impervious	98	0.30	29.3
--	Water	98	1.12	109.6

[1]Use only one CN source per line — Totals → 16.02 | 1305.3

0.0250 sq. miles

CN (weighted) = total product / total area = Use CN → **81.5**

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.90	1.26	2.33	4.47	6.45

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 1 UNCONTROLLED DISTURBED

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 1, Onsite Uncontrolled | Checked: EU | Date: 1/24/2024
Check one: ☐ Present: ☒ Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Open Space - Good Condition	61	0.16	9.5

[1]Use only one CN source per line — Totals → 0.16 | 9.5

0.0002 sq. miles

CN (weighted) = total product / total area = Use CN → **61.0**

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.90	1.26	2.33	4.47	6.45

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 1 SHEETFLOW

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 1, Onsite Sheetflow | Checked: EU | Date: 1/24/2024
Check one: ☐ Present: ☒ Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Open Space - Good Condition	61	0.16	10.1
--	Impervious	98	0.08	7.6

[1]Use only one CN source per line — Totals → 0.24 | 17.6

0.0004 sq. miles

CN (weighted) = total product / total area = Use CN → **72.8**

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.90	1.26	2.33	4.47	6.45

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 2

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 2, Onsite | Checked: EU | Date: 1/24/2024
Check one: ☐ Present: ☒ Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Open Space - Good Condition	61	1.22	74.2

[1]Use only one CN source per line — Totals → 1.22 | 74.2

0.0019 sq. miles

CN (weighted) = total product / total area = Use CN → **61.0**

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.17	0.32	0.92	2.40	3.98

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 2 UNCONTROLLED UNDISTURBED

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 2, Onsite Uncont. Undist. | Checked: EU | Date: 1/24/2024
Check one: ☐ Present: ☒ Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Pasture - Good Condition	61	2.98	181.8
B	Woods - Good Condition	55	1.44	79.2

[1]Use only one CN source per line — Totals → 4.42 | 261.0

0.0069 sq. miles

CN (weighted) = total product / total area = Use CN → **59.0**

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.17	0.32	0.92	2.40	3.98

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 3

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 3, Onsite | Checked: EU | Date: 1/24/2024
Check one: ☐ Present: ☒ Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Gravel	85	0.05	4.0
--	Impervious	98	0.29	28.7
B	Open Space - Good Condition	61	1.25	76.4

[1]Use only one CN source per line — Totals → 1.59 | 109.1

0.0025 sq. miles

CN (weighted) = total product / total area = Use CN → **68.5**

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.36	0.59	1.37	3.12	4.88

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 3 UNCONTROLLED DISTURBED

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 3, Onsite Uncontrolled | Checked: EU | Date: 1/24/2024
Check one: ☐ Present: ☒ Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Gravel	85	0.21	18.1
--	Impervious	98	0.11	10.9
B	Open Space - Good Condition	61	0.34	20.7

[1]Use only one CN source per line — Totals → 0.66 | 49.7

0.0010 sq. miles

CN (weighted) = total product / total area = Use CN → **74.9**

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.36	0.59	1.37	3.12	4.88

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 3 SHEETFLOW

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 3, Onsite Sheetflow | Checked: EU | Date: 1/24/2024
Check one: ☐ Present: ☒ Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
--	Impervious	98	0.20	19.8
B	Open Space - Good Condition	61	0.35	21.4

[1]Use only one CN source per line — Totals → 0.55 | 41.1

0.0009 sq. miles

CN (weighted) = total product / total area = Use CN → **74.5**

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.36	0.59	1.37	3.12	4.88

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 4

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 4, Onsite | Checked: EU | Date: 1/24/2024
Check one: ☐ Present: ☒ Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
--	Impervious	98	0.25	24.7
B	Open Space - Good Condition	61	1.00	61.0

[1]Use only one CN source per line — Totals → 1.25 | 85.6

0.0020 sq. miles

CN (weighted) = total product / total area = Use CN → **68.4**

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.36	0.59	1.36	3.12	4.87

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 4 UNCONTROLLED UNDISTURBED

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 4, Onsite Uncont. Undist. | Checked: EU | Date: 1/24/2024
Check one: ☐ Present: ☒ Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
B	Pasture - Good Condition	61	0.40	24.4

[1]Use only one CN source per line — Totals → 0.40 | 24.4

0.0006 sq. miles

CN (weighted) = total product / total area = Use CN → **61.0**

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.36	0.59	1.36	3.12	4.87

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 4 SHEETFLOW

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 4, Onsite Sheetflow | Checked: EU | Date: 1/24/2024
Check one: ☐ Present: ☒ Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
--	Impervious	98	0.14	13.2
B	Open Space - Good Condition	61	0.17	10.5

[1]Use only one CN source per line — Totals → 0.31 | 23.7

0.0005 sq. miles

CN (weighted) = total product / total area = Use CN → **77.3**

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.36	0.59	1.36	3.12	4.87

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

DRAINAGE AREA 5

Worksheet 2: Runoff curve number and runoff

Project: Unity Substation | By: KAZ | Date: 1/24/2024
Location: Drainage Area 5, Onsite | Checked: EU | Date: 1/24/2024
Check one: ☐ Present: ☒ Developed:

1. Runoff curve number

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	AREA (Acres)	Product of CN x Area
--	Impervious	98	0.1398	13.7
B	Open Space - Good Condition	61	0.33	20.0

[1]Use only one CN source per line — Totals → 0.47 | 33.7

0.0007 sq. miles

CN (weighted) = total product / total area = Use CN → **72.1**

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... Yr	1	2	10	100	500
Rainfall, P (24-hour) . In.	2.4	2.89	4.2	6.58	8.69
Runoff, Q..... In.	0.48	0.75	1.61	3.48	5.31

(Use P and CN with table 2-1, Figure 2-1, or equations 2-3 and 2-4)

REVISIONS

REV	DATE	DESCRIPTION

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COMMONWEALTH OF VIRGINIA
EDWARD R. UMBRELL
Lic. No. 038388
1/24/2024
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

POST DEVELOPMENT CN COMPS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-610	
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:		
APPROVED BY	KAS	01/29/24	1707908-C-610.dwg		

DRAINAGE AREA 1 – CONTROLLED

Unity Sub Station - Drainage Area 1 Onsite Controlled

Worksheet 3: Time of Concentration (Tc) or Travel Time (Tt)
Time of Concentration Computations for Postdeveloped Conditions

Sheet flow		A - B
Surface description		Smooth Surfaces (Gravel)
Manning's roughness coeff., n		0.03
Flow length, L	(ft)	100
Two-yr 24-hr rainfall, P2	(in)	3.31
Land slope, s	(ft/ft)	0.010
Tt = [0.007(nL)^0.8]/[(P2^0.5)(s^0.4)]	(hr)	0.051
Shallow concentrated flow		**B - C**
Surface description		Paved
Flow length, L	(ft)	263
Watercourse slope, s	(ft/ft)	0.02
Average velocity, V	(fps)	2.7
Tt = L/(3600*V)	(hr)	0.027
Pipe flow		**C - D**
Pipe Diameter	(in)	
Channel Data		
bottom width	(ft)	4
side slope	z:1	3
depth	(ft)	1
Cross sectional flow area, a		7.000
Wetted perimeter, Pw		10.325
Hydraulic radius, r = a/Pw		0.678
Channel slope, s		0.0130
Manning's roughness coeff., n		0.030
V =(1.49*r^2/3*s^1/2)/n; Compute V		4.375
Flow length, L	(ft)	690.8
Tt = L/(3600*V); Compute Tt	(hr)	0.044
Watershed time of concentration, Tc	(hrs)	**0.122**
Lag Tc, Tlag = (0.6*Tc)	(hrs)	**0.073**

DRAINAGE AREA 2 – UNCONTROLLED UNDISTURBED

Unity Sub Station - Drainage Area 2 Onsite Uncontrolled Undisturbed

Worksheet 3: Time of Concentration (Tc) or Travel Time (Tt)
Time of Concentration Computations for Postdeveloped Conditions

Sheet flow		A1 - B1
Surface description		Short Grass Prarie
Manning's roughness coeff., n		0.15
Flow length, L	(ft)	100
Two-yr 24-hr rainfall, P2	(in)	3.31
Land slope, s	(ft/ft)	0.04
Tt = [0.007(nL)^0.8]/[(P2^0.5)(s^0.4)]	(hr)	0.128
Shallow concentrated flow		**B1 - C1**
Surface description		Unpaved
Flow length, L	(ft)	470
Watercourse slope, s	(ft/ft)	0.06
Average velocity, V	(fps)	3.9
Tt = L/(3600*V)	(hr)	0.034
Watershed time of concentration, Tc	(hrs)	**0.162**
Lag Tc, Tlag = (0.6*Tc)	(hrs)	**0.097**

DRAINAGE AREA 3 – CONTROLLED

Unity Sub Station - Drainage Area 3 Onsite

Worksheet 3: Time of Concentration (Tc) or Travel Time (Tt)
Time of Concentration Computations for Postdeveloped Conditions

Sheet flow		A - B
Surface description		Grass
Manning's roughness coeff., n		0.24
Flow length, L	(ft)	39
Two-yr 24-hr rainfall, P2	(in)	3.31
Land slope, s	(ft/ft)	0.051
Tt = [0.007(nL)^0.8]/[(P2^0.5)(s^0.4)]	(hr)	0.076
Pipe flow/Channel flow		**C - D**
Pipe Diameter	(in)	
Channel Data		
bottom width	(ft)	0.1
side slope	z:1	3
depth	(ft)	0.73
Cross sectional flow area, a		1.658
Wetted perimeter, Pw		4.697
Hydraulic radius, r = a/Pw		0.353
Channel slope, s		0.0117
Manning's roughness coeff., n		0.035
V =(1.49*r^2/3*s^1/2)/n; Compute V		2.297
Flow length, L	(ft)	771.3
Tt = L/(3600*V); Compute Tt	(hr)	0.093
Watershed time of concentration, Tc	(hrs)	**0.169**
Lag Tc, Tlag = (0.6*Tc)	(hrs)	**0.101**

DRAINAGE AREA 3 – UNCONTROLLED DISTURBED

Unity Sub Station - Drainage Area 3 Onsite Uncontrolled

Worksheet 3: Time of Concentration (Tc) or Travel Time (Tt)
Time of Concentration Computations for Postdeveloped Conditions

Sheet flow		A - B
Surface description		Smooth Surfaces (Gravel)
Manning's roughness coeff., n		0.03
Flow length, L	(ft)	100
Two-yr 24-hr rainfall, P2	(in)	3.31
Land slope, s	(ft/ft)	0.010
Tt = [0.007(nL)^0.8]/[(P2^0.5)(s^0.4)]	(hr)	0.057
Shallow concentrated flow		**B - C**
Surface description		Unpaved
Flow length, L	(ft)	198
Watercourse slope, s	(ft/ft)	0.02
Average velocity, V	(fps)	2.0
Tt = L/(3600*V)	(hr)	0.028
Pipe flow/Channel flow		**C - D**
Pipe Diameter	(in)	
Channel Data		
bottom width	(ft)	0.1
side slope	z:1	3
depth	(ft)	0.65
Cross sectional flow area, a		1.333
Wetted perimeter, Pw		4.211
Hydraulic radius, r = a/Pw		0.316
Channel slope, s		0.0153
Manning's roughness coeff., n		0.035
V =(1.49*r^2/3*s^1/2)/n; Compute V		2.446
Flow length, L	(ft)	555.17
Tt = L/(3600*V); Compute Tt	(hr)	0.063
Watershed time of concentration, Tc	(hrs)	**0.148**
Lag Tc, Tlag = (0.6*Tc)	(hrs)	**0.089**

DRAINAGE AREA 4 – CONTROLLED

Unity Sub Station - Drainage Area 4 Onsite

Worksheet 3: Time of Concentration (Tc) or Travel Time (Tt)
Time of Concentration Computations for Postdeveloped Conditions

Sheet flow		A - B
Surface description		Short Grass Prarie
Manning's roughness coeff., n		0.15
Flow length, L	(ft)	76.91
Two-yr 24-hr rainfall, P2	(in)	3.31
Land slope, s	(ft/ft)	0.052
Tt = [0.007(nL)^0.8]/[(P2^0.5)(s^0.4)]	(hr)	0.089
Pipe flow/Channel flow		**B-C**
Pipe Diameter	(in)	
Channel Data		
bottom width	(ft)	0.1
side slope	z:1	3
depth	(ft)	0.51
Cross sectional flow area, a		0.831
Wetted perimeter, Pw		3.326
Hydraulic radius, r = a/Pw		0.250
Channel slope, s		0.0405
Manning's roughness coeff., n		0.030
V =(1.49*r^2/3*s^1/2)/n; Compute V		3.965
Flow length, L	(ft)	222.42
Tt = L/(3600*V); Compute Tt	(hr)	0.016
Watershed time of concentration, Tc	(hrs)	**0.105**
Lag Tc, Tlag = (0.6*Tc)	(hrs)	**0.063**

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
EDWARD R. UMBRELL
Lic. No. 038388
1/29/2024
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

POST DEVELOPMENT TC COMPS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-611	
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:		
APPROVED BY	KAS	01/29/24	1707908-C-611.dwg		

DA 1 ROUTING RESULTS SUMMARY

DA 1				
Return Event	**$Q_{pre-outfall}$**	**$Q_{post-pond}$**	**$Q_{post-uncont}$**	**$Q_{post-outfall}$**
	CFS	*CFS*	*CFS*	*CFS*
1-year	0.40	0.19	0.03	0.19
10-year	4.07	1.14	0.28	1.15

NOTE: POST-DEVELOPMENT PEAK OUTFLOWS ARE NON-COINCIDENT.

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
Drainage Area 1	Pre-Development 1 year	1	0.061	12.200	0.40
Drainage Area 1	Post-Development 1 year	1	0.737	12.150	9.53
Drainage Area 1	Forested	1	0.030	12.550	0.09
Drainage Area 1	Pre-Development 2 year	2	0.111	12.150	1.06
Drainage Area 1	Post-Development 2 year	2	1.162	12.150	16.09
Drainage Area 1	Pre-Development 10 year	10	0.319	12.150	4.07
Drainage Area 1	Post-Development 10 year	10	2.727	12.150	39.25
Drainage Area 1	Pre-Development 100 year	100	0.807	12.150	11.08
Drainage Area 1	Post-Development 100 year	100	6.058	12.150	87.54
DA 1: Uncont. Dist.	Post-Development 1 year	1	0.004	12.150	0.03
DA 1: Uncont. Dist.	Post-Development 2 year	2	0.007	12.100	0.07
DA 1: Uncont. Dist.	Post-Development 10 year	10	0.019	12.100	0.28
DA 1: Uncont. Dist.	Post-Development 100 year	100	0.047	12.100	0.77

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
O-1	Pre-Development 1 year	1	0.061	12.200	0.40
O-1	Post-Development 1 year	1	0.171	24.000	0.19
O-1	Forested	1	0.030	12.550	0.09
O-1	Pre-Development 2 year	2	0.111	12.150	1.06
O-1	Post-Development 2 year	2	0.236	24.000	0.26
O-1	Pre-Development 10 year	10	0.319	12.150	4.07
O-1	Post-Development 10 year	10	0.921	17.400	1.15
O-1	Pre-Development 100 year	100	0.807	12.150	11.08
O-1	Post-Development 100 year	100	3.852	12.650	14.43

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Wet Pond (IN)	Post-Development 1 year	1	0.737	12.150	9.53	(N/A)	(N/A)
Wet Pond (OUT)	Post-Development 1 year	1	0.168	24.000	0.19	379.81	0.569
Wet Pond (IN)	Post-Development 2 year	2	1.162	12.150	16.09	(N/A)	(N/A)
Wet Pond (OUT)	Post-Development 2 year	2	0.229	24.000	0.25	380.30	0.933
Wet Pond (IN)	Post-Development 10 year	10	2.727	12.150	39.25	(N/A)	(N/A)
Wet Pond (OUT)	Post-Development 10 year	10	0.902	17.250	1.14	381.58	1.923
Wet Pond (IN)	Post-Development 100 year	100	6.058	12.150	87.54	(N/A)	(N/A)
Wet Pond (OUT)	Post-Development 100 year	100	3.804	12.650	14.32	383.04	3.145

ELEVATION–VOLUME TABLE

MAIN CELL

STAGE VS. STORAGE USING CONIC METHOD

PROJECT: Unity Substation Wet Pond
ENGINEER / DATE: KZ 7/18/2023
Main Cell

ELEVATION	AREA	AREA	INCREMENTAL VOLUME	TOTAL VOLUME	
(FEET)	(SQ FEET)	(ACRES)	(ACRE-FEET)	(ACRE-FEET)	
375	10189.5	0.2339	0	0.000	
376	19805.1	0.4547	0.3382	0.338	
377	21486.1	0.4933	0.4738	0.812	
378	23225.5	0.5332	0.5131	1.325	
378.5	24118.6	0.5537	0.2717	1.597	
378.5	28865.7	0.6627	0.0000	1.597	
379	29830.8	0.6848	0.3369	1.934	84232.189 Normal Pool = 379 ft
380	31803.4	0.7301	0.7073	2.641	
381	33832.6	0.7767	0.7533	3.394	
382	35918.3	0.8246	0.8005	4.195	
383	38060.5	0.8737	0.8490	5.044	
384	40788.8	0.9364	0.9049	5.949	
385	42983.4	0.9868	0.9615	6.910	
386	45569.6	1.0461	1.0163	7.927	

FOREBAY

STAGE VS. STORAGE USING CONIC METHOD

PROJECT: Unity Substation Wet Pond
ENGINEER / DATE: KZ 7/18/2023
Forebay

ELEVATION	AREA	AREA	INCREMENTAL VOLUME	TOTAL VOLUME	
(FEET)	(SQ FEET)	(ACRES)	(ACRE-FEET)	(ACRE-FEET)	
379	3153.0	0.0724	0	0.000	
380	3910.8	0.0898	0.0809	0.081	
381	4732.9	0.1087	0.0991	0.180	
382	5619.3	0.1290	0.1187	0.299	
382.5	6086.6	0.1397	0.0672	0.366	
382.5	8257.4	0.1896	0.0000	0.366	
383	9161.3	0.2103	0.0999	0.466	20288.497 Normal Pool = 383 ft
384	10649.4	0.2445	0.2272	0.693	
385	11781.5	0.2705	0.2574	0.950	
386	13546.5	0.3110	0.2905	1.241	Top of Dam = 386 ft

WETLAND CELL

STAGE VS. STORAGE USING CONIC METHOD

PROJECT: Unity Substation Wet Pond
ENGINEER / DATE: KZ 7/18/2023
Wetland Cell

ELEVATION	AREA	AREA	INCREMENTAL VOLUME	TOTAL VOLUME	
(FEET)	(SQ FEET)	(ACRES)	(ACRE-FEET)	(ACRE-FEET)	
381.5	1831.1	0.0420	0	0.000	
382	2755.4	0.0633	0.0261	0.026	
382.5	5332.2	0.1224	0.0456	0.072	
382.5	6771.9	0.1555	0.0000	0.072	
383	7754.7	0.1780	0.0833	0.155	6754.4566 Normal Pool = 383 ft
384	9271.2	0.2128	0.1952	0.350	
385	10645.9	0.2444	0.2284	0.579	
386	12048.2	0.2766	0.2603	0.839	Top of Dam = 386 ft

TOTAL VOLUME

STAGE VS. STORAGE USING CONIC METHOD

PROJECT: Unity Substation Wet Pond
ENGINEER / DATE: KZ 7/18/2023
Total Volume

ELEVATION	AREA	AREA	INCREMENTAL VOLUME	TOTAL VOLUME	
(FEET)	(SQ FEET)	(ACRES)	(ACRE-FEET)	(ACRE-FEET)	
375	10189.50	0.234	0.000	0.000	
376	19805.05	0.455	0.338	0.338	
377	21486.10	0.493	0.474	0.812	
378	23225.45	0.533	0.513	1.325	
378.5	24118.59	0.554	0.272	1.597	
378.5	28865.65	0.663	0.000	1.597	
379	32983.71	0.757	0.337	1.934	
380	35714.16	0.820	0.788	2.722	
381	38565.42	0.885	0.852	3.574	
382	41537.53	0.954	0.919	4.494	
382.5	47337.06	1.087	0.913	4.632	
382.5	50947.55	1.170	0.801	4.632	
383	54976.55	1.262	1.032	5.665	
384	60709.37	1.394	1.327	6.992	
385	65410.73	1.502	1.447	8.439	
386	71164.34	1.634	1.567	10.006	435875 Top of Dam = 386 ft

OUTLET STRUCTURE INPUT DATA

Requested Pond Water Surface Elevations

Minimum (Headwater)	379.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	386.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Area	Orifice - Square	Forward	Culvert - 24"	381.25	386.00
Inlet Box	Riser Top	Forward	Culvert - 24"	382.75	386.00
Orifice-Circular	Orifice - Circular	Forward	Culvert - 24"	379.00	386.00
Culvert-Circular	Culvert - 24"	Forward	TW	375.66	386.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Orifice - Circular
Structure Type: Orifice-Circular

Number of Openings	1
Elevation	379.00 ft
Orifice Diameter	3.0 in
Orifice Coefficient	0.600

Structure ID: Culvert - 24"
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	24.0 in
Length	115.00 ft
Length (Computed Barrel)	115.00 ft
Slope (Computed)	0.007 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.156
T2 ratio (HW/D)	1.303
Slope Correction Factor	-0.500

Structure ID: Riser Top
Structure Type: Inlet Box

Number of Openings	1
Elevation	382.75 ft
Orifice Area	36.0 ft²
Orifice Coefficient	0.600
Weir Length	24.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	True
Orifice H to crest	False

Structure ID: Orifice - Square
Structure Type: Orifice-Area

Number of Openings	1
Elevation	381.25 ft
Orifice Area	0.5 ft²
Top Elevation	381.75 ft
Datum Elevation	381.50 ft
Orifice Coefficient	0.600

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	377.97 ft	T1 Flow	15.55 ft³/s
T2 Elevation	378.27 ft	T2 Flow	17.77 ft³/s

LEVEL POOL ROUTING

Subsection: Level Pool Pond Routing Summary — Return Event: 1 years
Label: Wet Pond (IN) — Storm Event: 1 Year
Scenario: Post-Development 1 year

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	379.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours
Inflow/Outflow Hydrograph Summary	
Flow (Peak In)	9.53 ft³/s — Time to Peak (Flow, In) 12.150 hours
Flow (Peak Outlet)	0.19 ft³/s — Time to Peak (Flow, Outlet) 24.000 hours
Elevation (Water Surface, Peak)	379.81 ft
Volume (Peak)	0.569 ac-ft
Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	0.737 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	0.168 ac-ft
Volume (Retained)	0.569 ac-ft
Volume (Unrouted)	-0.001 ac-ft
Error (Mass Balance)	0.1 %

Subsection: Level Pool Pond Routing Summary — Return Event: 2 years
Label: Wet Pond (IN) — Storm Event: 2 Year
Scenario: Post-Development 2 year

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	379.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours
Inflow/Outflow Hydrograph Summary	
Flow (Peak In)	16.09 ft³/s — Time to Peak (Flow, In) 12.150 hours
Flow (Peak Outlet)	0.25 ft³/s — Time to Peak (Flow, Outlet) 24.000 hours
Elevation (Water Surface, Peak)	380.30 ft
Volume (Peak)	0.933 ac-ft
Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	1.162 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	0.229 ac-ft
Volume (Retained)	0.932 ac-ft
Volume (Unrouted)	-0.001 ac-ft
Error (Mass Balance)	0.1 %

Subsection: Level Pool Pond Routing Summary — Return Event: 10 years
Label: Wet Pond (IN) — Storm Event: 10 Year
Scenario: Post-Development 10 year

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	379.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours
Inflow/Outflow Hydrograph Summary	
Flow (Peak In)	39.25 ft³/s — Time to Peak (Flow, In) 12.150 hours
Flow (Peak Outlet)	1.14 ft³/s — Time to Peak (Flow, Outlet) 17.250 hours
Elevation (Water Surface, Peak)	381.58 ft
Volume (Peak)	1.923 ac-ft
Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	2.727 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	0.902 ac-ft
Volume (Retained)	1.821 ac-ft
Volume (Unrouted)	-0.003 ac-ft
Error (Mass Balance)	0.1 %

Subsection: Level Pool Pond Routing Summary — Return Event: 100 years
Label: Wet Pond (IN) — Storm Event: 100 Year
Scenario: Post-Development 100 year

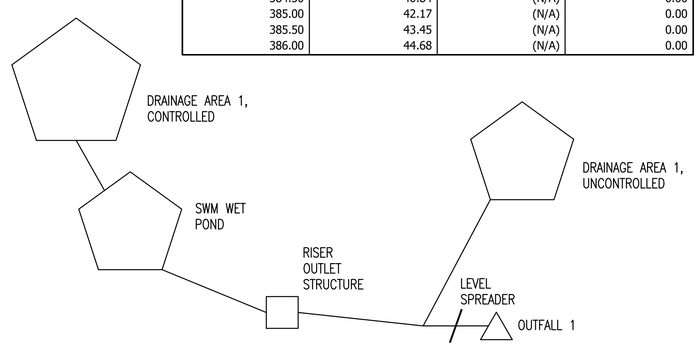
Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	379.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours
Inflow/Outflow Hydrograph Summary	
Flow (Peak In)	87.54 ft³/s — Time to Peak (Flow, In) 12.150 hours
Flow (Peak Outlet)	14.32 ft³/s — Time to Peak (Flow, Outlet) 12.650 hours
Elevation (Water Surface, Peak)	383.04 ft
Volume (Peak)	3.145 ac-ft
Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	6.058 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	3.804 ac-ft
Volume (Retained)	2.245 ac-ft
Volume (Unrouted)	-0.009 ac-ft
Error (Mass Balance)	0.1 %

ELEVATION–DISCHARGE TABLE

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
379.00	0.00	(N/A)	0.00
379.50	0.14	(N/A)	0.00
380.00	0.22	(N/A)	0.00
380.50	0.28	(N/A)	0.00
381.00	0.32	(N/A)	0.00
381.25	0.34	(N/A)	0.00
381.50	0.97	(N/A)	0.00
382.00	2.10	(N/A)	0.00
382.50	2.84	(N/A)	0.00
382.75	3.14	(N/A)	0.00
383.00	12.41	(N/A)	0.00
383.50	37.38	(N/A)	0.00
384.00	39.38	(N/A)	0.00
384.50	40.84	(N/A)	0.00
385.00	42.17	(N/A)	0.00
385.50	43.45	(N/A)	0.00
386.00	44.68	(N/A)	0.00

MODEL SCHEMATIC



DA 1A SHEETFLOW ROUTING RESULTS SUMMARY

Unity Substation
Dewberry
Water Resources Engineering

OUTFALL 1A - Sheet Flow Computations

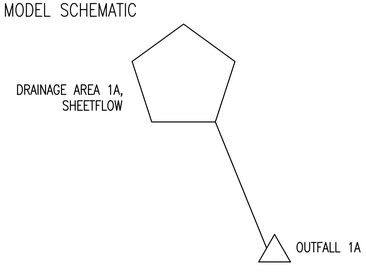
Computed By: KZ *Date:* 25-Jan-24
Checked By: EU *Date:* 25-Jan-24

	Drainage Area (ac)	CN Value	2-Year Flow (cfs)	10-Year Flow (cfs)
Existing Sheet Flow	0.24	61.0	**0.11**	**0.43**
Proposed Sheet Flow	0.24	72.8	**0.33**	**0.74**

	Existing Sheet Flow		Proposed Sheet Flow
2-Year Flow	**0.11**	<	**0.33**
10-Year Flow	**0.43**	<	**0.74**

**Assuming Tc=5 mins*

MODEL SCHEMATIC



REVISIONS		
REV	DATE	DESCRIPTION

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COMMONWEALTH OF VIRGINIA
EDWARD R. UMBRELL
Lic. No. 038388
1/29/2024
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

ROUTING COMPS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-612	
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:	1707908-C-612.dwg	
APPROVED BY	KAS	01/29/24			

DRAINAGE AREA 2

DA 2				
Return Event	$Q_{pre^-outfall}$	$Q_{allowable}$	$Q_{undist.}$	$Q_{post-outfall}$
	CFS	*CFS*	*CFS*	*CFS*
1-year	0.79	0.79	--	0.22
10-year	14.64	14.64	5.76	7.65

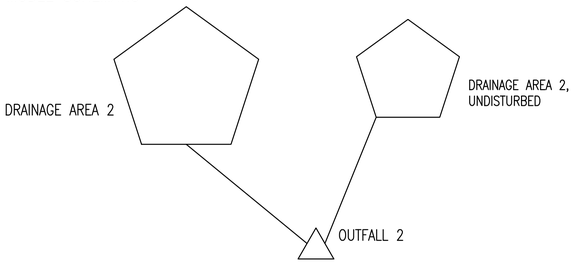
Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
DA2	Post-Development 1 year	1	0.027	12.150	0.22
DA2	Pre-Development 1 year	1	0.137	12.250	0.79
DA2	Pre-Development 10 year	10	0.738	12.150	8.89
DA2	Post-Development 10 year	10	0.143	12.100	2.16
DA2 Uncont. Undist.	Pre-Development 10 year	10	0.468	12.150	5.76
DA2 Uncont. Undist.	Post-Development 10 year	10	0.468	12.150	5.76

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
O-2	Post-Development 1 year	1	0.027	12.150	0.22
O-2	Pre-Development 1 year	1	0.137	12.250	0.79
O-2	Pre-Development 10 year	10	1.206	12.150	14.64
O-2	Post-Development 10 year	10	0.611	12.150	7.65

MODEL SCHEMATIC



DRAINAGE AREA 3

DA 3					
Return Event	$Q_{pre^-outfall}$	$Q_{allowable}$	$Q_{post-culvert}$	$Q_{post-uncont}$	$Q_{post-outfall}$
	CFS	*CFS*	*CFS*	*CFS*	*CFS*
1-year	1.01	1.01	0.73	0.58	1.01
10-year	10.53	10.53	2.19	1.91	3.42

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
DA3	Post-Development 1 year	1	0.068	12.150	0.73
DA3	Pre-Development 1 year	1	0.153	12.200	1.01
DA3	Pre-Development 10 year	10	0.800	12.150	10.53
DA3	Post-Development 10 year	10	0.260	12.150	3.42
DA 3 Uncontrolled	Post-Development 1 year	1	0.043	12.150	0.58
DA 3 Uncontrolled	Post-Development 10 year	10	0.137	12.150	1.91

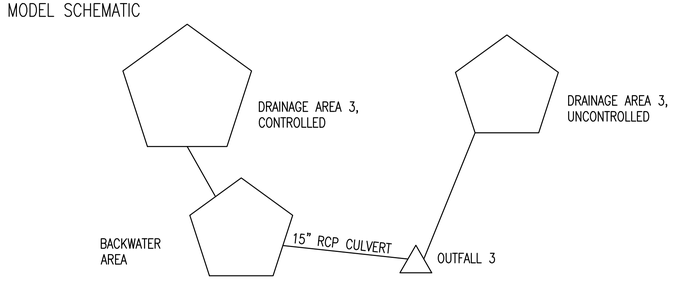
Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
O-3	Post-Development 1 year	1	0.111	12.200	1.01
O-3	Pre-Development 1 year	1	0.153	12.200	1.01
O-3	Pre-Development 10 year	10	0.800	12.150	10.53
O-3	Post-Development 10 year	10	0.396	12.200	3.60

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Backwater (IN)	Post-Development 1 year	1	0.068	12.150	0.73	(N/A)	(N/A)
Backwater (OUT)	Post-Development 1 year	1	0.068	12.250	0.56	388.77	0.003
Backwater (IN)	Post-Development 10 year	10	0.260	12.150	3.42	(N/A)	(N/A)
Backwater (OUT)	Post-Development 10 year	10	0.259	12.300	2.19	389.29	0.032

MODEL SCHEMATIC



DRAINAGE AREA 4

DA 4				
Return Event	$Q_{pre^-outfall}$	$Q_{allowable}$	$Q_{undist.}$	$Q_{post-outfall}$
	CFS	*CFS*	*CFS*	*CFS*
1-year	0.68	0.68	--	0.68
10-year	7.61	7.61	0.71	3.67

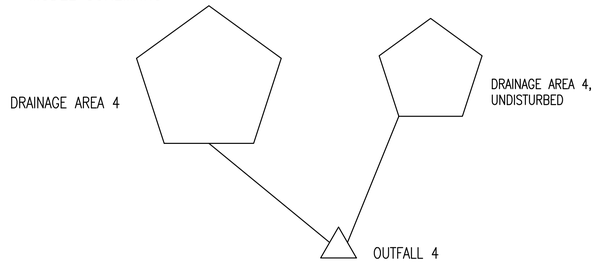
Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
DA4	Pre-Development 1 year	1	0.114	12.250	0.68
DA4	Post-Development 1 year	1	0.053	12.150	0.68
DA4	Pre-Development 10 year	10	0.595	12.150	6.99
DA4	Post-Development 10 year	10	0.204	12.100	2.96
DA4 Uncont. Undist.	Pre-Development 10 year	10	0.047	12.100	0.71
DA4 Uncont. Undist.	Post-Development 10 year	10	0.047	12.100	0.71

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
O-4	Pre-Development 1 year	1	0.114	12.250	0.68
O-4	Post-Development 1 year	1	0.053	12.150	0.68
O-4	Pre-Development 10 year	10	0.642	12.150	7.61
O-4	Post-Development 10 year	10	0.251	12.100	3.67

MODEL SCHEMATIC



DRAINAGE AREA 5

DA 5		
Return Event	$Q_{pre-dev}$	$Q_{post-dev}$
--	*CFS*	*CFS*
1-year	0.01	0.38
10-year	0.21	1.42

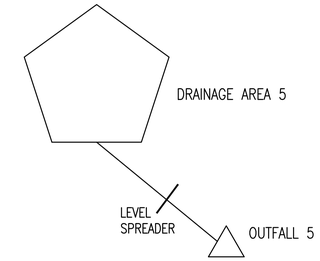
Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
DA5	Pre-Development 1 year	1	0.002	12.500	0.01
DA5	Post-Development 1 year	1	0.026	12.100	0.38
DA5	Pre-Development 10 year	10	0.015	12.100	0.21
DA5	Post-Development 10 year	10	0.088	12.100	1.42

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
O-5	Pre-Development 1 year	1	0.002	12.500	0.01
O-5	Post-Development 1 year	1	0.026	12.100	0.38
O-5	Pre-Development 10 year	10	0.015	12.100	0.21
O-5	Post-Development 10 year	10	0.088	12.100	1.42

MODEL SCHEMATIC



DA 3 BACKWATER AREA ELEVATION–VOLUME TABLE

STAGE VS. STORAGE USING CONIC METHOD				
PROJECT:	Unity Substation DA 3 Backwater Area			
ENGINEER / DATE:	KZ	1/25/2024		
Main Cell				
ELEVATION	AREA	AREA	INCREMENTAL VOLUME	TOTAL VOLUME
(FEET)	(SQ FEET)	(ACRES)	(ACRE-FEET)	(ACRE-FEET)
388.37	0.0	0.000	0.000	0.000
389	2700.7	0.062	0.013	0.013
390	3702.6	0.085	0.073	0.086
391	4530.2	0.104	0.094	0.181
392	5445.0	0.125	0.114	0.295

DRAINAGE AREA 3A SHEETFLOW

Unity Substation
Dewberry
Water Resources Engineering

OUTFALL 3A - Sheet Flow Computations

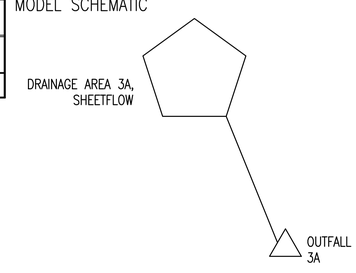
Computed By: *KZ* *Date:* *25-Jan-24*
Checked By: *EU* *Date:* *25-Jan-24*

	Drainage Area (ac)	CN Value	2-Year Flow (cfs)	10-Year Flow (cfs)
Existing Sheet Flow	0.60	60.0	**0.24**	**1.00**
Proposed Sheet Flow	0.55	74.5	**0.83**	**1.81**

	Existing Sheet Flow	>	Proposed Sheet Flow
2-Year Flow	**0.24**	<	**0.83**
10-Year Flow	**1.00**	<	**1.81**

**Assuming Tc=5 mins*

MODEL SCHEMATIC



Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
DA 3A	Post-Development 2 year	2	0.052	12.100	0.83
DA 3A	Pre-Development 2 year	2	0.023	12.150	0.24
DA 3A	Pre-Development 10 year	10	0.067	12.100	1.00
DA 3A	Post-Development 10 year	10	0.113	12.100	1.81

DRAINAGE AREA 4A SHEETFLOW

Unity Substation
Dewberry
Water Resources Engineering

OUTFALL 4A - Sheet Flow Computations

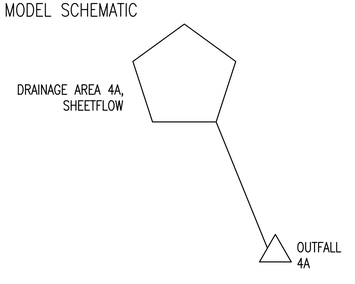
Computed By: *KZ* *Date:* *25-Jan-24*
Checked By: *EU* *Date:* *25-Jan-24*

	Drainage Area (ac)	CN Value	2-Year Flow (cfs)	10-Year Flow (cfs)
Existing Sheet Flow	0.31	57.4	**0.09**	**0.43**
Proposed Sheet Flow	0.31	77.3	**0.54**	**1.12**

	Existing Sheet Flow	>	Proposed Sheet Flow
2-Year Flow	**0.09**	<	**0.54**
10-Year Flow	**0.43**	<	**1.12**

**Assuming Tc=5 mins*

MODEL SCHEMATIC



Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
DA 4A	Post-Development 2 year	2	0.034	12.100	0.54
DA 4A	Pre-Development 2 year	2	0.009	12.150	0.09
DA 4A	Pre-Development 10 year	10	0.030	12.100	0.43
DA 4A	Post-Development 10 year	10	0.070	12.100	1.12

REVISIONS		
REV	DATE	DESCRIPTION

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1/29/2024
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

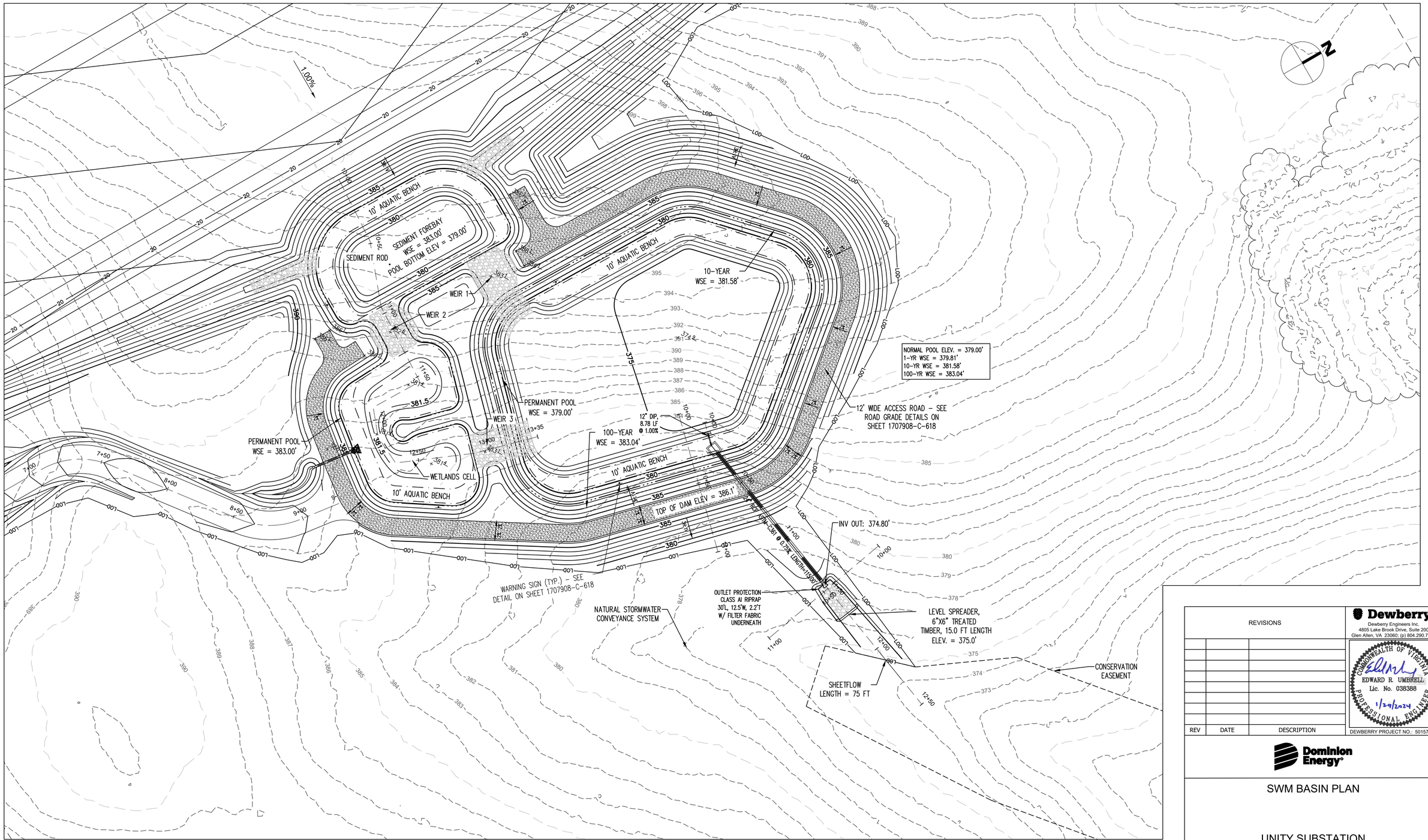
Dominion Energy

ROUTING COMPS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-613	
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:		
APPROVED BY	KAS	01/29/24	1707908-C-613.dwg		

SWM 1 - LVL 2 WET POND PLAN VIEW



NOTE:

1. ALL FILL EMBANKMENTS SHALL BE CONSTRUCTED TO THE 2013 APPENDIX A: EARTHEN EMBANKMENT SPEC PROVIDED BY DEQ
2. REFER BACK TO SEDIMENT BASIN ON 1707908-C-217 FOR CONVERSION SEQUENCE

0' 15' 30' 60'

SCALE: 1" = 30'

REVISIONS		
REV	DATE	DESCRIPTION

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1/29/2024

DEWBERRY PROJECT NO.: 50157950

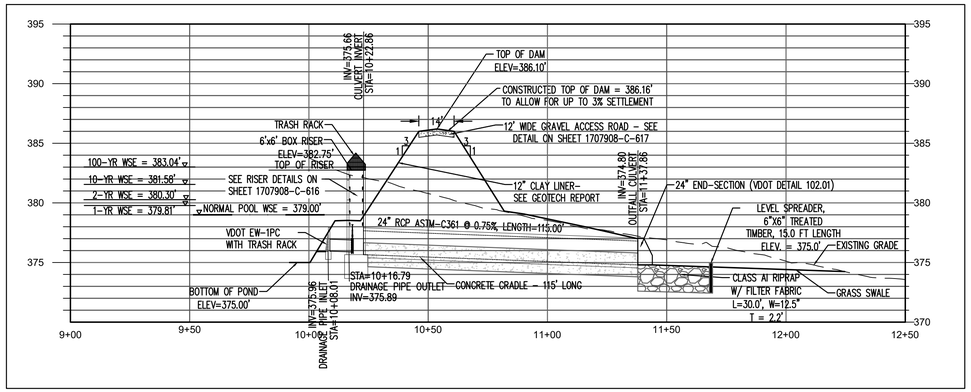
Dominion Energy

SWM BASIN PLAN

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

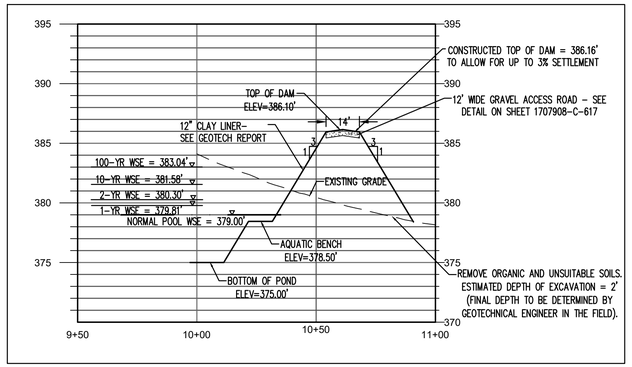
OPERATIONAL REGION			B/M No.		SCALE 1" = 30'
PROJECT	5017950	NAME	DATE	SHEET:	1707908-C-614
DESIGNER		EU/KZ	01/29/24		
PROJECT ENGINEER		EU/KZ	01/29/24	DRAWING:	
APPROVED BY		KAS	01/29/24		1707908-C-614.dwg

SWM 1 - LVL 2 WET POND PROFILE VIEWS



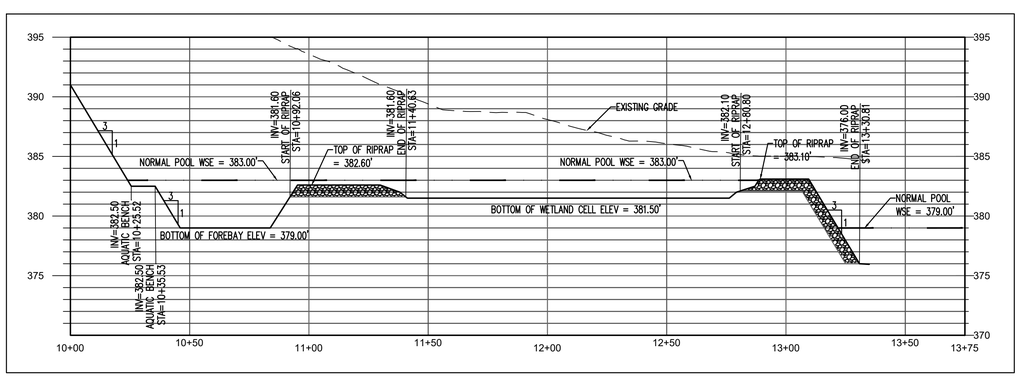
PRINCIPAL SPILLWAY PROFILE

SCALE: 1" = 30' HORIZONTAL
1" = 6' VERTICAL



DAM EMBANKMENT SPILLWAY PROFILE

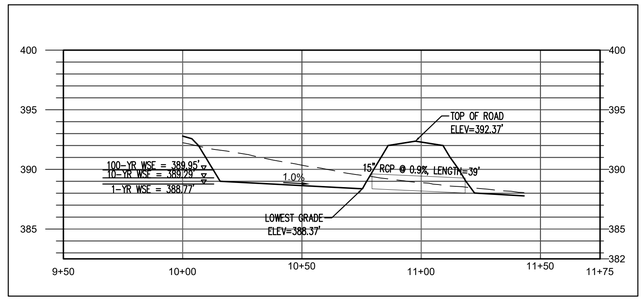
SCALE: 1" = 30' HORIZONTAL
1" = 6' VERTICAL



FOREBAY MICROPOOL PROFILE

SCALE: 1" = 30' HORIZONTAL
1" = 6' VERTICAL

DA 3 - BACKWATER AREA



DA 3 BACKWATER AREA PROFILE VIEW

SCALE: 1" = 30' HORIZONTAL
1" = 6' VERTICAL

SWM 1 RIP-RAP COMPUTATIONS

STRUCTURE	DIA. (IN.)	5*S (FT.) L REQ.	L PROV. (FT.)	5*S(FT.) W REQ.	W PROV. (FT.)	100 YEAR Q (CFS)*	VELOCITY (FPS)	RIP RAP	MIN. "T" (FT.)
STM 1	24	10	30	10	12.5	14.32	4.6	CLASS AI	1.5

*FULL FLOW CAPACITY FOR 24" RCP AT 0.75% SLOPE

NOTE: COMPUTATIONS FOR RIP RAP BASED ON VDOT EC-1. VELOCITY IS FOR 100 YEAR STORM EVENT.

SWM 1 SUMMARY

WET POND (LEVEL 2)							
DRAINAGE AREA	TOP OF DAM	DESIGN 10-YR WSE	DESIGN 100-YR WSE	FREEBOARD (100-YR)	TREATMENT REQUIRED	TREATMENT PROVIDED	PRE-TREATMENT METHOD
(AC)	(FT)	(FT)	(FT)	(FT)	(CF)	(CF)	
15.39	386.00	381.58	383.04	2.96	70102	111275	FOREBAY

OUTLET STRUCTURE - SWM 1						
STRUCTURE TYPE	TOP OF RISER	RISER DIMENSIONS	LOW FLOW ORIFICE INV	LOW FLOW ORIFICE SIZE	MID ORIFICE INV	MID ORIFICE SIZE
	(FT)	(FT)	(FT)	(IN)	(FT)	(SF)
BUILT-IN	382.75	6 X 6	379.00	3	381.25	0.5

SWM 1 DISCHARGES:
1- YEAR = 0.19 CFS
10- YEAR = 1.14 CFS
100- YEAR = 14.32 CFS

SWM 1 WATER SURFACE ELEVATIONS:
1- YEAR = 379.81 FT
10- YEAR = 381.58 FT
100- YEAR = 383.04 FT

VERTICAL SCALE 0' 3' 6' 12'
SCALE: 1" = 6'

HORIZONTAL SCALE 0' 15' 30' 60'
SCALE: 1" = 30'

REVISIONS		
REV	DATE	DESCRIPTION

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1/29/2024

DEWBERRY PROJECT NO.: 50157950

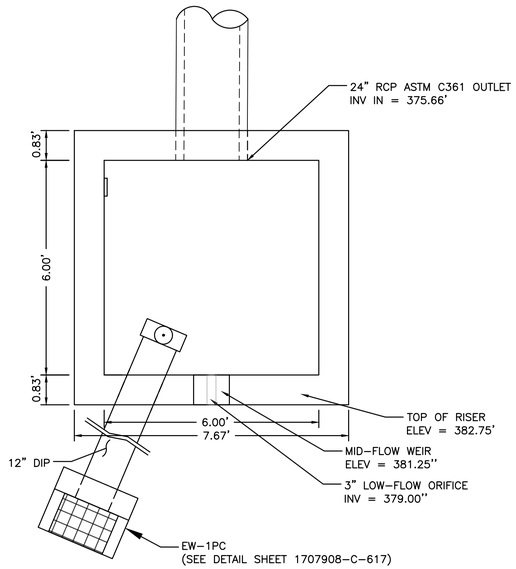
Dominion Energy

SWM BASIN PROFILES

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

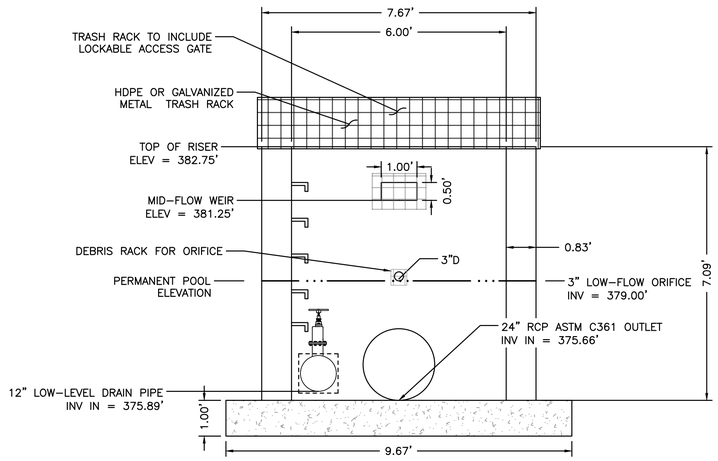
OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT	5017950	NAME	DATE	SHEET:	1707908-C-615
DESIGNER		EU/KZ	01/29/24		
PROJECT ENGINEER		EU/KZ	01/29/24	DRAWING:	
APPROVED BY		KAS	01/29/24		1707908-C-615.dwg

SWM 1 - RISER SCHEMATIC



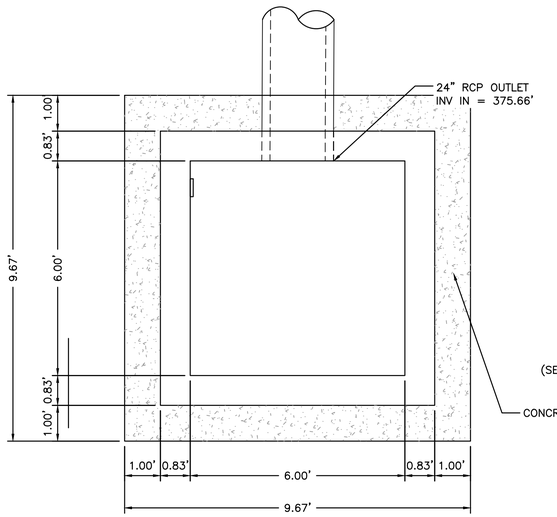
TOP PLAN

N.T.S.



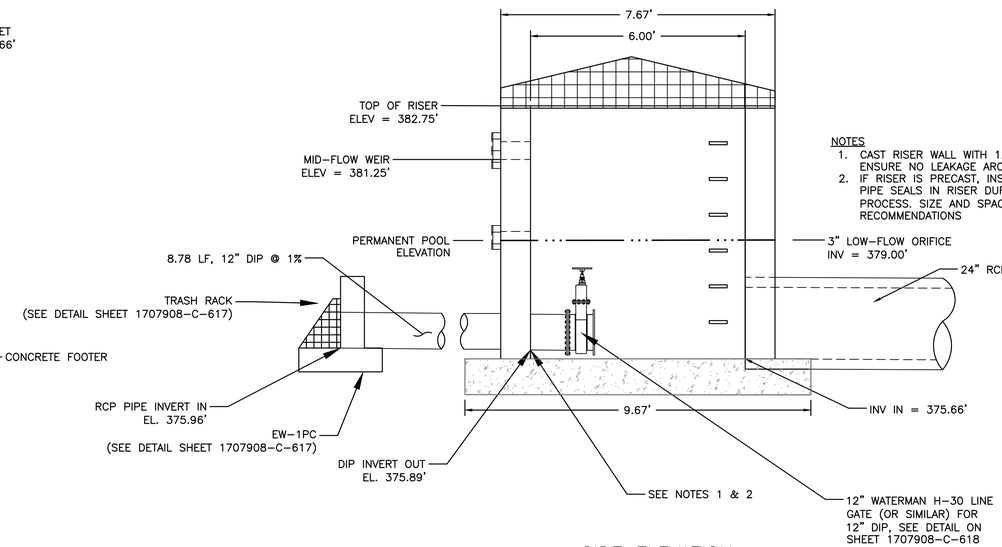
FRONT ELEVATION

N.T.S.



FOUNDATION PLAN

N.T.S.



NOTES
1. CAST RISER WALL WITH 12" DIP IN FIELD TO ENSURE NO LEAKAGE AROUND PIPE
2. IF RISER IS PRECAST, INSTALL LINK-SEAL MODULAR PIPE SEALS IN RISER DURING PRE-CASTING PROCESS. SIZE AND SPACING PER MANUFACTURER'S RECOMMENDATIONS

SIDE ELEVATION

N.T.S.

NORMAL POOL ELEV. = 379.00'
1-YR WSE = 379.81'
10-YR WSE = 381.58'
100-YR WSE = 383.04'

THIS SHEET IS FOR INFORMATION ONLY!!

INFORMATION SHOWN ON THIS SHEET IS FOR HYDRAULIC INFORMATION ONLY AND IS NOT TO BE USED FOR CONSTRUCTION, ONLY HYDRAULIC DIMENSIONS ARE SHOWN.

SEE SHEET 1707908-C-618 FOR BUOYANCY COMPUTATIONS.

REVISIONS		
REV	DATE	DESCRIPTION

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1/29/2024

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

SWM RISER DETAILS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.		SCALE AS SHOWN
PROJECT	5017950	NAME	DATE	SHEET:	1707908-C-616
DESIGNER		EU/KZ	01/29/24		
PROJECT ENGINEER		EU/KZ	01/29/24	DRAWING:	
APPROVED BY		KAS	01/29/24		1707908-C-616.dwg

VDOT CULVERT OUTLET PROTECTION DETAIL
EC-1 – 113.01
https://www.virginiadot.org/business/resources/LocDes/VDOT2016_Road_and_Bridge_Standards/Section100/113_01.pdf

VDOT STORMWATER MANAGEMENT (SWM)
CONCRETE CRADLE DETAILS
SWM-DR – 114.06
https://www.virginiadot.org/business/resources/LocDes/VDOT2016_Road_and_Bridge_Standards/Section100/114_06.pdf

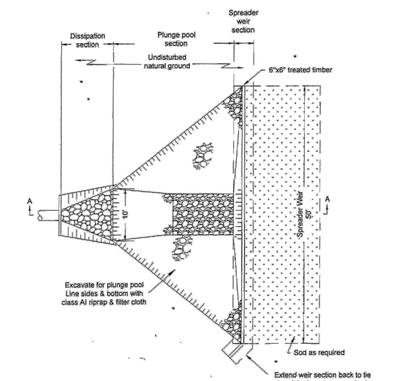
VDOT PRECAST ENDWALL FOR PIPE CULVERTS DETAIL
EW-1 – 101.02
https://www.virginiadot.org/business/resources/LocDes/VDOT2016_Road_and_Bridge_Standards/Section100/101_02.pdf

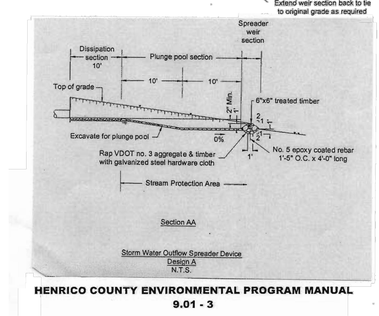
References to specific VDOT Road and Bridge Standards are shown. VDOT no longer allows the insertion of Road and Bridge Standard Drawings in plan assemblies. Contractor shall use specified VDOT Road and Bridge Standards as referenced.

VDOT STANDARD STEP DETAIL
ST-1 – 106.09
https://www.virginiadot.org/business/resources/LocDes/VDOT2016_Road_and_Bridge_Standards/Section100/106_09.pdf

VDOT STORMWATER MANAGEMENT
TRASH RACK FOR SWM DRAINAGE STRUCTURES DETAIL
SWM-DR – 114.08
https://www.virginiadot.org/business/resources/LocDes/VDOT2016_Road_and_Bridge_Standards/Section100/114_08.pdf

VDOT FLARED END SECTION
CONCRETE PIPE CULVERTS DETAIL
ES-1 – 102.01
https://www.virginiadot.org/business/resources/LocDes/VDOT2016_Road_and_Bridge_Standards/Section100/102_01.pdf





HENRICO COUNTY ENVIRONMENTAL PROGRAM MANUAL
9.01 - 3

LEVEL SPREADER DETAIL

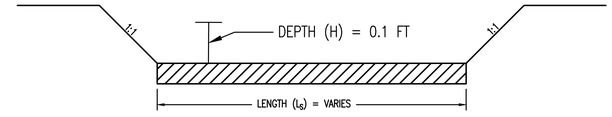
Level Spreader Design Spreadsheet

Step #	Step Description	Units	DA 1*	DA 5
1	10-Year Discharge (Q)	cfs	1.2	1.4
	Output Pipe Size (D)	ft	2	1.25
	10YR Velocity (V) from SWMF Outfall	fps	0.37	1.16
	Outfall Slope (S)	ft/ft	0.035	0.047
	Discharging Land Cover		Small Grains	Small Grains
	Allowable Velocity (Chart)	fps	1.7	1.7
	Is Calculated Above Allowable?		Yes	Yes
2	Verify sheet flow depth less than 0.1 ft	ft	0.10	0.10
3	N-value (n) (from chart)		0.24	0.24
	L_{sf} (Maximum Length of Sheetflow)	ft	78.0	90.3
	Required Sheetflow Length (Clearinghouse)	ft	50.0	--
	Length to down-gradient SW Convenance System	ft	75.0	20.0
4	Discharge from Levelspreader no adverse impacts		Yes	Yes
5	Any necessary remediation		No	No
6	Discharging into conserved forested/open space		Yes	Yes
7	Weir Coefficient (CW) (3.3 if rect.)		3.3	3.3
	Depth of Water Upslope (H) (0.1 ft)	ft	0.10	0.10
	Level Spreader Required Design Length (L_{LS}) (GM 22-2012)	ft	11.0	13.6
	Level Spreader Required Design Length (L_{LS}) (Clearinghouse)	ft	15.0	--
	Level Spreader Actual Length (L_{LS})	ft	15	15
8	DS 10YR Velocity (V) from Level Spreader	fps	0.25	0.32

* Level Spreader is being designed using both the 22-2012 Guidance Memo and the DEQ Stormwater Design Specifications to take credit for water quality treatment

NOTE: LEVEL SPREADERS WERE DESIGNED WITH EQUATIONS FROM, AND IN ACCORDANCE WITH *SECTION 3.305.2, DISCHARGES OF SHEET FLOW FROM LEVEL SPREADERS* OF VA DEQ GUIDANCE MEMO NO. 22-2012 - STORMWATER MANAGEMENT AND EROSION & SEDIMENT CONTROL DESIGN GUIDE. THE DA 1 LEVEL SPREADER WAS DESIGNED BASED ON ADDITIONAL DESIGN CRITERIA OUTLINED IN THE VA DEQ STORMWATER DESIGN SPECIFICATIONS FOR SHEET FLOW TO CONSERVED OPEN SPACE.

LEVEL SPREADER DETAIL



$L_{LS} = Q / C_w \times H^{3/2}$ V = (1.486/n) x $R^{2/3}$ x $S^{1/2}$ (Manning's Equation) $L_{SF} = 100 \times S^{1/2} / n$

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
EDWARD R. UMBRELL
Lic. No. 038388
1/29/2024
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

SWM DETAILS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-617	
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:		
APPROVED BY	KAS	01/29/24	1707908-C-617.dwg		

RED TOP

H-30 LINE GATE

- Iron seats (bronze seats optional)
- Each gate is hydrostatically tested
- 60 feet maximum seating (face) pressure
- 10 feet maximum unseating (back) pressure
- Non-rising stainless steel stems, double leads
- Bronze packing gland nut and lift nut
- Handwheel standard, 2" square operating nut optional
- NEW! Grease fitting on packing gland for continued ease of actuation

H-30-1 Hub End

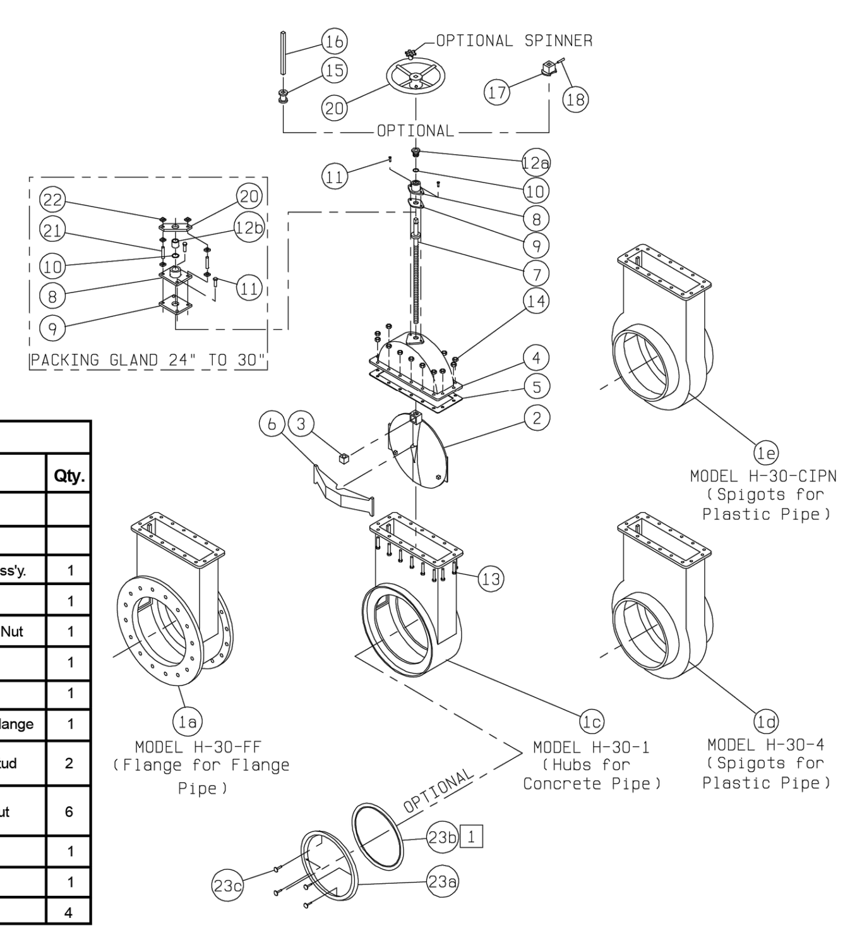
USES:

The Red Top Line Gate is designed for installation in pipe lines to eliminate the use of capped stands or standpipes. It is of heavy construction engineered to withstand constant usage over long periods of time.

FEATURES:

The gate is constructed of cast iron with a non-rising stainless steel screw which has also proven popular in the Waterman Pressure Gate. A screw with the standard Waterman double lead "Acme" type threads is offered. A handwheel is furnished.

The packing gland is made of cast iron with a bronze packing nut which eliminates "freezing" due to rust. A single wrench is required to adjust it.



PARTS LIST					
No.	Name	Qty.	No.	Name	Qty.
1	Body	1	13	Bonnet Bolt	
2	Cover	1	14	Hex Nut	
3	Screw Nut	1	15	Stem Coupling Ass'y.	1
4	Bonnet	1	16	Extension Stub	1
5	Bonnet Gasket	1	17	2" Sq. Operating Nut	1
6	Arch	1	18	Pin	1
7	Screw w/Collar	1	19	Handwheel	1
8	Packing Gland Body	1	20	Pack. Retainer Flange	1
9	Packing Gland Gasket	1	21	Packing Gland Stud	2
10	Packing Gland Packing	2	22	Packing Gland Nut	6
11	Packing Gland Bolt	2	23a	Bronze Seat	1
12a	Packing Gland Nut	1	23b	O-Ring	1
12b	Packing Gland Sleeve	1	23c	Seat Screws	4

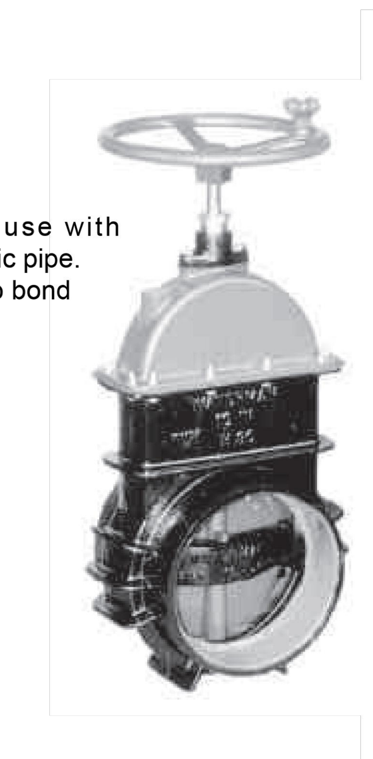
Waterman Industries

1

H-30 LINE GATES

H-30-1 Line Gate (Hub End) for use with concrete pipe.

H-30-4 Line Gate for use with PIP size plastic pipe. Use two part epoxy to bond pipe to spigot.



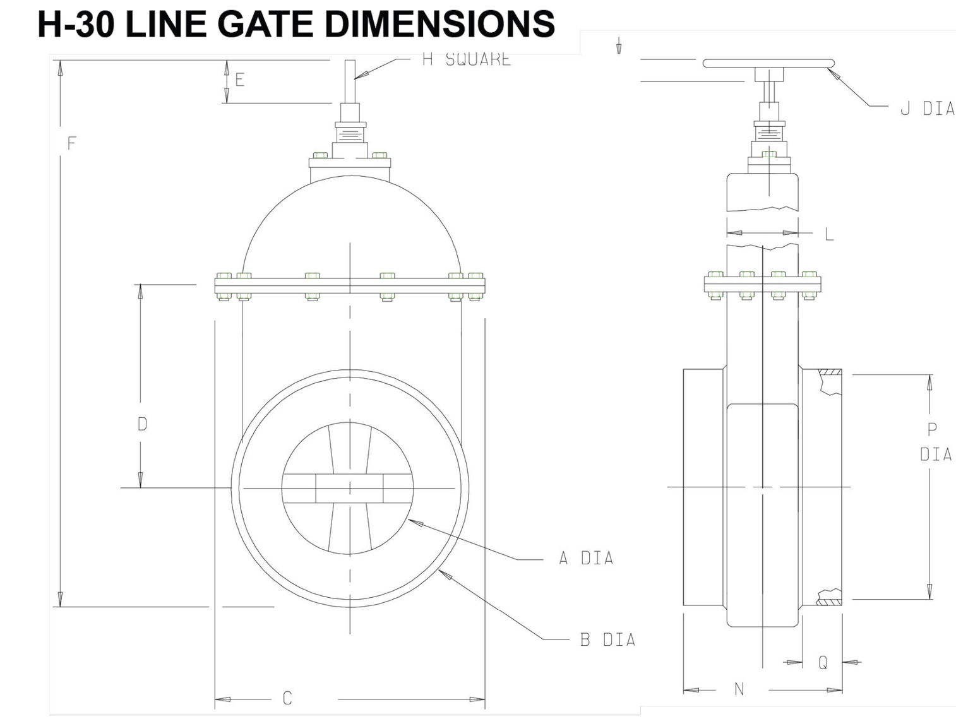
H-30-CIPN Line Gate for use with either PIP or IPS size plastic pipe. Use regular PVC cement to bond pipe to plastic spigots. (Specify PIP or IPS)

H-30-FF Line Gate with flanges drilled to match 25# standard flange or 125# standard flange (optional)

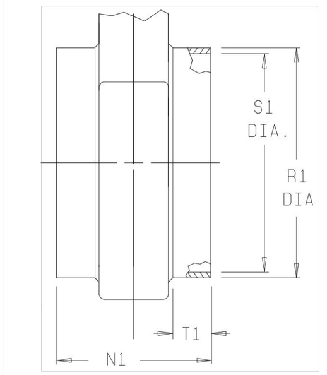
Waterman Industries

2

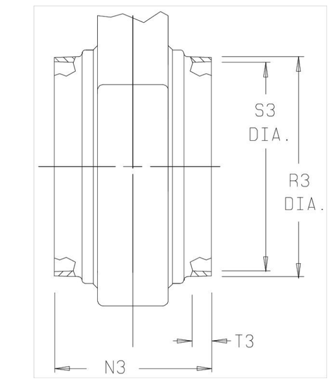
H-30 LINE GATE DIMENSIONS



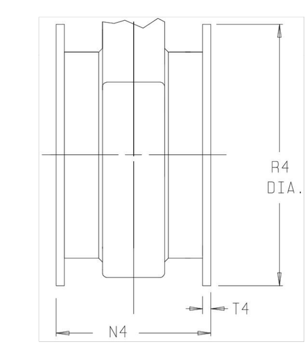
Type 1



Type 4 Frame



Type CIPN Frame



Flanged Frame

GATE DIMENSIONS IN INCHES

VALVE SIZE	A	B	C	D	E	F	H	J	K	L	N	P	Q
6	6	8½	11⅛	8⅝	1⅛	25	⅝	12	2¾	6½			
8	7⅞	11½	12⅞	9⅞	1⅛	27⅞	⅝	12	2¾	6½	6⅝	11⅛	1⅛
10	10	14⅛	14⅜	12	1⅛	31½	⅝	12	2¾	6	6¾	13 9/16	1⅜
12	12	17⅛	17 3/16	13½	1⅛	36¼	⅝	12	2¾	7	7½	16⅝	1 7/16
14	13½	18⅞	19½	15¾	1⅛	39¾	⅝	12	2¾	8⅛	9½	18⅛	1⅞
14 x 15	13½	20 5/16	19½	15¾	1⅛	40½	⅝	12	2¾	8⅛	13½	19.00 18.75 [1]	3⅝
16	16	21¾	21⅛	18⅞	1⅛	45	¾	14	3⅛	8⅜	9⅝	21⅛	1⅞
16 x 18	16	24	21⅛	18⅞	1⅛	46⅜	¾	14	3⅛	8⅜	13½	23.14 21.88 [1]	3.50 3.84 [1]
18	18	23⅝	23⅝	20⅛	1⅛	48⅞	¾	14	3⅛	8½	9⅞	23	1 15/16
20	20	27⅞	26¼	21	1 3/16	53¾	⅞	14	3⅛	10½	11½	27¼	2
20 x 24	20	30⅞	26¼	21	1 3/16	55¼	⅞	14	3⅛	10½	15½	29.89 [1]	3.97
24	24	32⅝	32¼	27¼	2⅛	71¼	1¼	18	3⅛	12	13	31¼	2 3/16
30	30	43	40⅝	34¾	4⅛	87⅛	1¼	24	2⅛	10¾	20¾	41 5/16	4¾

GATE DIMENSIONS IN INCHES

VALVE SIZE	TYPE 4 FRAME I.D. PLASTIC PIPE				TYPE CIPN FRAME O.D. IPS & PIP PIPE				FLANGED FRAME		
	N1	R1	S1	T1	N3	R3 [2]	S3 [3]	T3	N4	R4	T4
6	12¼	5 15/16	5⅜	3⅝	11⅞	6.45	6.16	2.50	8	11	¾
8	13	7 15/16	7⅜	3½	12¼	8.64	8.18	3.00	8½	13½	¾
10	13	9 15/16	9¼	3½	11⅞	10.77	10.22	3.00	11¼	16	⅞
12	14½	11 15/16	11⅜	3½	14⅞	12.78	12.27	3.00	12	19	1
14	15	13⅞	13 3/16	3½					13	21	1⅛
14 x 15	15	14⅞	14 3/16	3½							
16	14⅝	15⅞	15 3/16	3½					13	23½	1⅛
16 x 18											
18	14⅞	17⅞	17⅛	4½					14	25	1⅛
20	16½	19⅞	19½	4½					15¾	27½	1¼
20 x 24											
24									15¾	32	1¼
30									21¼	38¾	1¼

[1] Nominal dimensions for SRG (Shafter Rubber Gasket) and pipe.

[2] Nominal dimensions for IPS plastic pipe.

[3] Nominal dimensions for 50 and 100 ft. PIP plastic pipe.

Waterman Industries

3

VDOT SOIL STABILZATION MAT
EC-3 – 113.03

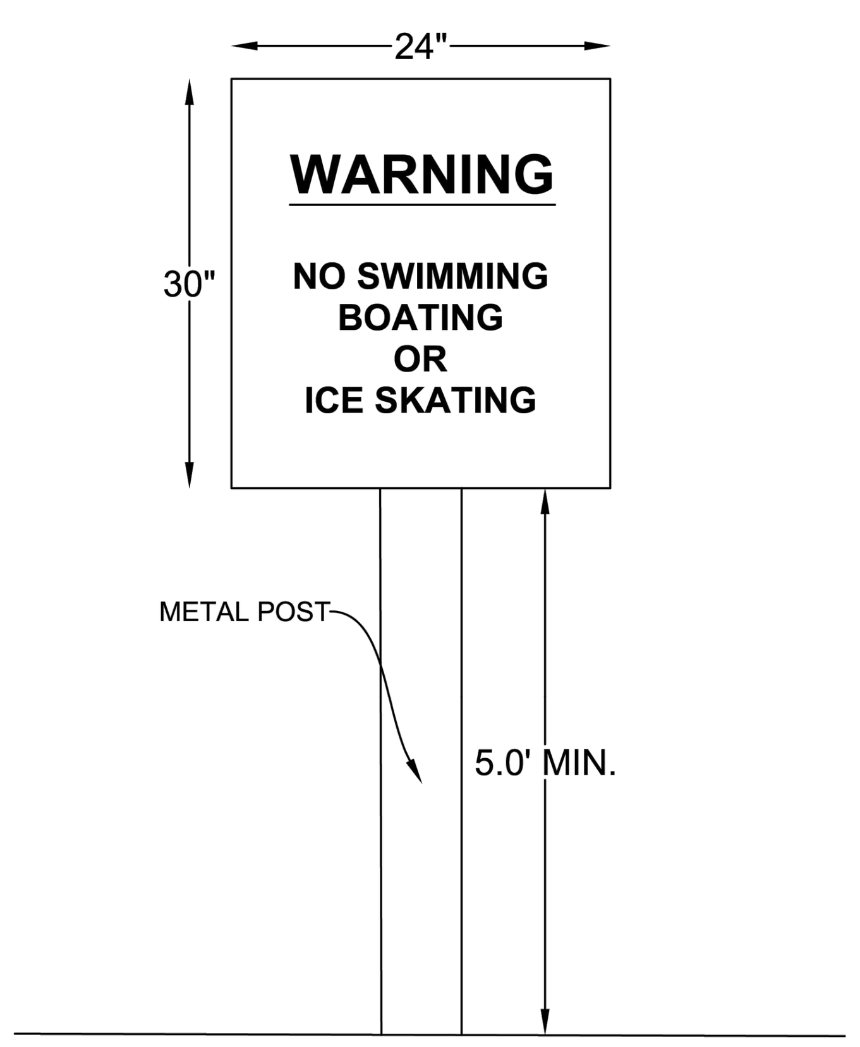
https://www.virginiadot.org/business/resources/LocDes/VDOT2016_Road_and_Bridge_Standards/Section100/113_03.pdf

VDOT STORMWATER MANAGEMENT (SWM)
DEBRIS RACK DETAILS
SWM-DR – 114.05

https://www.virginiadot.org/business/resources/LocDes/VDOT2016_Road_and_Bridge_Standards/Section100/114_05.pdf

EXHIBIT 20

1. SIGNS SHALL BE FABRICATED AS SHOWN BELOW IN **REFLECTIVE ORANGE WITH BLACK VINYL LETTERING.**
2. SIGNS ARE 24 INCHES WIDE AND 30 INCHES HIGH, ON 0.08 ALUMINUM SIGN BLANKS.
3. SIGNS MAY BE BOLTED TO SWM FACILITY OR PLACED ON A METAL POST, WITH A MINIMUM DISTANCE OF FIVE FEET FROM THE BOTTOM OF THE SIGN TO THE GROUND.
4. POSTS SHALL BE GALVANIZED STEEL U CHANNEL (2 LBS/FT).

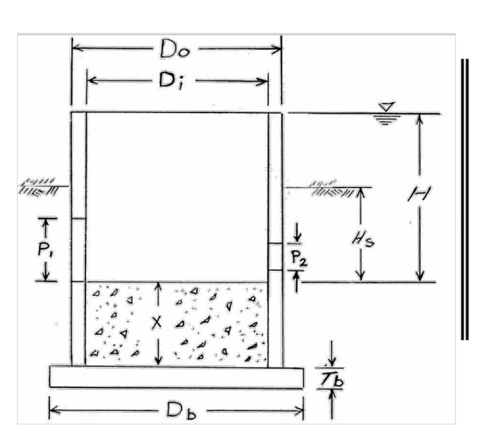


SIGNAGE FOR WET SWM/BMP FACILITIES

Adopted December 3, 2019 | Exhibit 20 | Effective February 3, 2020

RECTANGULAR RISER BUOYANCY COMPUTATIONS

PROJECT: **Unity Sub Station** ENGINEER / DATE: KZ/07/24/2023



Dimensions in Feet

Wo =	7.67	Lo =	7.67
Wi =	6.00	Li =	6.00
Bw =	9.67	Bl =	9.67
Tb =	1.00		
H =	7.09		
Hs =	2.84		
X=	0		

Terms not in Diagram	
Wo	Outside Width
Lo	Outside Length
Wi	Inside Width
Li	Inside Length
Bw	Base Width
Bl	Base Length

Weight of Water Displaced = 31835.16 pounds

Weight of Concrete = 40584.73 pounds

Weight of Soil on Footing = 3701.85 pounds

Factor of Safety = 1.39

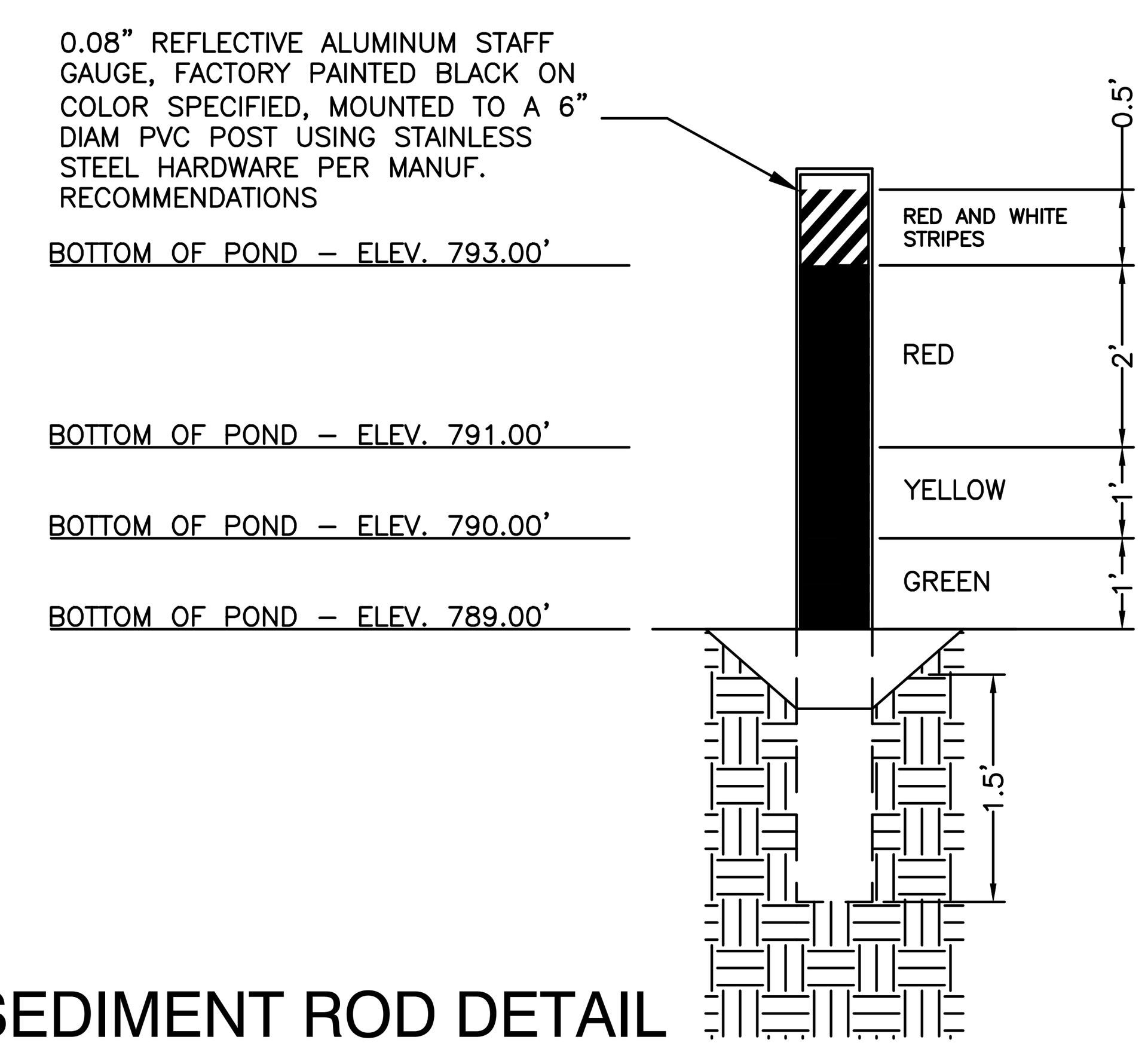
want 1.25 FS

Volume of Concrete

Riser	254.9 CF
Drain Pipe	-0.7 CF
Culvert	-2.6 CF
Circular Orifice	-0.02 CF
Rect. Orifice	-0.42 CF
	19.3 CF
	270.56 CF
x	150 lb/CF
weight of concrete	40584.73 pounds

NOTE: This bouyancy computation assumes that once the water exceeds 7.09 feet in height (H) it will begin flowing over the riser and begin to oppose the buoyancy force. Thus the maximum buoyancy occurs at this height.

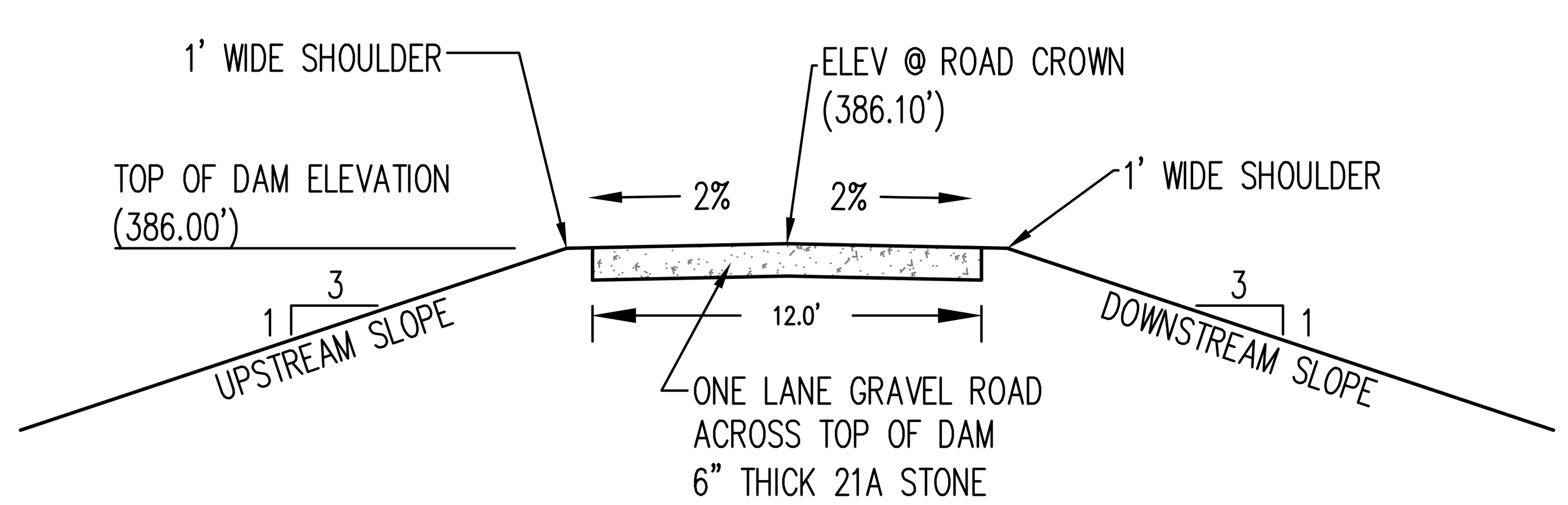
FORMULAS:
Weight of Water Displaced =(Lo*Wo*H+Bl*Bw*Tb)*62.4
Weight of Concrete =((Lo*Wo-Li*Wi)*H+Weir 2(L*H*Tw)+Weir 3(L*H*Tw)+(Bl*Bw*Tb)-PI/4*D^2*Tw-Wc*Hc*Tc)*150
Weight of Soil on Footing =N/A
Factor of Safety =(Wt. Concrete) / Wt. Water Displaced



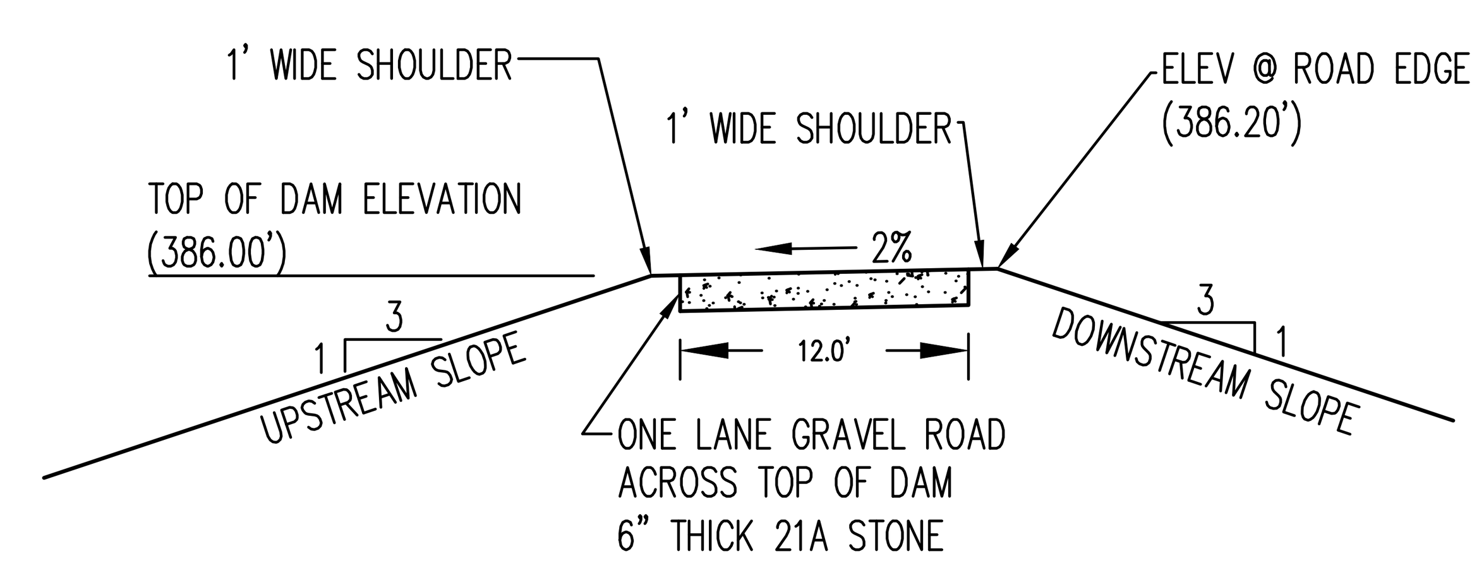
SEDIMENT ROD DETAIL

SCALE: 1" = 2'

DAM TOP ACCESS ROAD DETAIL #1

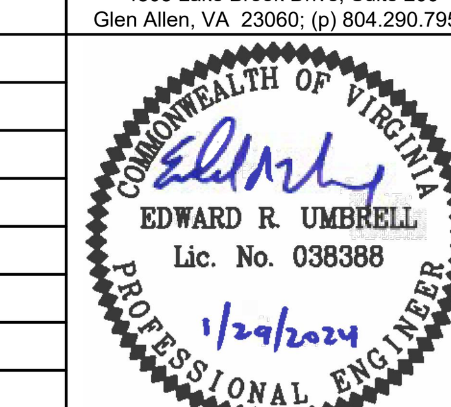


DAM TOP ACCESS ROAD DETAIL #2



REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957



DEWBERRY PROJECT NO.: 50157950

Dominion Energy

SWM DETAILS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.		SCALE	AS SHOWN
PROJECT	5017950	NAME	DATE	SHEET: 1707908-C-618		
DESIGNER		EU/KZ	01/29/24			
PROJECT ENGINEER		EU/KZ	01/29/24	DRAWING: 1707908-C-618.dwg		
APPROVED BY		KAS	01/29/24			

GENERAL NOTES:

1. ALL PLANT MATERIALS SHALL BE SPECIFIED TO BE EQUAL TO OR BETTER THAN THE STANDARDS FOR NURSERY STOCK, BY THE AMERICAN NURSERY AND LANDSCAPERS ASSOCIATION (ANLA).

2. TREES AND SHRUBS SHALL BE NURSERY GROWN, UNLESS OTHERWISE APPROVED, AND SHALL BE HEALTHY AND VIGOROUS PLANTS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUN-SCALD, INJURIES, ABRASIONS OF THE BARK, PLANT DISEASES, INSECT PEST EGGS, BORERS AND ALL FORMS OF INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS, AS DETERMINED BY THE DIRECTOR OF PUBLIC WORKS. PLANTS SHALL BE IN ACCORDANCE WITH THE CURRENT AMERICAN NURSERY AND LANDSCAPE ASSOCIATION AND CONFORM IN GENERAL TO REPRESENTATIVE SPECIES.

3. PLANT MEASUREMENTS: ALL PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED IN THE PLANT SCHEDULE OF THE LANDSCAPE PLAN. ALL PLANT SIZES SPECIFIED IN THE PLANS SHALL GENERALLY BE THE MEDIAN FOR THE SIZE RANGES INDICATED IN THE ANLA STANDARDS AND, AT A MINIMUM, SHALL COMPLY WITH THE FOLLOWING.

A. CALIPER MEASUREMENTS SHALL BE TAKEN SIX (6) INCHES ABOVE GRADE FOR TREES UNDER FOUR (4) INCHES CALIPER, AND TWELVE (12) INCHES ABOVE GRADE FOR TREES FOUR (4) INCHES IN CALIPER AND OVER.

B. MINIMUM BRANCHING HEIGHT FOR ALL SHADE TREES SHALL BE SIX (6) FEET.

C. MINIMUM SIZE FOR PLANTING LARGE DECIDUOUS TREES SHALL BE TWO TO TWO AND ONE-HALF (2-2½) INCH CALIPER, TWELVE (12) FEET TO FOURTEEN (14) FEET IN HEIGHT.

D. MINIMUM SIZE FOR PLANTING ALL OTHER DECIDUOUS TREES SHALL BE ONE TO ONE AND ONE-HALF (1-1½) INCH CALIPER, SIX (6) FEET TO EIGHT (8) FEET IN HEIGHT.

4. PLANTS SHALL BE PROTECTED DURING DELIVERY TO PREVENT DESICCATION OF LEAVES.

5. INSOFAR AS IS PRACTICABLE, TREES AND SHRUBS SHALL BE PLANTED ON DAY OF DELIVERY. IF THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT UNPLANTED TREES BY KEEPING THEM IN SHADE, WELL PROTECTED WITH SOIL, MULCH OR OTHER ACCEPTABLE MATERIAL AND SHALL KEEP TREES WELL WATERED. TREES AND SHRUBS SHALL NOT REMAIN UNPLANTED FOR MORE THAN TWO (2) WEEKS.

6. ALL TREES AND SHRUBS SHALL BE PLANTED IN SUCH A MANNER AS TO ENSURE THEIR SURVIVAL. THIS SHALL INCLUDE THE PLANTING OF INTACT BALLS, PLANTING AT PROPER DEPTH, PROPERLY BACKFILLING AND WATERING, AND CONSTRUCTION OF A PLANTING SAUCER. ALL PLANTING AREAS SHALL CONTAIN SOILS SUITABLE FOR PLANTING. SOILS SHALL BE CLEAN AND FREE OF ALL CONSTRUCTION MATERIALS. (SEE PLANTING PROCEDURES FOR TREES AND PLANTING PROCEDURES FOR SHRUBS IN THE LATEST EDITION OF LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE, WASHINGTON METROPOLITAN AREA, PREPARED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS FOR ADEQUATE SPECIFICATIONS.)

7. ANY ROPE OR WIRE BINDING THE BALL SHALL BE CUT PRIOR TO THE CONCLUSION OF BACKFILLING OPERATIONS TO PREVENT GIRDLING OF THE TREE TRUNK.

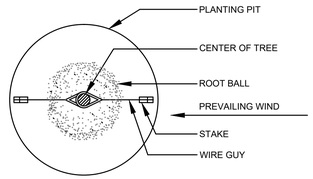
8. IF A NONBIODEGRADABLE MATERIAL IS USED AROUND THE BALL, IT SHALL BE COMPLETELY REMOVED PRIOR TO BACKFILLING.

9. ALL AREA WITHIN THE HIGH MARSH AND LOW MARSH LANDSCAPING SHALL BE COVERED BY COIR FIBER MATTING AND SECURED WITH LANDSCAPING BIODEGRADABLE (NON-METALLIC) STAPLES (MIN. 4"-6" STAPLES).

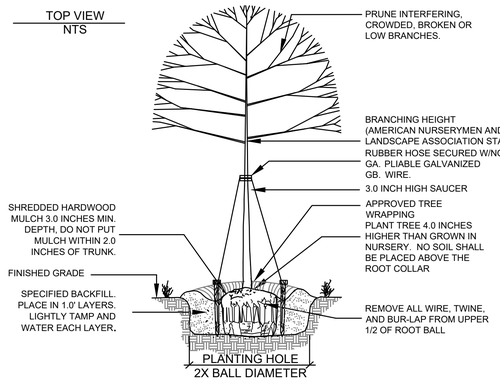
10. WHEN THE HIGH MARSH SEED MIX IS APPLIED, MIX WITH TEMPORARY SEED MIX TO HELP STABILIZE THE MIX UNTIL IT HAS HAD TIME TO GERMINATE (UNLESS THE MIX IS PRE-GERMINATED).

11. CONTRACTOR IS SOLELY RESPONSIBLE TO PROVIDE ONLY THE PLANTS SPECIFIED IN THIS PLAN SET. PLANT CULTIVARS SHALL NOT BE ACCEPTED WITHOUT PRIOR WRITTEN APPROVAL FROM PROJECT ENGINEER.

THIS SHEET IS FOR LANDSCAPE PURPOSES ONLY!!

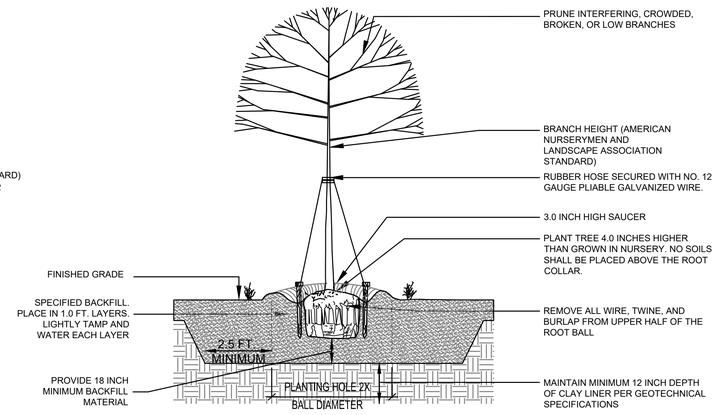


TOP VIEW
NTS



TYPICAL SHADE TREE PLANTING DETAIL

NOT TO SCALE



TYPICAL SHADE TREE PLANTING DETAIL - WETLAND BERMS

NOT TO SCALE

SEEDING NOTES:

A. GENERAL: THIS WORK SHALL CONSIST OF FURNISHING, TRANSPORTING, STOCKPILING, AND INSTALLING ALL HERBACEOUS PERMANENT AND TEMPORARY SEEDING.

B. ALL AREAS WILL BE SEEDED WITH THE SEED MIXES IN THE APPROPRIATE ZONES AS SPECIFIED IN THE SEEDING PLANS.

C. ALL SEED AND SEED VARIETIES SHALL BE FREE FROM STATE AND FEDERAL PROHIBITED NOXIOUS WEED SEEDS LISTED AS ALIEN INVASIVE SPECIES BY THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION NATURAL HERITAGE PROGRAM, THE US DEPARTMENT OF AGRICULTURE AND THE MID-ATLANTIC EXOTIC PEST PLANT COUNCIL.

D. DO NOT USE: LOLIUM PERENNES, PERENNIAL RYEGRASS, ERAGROSTIS CURVULA, WEEPING LOVEGRASS, OR LESPEDEZA STIPULACEA (OR L. CUNEATE), CHINESE LESPEDEZA.

E. STORAGE AND HANDLING: SEED STORAGE SHOULD FOLLOW THE JAMES RULE (JAMES HARRINGTON): RELATIVE HUMIDITY + TEMPERATURE IN DEGREES FAHRENHEIT, MUST BE EQUAL TO OR LESS THAN 100 DEGREES

F. ALL NATIVE SEED MIXES MUST BE OBTAINED FROM ERNST CONSERVATIONS SEEDS OF MEADVILLE, PA OR AN OWNER APPROVED ALTERNATE VENDOR. THE ERNMX-865 SEED MIX SHOULD BE APPLIED AT 60LBS PER ACRE. THE ERNMX-128 MIX SHOULD BE APPLIED AT 20LBS PER ACRE.

G. INSTALLATION

1. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDED IN ACCORDANCE WITH THE PLANTING PLANS AND SCHEDULES. THE HERBACEOUS PERMANENT SEEDING IS SPECIFIED ON THE COMPOSITION AND PLANTING SCHEDULES IN THE CONTRACT DOCUMENTS. AREAS NOT DISTURBED, SHALL NOT BE SEEDED.
2. PRIOR TO SEEDING CONTRACTOR SHALL VERIFY THAT ALL AREAS TO BE SEEDED SHALL CONFORM TO THE FINISHED GRADES AS SPECIFIED ON THE PLANS. ALL GULLIES, WASHES OR DISTURBED AREAS THAT DEVELOP SUBSEQUENT TO FINAL DRESSING SHALL BE REPAIRED PRIOR TO SEEDING.
3. PERMANENT SEEDING SHALL BE DONE BETWEEN AUGUST 15 AND JUNE 15.
4. SEEDING SHALL BE ACCOMPLISHED BY USING A BROADCASTING OR USE OF A TRUAX TYPE SEED DRILL. ANY ALTERNATIVE SEEDING METHODS MUST BE APPROVED BY OWNER PRIOR TO SEEDING. BROADCAST SPREADERS MAY BE USED TO SOW COVER CROPS. SEED INSTALLED BY A BROADCAST SPREADER SHALL BE CAPABLE OF PLACING SEED AT THE SPECIFIED RATE.
5. IF SEED DRILLING IS USED, IT MUST BE WITH A TRUAX TYPE SEED DRILL INTENDED FOR NATIVE SEED MIXES. ALL SEEDING EQUIPMENT SHALL BE CALIBRATED BEFORE APPLICATION TO THE SATISFACTION OF OWNER SO THAT THE MATERIAL IS APPLIED ACCURATELY AND EVENLY TO AVOID MISSES AND OVERLAPS.
6. THE SPECIFIED HERBACEOUS PERMANENT SEED MIX SHALL BE INSTALLED WITH SPECIFIED COVER CROP AND SEEDED AT THE RATES SPECIFIED IN THE CONTRACT DOCUMENTS.
7. ALL SEED MIXES INSTALLED USING SEED DRILLS SHALL BE APPLIED ON TOP OF THE PREPARED AND/OR COMPOSTED SEEDING AREA IN TWO DIFFERENT DIRECTIONS.
8. FOLLOWING BROADCAST SEEDING, THE CONTRACTOR SHALL RAKE THE AREA TO MIX THE SEED MIX WITH THE TOP ONE INCH (1 INCH) OF PREPARED SOIL.
9. THE CONTRACTOR SHALL THEN COVER THE SEEDED AREAS WITH STRAW MULCH AT A RATE OF 2 TONS PER ACRE PRIOR TO INSTALLING MATTING.
10. COVER CROPS SHALL CONSIST OF THE FOLLOWING.

1. SEPT 1 - FEB 15: CEREAL RYE (SECALE CEREALE)
2. FEB 15 - MAY 1: OATS (AVENA SETIVA)
3. MAY 1 - SEPT 1: ANNUAL RYE (LOLIUM MULTIFLORUM)

ADDITIONAL NOTES - LOW MARSH PLUGS:

A. GENERAL:

1. THIS WORK SHALL CONSIST OF PROVIDING, INSTALLING, WATERING AND MAINTAINING COMMERCIALLY SUPPLIED HERBACEOUS PLANT MATERIAL AS SPECIFIED IN THE CONTRACT DOCUMENTS.

2. ALL PLANT MATERIAL WILL MEET THE SPECIFICATIONS AS DEFINED BY CONTRACT DOCUMENTS. UNLESS OTHERWISE SPECIFIED, THE MINIMUM SIZE FOR PLANT MATERIAL UNDER THIS SECTION SHALL CONSIST OF EITHER

a. 4-INCHES (2.2 INCHES WIDE, 4 INCHES DEEP, 10.07 CUBIC INCHES ROOT VOLUME, 32 PLANTS PER TRAY) OR
b. 5-INCHES (2 INCHES WIDE, 5 INCHES DEEP, 11.9 CUBIC INCHES ROOT VOLUME, 50 PLANTS PER TRAY)
c. NOTE THAT VERNALIZED PLUGS ARE PREFERRED FOR SPRING PLANTING AND IS A BEST PRACTICE WHICH HARDENS THE PLANTS USUALLY OVER WINTER SO THAT THEY WILL BE BETTER ADAPTED TO SITE CONDITIONS AND THEREFORE BE HARDIER AND SURVIVE BETTER.

3. SUBSTITUTIONS FOR ANY OTHER PLUG SIZE WILL REQUIRE WRITTEN APPROVAL OF THE OWNER PRIOR TO DELIVERY ON SITE.

4. PLANT MATERIALS SHALL BE NURSERY GROWN UNLESS OTHERWISE OWNER APPROVED AND SHALL BE HEALTHY AND VIGOROUS. PLANTS SHALL BE FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUN-SCALD, INJURIES, ABRASIONS, DISEASES, INSECT PESTS, AND FORMS OF INFESTATIONS OR OBJECTIONABLE DISFIGUREMENT AS DETERMINED BY THE OWNER.

B. DELIVERY, STORAGE AND HANDLING:

1. PLANTS SHALL BE PROTECTED DURING DELIVERY TO PREVENT DESICCATION OF LEAVES.
2. PLANTS SHOULD BE PLANTED ON DAY OF DELIVERY. IF THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT UNPLANTED PLANTS BY KEEPING THEM IN SHADE, WATERED AND PROTECTED.
3. PLANTS SHALL NOT REMAIN UNPLANTED FOR MORE THAN TWO WEEKS, SHOULD NOT SHOW SIGNS OF STRESS BEFORE PLANTING.
4. UNINSTALLED PLANTS WILL BE SUBJECT TO RE-INSPECTED AND MAY BE REJECTED IF THEY HAVE DETERIORATED.

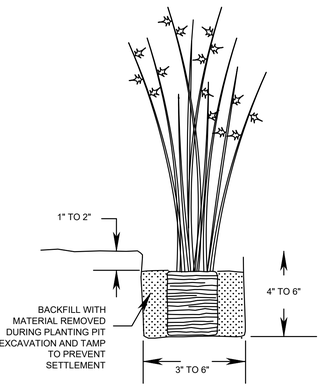
C. INSTALLATION:

DRY CONDITIONS:

i. PLUGS SHALL BE INSTALLED AS DIRECTED IN THE CONTRACT DOCUMENTS.
ii. PLUGS WILL BE ANCHORED SO THAT THEY WILL NOT FLOAT WHEN THE POOL AREA BECOMES INUNDATED (BIO-DEGRADABLE STAPLES).
iii. IF POOL IS EMPTY, WATER THE PLUGS IMMEDIATELY AFTER PLANTING PER ABOVE.
iv. ADDITIONAL WATERING MAY BE REQUIRED IF THE POOL IS NOT TO BE FILLED WITHIN 48 HOURS OF PLANTING.
v. NOTIFY OWNER OF ALL WATERING EVENTS.
vi. SUPPLY, INSTALL AND MAINTAIN GOOSE FENCING AS NEEDED TO PROTECT PLANTS IN PONDED AREAS FROM DISTURBANCE FROM AQUATIC BIRDS.

WET CONDITIONS:

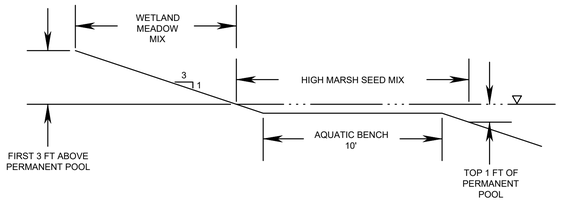
i. PLUGS INSTALLED IN WET CONDITIONS IN PERMANENT POOLS SHALL BE PLANTED AS PER THE PROJECT DOCUMENTS OR IN 12 INCHES OF WATER OR LESS AS DIRECTED BY THE OWNER.
ii. PLUGS INSTALLED IN WET CONDITIONS IN TEMPORARY POOLS SHALL BE INSTALLED AS DETAILED IN THE CONTRACT DOCUMENTS AND ANCHORED SO THAT THEY WILL NOT FLOAT AWAY WHILE INUNDATED (BIO-DEGRADABLE STAPLES).
iii. SUPPLY, INSTALL AND MAINTAIN GOOSE FENCING AS NEEDED TO PROTECT PLANTS FROM DISTURBANCE FROM AQUATIC BIRDS.



1) CUT LINEAR SLITS IN ORGANIC CONTAINER TO FACILITATE ROOT PENETRATION. IF CONTAINER IS NON-ORGANIC, REMOVE COMPLETELY.
2) CONTRACTOR TO UTILIZE BIODEGRADABLE STAPLE FOR PLUGS. WOODEN STAKES SHALL NOT BE USED.

TYPICAL HERBACEOUS PLUGS

NOT TO SCALE



CROSS SECTION - AQUATIC BENCH PLANTINGS

NOT TO SCALE

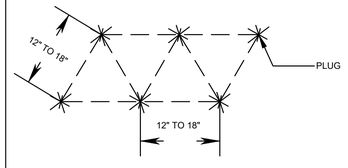
LOW MARSH PLUGS:

SCHEDULE

SCIENTIFIC NAME	COMMON NAME	SIZE
Carex stricta	TUSSOCK SEDGE	#SP 2 CONTAINER
Eupatorium purpureum	JOE PYE WEED	#SP 2 CONTAINER
Hibiscus moscheutos	MARSH HIBISCUS	#SP 2 CONTAINER
Juncus effusis	COMMON RUSH	#SP 2 CONTAINER
Peltandra virginica	ARROW ARUM	#SP 2 CONTAINER
Pontederia cordata	PICKEREL WEED	#SP 2 CONTAINER
Scripus tabernaemontani	SOFT STEM BULRUSH	#SP 2 CONTAINER

NOTES

1) TOTAL QUANTITY OF PLUGS TO BE PROVIDED = 1,322
2) ALL SPECIES LISTED TO BE EQUALLY REPRESENTED IN PLANTED INSTALLATION
3) PLANT PLUGS IN GROUPINGS OF 3-5 LIKE SPECIES 12-18-INCHES ON CENTER UNLESS PLANT SCHEDULE OR LANDSCAPE ARCHITECT DIRECTS OTHERWISE (SEE EXAMPLE DIAGRAM BELOW). PLUG SPACING MAY VARY WITH SPECIES. LIKE GROUPING SPECIES SHALL BE A MINIMUM OF 24-INCHES FROM EACH OTHER.
4) PLUG QUANTITIES MAY BE FIELD ADJUSTED WITH APPROVAL FROM THE LANDSCAPE ARCHITECT TO ALIGN WITH QUANTITIES AVAILABLE PER FLAT AT THE TIME OF PURCHASE.
5) PLUGS SHALL BE INSTALLED MARCH 15 - MAY 31 OR SEPTEMBER 1 - NOVEMBER 15



PLUG PLANTING DETAIL

NOT TO SCALE

REVISIONS		
REV	DATE	DESCRIPTION

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1/29/2024
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

SWM LANDSCAPE DETAILS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-619	
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING:	1707908-C-619.dwg	
APPROVED BY	KAS	01/29/24			

LEGEND:

PROP. PLANT TAG- QUANTITY KEY — XXX / XX

PLANT SCHEDULE					
KEY	QTY	BOTANICAL NAME	COMMON NAME	REMARKS	SIZE
SHADE TREES					
BN	9	*Betula nigra*	river birch	B&B/Multi-Stem	6-8'HT

THIS SHEET IS FOR LANDSCAPE PURPOSES ONLY!!

(FOR LANDSCAPE DETAILS SEE SHEET 1707908-C-619)

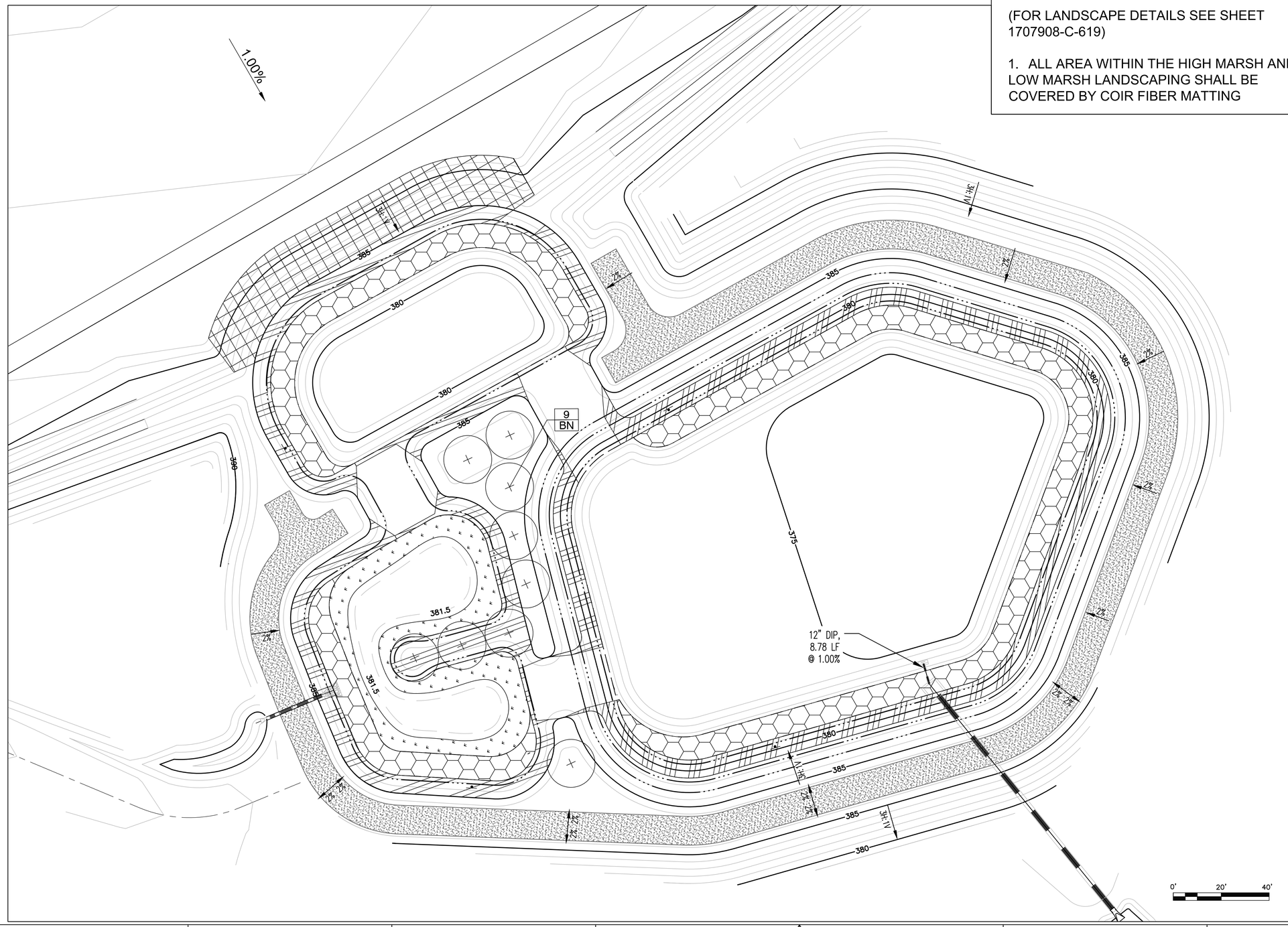
1. ALL AREA WITHIN THE HIGH MARSH AND LOW MARSH LANDSCAPING SHALL BE COVERED BY COIR FIBER MATTING

WETLAND MEADOW MIX (ERNMX-865)

HIGH MARSH SEED MIX (ERNMX-128)

LOW MARSH PLUGS

ES-3 SOIL STABILIZATION MAT



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Dominion Energy

SWM LANDSCAPE PLAN

UNITY SUBSTATION

LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.		SCALE 1" = 20'
PROJECT 5017950	NAME	DATE	SHEET: 1707908-C-620		
DESIGNER	EU/KZ	01/29/24			
PROJECT ENGINEER	EU/KZ	01/29/24	DRAWING: 1707908-C-620.dwg		
APPROVED BY	KAS	01/29/24			

(FOR LANDSCAPE DETAILS SEE SHEET 1707908-C-619)

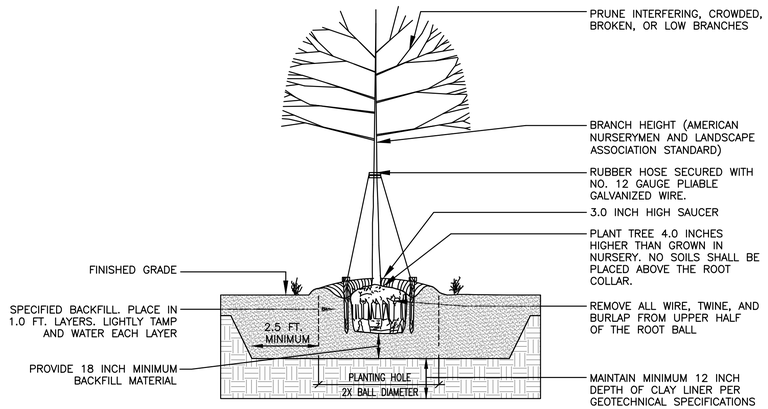
1. TOP SOIL SHALL MEET VDOT SPECIFICATIONS.
2. SEE GEOTECHNICAL RECOMMENDATIONS FOR CLAY LINER SPECIFICATIONS.
3. CLAY LINER SHALL BE UNDER ALL PERMANENT POOLS, INCLUDING WETLANDS AND SEDIMENT FOREBAYS.
4. CLAY LINER SHALL EXTEND 2' ABOVE THE 10-YEAR WATER SURFACE ELEVATION ON THE DAM EMBANKMENT.
5. 6" OF TOP SOIL SHALL BE USED UNDER ALL PERMANENT SEEDING.
6. 12" OF TOP SOIL SHALL BE USED UNDER ALL WETLANDS, LOW AND HIGH MARSH PLANTINGS.
7. RIPRAP FOR RIPRAP WEIRS SHALL BE PLACED ON AT LEAST 12" THICK CLAY LINER.
8. ALL OTHER AREAS OF THE DAM EMBANKMENT AND THE POND AREA SHALL HAVE 6" OF TOP SOIL (UNDER PERMANENT SEEDING).

12" THICK CLAY LINER

6" TOP SOIL & 12" CLAY LINER

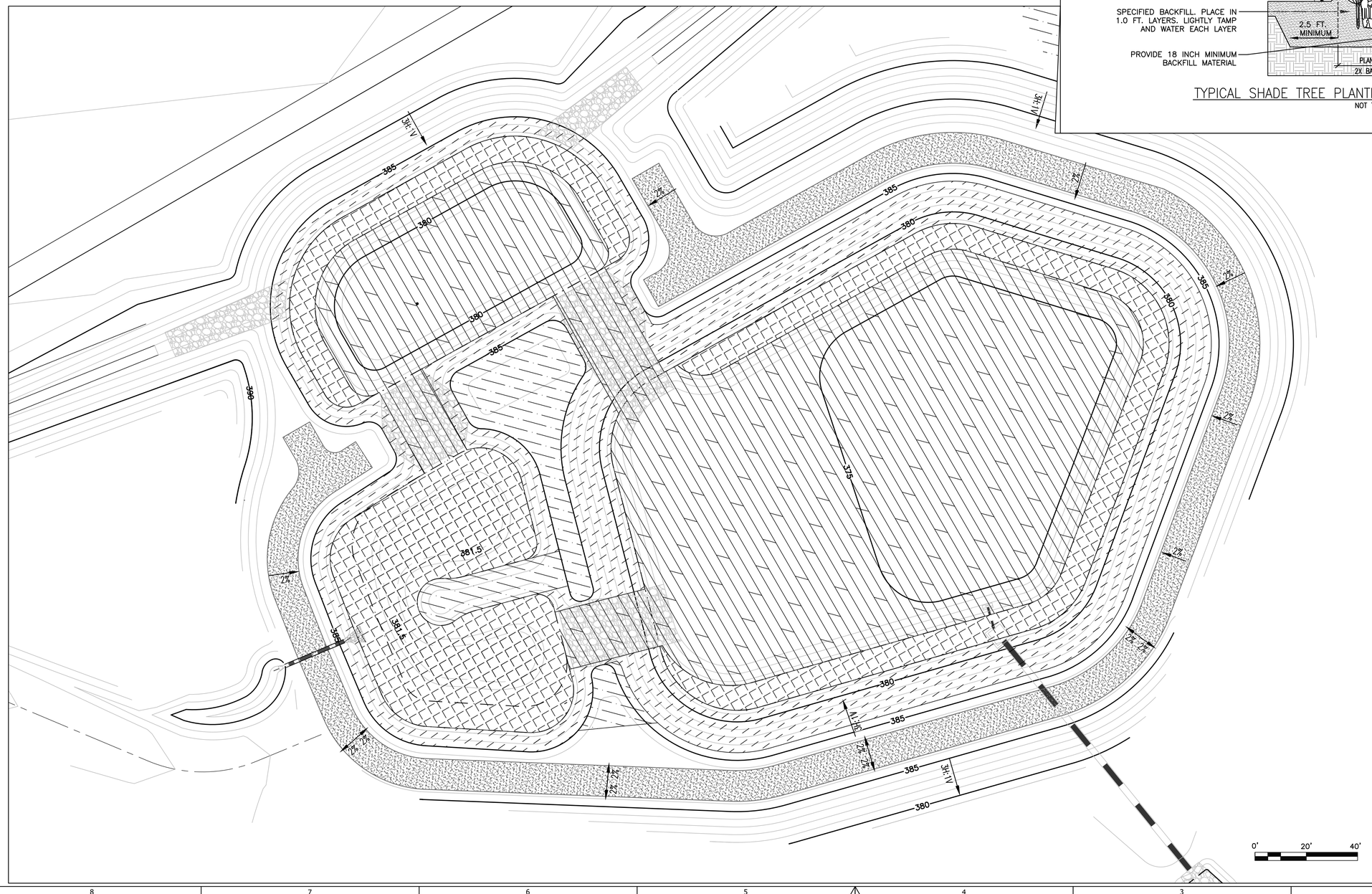
12" TOP SOIL & 12" CLAY LINER (UNDER WETLANDS & MARSH PLANTINGS)

42" TOP SOIL & 12" CLAY LINER (UNDER WETLAND BERMS)



TYPICAL SHADE TREE PLANTING DETAIL – WETLAND BERMS

NOT TO SCALE



THIS SHEET IS FOR LANDSCAPE PURPOSES ONLY!!

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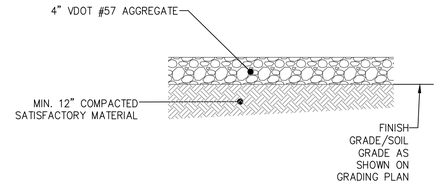
DEWBERRY PROJECT NO.: 50157950

Dominion Energy

SWM TOP SOIL

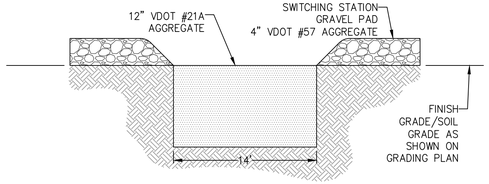
UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION			B/M No.	SCALE	1" = 20'
PROJECT 5017950		NAME	DATE	SHEET:	1707908-C-621
DESIGNER		EU/KZ	01/29/24		
PROJECT ENGINEER		EU/KZ	01/29/24	DRAWING:	
APPROVED BY		KAS	01/29/24		1707908-C-621.dwg



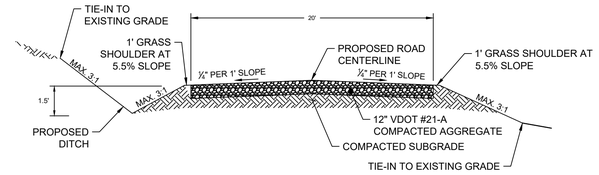
SUBSTATION GRAVEL PAD

N.T.S. Source: Dewberry



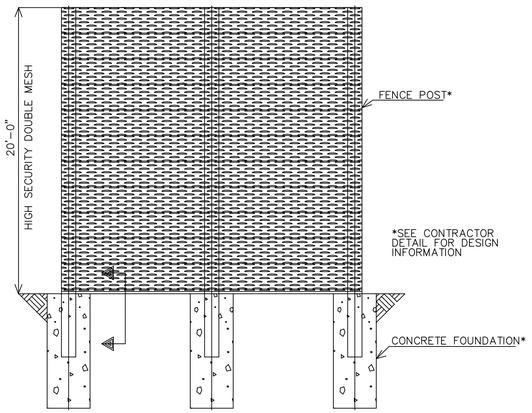
EQUIPMENT ACCESS ROAD

N.T.S. Source: Dewberry

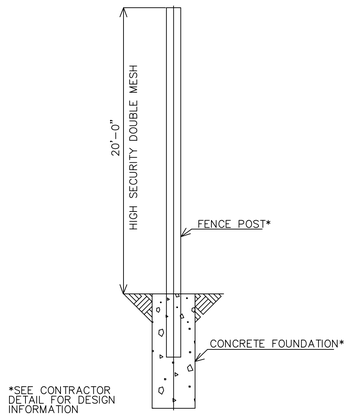


ACCESS ROAD, WEST ACCESS ROAD & SWM ACCESS ROAD SECTION

N.T.S. Source: Dewberry



FENCE ELEVATION
FOR ILLUSTRATIVE PURPOSES ONLY

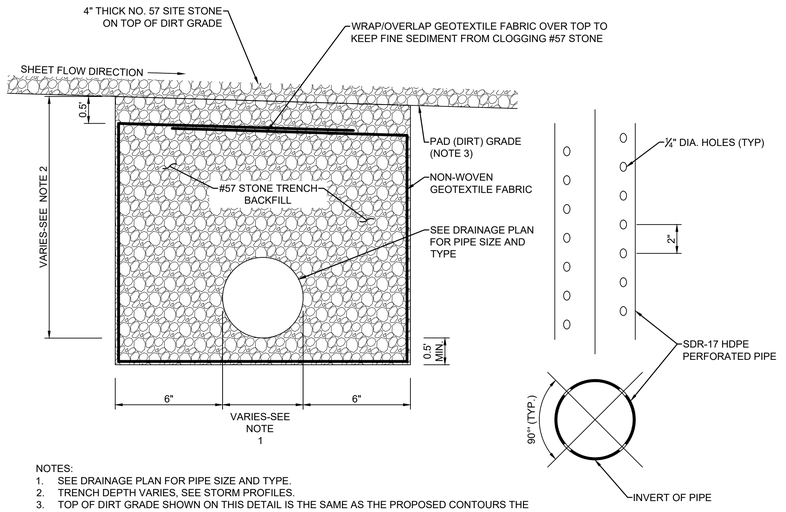


FENCE DETAIL
FOR ILLUSTRATIVE PURPOSES ONLY

NOTE:
1. SEE CONFIDENTIAL FENCE PLANS (BY OTHERS) FOR DETAILED FENCE CONSTRUCTION PLANS.

TYPICAL DOMINION SECURITY FENCE

N.T.S. Source: DOMINION



NOTES:
1. SEE DRAINAGE PLAN FOR PIPE SIZE AND TYPE.
2. TRENCH DEPTH VARIES, SEE STORM PROFILES.
3. TOP OF DIRT GRADE SHOWN ON THIS DETAIL IS THE SAME AS THE PROPOSED CONTOURS THE GRADING PLAN.

STONE TRENCH WITH PERFORATED PIPE

N.T.S. Source: Dewberry

REVISIONS		
REV	DATE	DESCRIPTION

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DEWBERRY PROJECT NO.: 50157950

Dominion Energy

CONSTRUCTION DETAILS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE	AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-801	
DESIGNER	MFR	8/18/23			
PROJECT ENGINEER	GA	8/18/23	DRAWING:	1707908-C-801.dwg	
APPROVED BY	KAS	8/18/23			

LD-269
Rev. May 2016

Project: UNITY SUBSTATION
ACCESS ROAD STA 23+31.5
CULVERT #1

Plan Sheet No. ____ Designer ____ Sheet ____ of
Rev. Date ____ Date ____

HYDROLOGICAL DATA: D.A.= 27.55 AC.
Tc = 22 mins
i10= 4.03
i100=5.38
C=0.38

AHW Controls:
100 yr. Flood plain elev.
Design AHW depth elev.
Structures elev.

STATION:
freq. TWelev.

Shoulder elev. 383.35
CL elev. 383.55
Skew ° Cover ft.
Inv. El. 378.60 Orig. Gr. Elev.
So= 0.0116 L= 34.55'
Inv. El. 378.20 Orig. Gr. Elev.

DISCHARGES USED
Q 10 = 42.19 CFS
Q 100 = 56.32 CFS

RISK ASSESSMENT
ADT ____ Length ____
Detours Available
Overtopping Stage
Flood Plain Management
Criteria and Significant Impact

CULVERT TYPE & SIZE	Q	Q/B	INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ke	OUTLET CONTROL do	OUTLET CONTROL (dc+D)/2	OUTLET CONTROL ho	OUTLET CONTROL H	OUTLET CONTROL LSo	CONT HW ELEV.	OUTLET VELOCITY C.M.	OUTLET VELOCITY Smooth	End Treat	COMMENTS
(2) - 24" RCP*	42.19	21.1	1.55	3.1	0.5	1.6	1.8	1.8	1.35	0.4	2.75	381.7			
(2) - 24" RCP*	56.32	28.16	2.35	4.7	0.5	1.9	1.95	1.95	2.55	0.4	4.1	383.3			

*NOTE: THERE ARE DUAL 30" CULVERTS THAT ARE COUNTERSUNK 6", THEREFOR THE CALCULATIONS ARE BASED ON 24" CULVERTS.

SUMMARY & RECOMMENDATIONS:

Design Flood Exceed. Prob. ____ Elev.
Overtop Flood Exceed. Prob. ____ Elev.
Base Flood 1% Exceed. Prob. ____ Elev.

LD-269
Rev. May 2016

Project: UNITY SUBSTATION
ACCESS ROAD STA 26+16.8
CULVERT #2

Plan Sheet No. ____ Designer ____ Sheet ____ of
Rev. Date ____ Date ____

HYDROLOGICAL DATA: D.A.= 3.49 AC.
Tc = 17 mins
i10= 4.58
i100=6.06
C=0.29

AHW Controls:
100 yr. Flood plain elev.
Design AHW depth elev.
Structures elev.

STATION:
freq. TWelev.

Shoulder elev. 386.72
CL elev. 386.92
Skew ° Cover ft.
Inv. El. 382.14 Orig. Gr. Elev.
So= 0.01 L= 42'
Inv. El. 381.72 Orig. Gr. Elev.

DISCHARGES USED
Q 10 = 4.64 CFS
Q 100 = 6.13 CFS

RISK ASSESSMENT
ADT ____ Length ____
Detours Available
Overtopping Stage
Flood Plain Management
Criteria and Significant Impact

CULVERT TYPE & SIZE	Q	Q/B	INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ke	OUTLET CONTROL do	OUTLET CONTROL (dc+D)/2	OUTLET CONTROL ho	OUTLET CONTROL H	OUTLET CONTROL LSo	CONT HW ELEV.	OUTLET VELOCITY C.M.	OUTLET VELOCITY Smooth	End Treat	COMMENTS
15" RCP	4.64	4.64	1.1	1.4	0.5	0.6	0.9	0.9	0.4	0.4	0.9				
15" RCP	6.13	6.13	1.3	1.6	0.5	0.9	1.1	1.1	0.8	0.4	1.5				

SUMMARY & RECOMMENDATIONS:

Design Flood Exceed. Prob. ____ Elev.
Overtop Flood Exceed. Prob. ____ Elev.
Base Flood 1% Exceed. Prob. ____ Elev.

LD-269
Rev. May 2016

Project: UNITY SUBSTATION
ACCESS ROAD STA 31+32
CULVERT #3

Plan Sheet No. ____ Designer ____ Sheet ____ of
Rev. Date ____ Date ____

HYDROLOGICAL DATA: D.A.= 0.74 AC.
Tc = 14 mins
i10=5.16
i100=6.77
C=0.29

AHW Controls:
100 yr. Flood plain elev.
Design AHW depth elev.
Structures elev.

STATION:
freq. TWelev.

Shoulder elev. 398.1
CL elev. 398.3
Skew ° Cover ft.
Inv. El. 394.02 Orig. Gr. Elev.
So= 0.015 L= 31'
Inv. El. 393.55 Orig. Gr. Elev.

DISCHARGES USED
Q 10 = 1.11 CFS
Q 100 = 1.45 CFS

RISK ASSESSMENT
ADT ____ Length ____
Detours Available
Overtopping Stage
Flood Plain Management
Criteria and Significant Impact

CULVERT TYPE & SIZE	Q	Q/B	INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ke	OUTLET CONTROL do	OUTLET CONTROL (dc+D)/2	OUTLET CONTROL ho	OUTLET CONTROL H	OUTLET CONTROL LSo	CONT HW ELEV.	OUTLET VELOCITY C.M.	OUTLET VELOCITY Smooth	End Treat	COMMENTS
15" RCP	1.11	1.11	0.4	0.5	0.5	0.5	0.9	0.9	0	0.5	0.4				
15" RCP	1.45	1.45	0.5	0.6	0.5	0.5	0.9	0.9	0	0.5	0.4				

SUMMARY & RECOMMENDATIONS:

Design Flood Exceed. Prob. ____ Elev.
Overtop Flood Exceed. Prob. ____ Elev.
Base Flood 1% Exceed. Prob. ____ Elev.

LD-269
Rev. May 2016

Project: UNITY SUBSTATION
ACCESS ROAD STA 35+12
CULVERT #4

Plan Sheet No. ____ Designer ____ Sheet ____ of
Rev. Date ____ Date ____

HYDROLOGICAL DATA: D.A.= 11.04 AC.
Tc = 22 mins
i10=4.03
i100=5.38
C=0.29

AHW Controls:
100 yr. Flood plain elev.
Design AHW depth elev.
Structures elev.

STATION:
freq. TWelev.

Shoulder elev. 392.59
CL elev. 392.79
Skew ° Cover ft.
Inv. El. 387.64 Orig. Gr. Elev.
So= 0.018 L= 49.5'
Inv. El. 386.75 Orig. Gr. Elev.

DISCHARGES USED
Q 10 = 12.90 CFS
Q 100 = 17.22 CFS

RISK ASSESSMENT
ADT ____ Length ____
Detours Available
Overtopping Stage
Flood Plain Management
Criteria and Significant Impact

CULVERT TYPE & SIZE	Q	Q/B	INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ke	OUTLET CONTROL do	OUTLET CONTROL (dc+D)/2	OUTLET CONTROL ho	OUTLET CONTROL H	OUTLET CONTROL LSo	CONT HW ELEV.	OUTLET VELOCITY C.M.	OUTLET VELOCITY Smooth	End Treat	COMMENTS
24" RCP	12.90	12.90	0.95	1.9	0.5	1.4	1.7	1.7	0.6	0.9	1.4				
24" RCP	17.22	17.22	1.2	2.4	0.5	1.5	1.8	1.8	1.0	0.9	1.9				

SUMMARY & RECOMMENDATIONS:

Design Flood Exceed. Prob. ____ Elev.
Overtop Flood Exceed. Prob. ____ Elev.
Base Flood 1% Exceed. Prob. ____ Elev.

LD-269
Rev. May 2016

Project: UNITY SUBSTATION
WEST ACCESS ROAD STA 00+69.8
CULVERT #5

Plan Sheet No. ____ Designer ____ Sheet ____ of
Rev. Date ____ Date ____

HYDROLOGICAL DATA: D.A.= 0.15 AC.
Tc = 5 mins
i10=7.06
i100=9.15
C=0.46

AHW Controls:
100 yr. Flood plain elev.
Design AHW depth elev.
Structures elev.

STATION:
freq. TWelev.

Shoulder elev. 398.55
CL elev. 398.69
Skew ° Cover ft.
Inv. El. 394.11 Orig. Gr. Elev.
So= 0.013 L= 43.50'
Inv. El. 393.54 Orig. Gr. Elev.

DISCHARGES USED
Q 10 = 0.49 CFS
Q 100 = 0.63 CFS

RISK ASSESSMENT
ADT ____ Length ____
Detours Available
Overtopping Stage
Flood Plain Management
Criteria and Significant Impact

CULVERT TYPE & SIZE	Q	Q/B	INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ke	OUTLET CONTROL do	OUTLET CONTROL (dc+D)/2	OUTLET CONTROL ho	OUTLET CONTROL H	OUTLET CONTROL LSo	CONT HW ELEV.	OUTLET VELOCITY C.M.	OUTLET VELOCITY Smooth	End Treat	COMMENTS
15" RCP	0.49	0.49	0.4	0.5	0.5	0.5	0.9	0.9	0	0.6	0.3				
15" RCP	0.63	0.63	0.4	0.5	0.5	0.5	0.9	0.9	0	0.6	0.3				

SUMMARY & RECOMMENDATIONS:

Design Flood Exceed. Prob. ____ Elev.
Overtop Flood Exceed. Prob. ____ Elev.
Base Flood 1% Exceed. Prob. ____ Elev.

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Project: UNITY SUBSTATION
WEST ACCESS ROAD STA 11+35
CULVERT #6

Plan Sheet No. ____ Designer ____ Sheet ____ of
Rev. Date ____ Date ____

HYDROLOGICAL DATA: D.A.= 1.77 AC.
Tc = 17 mins
i10=4.58
i100=6.06
C=0.51

AHW Controls:
100 yr. Flood plain elev.
Design AHW depth elev.
Structures elev.

STATION:
freq. TWelev.

Shoulder elev. 392.16
CL elev. 392.36
Skew ° Cover ft.
Inv. El. 388.37 Orig. Gr. Elev.
So= 0.009 L= 39'
Inv. El. 388.02 Orig. Gr. Elev.

DISCHARGES USED
Q 10 = 4.13 CFS
Q 100 = 5.47 CFS

RISK ASSESSMENT
ADT ____ Length ____
Detours Available
Overtopping Stage
Flood Plain Management
Criteria and Significant Impact

CULVERT TYPE & SIZE	Q	Q/B	INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ke	OUTLET CONTROL do	OUTLET CONTROL (dc+D)/2	OUTLET CONTROL ho	OUTLET CONTROL H	OUTLET CONTROL LSo	CONT HW ELEV.	OUTLET VELOCITY C.M.	OUTLET VELOCITY Smooth	End Treat	COMMENTS
15" RCP	4.13	4.13	1.0	1.25	0.5	0.9	1.08	1.08	0.4	0.35	1.13				
15" RCP	5.47	5.47	1.3	1.63	0.5	1.0	1.13	1.13	0.7	0.35	1.48				

SUMMARY & RECOMMENDATIONS:

Design Flood Exceed. Prob. ____ Elev.
Overtop Flood Exceed. Prob. ____ Elev.
Base Flood 1% Exceed. Prob. ____ Elev.

SUBSTATION INTERIOR STORM SEWER

Design Storm Year = 10

POINT	DOWNSTREAM STRUCTURE	DRAIN AREA ACRES	RUNOFF COEFF. C	CA INCR	CA ACCUM	INLET TIME MIN	RAIN FALL IN/HR	RUNOFF Q C.F.S.	INVERT ELEVATIONS UPPER	INVERT ELEVATIONS LOWER	LENGTH FEET	SLOPE FT./FT.	DIA INCHES	CAPA- CITY C.F.S.	VEL F.P.S.	FLOW TIME SEC	REMARKS
14		0.96	0.90	0.86	0.86	5.00	7.02	6.1									
	13								395.00	394.19	161.50	0.0050	18	8.0	5.0	32.4	
13		0.70	0.90	0.63	1.49	5.54	6.85	10.2									
	12								393.69	392.99	140.00	0.0050	24	17.3	5.7	24.4	
12		0.00	0.00	0.00	1.49	5.95	6.72	10.2									
	11								392.89	389.29	245.06	0.0147	24	27.4	8.1	30.4	
11		0.00	0.00	0.00	2.77	6.45	6.57	18.2									
	10								389.19	388.04	229.17	0.0050	30	29.0	6.2	36.8	24 x 38 ELLIPTICAL PIPE
16		0.84	0.90	0.76	0.76	5.00	7.02	5.3									
	15								392.60	391.87	147.00	0.0050	18	8.0	4.9	30.3	
15		0.58	0.90	0.52	1.28	5.50	6.86	8.8									
	11								391.37	390.60	154.00	0.0050	24	17.3	5.5	27.9	
24		0.96	0.90	0.86	0.86	5.00	7.02	6.1									
	23								395.00	394.19	161.50	0.0050	18	8.0	5.0	32.4	
23		0.69	0.90	0.62	1.49	5.54	6.85	10.2									
	22								393.69	393.00	138.20	0.0050	24	17.3	5.7	24.1	
22		0.00	0.00	0.00	1.49	5.94	6.72	10.2									
	21								392.90	389.29	224.08	0.0161	24	28.7	8.4	26.8	
21		0.00	0.00	0.00	2.75	6.39	6.59	18.1									
	20								389.19	388.04	229.38	0.0050	30	29.0	6.2	36.9	24 x 38 ELLIPTICAL PIPE
26		0.84	0.90	0.76	0.76	5.00	7.02	5.3									
	25								392.60	391.87	147.00	0.0050	18	8.0	4.9	30.3	
25		0.57	0.90	0.51	1.27	5.50	6.86	8.7									
	21								391.37	390.60	152.20	0.0050	24	17.3	5.5	27.6	

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Project: UNITY SUBSTATION
SWM ACCESS ROAD STA 05+56
CULVERT #7

Plan Sheet No. ____ Designer ____ Sheet ____ of
Rev. Date ____ Date ____

HYDROLOGICAL DATA: D.A.= 0.93 AC.
Tc = 13 mins
i10=5.16
i100=6.77
C=0.42

AHW Controls:
100 yr. Flood plain elev.
Design AHW depth elev.
Structures elev.

STATION:
freq. TWelev.

Shoulder elev. 382.95
CL elev. 383.15
Skew ° Cover ft.
Inv. El. 379.13 Orig. Gr. Elev.
So= 0.011 L= 36'
Inv. El. 378.73 Orig. Gr. Elev.

DISCHARGES USED
Q 10 = 2.02 CFS
Q 100 = 2.64 CFS

RISK ASSESSMENT
ADT ____ Length ____
Detours Available
Overtopping Stage
Flood Plain Management
Criteria and Significant Impact

CULVERT TYPE & SIZE	Q	Q/B	INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ke	OUTLET CONTROL do	OUTLET CONTROL (dc+D)/2	OUTLET CONTROL ho	OUTLET CONTROL H	OUTLET CONTROL LSo	CONT HW ELEV.	OUTLET VELOCITY C.M.	OUTLET VELOCITY Smooth	End Treat	COMMENTS
15" RCP	2.02	2.02	0.6	0.8	0.5	0.6	1.2	1.2	0	0.4	0.8				
15" RCP	2.64	2.64	0.7	0.9	0.5	0.6	1.2	1.2	0	0.4	0.8				

SUMMARY & RECOMMENDATIONS:

Design Flood Exceed. Prob. ____ Elev.
Overtop Flood Exceed. Prob. ____ Elev.
Base Flood 1% Exceed. Prob. ____ Elev.

SUBSTATION INTERIOR STORM SEWER HYDRAULIC GRADE LINE

INLET STATION	OUTLET WATER SURFACE ELEV	L_s FT	D_s IN	Q_s ZW C.F.S.	S_0 FT/FT	H_f FT	JUNCTION LOSS V_o F.P.S.	H_o FT	Q_{50} C.F.S.	V_{50} F.P.S.	$Q_s{*}V_o$	$V_o^2/2g$ FT	H_j	ANGLE	H_a	H_i	1.3H_i	.5H_i	FINAL H	INLET WATER SURFACE ELEV.	RIM ELEV.
	392.20	152.20	24	8.71	0.001	0.19	5.5	0.1													
25									5.3	4.9	25.8	0.4	0.13	0	0.00	0.25	0.32	N/A	0.51	392.72	395.15
	393.07	147.00	18	5.31	0.002	0.32	4.9	0.1													
26													0.00	0	0.00	0.09	N/A	N/A	0.41	393.48	395.44
	389.64	229.38	24	18.14	0.006	1.48	6.2	0.2													
21									10.2	8.4	84.9	1.1	0.38	0	0.00	0.53	0.69	N/A	2.16	391.80	394.33
	391.80	224.08	24	10.17	0.002	0.45	8.4	0.3													
22									10.2	5.7	58.3	0.5	0.18	90	0.36	0.81	N/A	N/A	1.26	393.06	397.45
	394.60	138.20	24	10.17	0.002	0.24	5.7	0.1													
23									6.1	5.0	30.2	0.4	0.13	0	0.00	0.26	0.34	N/A	0.58	395.18	397.90
	395.39	161.50	18	6.07	0.003	0.46	5.0	0.1													
24													0.00	0	0.00	0.10	N/A	N/A	0.56	395.95	397.90
	392.20	154.00	24	8.77	0.001	0.20	5.5	0.1													
15									5.3	4.9	25.8	0.4	0.13	0	0.00	0.25	0.32	N/A	0.52	392.71	395.15
	393.07	147.00	18	5.31	0.002	0.32	4.9	0.1													
16													0.00	0	0.00	0.09	N/A	N/A	0.41	393.48	395.44
	389.64	229.17	24	18.21	0.006	1.48	6.2	0.2													
11									10.2	8.1	82.6	1.0	0.35	0	0.00	0.50	0.66	N/A	2.14	391.78	394.33
	391.78	245.06	24	10.23	0.002	0.50	8.1	0.3													
12									10.2	5.7	58.7	0.5	0.18	90	0.36	0.79	N/A	N/A	1.29	393.07	397.45
	394.59	140.00	24	10.23	0.002	0.24	5.7	0.1													
13									6.1	5.0	30.2	0.4	0.13	0	0.00	0.26	0.34	N/A	0.59	395.18	397.90
	395.39	161.50	18	6.07	0.003	0.46	5.0	0.1													
14													0.00	0	0	0.10	N/A	N/A	0.56	395.95	397.90

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Project: UNITY SUBSTATION
SWM BASIN

Plan Sheet No. ____ Designer ____ Sheet ____ of
Rev. Date ____ Date ____

HYDROLOGICAL DATA: D.A.= 0.23 AC.
Tc = 12 mins
i10=5.33
i100=6.99
C=0.39

AHW Controls:
100 yr. Flood plain elev.
Design AHW depth elev.
Structures elev.

STATION:
freq. TWelev.

Shoulder elev. 386.00
CL elev. 386.10
Skew ° Cover ft.
Inv. El. 383.50 Orig. Gr. Elev.
So= 0.0172 L= 29'
Inv. El. 383.00 Orig. Gr. Elev.

DISCHARGES USED
Q 10 = 0.48 CFS
Q 100 = 0.63 CFS

RISK ASSESSMENT
ADT ____ Length ____
Detours Available
Overtopping Stage
Flood Plain Management
Criteria and Significant Impact

CULVERT TYPE & SIZE	Q	Q/B	INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ke	OUTLET CONTROL do	OUTLET CONTROL (dc+D)/2	OUTLET CONTROL ho	OUTLET CONTROL H	OUTLET CONTROL LSo	CONT HW ELEV.	OUTLET VELOCITY C.M.	OUTLET VELOCITY Smooth	End Treat	COMMENTS
12" RCP	0.48	0.48	0.4	0.4	0.5	0.4	0.7	0.7	0	0.4	0.3				
12" RCP	0.63	0.63	0.4	0.4	0.5	0.4	0.7	0.7	0	0.4	0.3				

SUMMARY & RECOMMENDATIONS:

Design Flood Exceed. Prob. ____ Elev.
Overtop Flood Exceed. Prob. ____ Elev.
Base Flood 1% Exceed. Prob. ____ Elev.

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Project: UNITY SUBSTATION
ACCESS ROAD STA 37+58.61
CULVERT #9

Plan Sheet No. ____ Designer ____ Sheet ____ of
Rev. Date ____ Date ____

HYDROLOGICAL DATA: D.A.= 0.58 AC.
Tc = 5 mins
i10=7.06
i100=9.15
C=0.58

AHW Controls:
100 yr. Flood plain elev.
Design AHW depth elev.
Structures elev.

STATION:
freq. TWelev.

Shoulder elev. 396.97
CL elev. 397.15
Skew ° Cover ft.
Inv. El. 393.65 Orig. Gr. Elev.
So= 0.01 L= 32.5'
Inv. El. 393.33 Orig. Gr. Elev.

DISCHARGES USED
Q 10 = 2.37 CFS
Q 100 = 3.08 CFS

RISK ASSESSMENT
ADT ____ Length ____
Detours Available
Overtopping Stage
Flood Plain Management
Criteria and Significant Impact

CULVERT TYPE & SIZE	Q	Q/B	INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ke	OUTLET CONTROL do	OUTLET CONTROL (dc+D)/2	OUTLET CONTROL ho	OUTLET CONTROL H	OUTLET CONTROL LSo	CONT HW ELEV.	OUTLET VELOCITY C.M.	OUTLET VELOCITY Smooth	End Treat	COMMENTS
15" RCP	2.37	2.37	0.65	0.81	0.5	0.6	0.93	0.93	0	0.32	0.61				
15" RCP	3.08	3.08	0.75	0.75	0.5	0.6	0.93	0.93	0	0.32	0.61				

SUMMARY & RECOMMENDATIONS:

Design Flood Exceed. Prob. ____ Elev.
Overtop Flood Exceed. Prob. ____ Elev.
Base Flood 1% Exceed. Prob. ____ Elev.

REVISIONS		
REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

DRAINAGE CALCULATIONS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE AS SHOWN
PROJECT 5017950	NAME	DATE	SHEET:	1707908-C-901
DESIGNER	MFR	8/18/23		
PROJECT ENGINEER	GA	8/18/23	DRAWING:	
APPROVED BY	KAS	8/18/23		1707908-C-901.dwg

Dewberry

PROJECT: Unity Substation
DATE: 2023.07.24

Ditch Computations

LD-268

COUNTY: Lunenburg
ENGINEER: GKA/Dewberry Engineers Inc.

Column groups: Invert (Upstream, Downstream); Hydrology (Area 1 through 2 yr Q); Ditch Geometry (Bottom B through Ditch Slope); Hydraulics (10 yr Depth through Capacity Adeq?).

Access Road

From Station	To Station	LT RT	Invert Upstream	Invert Downstream	Area 1 (acres)	C 0.9	Area 2 (acres)	C 0.5	Area 3 (acres)	C 0.3	Incr CA	Total CA	T_C 10 yr (min)	T_C 2 yr (min)	10 yr i (in/hr)	2 yr i (in/hr)	10 yr Q (cfs)	2 yr Q (cfs)	Bottom B (ft)	Depth Y (ft)	Left Slope (H/V)	Right Slope (H/V)	Lining Type	Lining Width (ft)	n	Ditch Curve? R_d (ft)	Ditch Slope (ft/ft)	10 yr Depth (ft)	10 yr Velocity (ft/sec)	2 yr Depth (ft)	2 yr Velocity (ft/sec)	Tractive Force "τ" (lbs/ft^2)	Lining Adeq? (Max V)	Lining Adeq? (Max $τ_{allow}$)	Free-board (ft)	Capacity Adeq?
000+75.00	001+00.00	LT	450.39	448.21	0.041	0.90	0.052	0.50	0.253	0.30	0.138	0.138	13.00	13.00	5.16	3.90	0.71	0.54	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.087	0.30	2.66	0.27	2.46	0.77	YES	YES	1.20	YES
001+00.00	002+00.00	LT	448.21	442.16	0.039	0.90	0.143	0.50	0.039	0.30	0.119	0.257	8.00	8.00	6.18	4.73	1.59	1.22	0.00	1.50	3.00	3.00	2-EC-2 Ty2	3	0.045	NA	0.060	0.43	2.83	0.39	2.64	0.78	YES	YES	1.07	YES
002+00.00	003+00.00	LT	442.16	439.30	0.046	0.90	0.285	0.50	0.262	0.30	0.263	0.520	13.00	13.00	5.16	3.90	2.68	2.03	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.029	0.61	2.44	0.54	2.26	0.51	YES	YES	0.89	YES
003+00.00	004+00.00	LT	439.30	436.97	0.045	0.90	0.431	0.50	0.364	0.30	0.366	0.885	12.00	12.00	5.33	4.04	4.72	3.58	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.023	0.78	2.61	0.70	2.42	0.54	YES	YES	0.72	YES
004+00.00	005+00.00	LT	436.97	435.02	0.041	0.90	0.605	0.50	0.316	0.30	0.434	1.319	13.00	13.00	5.16	3.90	6.81	5.15	0.00	1.50	3.00	3.00	2-EC-2 Ty2	6	0.045	NA	0.020	0.92	2.65	0.83	2.47	0.53	YES	YES	0.58	YES
005+00.00	006+00.00	LT	435.02	433.39	0.028	0.90	0.391	0.50	0.075	0.30	0.243	1.563	13.00	13.00	5.16	3.90	8.06	6.10	0.00	1.50	3.00	3.00	2-EC-2 Ty2	6	0.045	NA	0.016	1.03	2.61	0.92	2.42	0.49	YES	YES	0.48	YES
006+00.00	007+00.00	LT	433.39	431.90	0.025	0.90	0.142	0.50	0.000	0.30	0.094	1.657	9.00	9.00	5.94	4.53	9.84	7.51	0.00	1.50	3.00	3.00	2-EC-2 Ty2	7	0.045	NA	0.015	1.12	2.64	1.01	2.47	0.49	YES	YES	0.38	YES
007+00.00	008+00.00	LT	431.90	430.28	0.025	0.90	0.028	0.50	0.000	0.30	0.037	1.693	5.00	5.00	7.06	5.44	11.95	9.21	0.00	1.50	3.00	3.00	2-EC-2 Ty2	7	0.045	NA	0.016	1.18	2.86	1.08	2.68	0.57	YES	YES	0.32	YES
008+00.00	009+00.00	LT	430.28	427.72	0.025	0.90	0.025	0.50	0.000	0.30	0.035	1.729	5.00	5.00	7.06	5.44	12.20	9.41	0.00	1.50	3.00	3.00	2-EC-2 Ty2	7	0.045	NA	0.026	1.09	3.41	0.99	3.20	0.83	YES	YES	0.41	YES
009+00.00	010+00.00	LT	427.72	425.64	0.025	0.90	0.036	0.50	0.000	0.30	0.040	1.769	5.00	5.00	7.06	5.44	12.49	9.63	0.00	1.50	3.00	3.00	2-EC-2 Ty2	7	0.045	NA	0.021	1.14	3.16	1.03	2.96	0.70	YES	YES	0.36	YES
010+00.00	011+00.00	LT	425.64	422.94	0.025	0.90	0.030	0.50	0.005	0.30	0.039	1.808	5.00	5.00	7.06	5.44	12.76	9.84	0.00	1.50	3.00	3.00	2-EC-2 Ty2	7	0.045	NA	0.027	1.10	3.52	1.00	3.30	0.88	YES	YES	0.40	YES
011+00.00	012+00.00	LT	422.94	420.14	0.025	0.90	0.029	0.50	0.000	0.30	0.037	1.845	5.00	5.00	7.06	5.44	13.03	10.04	0.00	1.50	3.00	3.00	2-EC-2 Ty2	7	0.045	NA	0.028	1.10	3.58	1.00	3.36	0.91	YES	YES	0.40	YES
012+00.00	012+50.00	LT	420.14	419.05	0.013	0.90	0.003	0.50	0.000	0.30	0.013	1.858	5.00	5.00	7.06	5.44	13.12	10.11	0.00	1.50	3.00	3.00	2-EC-2 Ty2	7	0.045	NA	0.022	1.16	3.27	1.05	3.06	0.75	YES	YES	0.34	YES
025+50.00	026+25.00	LT	385.66	382.18	0.025	0.90	0.039	0.50	0.461	0.30	0.180	0.180	15.00	15.00	4.85	3.65	0.87	0.66	0.00	1.50	3.00	3.00	2-EC-2 Ty2	3	0.045	NA	0.046	0.37	2.22	0.33	2.05	0.50	YES	YES	1.13	YES
026+25.00	027+00.00	LT	385.71	382.18	0.018	0.90	0.038	0.50	0.557	0.30	0.202	1.051	15.00	15.00	4.85	3.65	5.10	3.84	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.047	0.70	3.44	0.63	3.21	0.98	YES	YES	0.80	YES
027+00.00	028+00.00	LT	387.32	385.71	0.025	0.90	0.043	0.50	0.146	0.30	0.088	0.849	12.00	12.00	5.33	4.04	4.53	3.43	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.016	0.83	2.24	0.74	2.09	0.39	YES	YES	0.68	YES
028+00.00	029+00.00	LT	388.93	387.32	0.025	0.90	0.035	0.50	0.616	0.30	0.225	0.761	15.00	15.00	4.85	3.65	3.69	2.78	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.016	0.76	2.12	0.68	1.98	0.36	YES	YES	0.74	YES
029+00.00	030+00.00	LT	390.67	388.93	0.025	0.90	0.037	0.50	0.278	0.30	0.124	0.536	12.00	12.00	5.33	4.04	2.86	2.17	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.017	0.68	2.06	0.62	1.92	0.35	YES	YES	0.82	YES
030+00.00	031+00.00	LT	393.37	390.67	0.025	0.90	0.044	0.50	0.280	0.30	0.128	0.412	11.00	11.00	5.52	4.19	2.27	1.73	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.027	0.58	2.28	0.52	2.12	0.46	YES	YES	0.93	YES
031+00.00	032+00.00	LT	394.88	393.37	0.025	0.90	0.070	0.50	0.409	0.30	0.180	0.284	15.00	15.00	4.85	3.65	1.38	1.04	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.015	0.53	1.62	0.48	1.52	0.24	YES	YES	0.97	YES
032+00.00	033+00.00	LT	397.09	394.88	0.023	0.90	0.037	0.50	0.213	0.30	0.103	0.103	15.00	15.00	4.85	3.65	0.50	0.38	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.022	0.34	1.46	0.31	1.36	0.22	YES	YES	1.16	YES
033+00.00	034+00.00	LT	397.09	391.63	0.026	0.90	0.053	0.50	0.248	0.30	0.125	0.125	15.00	15.00	4.85	3.65	0.60	0.46	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.055	0.31	2.14	0.28	1.98	0.50	YES	YES	1.19	YES
034+00.00	035+00.00	LT	391.63	387.64	0.026	0.90	0.067	0.50	0.019	0.30	0.063	0.188	11.00	11.00	5.52	4.19	1.04	0.79	0.00	1.50	3.00	3.00	2-EC-2 Ty2	3	0.045	NA	0.040	0.40	2.18	0.36	2.02	0.47	YES	YES	1.10	YES
035+00.00	036+00.00	LT	391.45	387.64	0.025	0.90	0.065	0.50	0.007	0.30	0.057	0.248	5.00	5.00	7.06	5.44	1.75	1.35	0.00	1.50	3.00	3.00	2-EC-2 Ty2	3	0.045	NA	0.038	0.49	2.44	0.44	2.27	0.55	YES	YES	1.01	YES
036+00.00	000+50.00	LT	393.28	391.45	0.035	0.90	0.040	0.50	0.078	0.30	0.075	0.191	5.00	5.00	7.06	5.44	1.35	1.04	0.00	1.50	3.00	3.00	2-EC-2 Ty2	3	0.045	NA	0.036	0.45	2.23	0.41	2.09	0.48	YES	YES	1.05	YES
000+50.00	001+50.00	LT	400.00	393.28	0.025	0.90	0.054	0.50	0.007	0.30	0.051	0.116	5.00	5.00	7.06	5.44	1.31	1.01	0.00	1.50	3.00	3.00	2-EC-2 Ty2	3	0.045	NA	0.067	0.39	2.79	0.36	2.63	0.78	YES	YES	1.11	YES
001+50.00	002+50.00	LT	403.00	400.00	0.028	0.90	0.075	0.50	0.008	0.30	0.064	0.064	5.00	5.00	7.06	5.44	0.45	0.35	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.030	0.31	1.59	0.28	1.50	0.27	YES	YES	1.19	YES

Stationing is from Western Access Road

Flow from culvert at STA 000+70.00 included

Access Road

From Station	To Station	LT RT	Invert Upstream	Invert Downstream	Area 1 (acres)	C 0.9	Area 2 (acres)	C 0.5	Area 3 (acres)	C 0.3	Incr CA	Total CA	T_C 10 yr (min)	T_C 2 yr (min)	10 yr i (in/hr)	2 yr i (in/hr)	10 yr Q (cfs)	2 yr Q (cfs)	Bottom B (ft)	Depth Y (ft)	Left Slope (H/V)	Right Slope (H/V)	Lining Type	Lining Width (ft)	n	Ditch Curve? R_d (ft)	Ditch Slope (ft/ft)	10 yr Depth (ft)	10 yr Velocity (ft/sec)	2 yr Depth (ft)	2 yr Velocity (ft/sec)	Tractive Force "τ" (lbs/ft^2)	Lining Adeq? (Max V)	Lining Adeq? (Max $τ_{allow}$)	Free-board (ft)	Capacity Adeq?
010+50.00	011+00.00	RT	424.56	422.94	0.020	0.90	0.021	0.50	0.000	0.30	0.029	0.029	5.00	5.00	7.06	5.44	0.20	0.16	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.032	0.23	1.34	0.21	1.27	0.22	YES	YES	1.28	YES
011+00.00	012+00.00	RT	422.94	420.14	0.025	0.90	0.035	0.50	0.032	0.30	0.050	0.079	7.00	7.00	6.45	4.94	0.51	0.39	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.028	0.33	1.59	0.29	1.48	0.27	YES	YES	1.18	YES
012+00.00	013+00.00	RT	420.14	417.47	0.025	0.90	0.024	0.50	0.095	0.30	0.063	0.142	9.00	9.00	5.94	4.53	0.84	0.64	0.00	1.50	3.00	3.00	2-EC-2 Ty2	3	0.045	NA	0.027	0.40	1.78	0.36	1.66	0.32	YES	YES	1.10	YES
013+00.00	014+00.00	RT	417.47	413.49	0.025	0.90	0.071	0.50	0.274	0.30	0.141	0.282	12.00	12.00	5.33	4.04	1.51	1.14	0.00	1.50	3.00	3.00	2-EC-2 Ty2	3	0.045	NA	0.040	0.46	2.38	0.42	2.24	0.54	YES	YES	1.04	YES
014+00.00	015+00.00	RT	413.49	411.47	0.025	0.90	0.153	0.50	0.061	0.30	0.117	0.399	13.00	13.00	5.16	3.90	2.06	1.56	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.020	0.58	1.99	0.53	1.86	0.35	YES	YES	0.92	YES
015+00.00	016+00.00	RT	411.47	408.96	0.025	0.90	0.263	0.50	0.397	0.30	0.273	0.673	14.00	14.00	5.00	3.77	3.36	2.54	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.025	0.68	2.45	0.61	2.28	0.50	YES	YES	0.83	YES
016+00.00	017+00.00	RT	408.96	403.54	0.025	0.90	0.268	0.50	0.107	0.30	0.189	0.862	11.00	11.00	5.52	4.19	4.76	3.61	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.054	0.67	3.57	0.60	3.33	1.07	YES	YES	0.83	YES
017+00.00	018+00.00	RT	403.54	399.23	0.025	0.90	0.258	0.50	0.012	0.30	0.155	1.017	12.00	12.00	5.33	4.04	5.42	4.11	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.043	0.73	3.39	0.66	3.16	0.94	YES	YES	0.77	YES
018+00.00	019+00.00	RT	399.23	396.23	0.025	0.90	0.643	0.50	0.003	0.30	0.345	1.362	13.00	13.00	5.16	3.90	7.03	5.32	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.030	0.86	3.14	0.78	2.94	0.76	YES	YES	0.64	YES
019+00.00	020+00.00	RT	396.23	393.23	0.025	0.90	0.059	0.50	0.147	0.30	0.097	1.459	13.00	13.00	5.16	3.90	7.53	5.69	0.00	1.50	3.00	3.00	2-EC-2 Ty2	6	0.045	NA	0.030	0.88	3.20	0.80	3.00	0.78	YES	YES	0.62	YES
020+00.00	021+00.00	RT	393.23	390.17	0.025	0.90	0.135	0.50	0.097	0.30	0.119	1.578	12.00	12.00	5.33	4.04	8.42	6.38	0.00	1.50	3.00	3.00	2-EC-2 Ty2	6	0.045	NA	0.031	0.92	3.32	0.83	3.09	0.83	YES	YES	0.58	YES
021+00.00	022+00.00	RT	390.17	386.29	0.026	0.90	0.310	0.50	0.000	0.30	0.179	1.757	12.00	12.00	5.33	4.04	9.37	7.10	0.00	1.50	3.00	3.00	2-EC-2 Ty2	6	0.045	NA	0.039	0.92	3.73	0.83	3.48	1.05	YES	YES	0.58	YES
022+00.00	023+00.00	RT	386.29	379.19	0.026	0.90	0.282	0.50	0.019	0.30	0.170	1.928	12.00	12.00	5.33	4.04	10.28	7.79	0.00	1.50	3.00	3.00	5-EC-3 Ty1	5	0.036	NA	0.071	0.78	5.64	0.70	5.27	1.63	YES	YES	0.73	YES

West Access Road

From Station	To Station	LT RT	Invert Upstream	Invert Downstream	Area 1 (acres)	C 0.9	Area 2 (acres)	C 0.5	Area 3 (acres)	C 0.3	Incr CA	Total CA	T_C 10 yr (min)	T_C 2 yr (min)	10 yr i (in/hr)	2 yr i (in/hr)	10 yr Q (cfs)	2 yr Q (cfs)	Bottom B (ft)	Depth Y (ft)	Left Slope (H/V)	Right Slope (H/V)	Lining Type	Lining Width (ft)	n	Ditch Curve? R_d (ft)	Ditch Slope (ft/ft)	10 yr Depth (ft)	10 yr Velocity (ft/sec)	2 yr Depth (ft)	2 yr Velocity (ft/sec)	Tractive Force "τ" (lbs/ft^2)	Lining Adeq? (Max V)	Lining Adeq? (Max $τ_{allow}$)	Free-board (ft)	Capacity Adeq?
000+70.00	001+50.00	RT	400.20	394.16	0.02	0.90	0.08	0.50	0.00	0.30	0.060	0.092	9.00	9.00	5.94	4.53	0.55	0.42	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.078	0.28	2.37	0.25	2.23	0.63	YES	YES	1.23	YES
001+50.00	001+85.00	RT	401.14	400.20	0.02	0.90	0.03	0.50	0.00	0.30	0.032	0.032	5.00	5.00	7.06	5.44	0.23	0.18	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.027	0.24	1.28	0.23	1.22	0.19	YES	YES	1.26	YES
003+50.00	004+00.00	RT	399.43	398.21	0.04	0.90	0.02	0.50	0.00	0.30	0.046	0.046	5.00	5.00	7.06	5.44	0.32	0.25	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.024	0.28	1.35	0.26	1.27	0.20	YES	YES	1.22	YES
004+00.00	005+00.00	RT	398.21	396.97	0.05	0.90	0.03	0.50	0.00	0.30	0.057	0.103	5.00	5.00	7.06	5.44	0.73	0.56	0.00	1.50	3.00	3.00	1-Bare Earth	3	0.030	NA	0.012	0.38	1.74	0.34	1.64	0.14	YES	YES	1.13	YES
005+00.00	006+00.00	RT	396.97	395.96	0.05	0.90	0.04	0.50	0.00	0.30	0.061	0.164	5.00	5.00	7.06	5.44	1.16	0.89	0.00	1.50	3.00	3.00	1-Bare Earth	3	0.030	NA	0.010	0.47	1.82	0.42	1.69	0.14	YES	YES	1.03	YES
006+00.00	007+00.00	RT	395.96	394.96	0.05	0.90	0.04	0.50	0.00	0.30	0.065	0.229	5.00	5.00	7.06	5.44	1.62	1.25	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.010	0.61	1.44	0.56	1.36	0.18	YES	YES	0.89	YES
007+00.00	008+00.00	RT	394.96	394.00	0.05	0.90	0.05	0.50	0.00	0.30	0.068	0.298	5.00	5.00	7.06	5.44	2.10	1.62	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.010	0.68	1.51	0.61	1.41	0.19	YES	YES	0.83	YES
008+00.00	009+00.00	RT	394.00	392.94	0.05	0.90	0.06	0.50	0.00	0.30	0.072	0.370	5.00	5.00	7.06	5.44	2.61	2.01	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.011	0.72	1.66	0.65	1.55	0.22	YES	YES	0.78	YES
009+00.00	010+00.00	RT	392.94	392.00	0.05	0.90	0.06	0.50	0.00	0.30	0.075	0.445	5.00	5.00	7.06	5.44	3.14	2.42	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.009	0.80	1.68	0.73	1.57	0.22	YES	YES	0.70	YES
010+00.00	011+00.00	RT	392.00	391.00	0.05	0.90	0.07	0.50	0.00	0.30	0.076	0.521	5.00	5.00	7.06	5.44	3.68	2.83	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.010	0.83	1.78	0.75	1.66	0.25	YES	YES	0.67	YES
011+00.00	011+35.00	RT	391.00	388.41	0.01	0.90	0.03	0.50	0.00	0.30	0.024	0.545	5.00	5.00	7.06	5.44	3.85	2.97	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.074	0.58	3.81	0.53	3.56	1.28	YES	YES	0.92	YES
011+35.00	012+00.00	RT	391.21	388.41	0.03	0.90	0.15	0.50	0.00	0.30	0.101	0.865	5.00	5.00	7.06	5.44	6.11	4.71	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.043	0.77	3.49	0.69	3.26	0.98	YES	YES	0.73	YES
012+00.00	013+00.00	RT	392.75	391.21	0.08	0.90	0.34	0.50	0.00	0.30	0.238	0.764	12.00	12.00	5.33	4.04	4.07	3.09	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.015	0.80	2.15	0.73	2.01	0.36	YES	YES	0.70	YES
013+00.00	014+00.00	RT	394.00	392.75	0.03	0.90	0.15	0.50	0.00	0.30	0.100	0.526	10.00	10.00	5.72	4.36	3.01	2.29	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.013	0.73	1.83	0.66	1.70	0.27	YES	YES	0.77	YES
014+00.00	015+00.00	RT	394.84	394.00	0.02	0.90	0.06	0.50	0.00	0.30	0.052	0.426	5.00	5.00	7.06	5.44	3.01	2.32	0.00	1.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.008	0.80	1.59	0.73	1.49	0.20	YES	YES	0.70	YES
015+00.00	015+65.00	RT	395.32	394.84	0.25	0.90	0.31	0.50	0.00	0.30	0.374	0.374	5.00	5.00	7.06	5.44	2.64	2.03	0.00	1.50	3.00	3.00	1-Bare Earth	4	0.030	NA	0.007	0.68	1.99	0.61	1.86	0.15	YES	YES	0.83	YES
011+35.00	012+00.00	LT	391.21	395.32	0.02	0.90	0.02	0.50	0.00	0.30	0.027	0.247	5.00	5.00	7.06	5.44	1.74	1.34	0.00	1.50	3.00	3.00	2-EC-2 Ty2	3	0.045	NA	0.063	0.44	2.93	0.40	2.74	0.83	YES	YES	1.06	YES
012+00.00	013+00.00	LT	392.75	391.21	0.03	0.90	0.02	0.50	0.00	0.30	0.035	0.220	5.00	5.00	7.06	5.44	1.55	1.20	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.015	0.56	1.69	0.51	1.59	0.25	YES	YES	0.94	YES
013+00.00	014+00.00	LT	394.00	392.75	0.03	0.90	0.03	0.50	0.00	0.30	0.039	0.184	5.00	5.00	7.06	5.44	1.30	1.00	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.013	0.53	1.48	0.48	1.38	0.20	YES	YES	0.97	YES
014+00.00	015+00.00	LT	394.84	394.00	0.03	0.90	0.07	0.50	0.00	0.30	0.061	0.146	5.00	5.00	7.06	5.44	1.03	0.79	0.00	1.50	3.00	3.00	1-Bare Earth	3	0.030	NA	0.008	0.46	1.64	0.42	1.54	0.11	YES	YES	1.04	YES
015+00.00	015+65.00	LT	395.32	394.84	0.05	0.90	0.07	0.50	0.00	0.30	0.084	0.084	5.00	5.00	7.06	5.44	0.60	0.46	0.00	1.50	3.00	3.00	1-Bare Earth	3	0.030	NA	0.007	0.38	1.37	0.35	1.29	0.08	YES	YES	1.12	YES

SWM Access Road

From Station	To Station	LT RT	Invert Upstream	Invert Downstream	Area 1 (acres)	C 0.9	Area 2 (acres)	C 0.5	Area 3 (acres)	C 0.3	Incr CA	Total CA	T_C 10 yr (min)	T_C 2 yr (min)	10 yr i (in/hr)	2 yr i (in/hr)	10 yr Q (cfs)	2 yr Q (cfs)	Bottom B (ft)	Depth Y (ft)	Left Slope (H/V)	Right Slope (H/V)	Lining Type	Lining Width (ft)	n	Ditch Curve? R_d (ft)	Ditch Slope (ft/ft)	10 yr Depth (ft)	10 yr Velocity (ft/sec)	2 yr Depth (ft)	2 yr Velocity (ft/sec)	Tractive Force "τ" (lbs/ft^2)	Lining Adeq? (Max V)	Lining Adeq? (Max $τ_{allow}$)	Free-board (ft)	Capacity Adeq?
000+75.00	001+00.00	LT	396.05	395.00	0.011	0.90	0.031	0.50	0.000	0.30	0.025	0.025	5.00	5.00	7.06	5.44	0.18	0.14	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.039	0.21	1.39	0.19	1.31	0.24	YES	YES	1.29	YES
001+00.00	002+00.00	LT	395.00	390.45	0.025	0.90	0.107	0.50	0.000	0.30	0.076	0.102	9.00	9.00	5.94	4.53	0.60	0.46	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.046	0.32	1.99	0.28	1.85	0.43	YES	YES	1.18	YES
002+00.00	003+00.00	LT	390.45	386.02	0.025	0.90	0.119	0.50	0.000	0.30	0.082	0.184	6.00	6.00	6.74	5.18	1.24	0.95	0.00	1.50	3.00	3.00	2-EC-2 Ty2	3	0.045	NA	0.044	0.48	2.60	0.38	2.20	0.63	YES	YES	1.02	YES
003+00.00	004+00.00	LT	386.02	383.49	0.025	0.90	0.107	0.50	0.000	0.30	0.076	0.260	5.00	5.00	7.06	5.44	1.84	1.42	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.025	0.54	2.12	0.49	1.99	0.41	YES	YES	0.96	YES
004+00.00	005+00.00	LT	383.49	381.99	0.025	0.90	0.094	0.50	0.000	0.30	0.070	0.330	5.00	5.00	7.06	5.44	2.33	1.80	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.015	0.65	1.85	0.59	1.73	0.29	YES	YES	0.85	YES
005+00.00	005+60.00	LT	381.99	379.17	0.014	0.90	0.044	0.50	0.000	0.30	0.034	0.365	5.00	5.00	7.06	5.44	2.57	1.98	0.00	1.50	3.00	3.00	2-EC-2 Ty2	4	0.045	NA	0.058	0.53	3.14	0.48	2.94	0.90	YES	YES	0.98	YES
005+60.00	006+00.00	LT	381.79	379.17	0.010	0.90	0.036	0.50	0.000	0.30	0.027	0.174	5.00	5.00	7.06	5.44	1.23	0.95	0.00	1.50	3.00	3.00	2-EC-2 Ty2	3	0.045	NA	0.089	0.37	3.06	0.33	2.87	0.96	YES	YES	1.13	YES
006+00.00	007+00.00	LT	385.39	381.79	0.025	0.90	0.141	0.50	0.000	0.30	0.093	0.147	9.00	9.00	5.94	4.53	0.87	0.67	0.00	1.50	3.00	3.00	2-EC-2 Ty2	3	0.045	NA	0.038	0.38	2.03	0.34	1.91	0.42	YES	YES	1.13	YES
007+00.00	007+75.00	LT	387.64	385.39	0.022	0.90	0.068	0.50	0.000	0.30	0.054	0.054	7.00	7.00	6.45	4.94	0.35	0.27	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.023	0.29	1.35	0.27	1.27	0.20	YES	YES	1.21	YES
007+75.00	008+00.00	LT	387.64	387.55	0.005	0.90	0.017	0.50	0.000	0.30	0.013	0.013	8.00	8.00	6.18	4.73	0.08	0.06	0.00	1.50	3.00	3.00	1-Bare Earth	2	0.030	NA	0.005	0.19	0.71	0.18	0.67	0.03	YES	YES	1.31	YES
008+00.00	009+00.00	LT	387.55	384.38	0.029	0.90	0.142	0.50	0.000	0.30	0.097	0.110	12.00	12.00	5.33	4.04	0.58	0.44	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.039	0.33	1.88	0.29	1.75	0.38	YES	YES	1.18	YES
004+04.53	005+00.00	RT	384.92	380.76	0.025	0.90	0.032	0.50	0.000	0.30	0.038	0.038	5.00	5.00	7.06	5.44	0.27	0.21	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.063	0.23	1.86	0.20	1.72	0.42	YES	YES	1.28	YES
005+00.00	005+60.00	RT	380.76	378.67	0.015	0.90	0.020	0.50	0.000	0.30	0.023	0.062	5.00	5.00	7.06	5.44	0.43	0.33	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.031	0.30	1.58	0.28	1.49	0.27	YES	YES	1.20	YES
005+60.00	006+00.00	RT	381.55	378.67	0.013	0.90	0.021	0.50	0.000	0.30	0.022	0.084	5.00	5.00	7.06	5.44	0.59	0.46	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.043	0.32	1.93	0.29	1.82	0.40	YES	YES	1.18	YES
006+00.00	007+00.00	RT	385.39	381.55	0.025	0.90	0.025	0.50	0.000	0.30	0.035	0.062	5.00	5.00	7.06	5.44	0.44	0.34	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.042	0.28	1.78	0.26	1.67	0.35	YES	YES	1.22	YES
007+00.00	007+75.00	RT	387.65	385.39	0.020	0.90	0.018	0.50	0.000	0.30	0.027	0.027	5.00	5.00	7.06	5.44	0.19	0.15	0.00	1.50	3.00	3.00	2-EC-2 Ty2	2	0.045	NA	0.034	0.22	1.34	0.20	1.27	0.22	YES	YES	1.28	YES

Substation Ditch North

From Station	To Station	LT RT	Invert Upstream	Invert Downstream	Area 1 (acres)	C 0.9	Area 2 (acres)	C 0.5	Area 3 (acres)	C 0.3	Incr CA	Total CA	T_C 10 yr (min)	T_C 2 yr (min)	10 yr i (in/hr)	2 yr i (in/hr)	10 yr Q (cfs)	2 yr Q (cfs)	Bottom B (ft)	Depth Y (ft)	Left Slope (H/V)	Right Slope (H/V)	Lining Type	Lining Width (ft)	n	Ditch Curve? R_d (ft)	Ditch Slope (ft/ft)	10 yr Depth (ft)	10 yr Velocity (ft/sec)	2 yr Depth (ft)	2 yr Velocity (ft/sec)	Tractive Force "τ" (lbs/ft^2)	Lining Adeq? (Max V)	Lining Adeq? (Max $τ_{allow}$)	Free-board (ft)	Capacity Adeq?
000+00.00	001+00.00	NA	393.15	391.95	0.40	0.90	0.11	0.50	0.00	0.30	0.416	0.416	5.00	5.00	7.06	5.44	2.94	2.26	4.00	2.50	3.00	3.00	2-EC-2 Ty2	6	0.045	NA	0.012	0.36	1.59	0.31	1.46	0.27	YES	YES	2.14	YES
001+00.00	002+00.00	NA	391.95	390.75	0.24	0.90	0.05	0.50	0.00	0.30	0.242	0.658	5.00	5.00	7.06	5.44	4.64	3.58	4.00	2.50	3.00	3.00	2-EC-2 Ty2	7	0.045	NA	0.012	0.47	1.84	0.41	1.71	0.27	YES	YES	2.03	YES
002+00.00	003+00.00	NA	390.75	389.55	0.35	0.90	0.05	0.50	0.00	0.30	0.335	0.993	5.00	5.00	7.06	5.44	7.01	5.40	4.00	2.50	3.00	3.00	2-EC-2 Ty2	8	0.045	NA	0.012	0.58	2.08	0.51	1.93	0.33	YES	YES	1.92	YES
003+00.00	004+00.00	NA	389.55	388.42	0.25	0.90	0.05	0.50	0.00	0.30	0.244	1.237	5.00	5.00	7.06	5.44	8.73	6.73	4.00	2.50	3.00	3.00	2-EC-2 Ty2	8	0.045	NA	0.011	0.68	2.19	0.58	2.02	0.35	YES	YES	1.83	YES
004+00.00	005+00.00	NA	388.42	387.40	0.51	0.90	0.07	0.50	0.00	0.30	0.498	4.484	5.00	5.00	7.06	5.44	31.66	24.40	4.00	3.00	3.00	3.00	2-EC-2 Ty2	12	0.045	NA	0.010	1.33	3.01	1.17	2.80	0.55	YES	YES	1.67	YES
005+00.00	006+00.00	NA	387.40	386.38	0.47	0.90	0.15	0.50	0.00	0.30	0.500	4.984	5.00	5.00	7.06	5.44	35.19	27.12	4.00	3.00	3.00	3.00	2-EC-2 Ty2	12	0.045	NA	0.010	1.40	3.09	1.23	2.89	0.57	YES	YES	1.60	YES
006+00.00	006+80.00	NA	386.38	385.50	0.25	0.90	0.12	0.50	0.00	0.30	0.280	5.264	5.00	5.00	7.06	5.44	37.17	28.65	4.00	3.00	3.00	3.00	2-EC-2 Ty2	12	0.045	NA	0.011	1.41	3.22	1.23	3.00	0.62	YES	YES	1.59	YES

Includes flow from internal drainage system

Substation Ditch South

From Station	To Station	LT RT	Invert Upstream	Invert Downstream	Area 1 (acres)	C 0.9	Area 2 (acres)	C 0.5	Area 3 (acres)	C 0.3	Incr CA	Total CA	T_C 10 yr (min)	T_C 2 yr (min)	10 yr i (in/hr)	2 yr i (in/hr)	10 yr Q (cfs)	2 yr Q (cfs)	Bottom B (ft)	Depth Y (ft)	Left Slope (H/V)	Right Slope (H/V)	Lining Type	Lining Width (ft)	n	Ditch Curve? R_d (ft)	Ditch Slope (ft/ft)	10 yr Depth (ft)	10 yr Velocity (ft/sec)	2 yr Depth (ft)	2 yr Velocity (ft/sec)	Tractive Force "τ" (lbs/ft^2)	Lining Adeq? (Max V)	Lining Adeq? (Max $τ_{allow}$)	Free-board (ft)	Capacity Adeq?
000+00.00	001+00.00	NA	398.52	395.84	0.04	0.90	0.14	0.50	0.00	0.30	0.11	0.11	5.00	5.00	7.06	5.44	0.76	0.59	4.00	2.50	3.00	3.00	2-EC-2 Ty2	5	0.045	NA	0.027	0.13	1.32	0.12	1.22	0.22	YES	YES	2.37	YES
001+00.00	002+00.00	NA	395.84	393.88	0.17	0.90	0.10	0.50	0.00	0.30	0.21	0.31	5.00	5.00	7.06	5.44	2.22	1.71	4.00	2.50	3.00	3.00	2-EC-2 Ty2	6	0.045	NA	0.020	0.27	1.71	0.23	1.58	0.33	YES	YES	2.23	YES
002+00.00	003+00.00	NA	393.88	392.88	0.20	0.90	0.08	0.50	0.00	0.30	0.22	0.53	5.00	5.00	7.06	5.44	3.76	2.90	4.00	2.50	3.00	3.00	2-EC-2 Ty2	7	0.045	NA	0.010	0.43	1.61	0.38	1.49	0.21	YES	YES	2.07	YES
003+00.00	004+00.00	NA	392.88	391.88	0.30	0.90	0.08	0.50	0.00	0.30	0.31	0.84	5.00	5.00	7.06	5.44	5.93	4.57	4.00	2.50	3.00	3.00	2-EC-2 Ty2	8	0.045	NA	0.010	0.56	1.85	0.48	1.71	0.26	YES	YES	1.94	YES
004+00.00	005+00.00	NA	391.88	390.88	0.20	0.90	0.05	0.50	0.00	0.30	0.21	1.05	5.00	5.00	7.06	5.44	7.40	5.70	4.00	2.50	3.00	3.00	2-EC-2 Ty2	8	0.045	NA	0.010	0.63	1.99	0.55	1.84	0.29	YES	YES	1.87	YES
005+00.00	006+00.00	NA	390.88	389.88	0.31	0.90	0.05	0.50	0.00	0.30	0.30	1.35	5.00	5.00	7.06	5.44	9.54	7.36	4.00	2.50	3.00	3.00	2-EC-2 Ty2	9	0.045	NA	0.010	0.73	2.14	0.63	1.99	0.33	YES	YES	1.78	YES
006+00.00	007+00.00	NA	389.88	388.88	0.26	0.90	0.05	0.50	0.00	0.30	0.26	1.61	5.00	5.00	7.06	5.44	11.38	8.77	4.00	2.50	3.00	3.00	2-EC-2 Ty2	9	0.045	NA	0.010	0.79	2.24	0.69	2.09	0.35	YES	YES	1.71	YES
007+00.00	008+00.00	NA	388.88	387.86	0.41	0.90	0.06	0.50	0.00	0.30	0.40	4.78	5.00	5.00	7.06	5.44	33.76	26.02	4.00	2.80	3.00	3.00	2-EC-2 Ty2	12	0.045	NA	0.010	1.38	3.06	1.21	2.85	0.56	YES	YES	1.43	YES
008+00.00	009+00.00	NA	387.86	386.81	0.05	0.90	0.58	0.50	0.00	0.30	0.34	5.12	5.00	5.00	7.06	5.44	36.14	27.85	4.00	2.80	3.00	3.00	2-EC-2 Ty2	12	0.045	NA	0.011	1.38	3.12	1.22	2.91	0.58	YES	YES	1.42	YES
009+00.00	010+00.00	NA	386.81	385.80	0.40	0.90	0.16	0.50	0.00	0.30	0.44	5.56	5.00	5.00	7.06	5.44	39.27	30.27	4.00	2.80	3.00	3.00	2-EC-2 Ty2	13	0.045	NA	0.010	1.48	3.17	1.30	2.96	0.59	YES	YES	1.33	YES
010+00.00	010+20.00	NA	385.80	385.50	0.00	0.90	0.02	0.50	0.00	1.30	0.01	5.57	5.00	5.00	7.06	5.44	39.36	30.33	4.00	2.80	3.00	3.00	2-EC-2 Ty2	12	0.045	NA	0.015	1.34	3.66	1.18	3.41	0.81	YES	YES	1.46	YES

Includes flow from internal drainage system

REVISIONS

REV	DATE	DESCRIPTION

Dewberry
Dewberry Engineers Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060; (p) 804.290.7957

COMMONWEALTH OF VIRGINIA
KEITH A. SCHOLTEN
Lic. No. 036569
1/29/24
PROFESSIONAL ENGINEER

DEWBERRY PROJECT NO.: 50157950

Dominion Energy

DRAINAGE CALCULATIONS

UNITY SUBSTATION
LUNENBURG COUNTY VIRGINIA

OPERATIONAL REGION		B/M No.		SCALE
PROJECT	NAME	DATE	SHEET: 1707908-C-902	
DESIGNER	MFR	8/18/23		
PROJECT ENGINEER	GA	8/18/23	DRAWING:	
APPROVED BY	KAS	8/18/23	1707908-C-902.dwg	

Lunenburg Planning Office
Application for Conditional Use Permit for **Solar Facilities**
Case Number: _____ (Office Use Only)

Section 1

Applicant Name: Virginia Electric and Power Company dba Dominion Energy Virginia

Owner Name: Kevin L. Fields - Authorized Representative

Owner Signature: K Fields

Contact Name for Application: Chuck Weil

Physical and Mailing Address: 5000 Dominion BLVD, 3rd Floor, Glen Allen, VA 23060

Phone Number: (804) 239-6450

Email Address: Charles.H.Weil@Dominionenergy.com

Fax Number (if applicable):

Power of Attorney Name: Kevin L Fields

Power of Attorney Signature: K Fields

As owner or authorized agent of this property, I certify that this application is complete and accurate to the best of my knowledge, and I authorize the Lunenburg County representative(s) entry on the property for purposes of reviewing this application.

Section 2
Property Information

Parcel Number(s): Portion of 059-0A-0-18A (SITE)

059-01-0-2 (ACCESS ROAD)

059-03-0-6 (ACCESS ROAD)

Area (ac./sq. ft.): Portion of 059-0A-0-18A (49.65ac/2,162,869sf)

Magisterial District: COLUMBIAN GROVE

Address: 3832 LAUREL BRANCH ROAD, LUNENBURG COUNTY, VA

Existing Zoning: A-1 : Agriculture

Requested Use: Electrical Substation

Does this property have a historical designation? If yes, describe: NO

Parcel number(s), acreage, magisterial district and existing zoning can be located at: https://lunenburggis.timmons.com/#/mwl. The address can be typed into the "*By Parcel Address"* search bar followed by selecting search. This will pull up the information pertaining to the parcel.

The application deadline is the **1st of the month proceeding the month** in which the public hearing by the Planning Commission is to be held. The Planning Commission meeting is held on the 1st Thursday of the month at 7:00 p.m. Applications must be submitted in completed form a minimum of forty-five (45) days prior to scheduling a public hearing by the Planning Commission. Notice of incomplete applications will be sent to the applicant at the listed address in Section 1.

The site plan must be submitted as described in the site plan requirements at the time of the application.

Application fee is $2,500.00, which must be paid at the time of application submission. The applicant will be invoiced for any costs incurred, including but not limited to advertising, postage, legal fees, third-party consulting fees, etc.

Incomplete applications will be returned to the applicant and not docketed for a public hearing

Section 3
Certification of Adjoining Property Owners, Board of Supervisors, and Planning Commissioners

Applicants Certification:

I certify that I have notified all adjacent property owners, to the property which is the subject of this application request, that this application is being filed. Notifications were sent via first class mail.

Adjacent property includes all property touching the project parcel, across roadways, watercourses, railroads, and/or municipal boundaries.

I further certify that the names and addresses below are those of the adjacent property owners as listed in the tax records of the Commissioner of Revenue of Lunenburg County.

Applicant's Signature: _____

State of: _____.

County of: _____.

Before me, _____, on this _____ day of
Name of Notary Public

_____, 20____, _____, personally appeared, and
Applicant(s) Name

provided verification to be the person(s) whose name(s) is/are subscribed to the foregoing instrument and acknowledged to me that he/she/they executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this _____ day of _____, 20___.

_____
Notary Public's Signature

_____
Location of Commission

Registration #: _____

Commission Expiration: _____

Verification of Identity
[ ]Driver's License or Govt./State Identification Card:
State: _____ Number: _____
[ ] U. S. Passport: Number: _____
[ ] U. S. Military ID Card
[ ] Social Security Card
[ ] Birth Certificate
[ ] Other: _____

(Seal)

Adjacent Parcel (Property) Owners		
Parcel Number	**Name(s)**	**Address**
059-01-0-3	FBJ GRAT-98 FORESTS LLC,	PO BOX 1288 MOBILE AL 36633
059-02-0-1	LONG RANDALL S	3173 BRICKLAND ROAD SOUTH HILL VA 23970
059-02-0-2A	LONG JOHNNY K	3502 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-03-0-5	RAGSDALE DOUGLAS INGRAM JR,	12113 CREEKWOOD TERRACE KNOXVILLE TN 37934
059-03-0-6	RAGSDALE DOUGLAS INGRAM JR,	12113 CREEKWOOD TERRACE KNOXVILLE TN 37934
059-03-0-9	LONG RANDALL S,	3173 BRICKLAND ROAD SOUTH HILL VA 23970
059-04-0-3	ARD CHRISTOPHER P	3899 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-04-0-4	CURLEY GEORGE W & SARA L	3899 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-18A	LONG RANDALL S,	3173 BRICKLAND ROAD SOUTH HILL VA 23970
059-0A-0-39	YEATTS CLAUDE WESLEY & JAMES WILEY &, JAMES ELLIOTT NASH & MELINDA CLAY NASH	4525 BRICKLAND ROAD KENBRIDGE VA 23944
059-0A-0-41	HARVILICZ RONALD M OR PATRICIA I	3963 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-41A	BOAZ DAVID A,	3832 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-41B	CURLEY SARA L OR GEORGE W CURLEY	3883 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-41C	REESE MARK S SR OR CONNIE W,	8507 CRAIG MILL ROAD KENBRIDGE VA 23944
059-0A-0-41D	LONG JOHNNY K	3502 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-42	HOLMES CHARLIE ESTATE	251 DUSTY LANE KENBRIDGE VA 23944
059-0A-0-43	REESE MARK S SR OR CONNIE W,	8507 CRAIG MILL ROAD KENBRIDGE VA 23944
059-0A-0-43A	BOAZ DAVID A	3832 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-44	LONG RONALD E OR PATRICIA A	3589 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-44A	LONG RONALD E OR PATRICIA A	3589 LAUREL BRANCH ROAD KENBRIDGE VA 23944

*If there are additional adjacent property owners, please include them on a separate sheet. Also, the letter that follows can be completed and mailed to adjacent property owners.

Adjacent Parcel (Property) Owners		
Parcel Number	**Name(s)**	**Address**
059-0A-0-44A1	REESE MARK S SR OR CONNIE W	8507 CRAIG MILL ROAD KENBRIDGE VA 23944
059-0A-0-44B1	REESE MARK S SR OR CONNIE W	8507 CRAIG MILL ROAD KENBRIDGE VA 23944
059-0A-0-44C	NOBLIN AMANDA R	3441 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-44C1	REESE MARK S SR OR CONNIE W,	8507 CRAIG MILL ROAD KENBRIDGE VA 23944
059-0A-0-46	HERRINGTON BRENDA REESE ET A	603 WINDSOR AVE LAWRENCEVILLE VA 23868
059-0A-0-53A	LONG JOHNNIE K,	3502 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-54	RAGSDALE DOUGLAS INGRAM JR,	12113 CREEKWOOD TERRACE KNOXVILLE TN 37934
059-0A-0-54A	LONG JOHNNY K OR LUCILLE S,	3502 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-0A-0-55	CEMETERY	
071-0A-0-9	YANCEY ROSA LEE OR CARSON W &, GINGER LEE & JEAN ELIZABETH YANCEY	3653 BRICKLAND ROAD SOUTH HILL VA 23970
059-01-0-3	FBJ GRAT-98 FORESTS LLC,	PO BOX 1288 MOBILE AL 36633
059-02-0-1	LONG RANDALL S	3173 BRICKLAND ROAD SOUTH HILL VA 23970
059-02-0-2A	LONG JOHNNY K,	3502 LAUREL BRANCH ROAD KENBRIDGE VA 23944
059-03-0-5	RAGSDALE DOUGLAS INGRAM JR,	12113 CREEKWOOD TERRACE KNOXVILLE TN 37934
059-03-0-9	LONG RANDALL S	3173 BRICKLAND ROAD SOUTH HILL VA 23970
059-0A-0-18	MOORE ANN D,	351 RUBIN LANE KENBRIDGE VA 23944
059-0A-0-19	MARTIN DOROTHY S	13301 KINGSMILL ROAD MIDLOTHIAN VA 2311

*If there are additional adjacent property owners, please include them on a separate sheet. Also, the letter that follows can be completed and mailed to adjacent property owners.

Notification of Application Submittal to Adjacent Property Owners

To: Adjacent Property Owner of Parcel(s) _____

From: Dominion Energy Virginia

Date: _____

The following application will be submitted for review to the Lunenburg County Planning Office:

[ ] Rezoning

[X] Conditional Use Permit

[ ] Special Exception

Requested Use or Exception:

This application is for a Conditional Use Permit to construct a 230/500kV Electric Transmission Substation (a major public utility) on a parcel that is zoned A-1 Agricultural.

The application will be available for viewing at the Lunenburg County Planning Office. The Planning Office shall notify all adjacent property owner(s) of the time, day, and location of the public hearing(s) to be held on this application. Should you have questions and/or comments, please contact the Planning Office at 434.696.2142 or taylor@lunenburgva.gov.

Section 4
Applicant's Report
Section 8.3(b) of Lunenburg Zoning Ordinance

Every application for a Conditional Use Permit shall be accompanied by a report from the applicant describing the proposed Conditional Use and explaining the manner which it complies with the requirements and standards of this article.

The following questions address the basic issues. The Planning Commission and/or Board of Supervisors may request additional information.

1.) What type of use is being requested?
The construction and operation of a Dominion Energy 500/230KV substation.

2.) Describe how you plan to develop the property for the proposed use and any associated uses.
The site will be cleared and graded for the installation of the substation and associate electrical equipment. A wet pond will be constructed to address stormwater management. An access road will be constructed from Laurel Branch Road to the substation.

3.) Describe why the proposed use is desirable and appropriate for the area. What measures will be taken to assure that the proposed use will not have a negative impact on the surrounding vicinity?
The construction of the electrical utility substation will help meet growing power demands. The regulations of all local, state, or federal governmental bodies having jurisdiction over the project shall be observed at all times.

Also, address the following:

a. Details of Operations: The substation will be unmanned with personnel on site only when needed.
b. Hours of Operation: 24/7
c. Traffic: Because the substation is unmanned there will be no increase in traffic and will only have personnel on site when maintenance is needed.
d. Noise: We always work to design a new substation to meet the sound ordinance requirements of the locality where the substation resides which is typically specified as a specific "A" weighted sound level measured at the substation property line.
e. Dust/Smoke: There will be no generation of dust or smoke from the proposed substation once constructed.
f. Runoff: This project was analyzed for the 1-year and 10-year storm events to show compliance with VA DEQ IIB Stormwater Management Water Quantity Requirements. There is one wet pond on site.
g. Intensity of Use: The substation will have be low intensity due to it being an unmanned station.
h. Hazardous Materials: SF6 is the medium for the installed circuit breakers in the substation and has been listed as a hazardous material by OSHA but will not be a danger to the surrounding community.
i. Outside Storage: N/A

4.) Is the use location on a floodplain, wetland area, or dam break inundation zone? No
5.) Are there any deed restrictions concerning the type of use proposed? If so, provide the date the said restrictions expire. No

6.) Has a survey of the parcel(s) been conducted to include project parcel, property boundaries, existing roadways and structures, and adjoining parcels, as well as, the parcel owner? If so, is it included in the application packet? A combination of field run survey and GIS was used to show the existing conditions of the parcels. Site plan is included in submission packet.

7.) Has a site plan been included to note the information required on the survey, but also any new construction, parking, clearing, planting, etc.? A site plan is included with this application.

8.) Has a business plan been established? If so, please provide it with application submittal. N/A

9.) Describe how the proposed project complies or refutes the goals and objectives noted in the Kenbridge-Victoria-Lunenburg Comprehensive Plan. This can be located the Lunenburg County, Virginia website. The construction of the electrical utility substation will help meet growing power demands. This complies with goals such as "Promote the expansion of a diversified economy"

Requirements for telecom site plans can be found in Section 22 Article III, items 22-81 thru 22-112 of the Lunenburg County Code.

Section 5
Construction Traffic Management Plan (CTMP)

VDOT and the County have identified that the construction phase of solar energy projects have an increased impact on VDOT's secondary road network. These impacts occur as VDOT's secondary road system was not designed to accommodate large numbers of truck traffic that results from the transport of the needed materials for the solar project to the construction sites. The increase in number of employees, also, impacts the roadways. To assist VDOT and the County in mitigating the increased maintenance costs associated with the increased traffic, the County requires the submission and approval of a CTMP. The outline below includes the needed elements for the required CTMP.

Construction Traffic Haul Routes

- Identify the routes to be used to transport supplies to the construction site. The plan shall begin at a VDOT maintained primary route and include all secondary routes to be used to access the site.
- The plan shall, also, include any truck routes that may be used to dispose of excess materials, clearing and grubbing debris, timber harvesting, or other activities that generate truck traffic leaving the site.

Roadway Condition Survey

- The applicant shall document by either photos, videos, or other method acceptable to VDOT and the County, the condition of the secondary roadways identified as haul routes. This condition survey will be utilized to identify areas damaged by the construction traffic that will be required to be repaired to the pre-existing conditions or better.

On-Site Storage, Unloading, and Turn-Around Areas

- The applicant shall demonstrate that they have adequate areas available on-site to unload trucks, store the materials on-site, and provide an area where trucks can turn around on-site prior to entering the VDOT roadway.

On-Site Parking Areas for Construction Employees

- The applicant shall provide an estimated number of employees to be on-site during construction and demonstrate that adequate on-site parking areas are available for the anticipated employees. Employees will not be allowed to park along roadways or within VDOT Right-of-Way (ROW) adjacent to the construction areas.

Staff Report

Planning Commission and Board of Supervisors Staff Report
Unity Substation
Conditional Use Permit CUP-#-23
Lunenburg County, Virginia

Report Date: June 7, 2024
Planning Commission Meeting Date: June 13, 2024

APPLICATION SUMMARY

Project:	Unity Substation
Location:	The proposed facility will be a public utility switchyard (the "Switchyard") and substation (the "Substation") located on an approximately 26-acre portion of the property located at 3832 Laurel Branch Road (accessed from Dusty Lane).
Parcel Record Numbers:	059-0A-0-18A, 059-01-0-2, 059-03-0-6
Proposal:	The proposed public facility will be a public utility substation (the "Substation") located on an approximately 213-acre portion of the property located at 3832 Laurel Branch Road (accessed from Dusty Lane). The proposed Substation will be located on a single parcel, with 2-3 other parcels being used for access roads. The total disturbed acreage is 26.25 acres.
Application Submitted:	August 18, 2023 2232 Review on April 3, 2024
Applicant:	Virginia Electric and Power Company dba Dominion Energy Virginia Kevin Fields 5000 Dominion Blvd Glen Allen, VA 23060
Representative:	Kevin Fields (804) 771-3769

PLANNING COMMISSION ROLE

The Applicant has submitted a Conditional Use Permit (CUP) application for a switchyard and substation; as a major public utility, a CUP is required for the use in the A-1 zoning district. The Planning Commission previously completed their review of the Applicant's proposal as a "public utility facility" under Virginia Code Section 15.2-2232(A) and determined that the general or

approximate location, character, and extent of the proposed facility is substantially in accord with the County's Comprehensive Plan. Now, the Planning Commission may proceed with review of the CUP. Pursuant to Article 8, *Conditional Use Permits*, of the Lunenburg County Zoning Ordinance , the Planning Commission shall review the application and provide a recommendation to the Board of Supervisors following a public hearing; the Planning Commission may recommend approval or disapproval of the CUP, along with written reasons for its decision, or may defer the application for further discussion and consideration. As part of its recommendation for approval, the Commission may recommend that conditions be imposed to ensure compliance. In considering their recommendation, the Planning Commission shall consider "at least" the criteria contained in Section 8-5, *General requirements for approval of conditional use permits*, of Article 8. The Planning Commission shall issue their recommendation by motion, with the reasons for the recommendation, including a statement of the relationship of the proposed used to the Comprehensive Plan.

PROPOSED DEVELOPMENT

The proposed public facility will be a public utility substation (the "Substation") located on an approximately 213-acre portion of the property located at 3832 Laurel Branch Road (accessed from Dusty Lane). The proposed Substation will be located on a single parcel, with 2-3 other parcels being used for access roads. The total disturbed acreage is 26.25 acres.

The proposed Substation, under CUP-#-23, to be developed on three (3) parcels, will have a capacity of 230/500kV. The Property is currently used for agriculture and is largely open pasture. The majority of the Project is located along Dusty Lane and Laurel Branch Road.

EXISTING CONDITIONS AND ZONING

The parcel subject to the Application is currently zoned A-1, Agricultural, and is located in an area of the County having a current and future land use designation as *Agricultural*, characterized as areas "foreseen as slow growth, low density areas…expected to remain primarily agricultural, forest, and rural residential land uses."

The Project site is largely cleared, open pasture. The Application contains a *Slopes* plan indicating topography of the site. According to the Application, on-site soils are moderately fine-grained sands, humus, and clay, including Appling sandy loam, 2 to 7 percent slopes, moderately eroded; Appling sandy loam, 7 to 15 percent slopes, moderately eroded; Cecil sandy loam, 2 to 7 percent slopes, eroded. The Erosion and Stormwater Control Plan indicating slopes 0% to 15%.

ADJACENT AND SURROUNDING USES

The areas surrounding the proposed project area share the same land use and zoning characteristics – rural, agricultural, forestry uses – as well as the same land use classifications.

The closest town to the site is the Town of Kenbridge. The project site boundary is located 6 miles from the Kenbridge town center.

COMPREHENSIVE PLAN CITATIONS

The following Comprehensive Plan citations should be considered:

Chapter V, *Special Policy Areas*, *Policy Area: Loss of Agricultural Land and Open Space*, references that "Future residential, commercial and industrial development should be encouraged to locate in areas where adequate public services are available or planned. Any development that does occur in the rural areas should be designed to incorporate significant open spaces and designed to minimize environmental impacts on the land and water resources," and that "Environmental impacts of any newly planned development area should be considered. It is essential to maintain a balance between development and preservation objectives throughout the area." This section recommends that "Commercial and/or industrial developments that are approved in the rural portions of the County should be consistent with the best interest of the community."

Chapter V, *Special Policy Areas*, *Policy Area: Protection of Water Resources*, references that surface water resources within the County "provide recreational opportunities and are a critical component of the County's infrastructure and quality of life. As such, protection and enhancement of these water resources should be a primary object of the County and the Towns."

Chapter V, *Special Policy Areas*, *Policy Area: Corridor Development*, notes that road corridors, including Route 40, "maintain a high level of service," and that "Future development along these roads should be planned and designed to ensure that the safety and capacity of these roads are maintained and managed," and further references that road corridors including Route 40 are important "as "gateways to the County and Towns" these roads create first impressions to visitors coming into the area. The views and character of development is visible from the roadways. Maintenance and enhancement of these gateways can be critical to the success of the economic development and marketing activities in Lunenburg County, the Town of Kenbridge and the Town of Victoria."

Chapter VI, *Goals, Objectives, and Strategies*, B., *Economy and Employment*:

- Goal: Promote the expansion of a diversified economy.
  - Objective 1: Encourage quality industries to locate within the County and Towns.
    - Strategy 4: County Government, and other parties, to promote the area to environmentally friendly industries.
  - Objective 2: Provide adequate land and resources for commercial and industrial uses.
    - Strategy 5: Guide community and industrial uses into areas with adequate public utilities and transportation access.

Chapter VI, *Goals, Objectives, and Strategies*, C., *Land Use*:

- Goal: Promote a balance of land uses that meet economic and demographic needs of Lunenburg County, the Town of Kenbridge and the Town of Victoria.
  - Objective 4: Encourage quality industries to locate within the County and Towns.
    - Strategy 1: Encourage industries to locate in the County and Towns' industrial parks or in areas where they are compatible to adjacent uses.
    - Strategy 2: Guide community and industrial uses into areas with adequate public utilities and transportation access.
    - Strategy 3: Work with interest groups to attract new industries to the locality. Encourage industries to locate in the industrial parks or in areas where they are compatible to adjacent uses.
    - Strategy 4: Liaise with the Chamber of Commerce, and other parties, to promote the area to environmentally friendly industries.

Chapter VI, *Goals, Objectives, and Strategies*, F., *Natural Resources*:

- Goal: Protect and preserve the natural resources of the community.
  - Objective 1: Prevent development in areas of critical environmental importance.
    - Strategy 1: Restrict development in flood plains, swamps and drainage ways.
    - Strategy 2: Restrict development on soils that will not adequately support structures.
    - Strategy 4: Identify and protect all open spaces which have recreational potential or which would enhance the environment in Lunenburg County, the Town of Kenbridge and the Town of Victoria.
    - Strategy 5: Promote the preservation and planting of trees, shrubs and other natural foliage.

ZONING ORDINANCE PROVISIONS

The County's Zoning Ordinance includes the following sections relevant to the review of the Conditional Use Permit:

Article 8, *Conditional Use Permits*, of the Zoning Ordinance, establishes the procedures and standards for consideration of conditional use permit applications. **Section 8-5, *General requirements for approval of conditional use permits***, establishes that a conditional use permit shall be approved by the board of supervisors only if it finds that the proposed conditional use and related plans:

(a) Will not be contrary to the purposes of this ordinance as stated in section 2-3;
(b) Will not be in conflict with the objectives of the comprehensive plan for the county;
(c) Conform with all applicable provisions of this article, all other applicable requirements of the district in which such use is located and any specific conditions applicable to the proposed conditional use specified elsewhere in this ordinance; and
(d) Include satisfactory provision for or arrangement of the following, where applicable:

(1) Sewer, water and other public utilities;
(2) Ingress and egress, including access for fire and other emergency vehicles;
(3) Off-street parking, loading and vehicle circulation, including adequate consideration of the safety of motorists and pedestrians;
(4) Yards, open spaces, relationship among buildings and other elements of the site;
(5) Retention of natural vegetation and topographic features; and
(6) Landscaping, buffers, screening, fences and other features or means of separation to protect adjacent properties from potential adverse effects of the conditional use.

STAFF REVIEW, ANALYSIS, AND COMMENTS

Staff has reviewed the subject Application pursuant to Article 8, *Conditional Use Permits*, of the County's Zoning Ordinance, and specifically Section 8-5, *General requirements for approval of conditional use permits*, with respect to whether the application will not be contrary to the purposes of the Zoning Ordinance, or in conflict with the objectives of the Comprehensive Plan for the County, will conform with the provisions and requirements of the Zoning Ordinance, and includes satisfactory provision for or arrangement of certain infrastructure and physical development conditions. Please consider the following:

Whether the proposed conditional use and related plans will not be contrary to the purposes of this ordinance as stated in section 2-3

The purpose of the County's Zoning Ordinance, as provided in Section 2-3, Purpose, is as follows:

"…to classify the unincorporated territory of the county into zoning districts for the general purpose of promoting the health, safety and general welfare of the public and of further accomplishing the objectives of Code of Virginia, § 15.2-2200. To these ends, and pursuant to the provisions of Code of Virginia, § 15.2-2283, this ordinance is designed to give reasonable consideration to each of the following purposes, where applicable:

(a) To provide for adequate light, air, convenience of access and safety from fire, flood, crime and other dangers;
(b) To reduce or prevent congestion in the public streets;
(c) To facilitate the creation of a convenient, attractive and harmonious community;
(d) To facilitate the provision of adequate police and fire protection, disaster evacuation, civil defense, transportation, water, sewerage, flood

protection, schools, parks, forests, playgrounds, recreational facilities, airports and other public requirements;

(e) To protect against destruction of or encroachment upon historic areas;

(f) To protect against one or more of the following: overcrowding of land, undue density of population in relation to the community facilities existing or available, obstruction of light and air, danger and congestion in travel and transportation or loss of life, health or property from fire, flood, panic or other dangers;

(g) To encourage economic development activities that provide desirable employment and enlarge the tax base;

(h) To provide for the preservation of agricultural and forestal lands and other lands of significance for the protection of the natural environment;

(i) To protect approach slopes and other safety areas of licensed airports, including United States government and military air facilities;

(j) To promote the creation and preservation of affordable housing suitable for meeting the current and future needs of the county as well as a reasonable proportion of the current and future needs of the planning district; and

(k) To protect surface water and ground water as defined in Code of Virginia, § 62.1-255.

Staff is of the opinion that the proposed use and related plans, with the imposition of reasonable conditions, will be consistent with the purposes of the Zoning Ordinance. Further elaboration on Staff's position is provided below with respect to relevant policies contained in the Comprehensive Plan.

<u>Whether the proposed conditional use and related plans will not be in conflict with the objectives of the comprehensive plan for the county</u>

As noted herein, the Planning Commission previously completed their review of the Applicant's proposal as a "public utility facility" under Virginia Code Section 15.2-2232(A) and determined that the general or approximate location, character, and extent of the proposed facility is substantially in accord with the County's Comprehensive Plan. This determination was made at the Planning Commission's meeting on April 4, 2024.

As noted within the staff report for the 2232 review, Staff reviewed and analyzed the Application with respect to the above referenced Comprehensive Plan citations and offered the following opinions with respect to whether the project is substantially in accord with the Comprehensive Plan, or for these purposes, whether the proposed conditional use and related plans conflict with the objectives of the comprehensive plan for the County:

- With respect to the Loss of Agricultural Land and Open Space policy area, significant areas of the project will remain undeveloped, and the project is designed to minimize environmental impacts, and/or such impacts will be

minimized through reasonable conditions. It is also important to note that none of the leased lands comprising the Project rank as having suitability (high or otherwise) under the Agricultural Model used for the Virginia Department of Conservation and Recreation's (DCR's) Virginia Natural Heritage Data Explorer.

- With respect to the Protection of Water Resources policy area, Staff is of the opinion that the project will be subject to Virginia Department of Environmental Quality regulations and permitting, which will work to ensure protection of the County's water resources. It is important to note that there are areas along streams within the Project that rank low impact under the Watershed Impact Model used for the Virginia DCR's Virginia Natural Heritage Data Explorer.

- With respect to applicable Economy and Employment goals, objectives, and strategies. Staff is of the opinion that the proposed development works to expand a diversified economy within the County and would constitute an environmentally friendly industrial use.

- With respect to applicable Land Use goals, objectives, and strategies, while the area has adequate and necessary access and constitutes a more environmentally friendly industrial use, it is not inherently compatible with adjacent uses, which are almost entirely residential and agricultural. Setbacks and buffers/screening work to mitigate for this incompatibility.

- With respect to applicable Natural Resources goals, objectives, and strategies, Staff is of the opinion that the proposed development does not negatively impact natural resources of the County, especially areas of critical environmental importance. Staff acknowledges that the project works to promote the preservation of existing trees by retaining existing vegetated areas along the periphery of the site and would suggest that additional reasonable conditions to support the long-term maintenance of these areas be considered as part of the review of the Conditional Use Permit. It is important to note that while some areas of the Project rank as Moderate for Forest Conservation Value on Virginia DCR's Virginia Natural Heritage Data Explorer, most forested areas rank as Moderate or Average. Further, areas of the Project rank as Low or Moderate for Ecological Cores on Virginia DCR's Virginia Natural Heritage Data Explorer, with no areas ranking as High, Very High, or Outstanding.

Whether the proposed conditional use and related plans will conform with all applicable provisions of Article 8, *Conditional Use Permits*, all other applicable requirements of the district in which such use is located and any specific conditions applicable to the proposed conditional use specified elsewhere in the Zoning Ordinance

Staff had previously determined, in a report dated March 14, 2024 that the subject Application was complete and compliant/conforming) with all applicable requirements of the County's Zoning Ordinance.

Whether the proposed conditional use and related plans include satisfactory provision for or arrangement of the following, where applicable:

(1) Sewer, water and other public utilities;
(2) Ingress and egress, including access for fire and other emergency vehicles;
(3) Off-street parking, loading and vehicle circulation, including adequate consideration of the safety of motorists and pedestrians;
(4) Yards, open spaces, relationship among buildings and other elements of the site;
(5) Retention of natural vegetation and topographic features; and
(6) Landscaping, buffers, screening, fences and other features or means of separation to protect adjacent properties from potential adverse effects of the conditional use.

Staff is of the opinion that the proposed use and related plans satisfactorily provide or arrange for:

1. Necessary utilities;
2. Ingress and egress, including access for fire and other emergency services;
3. Parking, loading, and vehicle circulation, including adequate consideration of the safety of motorists and pedestrians;
4. Yards, open spaces, and the relationship among buildings and other elements of the site;
5. The retention of natural vegetation and topographic features; and
6. Landscaping, buffers, screening, fences, and other means of separation to protect adjacent properties from potential adverse effects of the conditional use.

Staff would recommend reasonable conditions to ensure this satisfactory position remains, especially relating to ingress and egress to the site, the construction/development stage of the project, and the long-term maintenance of existing trees and vegetated areas.

STAFF RECOMMENDATION

Based upon the above review, and for the reasons noted herein, Staff recommends ***approval of the Conditional Use Permit as proposed with conditions.***

PLANNING COMMISSION ACTION; DRAFT OPTIONS

As noted, after holding a public hearing on the Conditional Use Permit, the Planning Commission may recommend approval or disapproval of the Conditional Use Permit, or approval with conditions to ensure compliance with the requirements of the County's Zoning Ordinance. In making its recommendation, the Commission shall consider, at least, the aforementioned criteria specified in Section 8-5, *General requirements for approval of*

conditional use permits, of Article 8, *Conditional Use Permits*. The recommendation of the Commission shall be in the form of a motion, giving the reasons for the Commission's action and the vote of each member. The motion and recommendation to the board shall include a statement of the relationship of the proposed conditional use to the comprehensive plan. In any case where the commission is unable to adopt a motion to recommend approval, approval with conditions or disapproval, it shall report to the board of supervisors stating such fact and summarizing its deliberations. Failure of the Commission to provide a recommendation or report to the Board of Supervisors within 100 days after the first meeting of the Commission after the conditional use permit application was referred to the Commission shall be considered a recommendation of approval, unless the Application has been withdrawn by the Applicant prior to expiration of the time period.

Staff Recommendation - Option 1 - Recommend approval of the application with the stated (or amended) conditions.

I move to recommend to the Board of Supervisors that Virginia Electric and Power Company's Conditional Use Permit for a proposed Switchyard and Substation, as presented, be approved with conditions to ensure the project's consistency with the following findings and compliance with the applicable requirements of the County's Zoning Ordinance:

1. The proposed use and plans are not contrary to the purposes of the County's Zoning Ordinance.
2. The proposed use and plans are consistent with the objectives of the comprehensive plan for the County, namely that:

    a. The project will be subject to Virginia Department of Environmental Quality regulations and permitting, which will work to ensure protection of the County's water resources;
    b. The proposed development works to expand a diversified economy within the County, and would constitute an environmentally friendly industrial use, primarily due to the proposed scale of operation, generally sited in an area with adequate and necessary utility access;
    c. The area of the proposed project has adequate and necessary utility access and the project constitutes a more environmentally friendly industrial use; while not inherently compatible with adjacent uses, which are almost entirely residential and agricultural, significant setbacks and buffers/screening will work to mitigate for this incompatibility and additional conditions can considered as part of the review of the Conditional Use Permit; and
    d. The proposed development does not negatively impact natural resources of the County, especially areas of critical environmental importance.

3. The proposed use and plans conform with all applicable provisions of Article 8, *Conditional Use Permits*, all other applicable requirements of the district in which the use is located.

4. The proposed use and plans include satisfactory provision for or arrangement of:

    a. Sewer, water and other public utilities;
    b. Ingress and egress, including access for fire and other emergency vehicles;
    c. Off-street parking, loading and vehicle circulation, including adequate consideration of the safety of motorists and pedestrians;
    d. Yards, open spaces, relationship among buildings and other elements of the site;
    e. Retention of natural vegetation and topographic features; and
    f. Landscaping, buffers, screening, fences and other features or means of separation to protect adjacent properties from potential adverse effects of the conditional use.

Conditions recommended by the Commission are as follows: *please refer to the end of this Report below*

Option 2 - Recommend denial of the application

I move to recommend to the Board of Supervisors that Virginia Electric and Power Company's Conditional Use Permit for a Switchyard and Substation, as presented, be denied; among other concerns, the Planning Commission finds the following:

1. The proposed use and plans are contrary to the purposes of the County's Zoning Ordinance.

2. The proposed use and plans are inconsistent with the objectives of the comprehensive plan for the County, namely that:

    a. The location of the proposed solar facility is a rural area, the amount of undeveloped area within the project is insufficient and the project is not designed to minimize environmental impacts;
    b. Despite being subject to Virginia Department of Environmental Quality regulations and permitting, the project will have negative effects on the County's water resources;
    c. The proposed development does not work to expand a diversified economy within the County, and, given the scale of the proposal, would not constitute an environmentally friendly industrial use; furthermore, utility and transportation access to support the development are inadequate;
    d. The proposed project is not compatible with adjacent residential and agricultural uses; setbacks and buffers/screening are insufficient, and cannot be improved in a manner that would improve the compatibility of the project with adjacent uses; and
    e. The proposed development negatively impacts natural resources of the County, especially areas of critical environmental importance such as existing stands of trees and the isolated wetland to the east of the project site.

3. The proposed use and plans do not include satisfactory provision for or arrangement of:

    a. Sewer, water and other public utilities;
    b. Ingress and egress, including access for fire and other emergency vehicles;
    c. Off-street parking, loading and vehicle circulation, including adequate consideration of the safety of motorists and pedestrians;
    d. Yards, open spaces, relationship among buildings and other elements of the site;
    e. Retention of natural vegetation and topographic features; or
    f. Landscaping, buffers, screening, fences and other features or means of separation to protect adjacent properties from potential adverse effects of the conditional use.

Option 3 - Deferral of the application

I move that the Planning Commission defer issuance of a recommendation on Virginia Electric and Power Company's proposed Substation until the Planning Commission meeting scheduled to begin at _____ p.m. on _____, in the 2nd floor Courtroom; Lunenburg Courts Building, Lunenburg, VA 23952.

OPTION 1 RECOMMENDED CONDITIONS

Conditions recommended by the Commission (to ensure the project's consistency with the aforementioned findings and compliance with the applicable requirements of the County's Zoning Ordinance) are as follows:

1. The Applicant shall develop, construct, operate, and maintain the site in substantial conformance with the conceptual plans (dated August 18, 2023), all assurances and commitments made within the Application materials, and the conditions imposed on the issued conditional use permit, as determined by the Zoning Administrator. Substantial conformance will be determined by the Zoning Administrator based on his/her review of the record. Deviations determined not to be in substantial conformance with the conceptual plans shall require review and approval as an amendment to the conditional use permit, following the process for the granting of a conditional use permit. As used in these conditions, the term "Applicant" shall include the terms "Applicant, Owner, Developer, or Operator," and the successors and assigns thereof, and the term "Zoning Administrator" shall include the designee of the Zoning Administrator.

2. The project, as presented, does not include battery energy storage systems; the addition of battery energy storage shall require amendment of this conditional use permit.

3. Prior to the approval of the site plan for the project, the Applicant shall establish and submit to the County for review and record all permanent access and temporary construction easements.

4. The Substation facility shall be monitored at all times via installed surveillance cameras and electrical system monitoring equipment.

5. All exterior lighting associated with the site, both temporary and permanent, shall be full-cutoff, shielded, and directed downward. Emergency and/or safety lighting not meeting this requirement shall be presented to the County for approval prior to installation.

6. Unless approved in writing by the County, no signage, temporary or permanent, shall be permitted to be installed on the property. It is anticipated that signage containing notices, warnings, safety and security information, environmental information, and temporary signage concerning construction activities may be installed; the Owner will be required to submit sign packages to the County for approval prior to installation.

7. The Applicant will submit a final "Erosion and Sediment Control Plan" for review and approval by the Zoning Administrator. The owner or operator shall construct, maintain, and operate the Project in compliance with the approved plan. As authorized and allowed by Virginia DEQ, a separate Erosion and Sediment Control Plan may be submitted for various development areas on the Project Area. An erosion and sediment control bond (herein, an "E&S Bond") will be posted for the construction portion of the Project in accordance with the County's Erosion and Sediment Control Ordinance (codified as Lunenburg County Code Chapter 42, Article II) and/or the VESCP authority and applicable regulations. If the Project is subsequently sold to a non-investment grade entity or the Applicant's credit rating is downgraded to below investment grade, a bond or other security will be required from the transferee.

    a. The Applicant shall not disturb, grade, or clear any land that has a slope greater than eight percent (8%).

8. Prior to the commencement of construction of the Substation, the Applicant will drill test wells within the Perimeter (as defined in Condition 6.a herein) and at the locations shown on the Concept Plan, in areas approved by the County. The Applicant will conduct an initial study of the groundwater in those wells prior to the commencement of construction, which study will test for contaminants in the National Primary Drinking Water Regulations (the "Drinking Water Regulations") as compiled by the United States Environmental Protection Agency. Once each year for the first two years after completion of construction of the Switchyard, the Applicant will test the groundwater in those wells to determine if there are any contaminants in the groundwater that is in excess of the limits set by the Drinking Water Regulations that were not already present in the pre-construction test. The Applicant shall provide the results of these tests to the County. On year three, this condition (and every three years thereafter) shall be reviewed and the scope and/or frequency of the testing shall be reduced unless there is a showing (after year two) that the Switchyard and Substation has introduced contaminants into the groundwater in those monitoring wells.

9. Pollinator habitats. The portions of the land within the Perimeter where the Substation will be installed (the "Project Area"), any other area where the Developer has caused land

disturbance during construction and operation, except those areas designated as right of ways, setbacks with required natural or vegetative buffers, and where the VESCP authority requires stabilization and/or replanting, will be seeded or replanted with appropriate pollinator- friendly plants, shrubs, trees, forbs, and wildflowers native to the County where compatible with site conditions and where practicable and, in all cases, shall be approved by the Zoning Administrator, or a third-party consultant for the County, which shall be paid for by the Applicant. Such portions of the Project Area will be seeded immediately following completion of construction, in an approved section, in such a manner as to reduce invasive weed growth and sediment in the Project Area.

10. Groundcover and screening vegetation shall include appropriate pollinator-friendly plants, shrubs, trees, forbs, and wildflowers native to the County where compatible with site conditions and, in all cases, shall be approved by the Zoning Administrator, or a third-party consultant for the County, which shall be paid for by the Applicant.

11. Only EPA approved herbicides shall be used for vegetative and weed control at the Switchyard and Substation by a Licensed Applicator. No herbicides shall be used within one-hundred and fifty (150) feet of the location of an approved groundwater well. The Applicant shall submit an Herbicide Land Application Plan prior to approval of the Certificate of Occupancy (or equivalent). The plan shall specify the type of herbicides to be used, the frequency of land application, the identification of approved groundwater wells, wetlands, streams, and the distances from land application areas to features such as wells, wetlands, streams, and other bodies of water. The operator shall notify the County a week prior to application of pesticides and fertilizers with weather being taken into consideration. The County reserves the right to request soil and water testing.

12. All topsoil removed from land that is situated within the Perimeter or Project Area shall remain within the Perimeter or Project Area and shall be used to stabilize the soil and to facilitate growth of Pollinator habitats, screening vegetation, and other vegetation required under the Landscaping and Screening Plan. Removal of any topsoil from the Project Area or the County, shall be deemed grounds for revocation of the Applicant's Conditional Use Permit pursuant to the terms of Section 8-9 of the Zoning Ordinance.

13. The Applicant/Owner shall provide materials, education, and/or training on how to safely respond to any on-site emergencies and a key or code to access the facility in case of an on-site emergency.

14. The Applicant/Owner shall grant all necessary easements to the County for inspections of or access to the facility.

Lunenburg County School Board

VA Department of Transportation

VDOT Call Center - 1-800-367-ROAD

South Hill Residency – Richmond District

Lunenburg County

BOS Meeting – June 13, 2024

Maintenance Forces

- Primary and secondary mowing ongoing.
- Cut brush and limbs on secondary routes.
- Patched potholes on various routes.
- Cleaned pipes and ditches on various routes.
- Machined non-hard surface routes and hauled stone as needed.
- Checked various routes for maintenance and safety issues.
- Performed litter patrol on various routes.

Planning Update

CRC'S MAY ITEMS OF INTEREST

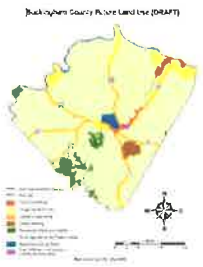
Grant Assistance:

- **VDACS, AFID Infrastructure Grant:** The CRC assisted Virginia Food Works with a grant application to purchase a variety of equipment for the Prince Edward County Cannery.
- **DCR, Recreational Trails Grant:** The CRC assisted Lunenburg County and the Towns of Victoria and Kenbridge with an application to DCR's Recreational Trails Grant Program to expand the Tobacco Heritage Trail. The Town of Victoria served as the applicant.
- **CENTRA:** The CRC assisted the Drakes Branch Volunteer Fire Department with an application to purchase a variety of equipment to perform lifesaving duties.

Project Updates:

- **SEED Innovation Hub Project Update:** EDA has authorized Longwood Real Estate Foundation to move forward with construction. The lowest bidder, English Construction, has been awarded and construction of the project has begun.
- **Town of Crewe, CBDG Planning Grant:** The Town of Crewe has received grant funding from DHCD to conduct a Planning Grant for the Town's Business District. The CRC is assisting the Town of Crewe with the procurement of a consulting firm to complete a series of studies on the business district.

Buckingham County Comprehensive Plan Update



The CRC staff attended the Planning Commission Work Session on May 20th. At this meeting, the Commissior reviewed changes to Draft Section Three (Community Facilities), discussed the Future Land Use Map, and reviewec an updated schedule of remaining work. At the next Planning Commission meeting, CRC staff will begin discussions or Draft Section Five (Land Use) and review the changes to the Future Land Use Map.

Lunenburg/Kenbridge/Victoria Comprehensive Plan Update

The CRC did not hold a working committee meeting ir May. The CRC worked with Committee members tc develop a citizen survey and create advertisement flyers with a QR code. The Citizen Survey was released on May 13th in both English and in Spanish. The survey was distributed to students through the school system and hac been placed at various locations throughout the County tc encourage citizen participation in the survey. As of May 24th, the CRC has received 108 surveys.

Creation of the Virginia's Heartland Regional Economic Development Alliance

CRC staff corresponded with local business owners and local government staff tc schedule three meetings for the Refinement Taskforce and the Evaluation Committee Both the Refinement Taskforce and the Evalutation Committee have met. The Refinement Taskforce reviewed the strategies proposed from the draft prospectus anc refined the plan to include measurable outcomes. This draft plan will be used tc develop the Case for Investment to attract potential investors. The Evaluations Committee reviewed the original list of potential prospects from the Feasibility Study and refined the list. Convergent Non-profit Solutions is in the process of developing the Case of Investment to move forward with the capital campaign.

CRC Regional Hazard Mitigation Plan Update

FEMA Region III has given the plan Approval Pending Adoption (preliminary approval). Local Adoptions are underway. As of May 28th, 15 out of the 18 covered localities have adopted the Plan. Once all localities have adopted the plan, it will be sent back to FEMA for final approval.

CRC Affordable Workforce Housing Development Program

The CRC has a remaining $225,357.46 in grant funding that has not been obligated to a housing partner or CRC staff time. The CRC released a third round of grant funding to seek funding applications from experienced housing partners to establish affordable workforce housing units throughout the CRC region by June 30, 2025. The CRC received five applications and awarded the remaining $225,357.46 in grant funding to the Town of Blackstone. Congratulations to the Town of Blackstone!

Piedmont Habitat has completed the remaining two homes on E California Ave in Crewe. CRC staff completed a final compliance review on both properties.

Upcoming Funding Opportunities:

VDACS AFID Planning Grant: Open; Rolling Basis

VDOF, Virginia Trees for Clean Water: Open - Rolling Basis

DHCD CBDG Planning Grant: Opens 6/15/24

DHCD CBDG Grant: Closes 6/12/24

VOF, Preservation Trust Fund: Summer 2024

VEDP, Site Remediation Grant: Fall 2024

Charging and Fueling Infrastructure (CFI) Grants: Summer 2024

DEQ, Litter Prevention and Recycling Fund: Closes 6/17/24

The CRC provides free grant writing services for member localities and local 501C3 non-profits.

County Offices and Departments

11512 Courthouse Road, Suite 101
Lunenburg, Virginia 23952

Telephone
(434) 696-2516
Fax
(434) 696-4023

COMMISSIONER OF THE REVENUE
COUNTY OF LUNENBURG

Elizabeth Y. "Liz" Hamlett
Master Commissioner

Amy S. Williams
Chief Master Deputy

Leah D. Wells
Master Deputy

May 14, 2024

Dear Taylor:

RE: 2024 Global Refining Group, Inc. EZ Incentive

	Assessed Value	2023 Taxes Paid
Real Estate (Shell Bldg & Addition) PRN 11550 2016	$1,384,800	$5,262.24
Real Estate (Addition) PRN 11550 2016 (Bldg #2)	$577,400	$2,194.12
Real Estate (Addition) PRN 11550 2020 (Bldg #2)	$425,000	$1,615.00
Real Estate PRN 13393 added for 2018	$937,800	$3,563.64
Machinery & Tools 2016	$623,037	$7,476
Machinery & Tools 2018	$127,635	$2,297.43
Machinery & Tools 2021	$3,265,137	$58,772.46

Machinery & Tools and Real Estate assessed in name of Global Refining Group, Inc.

As of May 10, 2024, Global Refining Group has not filed their 2024 Return of Business Tangible Property as required by Virginia Code §58.1-3518.

Thank you,

Liz Hamlett
Commissioner of the Revenue

June 3, 2024

To: Tracy Gee

From: Rodney Newton

Subject: Surplus Radios

The Lunenburg Communications Cache was started in 2010 as part of the Virginia Communications Cache. The portable radios that were purchased in 2010 have reached end of life and are no longer supported by Motorola. The radios were purchased using State Homeland Security Grant funds. These radios are not compatible with many of the new radio systems being built today. The Virginia Civil Air Patrol has used these radios to support their training and would benefit from the donation of these surplus radios for their use. This request is to declare the 75 VHF Motorola XTS 75 portable radios and accessories as surplus and to donate them to the Virginia Civil Air Patrol, an IRS 501(c)(3) non-profit organization.

Thank you for your continued support of the communications cache program.

HEADQUARTERS VIRGINIA WING
CIVIL AIR PATROL
UNITED STATES AIR FORCE AUXILIARY
7401 Airfield Dr.
Richmond, Virginia 23237-2259

24 Mar 2024

MEMORANDUM FOR Virginia Communications Cache-Lunenburg Team
Attn: Rodney Newton
1421 Main St
VICTORIA VA 23974

FROM: CC

SUBJECT: VHF Portable Radio Donation

1. I am writing to thank you and your organization for the charitable donation of 75 Very High Frequency (VHF) Portable radios and accessories. Civil Air Patrol (CAP) is a non-profit organization under section 501(c)(3) of the Internal Revenue Code and contributions to Civil Air Patrol may be deductible under section 170 of the Internal Revenue Code.

2. These radios will support multiple Virginia Wing missions. Specifically, they will enhance our ability to provide service to our communities in emergency and disaster response and help us train future leaders of our nation and commonwealth.

3. This additional equipment will allow us to have equipment at each of our 21 units throughout the wing to conduct training on proper radio procedures. Communications is a key component of safe and effective operations for everything we do.

4. Thank you again for your continued support of our organization.

ELIZABETH A. SYDOW, Colonel, CAP
Virginia Wing Commander

DocuSigned by:
Elizabeth A. Sydow
10E49FB8BE5D472...

Nicole Clark

From: Wanda Barnes
Sent: Friday, June 7, 2024 11:40 AM
To: Nicole Clark
Subject: Broken Printer

Nicole,

I have a broken printer here that needs to be disposed of. The model number is L8900-csw.

Thank you,

Wanda B. Barnes, MGDT
Treasurer
Lunenburg County
P-434-696-3354
F-434-696-3447

Please note a change in my email address. It is now wbarnes@lunenburgva.gov. Please update your records.*

A. TOWNSEND, JR.
SHERIFF

DJ PENLAND
MAJOR

Lunenburg County Sheriff's Office
160 Courthouse Square
Lunenburg, VA 23952
Ph: (434) 696-4452
Fax: (434) 696-2531

June 7, 2024

Office of the County Administrator
ATTN: Tracy Gee/Nicole Clark
11453 Lunenburg County Road
Lunenburg, VA 23952

RE: Comp Board Transfer

Dear Tracy and Nicole,

For the months of April and May, 2024, we have transferred a total of nineteen thousand four hundred seventy-one and sixteen cents ($19,471.16) from the Sheriff's Compensation Board funds to the county to be added to the following line item:

4-100-031200-6001 Office $19,471.16

Please advise should you need anything further.

Thank you,

Corrie Duvall
Administrative Assistant

Lunenburg County Administration
11413 Courthouse Road
Lunenburg, VA 23952

Tracy M. Gee
County Administrator

Telephone: (434) 696-2142
Facsimile: (434) 696-1798

Animal Control Report to the Board of Supervisors

Date: June 3, 2024

The following activities were conducted by Animal Control during the month of May 2024 :

6	Stray Cat(s) Picked Up	$	Surrender Fees
18	Stray Dog(s) Picked Up	$ 80.00	Impoundment Fees
1	Injured or Ill Cat(s)	$ 50.00	Adoption Fees
	Injured or Ill Dog(s)		
18	Cat Calls Dispatched	$ 130.00	**Total Fees Collected**
47	Dog Calls Dispatched		
	Cats, Surrendered by Owner		
13	Dogs, Surrendered by Owner		
	Cat Bite		
	Dog Bite		
1	Cat(s) Euthanized	11	Dog(s) Transferred to SPCA Southside
4	Dog(s) Euthanized	2	Cat(s) Transferred to SPCA Southside
3	Cat Trap(s) Set	4	Wildlife Calls
1	Dog Trap(s) Set	1	Dog transferred to Sanctuary Rescue
	Summons Issued	5	Dogs transferred to Charlottesville SPCA
1	Animal(s) Released to ACO	6	Dogs transferred to Richmond SPCA
	Expired at Shelter and/or DOA	1	Positive case Rabies (Skunk)
448	Telephone Calls for Animal Issues	5	Agriculture Animal Call
32	Check License		
3	Lost Cat(s) – Incoming Calls		
8	Lost Dog(s) – Incoming Calls		
	Cat(s) Returned to Owner		
5	Dog(s) Returned to Owner		
	Quarantine		
	Adoption—Dogs		
2	Adoption—Cats	38	**Total Number of Animals Handled**

D. Ray Elliott ACO

D. Ray Elliott
Animal Control Officer

Lunenburg County Sheriff's Office

Report To The Board Of Supervisors

May 2024

Jury Summons Served	10
Subpoenas Served	**114**
Summons Served	88
Levies Executed	**0**
Other Civil Process	76
Traffic Citations	**93**
Protective Orders	41
Arrests	**18**
Inmates Transported	6
Mental Patients	**0**
Extraditions	0
Circuit Court Days	**3**
General District Court Days	4
J&DR Court Days	**4**

Expense Report

Dues		$ -
Postage		**$ -**
Office Supplies		$ 589.81
Telephone		**$ 56.07**
Police Supplies		$ 1,255.95
Vehicle Maintenance & Repairs		**$ 1,551.80**
Fuel	(April)	$ 3,796.62
Gallons of Fuel Use		**1,349.52**

Arthur Townsend, Jr.
Sheriff, Lunenburg County

6-4-24
Date

FY2024-2025 Budget Discussions

Good evening,
The final Calculation template from May 2024 is available on the Department of Education website. There is an increase in State Share by $5,007, but an increase in Required Local Match of $50,255. This is comprised of the following changes:

1. Reduction in Sales Tax of -$136,990 from the State. This amount does not have a Local Share, therefore, it is not responsible for any changes in Local Match. See screen shot from the Calculation Template for additional information on the Sales Tax estimates:

NUM	DIVISION	Projected FY 2025 Unadjusted ADM[2]	Projected FY 2025 Adjusted ADM[2]	Projected FY 2(Unadjusted AD
055	LUNENBURG	1,483.20	1,483.20	1,(

	2024-2026 Composite Index	FY 2025		
	0.2614	FY 2025 State Share	FY 2025 Local Share	FY 2026 State Sl
Standards of Quality Programs:				
⇨ Basic Aid		8,048,143	2,848,341	7,9
	Sales Tax [4]			2,2
⇨ Textbooks [5]				1
⇨ Vocational Education				6
⇨ Gifted Education				
⇨ Special Education				1,(
⇨ VRS Retirement *(Includes RHCC)* [6]				9
⇨ Social Security				4
⇨ Group Life		28,483	10,080	

The sales tax estimates contained in this Excel calculation file represent the Department of Taxation's official forecast of sales tax. The sales tax estimates contained in the appropriation act must be used to compute the Basic Aid payment.

Please be aware that final sales tax payments to school divisions are based on actual revenues collected for the state sales and use tax dedicated to public education. These actual payments may differ from the estimates provided in this worksheet.

2. Increase in State Basic Aid of $101,182 and Required Local Match by $35,810.
3. Increase in State Infrastructure and Operations Per Pupil Allocation of $40,815 with a Required Local Match of $14,445.

I have contacted the School Administration/Finance to request an updated budget for the School Board to present to the Board of Supervisors at the meeting on June 13th as we prepare for budget adoption and appropriation for FY25. I will keep you informed.

Respectfully,

Tracy M. Gee
Lunenburg County Administrator
Clerk to the Board of Supervisors
Lunenburg County Administration
11413 Courthouse Road
Lunenburg, VA 23952
Email: tgee@lunenburgva.gov
Voice: 434-696-2142 Fax: 434-696-1798
Website: Lunenburg County, Virginia (lunenburgva.gov)

Virginia Department of Education

Projected FY 2025 and Projected FY 2026 State Payments, Based on Amendments Adopted by the 2024 Special Session I General Assembly to the 2024-2026 Biennial Budget (Chapter 2)

Standards of Quality (SOQ), Incentive, Categorical, and Lottery-Funded Programs in Direct Aid to Public Education

As of May 13, 2024

055 LUNENBURG

NUM	DIVISION	Projected FY 2025 Unadjusted ADM[2]	Projected FY 2025 Adjusted ADM[2]	Projected FY 2026 Unadjusted ADM[2]	Projected FY 2026 Adjusted ADM[2]
055	LUNENBURG	1,483.20	1,483.20	1,475.65	1,475.65

	2024-2026 Composite Index	FY 2025		FY 2026	
	0.2614	FY 2025 State Share	FY 2025 Local Share	FY 2026 State Share	FY 2026 Local Share
Standards of Quality Programs:					
⇨	*Basic Aid*	8,048,143	2,848,341	7,931,887	2,807,196
	Sales Tax [4]	2,192,105	N/A[1]	2,281,168	N/A[1]
⇨	**Textbooks** [5]	175,432	62,088	174,539	61,772
⇨	**Vocational Education**	616,762	218,280	613,622	217,169
⇨	**Gifted Education**	69,016	24,426	68,665	24,301
⇨	**Special Education**	1,037,430	367,160	1,031,060	364,905
⇨	**VRS Retirement** *(Includes RHCC)* [6]	985,942	348,938	980,924	347,161
⇨	**Social Security**	459,011	162,450	456,674	161,623
⇨	**Group Life**	28,483	10,080	28,338	10,029
⇨	English Learner Teacher Payments [12]	209,968	74,310	218,190	77,220
	At-Risk (Split funded - See Lottery section below) [17]	2,238,634	792,281	2,353,870	833,065
	Remedial Summer School [7, 9]	91,191	N/A[1]	101,103	N/A[1]
	Subtotal - SOQ Accounts [3]	**16,152,117**	**4,908,354**	**16,240,040**	**4,904,441**
Incentive Programs:					
	Compensation Supplement [13]	330,170	116,851	667,375	236,193
	Academic Year Governor's School [8]	0	N/A[1]	0	N/A[1]
	Alleghany School Consolidation Incentive	0	N/A[1]	0	N/A[1]
	Virginia Preschool Initiative [11]	323,944	114,648	323,944	114,648
	Virginia Preschool Initiative - Additional Programs [15]	0	N/A[1]	0	N/A[1]
	School Meals Expansion	0	N/A[1]	0	N/A[1]
	Supplemental GF Payments in Lieu of Food and Hygiene Tax[16]	349,204	N/A[1]	350,614	N/A[1]
	Math/Reading Instructional Specialists	0	0	0	0
	Early Reading Specialists Initiative	0	0	0	0
	Technology - VPSA [10]	154,000	30,800	154,000	30,800
	Subtotal - Incentive Accounts [3]	**1,157,318**	**262,299**	**1,495,933**	**381,641**
Categorical Programs:					
	Adult Education [7]	0	N/A[1]	0	N/A[1]
	American Indian Treaty Commitment [7]	0	N/A[1]	0	N/A[1]
	School Lunch [7]	8,560	N/A[1]	8,560	N/A[1]
	Special Education - Homebound [7]	20,564	N/A[1]	20,769	N/A[1]
	Special Education - State-Operated Programs [7]	0	N/A[1]	0	N/A[1]
	Special Education - Jails [7]	0	N/A[1]	0	N/A[1]
	Subtotal - Categorical Accounts [3]	**29,124**	**0**	**29,329**	**0**
Lottery-Funded Programs					
	Foster Care [7]	0	N/A[1]	0	N/A[1]
	At-Risk (Split funded - See SOQ section above) [17]	818,287	289,602	698,840	247,328
	Accomack-Northampton Distribution	0	N/A[1]	0	N/A[1]
⇨	Early Reading Intervention	78,606	27,820	78,606	27,820
	Mentor Teacher Program	1,953	N/A[1]	1,953	N/A[1]
	K-3 Primary Class Size Reduction	396,515	140,332	396,293	140,253
	School Breakfast [7]	13,665	N/A[1]	14,241	N/A[1]
⇨	SOL Algebra Readiness	41,696	14,757	38,584	13,655
	Project Graduation	4,036	N/A[1]	4,036	N/A[1]
	Alternative Education [7, 8]	0	N/A[1]	0	N/A[1]
	ISAEP	8,203	N/A[1]	8,203	N/A[1]
	Special Education-Regional Tuition [7, 8]	5,229	N/A[1]	5,229	N/A[1]
	Career and Technical Education [7, 8]	7,614	N/A[1]	7,614	N/A[1]
	Supplemental Basic Aid	0	N/A[1]	-	N/A[1]
	Infrastructure and Operations Per Pupil Allocation [14]	487,302	172,462	445,283	157,591
	Subtotal - Lottery-Funded Programs [3]	**1,863,106**	**644,973**	**1,698,882**	**586,647**
	Total State & Local Funds	**$19,201,665**	**$5,815,626**	**$19,464,184**	**$5,872,729**

[1] "N/A" = no local match required for this program.

[2] ADM values shown are based on the March 31 ADM projections used in the amendments adopted by the 2024 Special Session I General Assembly to the 2024-2026 biennial budget for FY 2025 and FY 2026.

[3] Columns may not add due to rounding.

[4] Projected revenue estimate. Semi-monthly payments will be based on actual sales tax receipts. Pursuant to the Appropriation Act, the Basic Aid state payment calculation is based on the appropriated sales tax distribution only and is not adjusted for actual sales tax revenues received.

Virginia Department of Education

Projected FY 2025 and Projected FY 2026 State Payments, Based on Amendments Adopted by the 2024 Special Session I General Assembly to the 2024-2026 Biennial Budget (Chapter 2)

Standards of Quality (SOQ), Incentive, Categorical, and Lottery-Funded Programs in Direct Aid to Public Education

As of May 13, 2024

055 LUNENBURG

NUM	DIVISION	Projected FY 2025 Unadjusted ADM[2]	Projected FY 2025 Adjusted ADM[2]	Projected FY 2026 Unadjusted ADM[2]	Projected FY 2026 Adjusted ADM[2]
055	LUNENBURG	1,483.20	1,483.20	1,475.65	1,475.65

2024-2026 Composite Index	FY 2025		FY 2026	
0.2614	FY 2025 State Share	FY 2025 Local Share	FY 2026 State Share	FY 2026 Local Share

[5] The amendments adopted by the 2024 Special Session I General Assembly to the 2024-2026 Biennial Budget assign the entire funding for Textbooks to the SOQ area. Required Local Effort for Textbooks is based on the payments in the SOQ area.

[6] VRS Retirement includes payments for the Retiree Health Care Credit (RHCC). Please see the Budget Variables tab for the funded RHCC rate.

[7] Projected state payment. Final payments will be based on actual expenditures, up to the projected state payment, subject to the availability of funds.

[8] Includes state funding for regional vocational, special, and alternative education programs and Academic Year Governor's Schools.

[9] Payments for Remedial Summer School are based on projected FY 2025 and FY 2026 enrollment used in the amendments adopted by the 2024 Special Session I General Assembly to the 2024-2026 biennial budget.

[10] Payments for the VPSA Technology Grants are made from bond proceeds on a reimbursement basis and may begin following each bond issuance. These payments include funding for the school division and the regional programs for which the division serves as the fiscal agent.

[11] Payments for the Virginia Preschool Initiative are based on projected FY 2025 and FY 2026 student slots used in the amendments adopted by the 2024 Special Session I General Assembly to the 2024-2026 biennial budget.

[12] Payments for English Leaner Teachers projected for FY 2025 and FY 2026 are based on a new funding methodology adopted by the 2024 General Assembly. The new methodology bases state payments on student proficiency level aligned to corresponding instructional position ratios, in lieu of the current standard that provides one position per 50 identified English Language Learners. Please refer to the Account Funding Explanations tab for more detail.

[13] The amendments adopted by the 2024 Special Session I General Assembly to the 2024-2026 biennial budget calculate the state share of Compensation Supplement funds based on a 3% salary increase effective July 1, 2024 and an additional 3% salary increase effective July 1, 2025 for funded SOQ instructional and support positions, Academic-Year Governor's Schools, and regional alternative education centers.

[14] The proposed per pupil funding amount for the Infrastructure and Operations Per Pupil Allocation Payment is projected at $446.67 for FY 2025 and $410.62 for FY 2026. Divisions will be paid up to their calculated entitlement based on actual March 31 ADM, pending sufficient appropriation. The per pupil amount is adjusted for the local composite index. Estimates will not change when local ADM projections are selected.

[15] Additional VPI programs include mixed delivery grants and additional VPI slots for 3-year olds, expanded class sizes, and waitlist students.

[16] According to the amendments adopted by the 2024 Special Session I General Assembly to the 2024-2026 biennial budget, the Supplemental General Fund Payments in Lieu of Food and Hygiene Tax Products shall be distributed on the basis of the latest annual estimate of school age population provided by the Weldon Cooper Center for Public Service.

[17] State funding for the Prevention, Intervention, and Remediation program has been absorbed by the new At-Risk Add-on program.

⇨ = SOQ accounts requiring a local match for purpose of meeting Required Local Effort.

BOLD = Account funding based on ADM; any changes in ADM numbers will result in a change in the state payment amount.

LUNENBURG COUNTY PUBLIC SCHOOLS

FY25 BUDGET SCHOOL BOARD APPROVED

LCPS Highlights

- Chronic absenteeism has decreased by almost 20% as compared to last year this time.
- All In Tutoring has begun on the elementary and middle school levels
- The pay accrual period has been adjusted to pay 10-month teachers at the end of the month in August as to avoid them waiting 2 months. This will enhance the recruitment process and provide more flexibility in planning the school calendar.
- The high school finished very strong first semester with all subgroups showing improvement.
- LCPS has obtained the following grants: Strong Connections, Safety Security Grant, and Mental Health Grant.

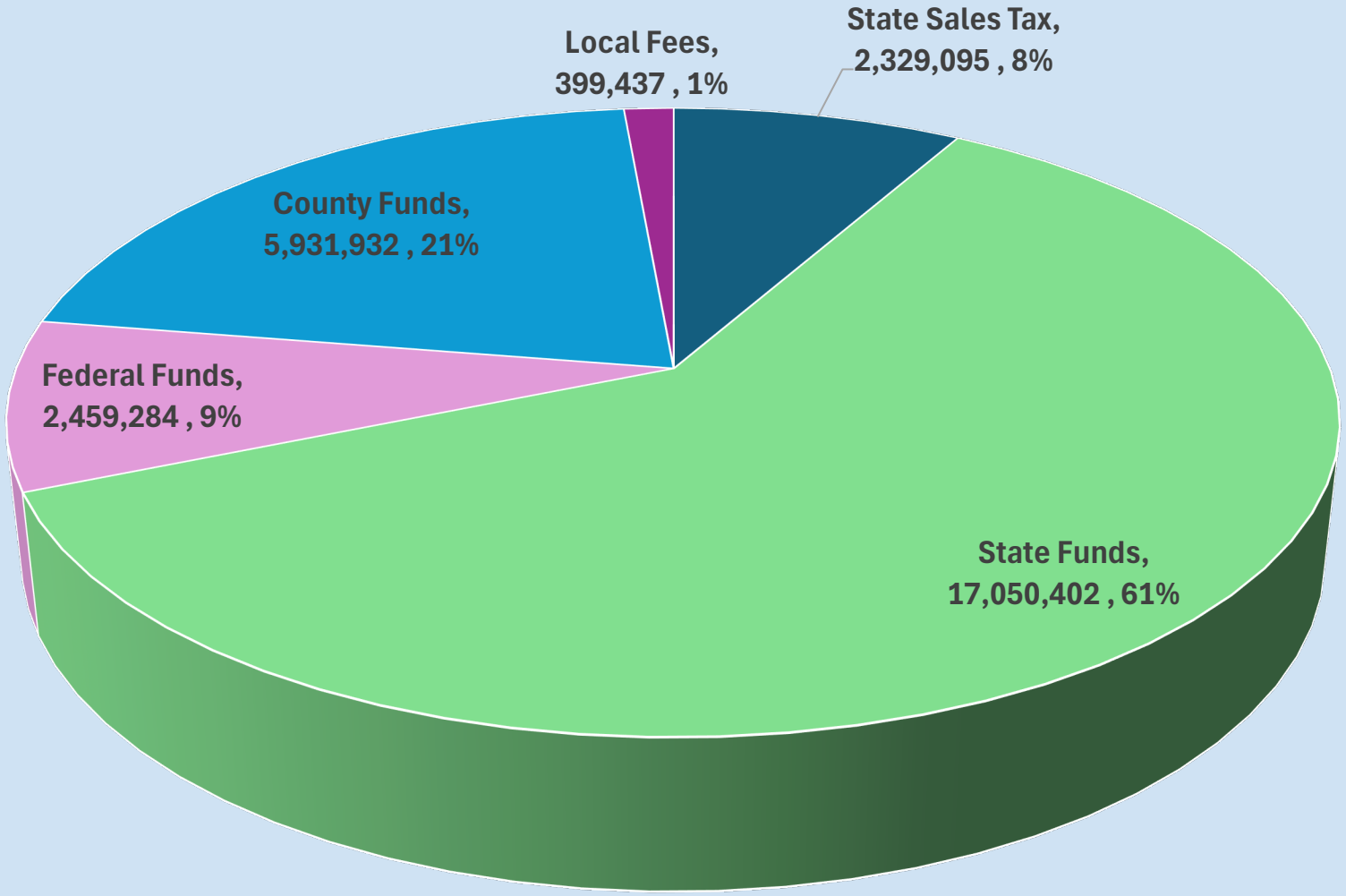
LCPS Budget Parameters

- Projected March 31 **ADM = 1483.2**
- Local Composite Index (LCI) increased from .2604 to .2614
- Increased state revenue from amended FY24 Budget to FY25 Proposed Budget is $2,269,972
- Increased Local Match from FY24 Amended Budget to FY25 Proposed Budget is $970,714 to meet the minimum RLE and RLM
- Part of this local match will be $313,715 from the existing construction fund.
- Proposed revisions to VRS is $203,645 reduction in expenditures.
- All In Expenditure Budget reduced from FY 24 $881,070 to $0 for FY25

Compensation

Full Year Additional Cost of 2.0% Salary Increase Effective Jan 1, 2024	**$178,390**
Bus drivers pay increase starting at $75 a day	**$ 90,594**
3 year phase in - New Teacher Salary Schedule	**$439,919**
2 year phase in - Market Adjusted Admin Salary Scale	**$ 118,886**
Market Adjusted Unified Salary Schedule	**$251,263**
Market Adjusted Food Service Salary Schedule	**$ 42,291**
TOTAL	**$ 942,953**

REVENUE BY SOURCE - FY25 APPROVED
$28,170,150

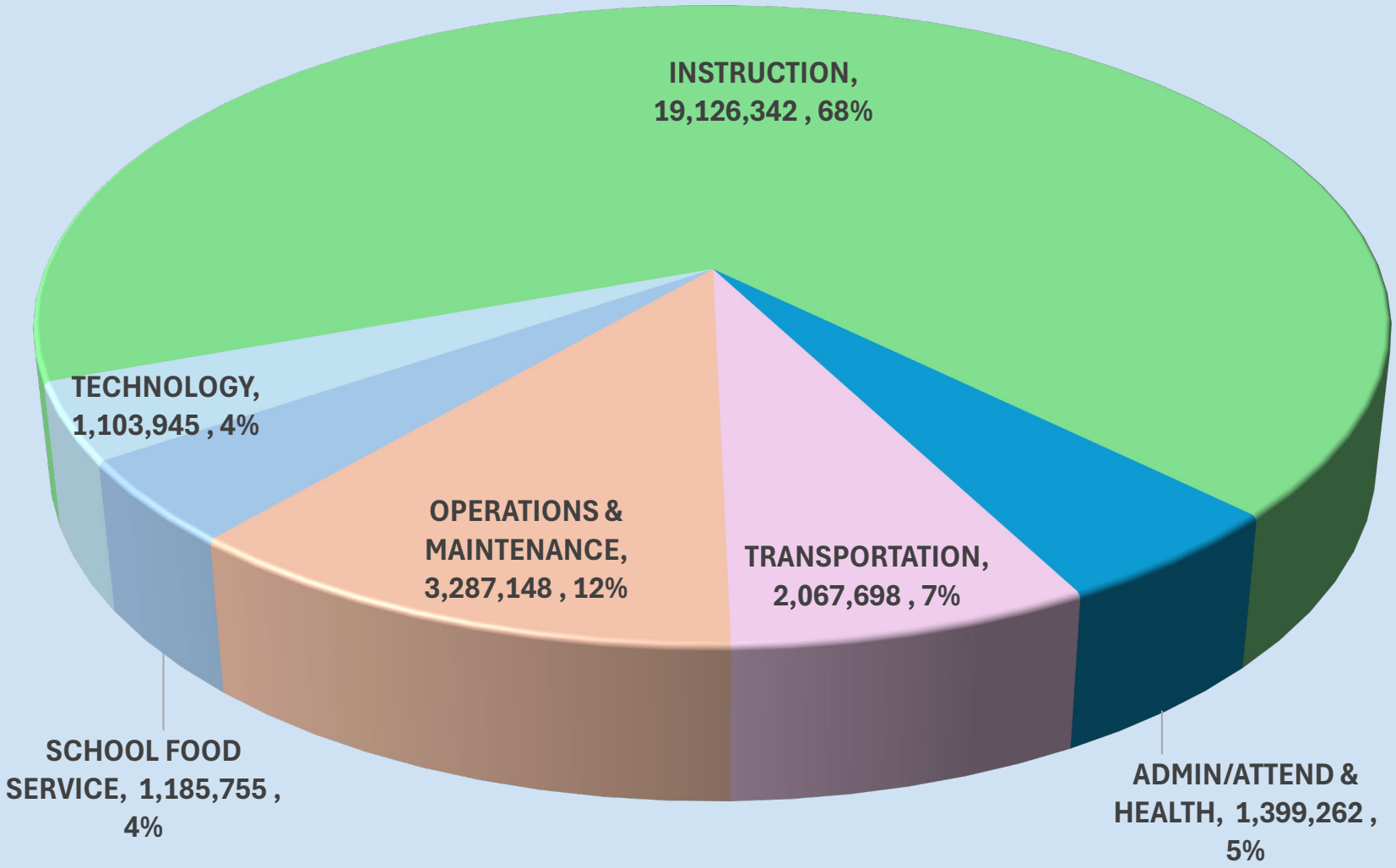


Revenue By Source

Note: FY25 County Funds include $313,715 from the construction fund

Revenue Source	Actuals FY 23	ADM: 1485 Amended FY 24	ADM: 1483.2 APPROVED FY 25	Change	% Change
State Sales Tax	2,251,756	2,274,386	2,192,105	82,281	-3.6
State Funds	15,208,018	14,840,146	17,009,560	2,171,414	14.6%
Federal Funds	4,776,825	4,858,596	2,459,284	(2,399,312)	-49.4%
County Funds	4,785,949	4,811,014	5,815,626	1,004,612	20.9%
Local Fees	458,831	305,768	399,437	93,669	30.6%
Total	27,481,379	27,089,910	27,876,012	788,102	2.9%

EXPENDITURE BY STATE CATEGORY - FY25
$28,170,150



EXPENDITURE BY CATEGORY

STATE CATEGORY	ACTUALS FY23	AMENDED FY24	APPROVED FY25	CHANGE	% CHG
INSTRUCTION	16,627,892	19,131,804	19,126,342	(5,462)	0.0%
ADMIN/ATTEND & HEALTH	1,463,393	1,367,372	1,399,262	31,890	2.3%
TRANSPORTATION	1,731,858	1,478,263	2,067,698	589,435	39.9%
OPERATIONS & MAINTENANCE	3,607,829	3,093,069	3,287,148	194,079	6.3%
SCHOOL FOOD SERVICE	1,282,221	1,167,931	1,185,755	17,824	1.5%
TECHNOLOGY	976,927	851,471	1,103,945	252,474	29.7%
TOTAL	25,690,120	27,089,910	28,170,150	1,080,240	4.0%

ADDITIONAL POSITIONS

KES $ 304,753	VES $163,626	LMS $417,794	CHS $74,858	Division $407,640
• 1 EL TEacher • 1 Assistant to Speech Pathologist • 2 Grade Level Teachers	• 1 Assistant to Speech Pathologist • 1 Special Education Position	• 1 Interventionist • 5 Math Teachers • 1 Special Education Teacher	• 1 CTE Teacher	• Remedial Summer School - (was ESSER funded FY24) • Before & After School Remediation Stipends (was ESSER funded FY24)

Total: 1,368,671

Other Expenditure Items

Eliminate ALL IN VA Grant Funds	($ 889,783)
Remove ESSER III Funding	($ 841,389)
Electronic Purchase Orders to improve efficiency	$ 8,000
Replace Revenues - School Fees	$ 30,000
Professional Development	$ 40,000
Library books	$ 20,000
Additional Software Packages	$ 60,000
Reinstate cut to vehicle purchases	$ 30,000
Maintain Bus Replacements - 3 Buses	$ 420,000
Reinstate KES Pavement Repair	$ 45,000
Capital Repairs & Maintenance	$1,247,629

VRS RETIREMENT CHANGES

	FY24	FY25
RATE FOR DEFINED BENEFIT COMPONENT	16.62%	14.21%
RATE FOR MANDATORY DEFINED CONTRIBUTION	1.00%	(incl above)
RATES FOR *OPTIONAL* DEFINED CONTRIBUTION – 9 TIERS	0% to 2.5%	0% to 2.5%

EMPLOYEE ELECTION	EMPLOYER MATCH
0.5%	0.5%
1.0%	1.0%
1.5%	1.25%
2.0%	1.50%
2.5%	1.75%
3.0%	2.00%
3.5%	2.25%
4.0%	2.50%

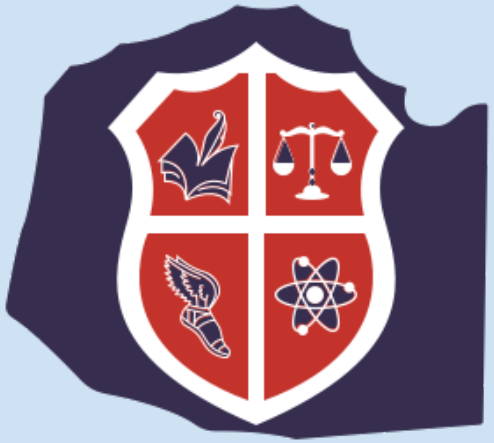
VRS Retirement – Hybrid Changes

- **Employer must begin managing optional defined contributions**
  - **Previously managed by state retirement system**
- **Employee may change optional contribution % quarterly**
  - **Employer's matching cost will vary as employees increase/decrease optional contributions**
  - **Year 1 (FY25) the net effect will be a decrease in retirement expense of approximately $203,645.**
  - **Year 2 and after will likely increase as employees elect to contribute greater % to their retirement and new employees become part of the hybrid retirement plan**
  - **Employees new to VRS after January 1, 2014 are placed in hybrid plan**

Health Insurance Changes

Rate Increase- 20%	$264,572
Increased Participation	$170,493

LCPS 2024-2025 Proposed Budget



BUDGET COMPARISON WORKSHEET FY2025

	CATEGORY	FY2023 BUDGET		*above/ below*	CURRENT FY2024 BUDGET		%	FY2024 Projected	%	FY2024 PROPOSED		
	REVENUE: 100	BUDGET	FINAL	*projection*	BUDGET	As of 3/31/24	Received	Year-end	Received	BUDGET	Difference	
1	Real Estate Tax	-3,475,000	(3,543,082)	*68,082*	-3,650,000	(1,771,792)	49%	(3,809,353)	104%	-4,000,000	350,000	Reassessment
2	PP Tax	-2,550,000	(2,925,836)	*375,836*	-2,700,000	(1,587,646)	59%	(3,175,292)	118%	-3,000,000	300,000	Values up
3	Mobile Home	-21,000	(22,659)	*1,659*	-20,000	(11,449)	57%	(22,898)	114%	-22,000	2,000	
4	Registration Fees	-210,000	(213,132)	*3,132*	-210,000	(21,558)	10%	(43,116)	21%	-212,000	2,000	
5	Machinery & Tools	-275,000	(311,096)	*36,096*	-260,000	(162,816)	63%	(325,632)	125%	-300,000	40,000	
6	Merchant's Capital	-85,000	(125,220)	*40,220*	-80,000	(71,774)	90%	(143,548)	179%	-100,000	20,000	
7	Public Service	-260,000	(223,942)	*(36,058)*	-250,000	(90,329)	36%	(180,658)	72%	-230,000	(20,000)	
8	Delinquent Taxes	-90,000	(246,849)	*156,849*	-119,000	(114,156)	96%	(142,695)	120%	-125,000	6,000	
9	Interest/Penalty Taxes	-90,000	(151,236)	*61,236*	-100,000	(111,209)	111%	(139,011)	139%	-120,000	20,000	
10	Local Sales/Use Tax	-450,000	(642,734)	*192,734*	-530,000	(395,238)	75%	(494,048)	93%	-550,000	20,000	based on recent
11	Consumer Utility Tax	-20,000	(24,232)	*4,232*	-20,000	(16,198)	81%	(20,248)	101%	-20,000	0	
12	Record/Will/Deeds Tax	-58,000	(95,609)	*37,609*	-69,000	(67,197)	97%	(83,996)	122%	-70,000	1,000	
13	Interest/Penalty Clerk	-500	(1,064)	*564*	-1,000	(830)	83%	(1,038)	104%	-1,000	0	
14	Animal License Fees	-6,000	(5,480)	*(520)*	-6,000	(4,110)	69%	(5,138)	86%	-5,000	(1,000)	
15	Animal Fines/Kennel Fees	-3,000	(1,575)	*(1,425)*	-5,000	(2,740)	55%	(3,425)	69%	-3,000	(2,000)	
16	Transfer Fees	-300	(526)	*226*	-400	(302)	76%	(378)	94%	-400	0	
17	Building Permits	-30,000	(30,571)	*571*	-135,000	(27,379)	20%	(34,224)	25%	-45,000	(90,000)	solar not added
18	Septic Permits	-400	(250)	*(150)*	-400	(600)	150%	(750)	188%	-500	100	
19	Events	0	(1,500)		-2,200	(3,500)		(4,375)		-3,500	1,300	
20	Conditional Use Permits	-7,500	(12,400)	*4,900*	-10,000	(9,858)	99%	(12,323)	123%	-10,000	0	
21	FOIA Fees				0	(225)		(225)		0	0	
22	County Landfill Host Fees	-450,000	(563,583)	*113,583*	-450,000	(272,494)	61%	(340,618)	76%	-650,000	200,000	
23	Landfill Liaison Fee	-72,000	(75,057)	*3,057*	-75,000	(38,920)	52%	(48,650)	65%	-78,000	3,000	
24	Local Fines	-3,000	(4,337)	*1,337*	-3,000	(6,279)	209%	(7,849)	262%	-4,000	1,000	
25	CH Renovation Fees	-2,500	(2,399)	*(101)*	-2,000	(1,646)	82%	(2,058)	103%	-2,000	0	
26	Clerk Misc Fees	-7,000	(8,061)	*1,061*	-7,000	(4,555)	65%	(5,694)	81%	-7,000	0	
27	Courthouse Security Fees	-10,000	(17,387)	*7,387*	-12,000	(12,206)	102%	(15,258)	127%	-14,000	2,000	
28	E-Summons Fee	-1,000	(2,075)	*1,075*	-1,000	(1,673)	167%	(2,091)	209%	-1,000	0	
29	Prisoner Processing Fees	-500	(931)	*431*	-500	(599)	120%	(749)	150%	-500	0	
30	Interest-Cking/Investments	-13,000	(41,318)	*28,318*	-22,000	(271,924)	1236%	(339,905)	1545%	-350,000	328,000	Sweep accounts
31	Rent/Property Receipts	-31,700	(31,733)	*33*	-31,700	(24,800)	78%	(31,000)	98%	-31,700	0	
32	Sheriff/Comm Atty Fees	-650	(791)	*141*	-600	(746)	124%	(908)	151%	-600	0	
33	Judgment Reimbursement				0	(8,957)		(8,957)		0	0	
34	TDO/ECO DCJS grant				0					-2,000	2,000	
35	Blood DNA Test	-200	(241)	*41*	-200	(102)	51%	(128)	64%	-100	(100)	
36	Document Reproduction Costs	-2,000	(1,699)	*(301)*	-2,000	(1,740)	87%	(2,175)	109%	-1,500	(500)	
37	Comm. Atty. Fees	-800	(956)	*156*	-800	(779)	97%	(974)	122%	-800	0	
38	Misc Refunds		(86)	*86*		(14,597)		(18,246)		0	0	

	CATEGORY	FY2023 BUDGET		above/ below	FY2024 BUDGET		%		%	FY2025 PROPOSED		
	REVENUE: 100	BUDGET	FINAL	projection	BUDGET	As of 3/31/24	Received	FY24 Projection	Received	BUDGET	Difference	
39	Unclaimed Taxes		(49,991)	49,991		(16,507)				0	0	
40	Miscellaneous & Surplus		(4,029)	4,029		(14,084)		(8,503)		0	0	
41	DMV Stops	-25,000	(32,375)	7,375	-25,000	(25,375)	102%	(31,719)	127%	-30,000	5,000	
42	Town Contributions	-5,000		(5,000)	-5,000		0%	0	0%	-5,000	0	
43	Siting Agreement	0	(126,666)							0		
44	Opioid Settlement	0	(26,232)			(6,098)				0		
45	DMV Mobile Home Titling Tax	-20,000	(31,528)	11,528	-30,000	(36,937)	123%	(46,171)	154%	-32,000	2,000	
46	Railroad Rolling Stock	-4,000	(4,765)	765	-4,000		0%	0	0%	-4,000	0	
47	PPTRA - State Reimburse	-1,048,240	(1,048,232)	(8)	-1,048,200	(995,821)	95%	(1,048,232)	100%	-1,048,200	0	
48	DMV Rental Tax	-600	(802)	202	-600	(919)	153%	(1,149)		-800	200	
49	DMV Animal Plates	-100	(158)	58	-100	(114)	114%	(143)	143%	-100	0	
50	DMV Moped ATV Tax	-500	(2,132)	1,632	-600	(830)	138%	(1,038)	173%	-1,500	900	
51	Constitutional Offices											
52	Comm. Atty.	-313,520	(273,667)	(39,853)	-320,000	(180,264)	56%	(225,330)	70%	-344,900	24,900	Comp
53	Sheriff	-850,000	(836,950)	(13,050)	-920,000	(601,315)	65%	(751,644)	82%	-996,000	76,000	Board
54	Comm. Of Revenue	-101,000	(118,102)	17,102	-126,000	(84,084)	67%	(105,105)	83%	-135,300	9,300	and State
55	Treasurer	-112,000	(114,391)	2,391	-122,000	(77,287)	63%	(96,609)	79%	-138,600	16,600	Estimates
56	Registrar	-57,000	(66,084)	9,084	-65,000		0%	0	0%	-70,000	5,000	
57	Clerk Circuit Court	-240,000	(242,169)	2,169	-258,000	(171,028)	66%	(213,785)	83%	-274,000	16,000	
58	Library of VA - Clerk		(28,375)	28,375	-54,558	(54,558)		(68,198)		0		
59	Clerk TTF		(111,460)	111,460	-110,726					0		
60	Victim Witness Coordinator	-75,000	(70,959)	(4,041)	-66,000	(33,669)	51%	(42,086)	64%	-66,000	0	
61	School Resource Officer	-129,600	(126,131)	(3,469)	-154,500	(36,802)		(39,000)		-154,500	0	SRO grants
62	Fire Program ATL	-41,000	(36,470)	(4,530)	-36,000	(40,927)	114%	(40,200)	112%	-36,000	0	
63	Four-for-Life EMS	-13,500	(12,303)	(1,197)	-12,000		0%	(12,000)	100%	-12,000	0	OEMS?
64	Radiocache	-100,000	(29,148)	(70,852)	-75,000	(187,407)	250%	(234,259)	312%	-60,000	(15,000)	grant amount
65	SHSP Radio Grant					(90,000)		(90,000)				
66	Selective Enforcement	-4,000	(5,869)	1,869	0	(6,099)		(7,624)	#DIV/0!		0	
67	LEMPGrant	-7,500	(5,567)	(1,933)	-7,500		0%	0		-7,500	0	
	CATEGORY	FY2023 BUDGET		above/ below	FY2024 BUDGET		%		%	FY2025 PROPOSED		
	TRANSFERS IN:	BUDGET	FINAL	projection	BUDGET	As of 3/31/24	Received		Received	BUDGET	Difference	
68	DCJS LE Grant			0		(2,888)		(3,610)		0		
69	ARPA Local LE				-259,000	(144,020)				0		one-time grant
70	Byrne JAG Grant		(3,825)	3,825				0		0		
71	TRANSFER in Solid Waste 137			0				0				
72	BEG FUND BALANCE SCHOOL	-258,026			-166,315	moved -313715		0		-313,715	147,400	
73	TRANSFER from Reserve	-$1,453,599	$0	-$1,453,599	-$1,575,234	$0		$0		-$1,165,547	-$409,687	USE OF RESERVE
74	ANNUAL REVENUE TOTAL	-$13,085,235	-$12,738,027	-$243,580	-$14,217,133	-$7,939,956	$54	-$12,534,028		-$14,856,262	$1,061,413	

	CATEGORY	FY2023 BUDGET		above/ below	FY2024 BUDGET		%	0	%	FY2025 PROPOSED		
	General Fund EXPENSE:	BUDGET	FINAL	projection	BUDGET	As of 3/31/24	Spent	FY24 Projection	Spent	BUDGET	Difference	
75	BOS	54,070	48,544	(5,526)	55,070	42,548	77%	53,185	97%	55,000	(70)	
76	County Administration	299,970	297,959	(2,011)	325,000	240,533	74%	300,666	93%	345,750	20,750	
77	Professional Services	115,000	131,299	16,299	130,000	140,112	108%	155,000	119%	130,000	0	
78	Comm. Of Revenue	246,860	249,976	3,116	254,100	199,970	79%	249,963	98%	281,500	27,400	
79	Treasurer	263,440	260,771	(2,669)	271,000	206,569	76%	258,211	95%	277,100	6,100	
80	Data Processing	64,000	76,367	12,367	82,000	131,903	161%	135,000	165%	75,000	(7,000)	
81	Electoral Board	61,900	55,791	(6,109)	72,100	91,081	126%	106,000	147%	94,550	22,450	3 elections/maint cont
82	Registrar	148,140	151,609	3,469	157,750	138,177	88%	172,721	109%	172,400	14,650	
83	Circuit Court	13,400	1,012	(12,388)	12,000	670	6%	11,000	92%	12,000	0	
84	General District Court	2,600	2,692	92	2,500	1,732	69%	2,165	87%	2,600	100	
85	Magistrate	1,325	1,595	270	1,550	1,065	69%	1,500	97%	1,550	0	
86	Juv/Domestic Court	78,300	108,230	29,930	67,350	37,160	55%	55,740	83%	67,350	0	
87	Juv Det Ctr Debt 2023-2038				41,200	41,214	100%	41,214	100%	45,200	4,000	back to $43,200 FY26
88	Clerk Circuit Court	342,660	336,359	(6,301)	361,000	274,105	76%	342,631	95%	378,500	17,500	
89	Library of VA Grant		28,375	28,375	54,558	54,558	100%	54,558		0		
90	Clerk Technology TF		111,460	111,460	110,726	67,316		84,145		0		
91	Courthouse Security	21,600	17,607	(3,993)	21,600	13,506	63%	16,883	78%	19,800	(1,800)	
92	Victim/Witness Coord	74,280	71,685	(2,595)	69,350	52,293	75%	65,366	94%	76,450	7,100	
93	Comm. Attorney	387,000	348,612	(38,388)	406,600	241,576	59%	301,970	74%	409,000	2,400	
94	Sheriff's Office	1,368,500	1,456,326	87,826	1,986,800	1,427,867	72%	1,986,800	100%	2,235,000	248,200	Staff support &SRO
95	Fire/Rescue Appropriations	194,900	194,240	(660)	194,100	149,775	77%	187,219	96%	444,100	250,000	EMS SUPPORT
96	Radiocache Grant	100,000	148,640	48,640	75,000	18,288	24%	75,000	100%	60,000	(15,000)	
97	CODE RED/LEMP Grant	15,000	8,277	(6,723)	15,000	6,556	44%	15,000	100%	15,000	0	
98	Fire Programs/EMS State	54,500	54,773	273	48,000	40,927	85%	51,159	107%	48,000	0	
99	Piedmont Regional Jail	725,000	515,277	(209,723)	847,000	722,750	85%	844,000	100%	840,000	(7,000)	new CB funding
100	PRJ Debt 2018-2033		49,932		50,000	49,930		49,930		50,000		
101	Building Official	104,360	101,916	(2,444)	109,220	81,136	74%	101,420	93%	116,700	7,480	
102	Animal Control	134,330	130,849	(3,481)	156,770	128,930	82%	161,163	103%	165,630	8,860	FT deputy
103	Buildings & Grounds	245,090	234,684	(10,406)	256,700	204,805	80%	256,006	100%	274,000	17,300	electric & ins
104	Health Dept	95,500	86,324	(9,176)	98,500	85,066	86%	98,500	100%	88,000	(10,500)	
105	Medical Examiner	200	220	20	200	80	40%	100	50%	200		
106	Crossroads	53,000	53,000	0	57,700	43,228	75%	57,700	100%	64,630	6,930	
107	Madeline's House	2,000	2,000	0	3,000	3,000	100%	3,000		7,000	4,000	
108	Planning/Zoning/JCP	16,100	10,987	(5,113)	40,700	39,772	98%	49,715	122%	43,400	2,700	Comp Plan Yr. 2
109	Community Dev	297,480	300,801	3,321	302,230	250,454	83%	302,230	100%	318,680	16,450	minor adjustments
110	Econ/Comm Dev Dept	85,890	85,384	(506)	93,220	68,773	74%	85,966	92%	101,400	8,180	
111	IDA Tax Incentives	67,000	62,882	(4,118)	50,000	0	0%		0%	50,000	0	
112	Cooperative Extension	51,800	30,160	(21,640)	55,510	22,554	41%	28,193	51%	61,700	6,190	
113	WC/LODA/Liability Ins.	73,500	75,660	2,160	77,000	76,487	99%	76,487	99%	85,000	8,000	WC increase
114	Refunds/DMV Stops	25,000	32,475	7,475	25,000	20,125	81%	25,156	101%	30,000	5,000	

	CATEGORY	FY2023 BUDGET		above/ below	FY2024 BUDGET		%	0	%	FY2025 PROPOSED		
	EXPENSE: 100	BUDGET	FINAL	projection	BUDGET	As of 3/31/24	Spent	FY24 Projection	Spent	BUDGET	Difference	
115	Capital Improvements	200,000	128,381	(71,619)	155,000	2,301	1%	150,000	97%	75,000	(80,000)	
116	Reserve for Contingency			0				0				
117	Total for GF Departmental Expenses	$6,083,695	$6,013,199	-$70,496	$7,192,104	$5,418,892		$6,773,615		$7,617,190	$425,086	
	Transfers to Other Funds											
118	Reassessment	50,000	50,000		180,000	134,923		134,923	75%	0	(180,000)	complete
119	911 Fund									0	0	911 fund depleted
120	Airport fund 221	5,000	8,072	3,072	77,100	77,100	100%		0%	18,700	(58,400)	
121	Schools 250	4,662,614	4,742,168	79,554	4,811,014	4,511,019	94%	3,810,700	79%	5,451,657	640,643	RLM 1,483 ADM
122	Schools Carryover 250	258,026		(258,026)	166,315					0	(166,315)	
123	Social Services 260	190,000	98,658	(91,342)	205,000	135,570	66%	205,000	100%	247,000	42,000	full staff
124	CSA 262	325,000	439,018	114,018	224,000	-6,929	-3%	250,000	112%	225,000	1,000	
125	Voting Machine Fund 319	5,000		(5,000)	5,000			5,000	100%	0	(5,000)	
126	School Carryover to 320				0	moved 313,715		313,715		313,715	313,715	
127	ED Grants Fund 226										0	
128	Debt Service 420	1,506,900	1,506,839	(61)	1,504,000	950,142	63%	1,438,000	96%	983,000	(521,000)	
129	Total Transfers:	7,002,540	6,844,755	-157,785	7,172,429	5,801,825		5,843,623		7,239,072	66,643	
130	Totals General Fund:	$13,086,235	$12,857,954	-$228,281	$14,364,533	$11,220,717		12,617,238		$14,856,262	$491,729	
131	USE OF RESERVE:				$147,400	School carryover change				0	will be on #71	
	SPECIAL FUNDS:	FY2023 BUDGET		above/ below	FY2024 BUDGET					FY2025 PROPOSED		
	Reassessment Fund 132	BUDGET		projection	BUDGET					BUDGET	Difference	
132	Reassessment Transfers IN	-50,000		50,000	-180,000					0	(180,000)	
133	Reassessment Fund Balance				-100,000	?						
134	Reassessment Expense	50,000			280,000					0	280,000	
	Fund balance											
135	135			0								
136	Solid Waste Revenue	-180,000		180,000	-193,000					-193,000	0	
137	Solid Waste Transfers IN	-135,300			-119,300					-162,000	42,700	
138	Solid Waste Expense	315,300		-315,300	312,300					355,000	(42,700)	
139	Solid Waste Transfers OUT											
140	Solid Waste Operations	315,300		-315,300	312,300					355,000	(42,700)	
	Fund balance					506,913						
141	Solid Waste Sites 137											
142	SW Fund Balance Transfer IN	-114,000			-114,000					-117,000		
143	SW 137 Revenue Total	-114,000			-114,000					-117,000		
144	SW Transfer to GF to balance											
145	SW Sites Expense			0	114,000					117,000		
146	Solid Waste Sites	114,000			114,000					117,000		
147	SW Site Cap Outlay ending Fund Bal					384,464						
	SPECIAL FUNDS:	FY2023 BUDGET		above/ below	FY2024 BUDGET					FY2025 PROPOSED		

		BUDGET		projection	BUDGET					BUDGET	Difference	
148	**213**											
149	Law Library Revenue	-1,000		1,000	-1,000					-1,000		
150	**Law Library Expense**	1,000			1,000					1,000		
151	**215**											
152	E-911 Fund Revenue State	-40,000		40,000	-48,000					-45,000	3,000	
153	transfer from GF			0						0		
154	Revenue from Solar 225			0	-100,000					-102,000	(2,000)	Solar Siting $$
155	Transfer in from Fund Balance	-123,760		123,760	-90,000					-100,000	(10,000)	Depleted Fund
156	E-911 Fund Revenue Comm Tax	-140,000		140,000	-145,000					-140,000	5,000	
157	**Total Revenue**	-303,760		303,760	-383,000					-387,000	(4,000)	
158	**E-911 Expense**	118,760		-118,760	383,000					387,000	4,000	Radio costs
159	Transfer to EMS Capital	185,000			0					0	0	No transfer
160	Total	303,760		-303,760	383,000					387,000	4,000	
161	911 Fund Balance					-131,947						
	SPECIAL FUNDS:	FY2023 BUDGET		above/ below	FY2024 BUDGET					FY2025 PROPOSED		
		BUDGET		projection	BUDGET					BUDGET	Difference	
	221											
162	Airport Fund Revenue	-40,400			-900,300					-10,300	890,000	
163	Transfer IN from GF	-5,000			-77,100					-18,700	58,400	
164	**Total Airport Revenue**	-45,400			-977,400					-29,000	948,400	paving done
165	**Airport Fund Expense**	45,400		-45,400	977,400					29,000	(948,400)	no grants yet
166	Fund Balance					22,113						
167	**225**											
168	Econ Dev Fund revenue				-1,573,000					0		
169	use of fund balance	-2,400								-102,000	(102,000)	to cover 911
170	**Total Expense**	2,400			1,573,000					102,000	(1,471,000)	
171	Econ Dev Fund Bal 225					830,612						
172	**226**											
173	Econ Dev Grant Funds Rev State/Fed	0		0	-15,000					0		
174	Econ Dev Fund Bal Transfer IN **225**			0								
175	Econ Dev Match Funds Local			0								
176	Econ Dev Revenue Total	0		0	-15,000					0		
177	Econ Dev Expense	0		0	15,000					0		
178	226 Fund balance					52,958						
	SPECIAL FUNDS:	FY2023 BUDGET		above/ below	FY2024 BUDGET					FY2025 PROPOSED		

		BUDGET		projection	BUDGET					BUDGET	Difference	
179	250											
180	School Fund Revenue											
181	State Sales Tax	-2,087,296		(2,087,296)	-2,274,386					-2,329,095	54,709	
182	State Funds	-15,030,475		(15,030,475)	-14,221,455					-16,867,563	2,646,108	
183	Federal Funds	-2,726,920		(2,726,920)	-2,244,573					-2,459,284	214,711	
184	County Funds Transfer	-4,662,614		(4,662,614)	-4,811,014	Modified by				-5,451,657	640,643	213,715 In fund 355
185	CARES Act Relief ESSER II&III	-4,575,544			-2,224,090	Supplements				0	(2,224,090)	
186	Prior Year Carryover	-258,026			166,315	for grants and				0		RLE
187	Other	-216,825		(216,825)	-216,822	other funding				-399,437	182,615	
188	Total Revenue	-29,557,700		(29,557,700)	-25,992,340	-27,975,581				-27,507,036	(1,514,696)	
189	School Fund Expense	29,557,700		(29,557,700)	25,992,340	27,975,581				27,507,036	1,514,696	
190	260											
191	Soc Serv Revenue State	-544,000		-544,000	-557,200					-563,000	(5,800)	
192	Soc Serv Local Transfer	-190,000		-190,000	-205,000					-247,000	(42,000)	
193	Soc Serv Revenue Fed	-900,000		-900,000	-835,800					-865,000	(29,200)	
	SPECIAL FUNDS:	FY2023 BUDGET		above/ below	FY2024 BUDGET					FY2025 PROPOSED		
		BUDGET		projection	BUDGET					BUDGET	Difference	
194	Soc Serv Revenue Total	-1,645,000		-1,634,000	-1,605,000					-1,675,000	(70,000)	
195	Social Services Expenses	1,645,000		1,645,000	1,605,000					1,675,000	70,000	
	262											
196	CSA Revenue State	-865,000		-865,000	-908,000					-877,000	(31,000)	
197	CSA Revenue Local Transfer	-325,000		-325,000	-224,000					-225,000	1,000	
198	CSA Reimburse Local			0								
199	CSA Revenue Total	-1,190,000		-1,190,000	-1,132,000					-1,102,000	(30,000)	
200	CSA Expense	1,190,000		-1,190,000	1,132,000					1,102,000	30,000	
201	280											
202	CARES Act Fund Rev	-1,184,465		1,184,465							0	
203	CARES Act Fund Balance	-900,000		900,000	-1,127,000	-707,815				-677,000		
204	CARES Act Fund Total	-2,084,465		2,084,465	-1,127,000					-677,000	(450,000)	
205	CARES Act Fund Expense	2,084,465		-2,084,465	1,127,000					677,000	450,000	
206	316											
207	Emerg Capital Revenue/Grants	-185,000			-50,000					-50,000	0	
208	Revenue from Solar Siting Agreement			0	-410,000					-360,000	(50,000)	
209	Emerg Capital Fund Balance			0		-526,247					0	Meridian
210	Fire/Rescue Total Revenue	-537,950		537,950	-460,000					-410,000	(50,000)	
211	Fire/Rescue Capital Expense	537,950		-537,950	460,000					410,000	50,000	
212	317											
213	Proj Lifesaver Revenue Total	-800		800	-800					-1,000	200	
214	Project Lifesaver Capital Outlay	800		-800	800					1,000	(200)	
	SPECIAL FUNDS:	FY2023 BUDGET		above/ below	FY2024 BUDGET					FY2025 PROPOSED		

		BUDGET		projection	BUDGET					BUDGET	Difference	
215	319											
216	Voting Machine Transfer In	-5,000			-5,000					0	(5,000)	
217	Voting Machine Fund Expense	5,000		-5,000	5,000					0	5,000	
218	Voting Machine Fund Bal											put in reg budget
219	320											
220	**Capital Outlay Fund**											
221	Bond Proceeds (LUIS)	-2,500,000			-1,200,000					0		
222	Use of Carryover				-75,000					0		
223	School Prior Yr Carryover				0					0	0	
224	Capital Outlay Fund Balance				0	-1,536,996					0	School Construction
225	Capital Outlay & Transfers	2,500,000		(2,500,000)	-1,275,000					0	1,275,000	
226	Total Capital Outlay	2,500,000			1,275,000					0	(1,275,000)	
227												
228	355											
229	**School Construction Fund**											
230	School Prior Yr Carryover									-313,715	313,715	
231	School				0					-1,439,108	1,439,108	
232	Capital Outlay School	2,500,000		(2,500,000)						-1,752,823	527,823	from 320 to 355
233	Total Capital Outlay	2,500,000								1,752,823	527,823	
234		BUDGET		projection	BUDGET					BUDGET	Difference	
235	420											
236	Debt Service Transfer	-1,506,900		-1,506,900	-1,504,000					-983,000	(521,000)	
237	Transfer in Fund 320											
238	Debt Service Refunds 2010 QSCB Int	-143,000		-143,000	-143,000					-143,000		
239	Total Debt Service Revenue	-1,649,900		-1,649,900	-1,647,000					-1,126,000	(521,000)	
240	Debt Service Schools	984,560		-984,560	983,200					977,000	(6,200)	
241	Debt Service Courthouse	514,220		-514,220	513,700					0	(513,700)	
242	Debt Service LUIS/bond	149,910		-149,910	148,900					148,000	(900)	
243	Fees	1,210			1,200					1,000		
244	**Debt Service Expense**	1,649,900		-1,649,900	1,647,000					1,126,000	(521,000)	
245	**Total Revenue General Fund**	-13,085,235		-243,580	-14,217,133					-14,856,262	(639,129)	
246	Total Revenue/Transfers Special Funds	-40,002,675		-30,873,625	-36,899,840					-35,241,859	1,657,981	
247	**Total All Special Funds**	40,002,675		-34,045,275	36,899,840					35,241,859	(1,657,981)	
248	**Total Expense General Fund**	13,086,235		-228,281	14,364,533					14,856,262	491,729	
249	**Budget Totals:**	53,088,910		-34,273,556	51,264,373					50,098,121	(1,166,252)	

LUNENBURG COUNTY, VIRGINIA
PROPOSED BUDGET FOR THE YEAR ENDING JUNE 30, 2025

UPDATED FOR CHANGES FROM 5-23-24 BUDGET PUBLIC HEARING

TAX LEVIES - PROPOSED BUDGET	ADOPTED	PROPOSED
TAX LEVY Category	2023 Calendar Year	2024 Calendar Year
Real Estate	$0.38	$0.33
Personal Property	$3.80	$3.80
Merchant's Capital	$1.20	$1.20
Aircraft	$2.10	$2.10
Machinery & Tools	$1.80	$1.80
Mobile Homes/Barns	$0.38	$0.33

GENERAL FUND REVENUES	FY 2024 ADOPTED	FY 2025 PROPOSED
Real Estate Taxes	-3,650,000	-4,000,000
Personal Property Taxes	-2,700,000	-3,000,000
Mobile Home	-20,000	-22,000
Registration Fees	-210,000	-212,000
Machinery & Tools	-260,000	-300,000
Merchant's Capital	-80,000	-100,000
Public Service Corporations	-250,000	-230,000
Delinquent Tax Collections	-119,000	-125,000
Interest/Penalty on Taxes	-100,000	-120,000
Local Sales & Use Taxes	-530,000	-550,000
Consumer Utility Consumption Tax	-20,000	-20,000
Taxes on Recordation & Wills	-69,000	-70,000
Interest/Penalties-Clerk	-1,000	-1,000
Animal Licenses	-6,000	-5,000
Animal Fines/Kennel Fees	-5,000	-3,000
Transfer Fees	-400	-400
Building Permits	-135,000	-45,000
Septic Permits	-400	-500
Event Permits/Fees	-2,200	-3,500
Conditional Use Permits	-10,000	-10,000
Landfill Host Fees	-450,000	-650,000
Landfill Liaison Fee	-75,000	-78,000
County Fines & Fees	-3,000	-4,000
Courthouse Renovation Fees	-2,000	-2,000
Clerk -Misc Fees	-7,000	-7,000
Courthouse Security Fees	-12,000	-14,000
e-Summons Fees	-1,000	-1,000
Prisoner Processing Fees	-500	-500
Interest Checking/Investments	-22,000	-350,000
Rental/General Property	-31,700	-31,700
Sheriff/Comm. Atty. Fees	-3,600	-5,000
DMV Stops	-25,000	-30,000
Town Contributions/Grants	-5,000	-5,000
DMV Mobile Home Tax	-30,000	-32,000
Railroad Rolling Stock	-4,000	-4,000
DMV Animal Plates	-100	-100
DMV Rental Tax	-600	-800
DMV Moped ATV	-600	-1,500
PPTRA-State Reimbursement	-1,048,200	-1,048,200
Constitutional Offices-State Reimbursement	-1,811,000	-1,958,800
Grants	-610,000	-336,000
School Carryover from Fund Balance	-313,715	-313,715
Use of General Fund Reserve	-1,722,634	-1,165,547
TOTAL GENERAL FUND REVENUES	*-14,346,649*	*-14,856,262*

Tax Levies are based on a Calendar Year and the Proposed Budget is based on a Fiscal Year (July 1-June 30). The Fiscal Year budget potentially sets rates for two different calendar years of tax collection. Tax levies are based on a per $100 assessed value. The 2024 levies include the previously adopted tax rate adjustment from $0.38/$100 to $0.33/$100 in valuation following the reassessment adopted in January 2024.

GENERAL FUND TRANSFER TO:	FY 2024 ADOPTED	FY 2025 PROPOSED
Reassessment Fund	180,000	0
Airport Fund	77,100	18,700
School Fund	4,811,014	5,451,657
School (Carryover) to Construction Fund	166,315	313,715
Social Services	205,000	247,000
C.S.A./At-Risk Fund	224,000	225,000
Voting Machine Fund	5,000	0
Debt Service	1,504,000	983,000
Total Transfers to other Funds	7,172,429	7,239,072
TOTAL GENERAL FUND EXPENDITURES	*14,364,533*	*14,856,262*

SPECIAL FUNDS:	FY 2024 ADOPTED	FY 2025 PROPOSED
Reassessment Fund		
Transfers in & Use of Fund Balance	-280,000	0
Expenditures	280,000	0
Solid Waste Operations Fund		
Revenue/Use of Fund Balance	-312,300	-355,000
Expenditures	312,300	355,000
Solid Waste Convenience Sites		
Revenue/Use of Fund Balance	-114,000	-117,000
Sites Expense & Construction	114,000	117,000
Law Library		
Revenue	-1,000	-1,000
Expenditures	1,000	1,000
E-911 Fund		
State Revenue	-193,000	-185,000
Solar Siting Agreement Revenue	-100,000	-102,000
Transfer in from Fund Balance	-90,000	-100,000
Total Revenue	-383,000	-387,000
Operations	142,600	139,000
Transfer to Public Safety Capital Fund	0	0
Emergency Radio System Expenses	240,400	248,000
Total	383,000	387,000
Airport Fund		
Revenue from State/Grants	-870,000	-2,700
Revenue: Local & GF Transfer	-107,400	-26,300
Total Revenue	-977,400	-29,000
Expenditures	977,400	29,000
Economic Development Fund		
Fund Balance: Solar Siting/Escrow	-1,573,000	-102,000
Expenditure: Transfer to E-911 Fund	1,573,000	102,000

GENERAL FUND Expenditures	FY 2024 ADOPTED	FY 2025 PROPOSED
Board of Supervisors	55,070	55,000
County Administration	325,000	345,750
Professional Services	130,000	130,000
Commissioner of the Revenue	254,100	281,500
Treasurer	271,000	277,100
Data Processing	82,000	75,000
Electoral Board	72,100	94,550
Registrar	157,750	172,400
Circuit Court	12,000	12,000
General District Court	2,500	2,600
Magistrate	1,550	1,550
Juvenile/Domestic Relations Court	67,350	67,350
Juvenile Detention Center Debt Service	41,200	45,200
Clerk, Circuit Court	361,000	378,500
Clerk Grants	165,284	0
Courthouse Security	21,600	19,800
Victim Witness	69,350	76,450
Commonwealth Attorney	406,600	409,000
Sheriff's Department	1,986,800	2,235,000
Volunteer Fire/EMS Operations & Grants	332,100	567,100
Piedmont Regional Jail	847,000	840,000
Piedmont Regional Jail Debt Service	50,000	50,000
Building Inspector	109,220	116,700
Animal Control	156,770	165,630
Maintenance/Buildings	256,700	274,000
Health Dept	98,500	88,000
Medical Examiner	200	200
Crossroads	57,700	64,630
Domestic Violence Prevention	3,000	7,000
Planning Commission/Zoning	40,700	43,400
Lunenburg Public Library System	150,280	160,000
Commonwealth Reg Council	19,000	19,000
Soil & Water Conservation	8,500	8,500
Lunenburg Literacy	8,000	6,000
SVCC	5,750	5,480
Longwood Small Business	2,000	2,000
SPCA	1,000	1,000
VA's Retreat	4,500	4,500
Town & County Bus	5,300	5,300
Piedmont Sr. Resources	12,000	14,000
Forestry Service	22,100	22,100
Rec Sports Leagues	15,000	20,000
People's Comm Center	500	500
Victoria Community/Senior Citizens Center	500	500
Kenbridge Comm Center	1,000	1,000
Piedmont Area Veterans Center	4,000	6,000
VA Legal Aid Society	4,800	4,800
VA's Growth Alliance	16,500	16,500
Community Action Agency	21,500	21,500
Community/Econ Dev. (Office)	93,220	101,400
IDA Tax Incentives	50,000	50,000
Cooperative Extension	55,510	61,700
Refunds / DMV Stops	25,000	30,000
Prop/Liability/LODA/WC Coverage	77,000	85,000
Capital Improvements	155,000	75,000
Total General Fund Operations	*7,192,104*	*7,617,190*

Economic Development Grants Fund		
Revenue: Grants	-15,000	0
Expenditures	15,000	0
School Fund		
State Sales Tax	-2,274,386	-2,329,095
State Funds	-14,221,455	-16,867,563
Federal Funds	-4,468,663	-2,459,284
County - Local Match	-4,811,014	-5,451,657
Other Funds	-216,822	-399,437
Total Revenue	**-25,992,340**	**-27,507,036**
Total Expenditures	**25,992,340**	**27,507,036**
Social Services Fund		
Revenue State/Federal	-1,400,000	-1,428,000
Local Funds	-205,000	-247,000
Total Revenue	**-1,605,000**	**-1,675,000**
Expenditures	**1,605,000**	**1,675,000**
Comprehensive Services Act		
Revenue State/Local	-908,000	-877,000
General Fund Transfer In	-224,000	-225,000
Total Revenue	**-1,132,000**	**-1,102,000**
Expenditures	**1,132,000**	**1,102,000**
American Rescue Plan - Federal Funds		
Revenue/Use of 911 Fund Balance	-1,127,000	-677,000
Expenditures	1,127,000	677,000
Emergency Services Capital Equipment		
Revenue Transfer/Use of Fund Balance	-460,000	-410,000
Expenditures	460,000	410,000
Project Lifesaver		
Revenue/Transfer IN	-800	-1,000
Total Expenditure	800	1,000
Voting Machine Fund		
Transfer from General Fund	-5,000	0
Total Expenditure	5,000	0
Capital Outlay Fund		
Bond (LUIS)/School Transfers	-1,275,000	0
Capital Outlay LUIS/School Construction	1,275,000	0
School Construction Fund		
School Transfers	0	-1,752,823
School Construction	0	1,752,823
Debt Service		
Refunding Interest QSCB	-143,000	-143,000
General Fund Transfer In	-1,504,000	-983,000
Total Revenue	**-1,647,000**	**-1,126,000**
Debt Service School	983,200	983,200
Debt Service Courthouse	513,700	0
Debt Service Radio System	148,900	148,900
Total Expenditures Debt Service	**1,647,000**	**1,126,000**

	FY 2024 ADOPTED	FY 2025 PROPOSED
TOTAL BUDGET SPECIAL FUNDS:	*36,899,840*	*35,241,859*
TOTAL COUNTY BUDGET:	*51,264,373*	*50,098,121*

Meherrin Fireworks Permit

MEHERRIN VOLUNTEER FIRE & RESCUE, INC.

102 Moore's Ordinary Road / P.O. Box 94
Meherrin, Virginia 23954
Station: 434-736-0633 / E-Mail: mvfr@mvfrco5.org
www.mvfrco5.org

May 30, 2024

Lunenburg County Administrator
11413 Courthouse Road
Lunenburg, Virginia 23952

Mrs. Gee

On behalf of Meherrin Volunteer Fire & Rescue, Inc., we are respectfully requesting a firework display permit per Chapter 45 Article II Sec. 46-31 of the Code of Lunenburg County. The proposed fireworks display will take place during our annual Independence Day celebration, currently scheduled for July 6th, 2024.

The property where the show will be shot from is adjoining our property and is owned by Forest Baptist Church. We were granted written permission for use of the grounds for this event, and a copy of written permission is attached.

Flashover Fireworks LLC, a federally licensed fireworks company, will be responsible for the design, set-up, and supervision of the fireworks display.

We greatly appreciate your consideration on this matter and look forward to your future correspondence.

If you have any questions or need any further information, please feel free to contact me directly.

Respectfully

Howard E. Pyle, III
Chief
434-547-7861

Forest Baptist Church

Exalting Jesus, Equipping the Saints, Evangelizing the Sinner

Deacon Lorraine Williams, Chairwoman of Deacon Board
Trustee Calvin Streat, Chairman of Trustees Board

Mrs. Dashannon Whitehead, Church Clerk
Mrs. Inez Meeks, Assistant Church Clerk

Wednesday, March 08, 201

We the Forest Baptist Church Official Board and members authorized Meherrin Volunteer Fire Department to use Forest Baptist Church property in Lunenburg, Virginia 23952 to shooting off annual 4th of July Celebration Fireworks.

Meherrin Volunteer Fire Department will clean-up all visible debris, display and disposal all fireworks after the event.

Yours in Christ,

Rev. Otis R. Spellman

Rev. Otis R. Spellman, Pastor

Mrs. Dashannon Whitehead, Church Clerk

Mrs. Dashannon Whitehead

Trustee Calvin Streat, Chairman of Trustees

Trustee Calvin Streat

cc: Forest Baptist Church
Meherrin Volunteer

ADMINISTRATOR'S UPDATE

-- As necessary

Board of Supervisors June Meeting – 6/13/24
County Administrator's Monthly Report

Events in <u>May</u>:

April 29 - May 3 – Tracy PTO
May 7 – Team meeting – make plan for Planning/ED work
May 9 – Finance Committee meeting
May 9 – BOS meeting
May 10 – meet w/ Brande re: CSA financials
May 14 – Industrial Development Authority meeting
May 14-16 – RFCA Audit Preliminary Fieldwork
May 15 – Piedmont Juvenile Detention Center and Jail Authority Board meetings
May 16 – meet w/ Lisa Nagorsky, Acting Social Services Director
May 20 – Attend Field Day at KES
May 20 – Southern Dominion Health Systems Board meeting
May 21-24 – Nicole PTO
May 22 – Attend Kindergarten graduation at KES
May 22 – Community Policy Management Team (CPMT) meeting
May 22 – CHS Senior Class Night – Scholarship Award presentation for SEC
May 23 – Meeting with Town Managers
May 23 – BOS Public Hearing FY24/25 Budget
May 27 – Memorial Day Holiday
May 28 – meet w/ Beverley Hawthorne for PT help
May 29 – call w/ Benchmark re: Sweep account for IDA
May 29 – Solid Waste Committee meeting

Administration

- Nicole is finalizing Board of Equalization findings and ruling.
- Mr. Campbell of Love's Mill District indicated that the noise from the kennel next to his home has improved with the owner's removal of many pups. He asked that the Board still consider limiting proximity of kennels to property lines in the future. If he has further issues, he will seek legal representation for a civil case.
- I attended Class Night at CHS on May 22nd to distribute scholarships to two CHS students on behalf of SEC's Southside Opportunity Fund.
- We held an administrative team meeting to divide and conquer the tasks that Taylor has not been able to handle while on maternity leave.

Airport

- We received funding and I immediately filed for reimbursement for the parking lot from DOAV. It was funded at 80%. I then sent an invoice to the two towns for their share of costs.
- Filed for Automated Weather Observation System reimbursements for annual maintenance and recent repairs.

Animal Control

- Officer Elliott continues to handle tasks with some volunteer assistance and part-time sanitation assistance by Dickie Richards.

Budget & Finance-

- Met with members of the finance committee together before the BOS meeting and had multiple discussions separately to review the budget and how to best cover the needs of the County.

- The School's Required Local Match and the subsequent funding data was exhaustively reviewed.
- The new budget data from the State budget, adopted 5/13, was posted in the VDOE calculation template on 5/29. This was after our budget public hearing on 5/23. I have included the updated data in the budget agenda item, which adds approximately $50,000 in local funding.
- The IDA will now be participating in the ICS sweep account program.

Building Official and Building & Grounds –

- New flooring replaced the damaged floor in the Dispatch Center.
- The newest estimate for a resolution to the Tax Office leaks is $13,700. We will need to get bids for that amount of work. Then, we can schedule replacement of carpet with LVT.
- The Registrar's Office will receive their new LVT flooring in July.
- Many of our lighting problems lately require replacement of ballasts, which can be resolved with our incremental implementation of LED lighting installation. That started at the Tax Office and continues with the Human Resource building.

Community/Economic Development/Planning –

- Taylor remains on modified leave, working up to 16 hours per week remotely. We are all praying for Baby Gwen and family. I met with Beverley Hawthorne, and she will complete some part-time hours as-needed to assist with the Planning Commission and other tasks.
- The IDA met on 5/14 and voted to support the first year of membership in the VHREDA with the Commonwealth Regional Council.
- Worked on the questions and distribution to the Schools of the Joint Comprehensive Plan survey. Surveys are due early July, please feel free to share the survey with others.
- We have a joint public hearing for the Unity Substation by Dominion Energy at the meeting.
- Discussed solar inspections with CRC members. We use TRC/Draper Aden.
- Met with the Town Managers to discuss items that affect our area and local developments.

Elections –

- Registrar Baldwin would like to apply for SHSP cybersecurity grant funds for the Local Election Security Standards.
- The primary will be held June 18th.
- Registrar Baldwin would like to publicly recognize long-time poll workers at the August BOS meeting.

Emergency Management & Public Safety –

- The Sheriff's Office is applying for several grants for staffing and vehicle support.
- I am working on the Four-for-Life EMS funds reporting with EMS agencies.
- Meherrin Fireworks will take place July 6th if the permit is approved by the BOS.

Piedmont Regional Jail Authority and Juvenile Detention Center Board -

- The Juvenile Detention Center ABM project staff manager is providing regular updates to the Commission regarding their extended timeline for repairs.

Schools

- School closed on May 23rd. The School Board will send over a new FY25 budget based on the new State calculation template. In the interim, I have the updated form in your packet.
- Worked with School Administration to understand funding and researched formulas and per diem calculations.

Social Services and Children's Services –

- The advertisement for the Social Services Director position posted on June 3rd and will close June 24th.
- The Acting Director Lisa Nagorsky has some part-time assistance from the Nottoway Director for specialized reviews, which has aided Lisa in learning much more about the programs.
- The new CSA Coordinator, Brande Crutchfield has caught up all previous pool reimbursements, including the refunds necessary to net the expenditures reported as duplicates. Her method of tracking has simplified our cross-referencing of expenditures. It used to take me a full day to reconcile, now it takes me no more than an hour.
- The CPMT and FAPT teams will have a joint worksession/team-building event in July.

Solid Waste -

- I met with the Town Managers to discuss commercial waste. They came up with a new best practice for paying for commercial waste. We await input from Meridian Waste.
- Meridian has requested to go from 1,500 tons per day to 2,000 tons per day. Their management has asked for a meeting to discuss the proposed increase. The Solid Waste Committee will meet on June 4th at 2pm.
- Meridian has applied for their vertical expansion permit modification with DEQ. The public meeting will be at the Courthouse on July 2nd, starting at 6pm.

UPCOMING dates of interest:

June 3 *– Carl Ashworth's Birthday!*
June 4 *– Solid Waste Committee meeting*
June 6-8 *– Tracy at VLGMA Conference - VA Beach*
June 6 *– Bobby Zava's Birthday!*
June 13 *– Board of Supervisors meeting 6PM Courthouse*
June 19 *– Juneteenth – Office closed*
June 20 *– Taylor King's Birthday!*
July 4 *– Independence Day – Office closed*

"Greater love has no one than this, than to lay down one's life for his friends."

--John 15:13 KJV

In memory of our fallen military and public servants, who lay down their lives for loved ones and strangers.

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment and announce a public hearing on a draft permit from the Department of Environmental Quality regarding a landfill in Lunenburg County, Virginia.

PUBLIC COMMENT PERIOD: May 29, 2024 to July 17, 2024.

PUBLIC HEARING: General District Courtroom, 160 Courthouse Square, Lunenburg, VA 23952 on July 2, 2024 at 7:00 p.m.

INFORMATION BRIEFING: General District Courtroom, 160 Courthouse Square, Lunenburg, VA 23952 on July 2, 2024 at 6:00 p.m.

PERMIT NAME AND NUMBER: Disposal and Recycling Services of Lunenburg Sanitary Landfill, Solid Waste Permit 544.

PERMIT APPLICANT: RWG5, LLC.

FACILITY NAME AND LOCATION: Disposal and Recycling Services of Lunenburg Sanitary Landfill, 45 Landfill Road, Victoria, Virginia. The facility is located on Route 659 (Old Mansion Road), approximately four and a half miles south of the Town of Victoria and approximately seven miles southwest of the Town of Kenbridge.

PROJECT DESCRIPTION: RWG5, LLC has applied for a modification to a permit that allows the Disposal and Recycling Services of Lunenburg Sanitary Landfill to operate an existing landfill in Lunenburg County, Virginia. This modification to the permit would allow the vertical expansion to 672 feet above mean sea level, adding approximately 800,000 cubic yards of landfill capacity.

HOW TO COMMENT: DEQ accepts comments by hand-delivery, e-mail, or postal mail. All comments must include the name, address and telephone number of the person commenting and be received by DEQ within the comment period. DEQ also accepts written and oral comments at public hearings. The public may review the draft permit and application online at https://www.deq.virginia.gov/permits/public-notices/land-protection or at the DEQ office named below. Copies of the permit documents are also available at the Lunenburg County Administration Building at 11413 Courthouse Road, Lunenburg, VA 23952.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: Christopher Keehan; Piedmont Regional Office, 4949-A Cox Road, Glen Allen, VA 23060; Phone: (804) 385-5570; E-mail: christopher.keehan@deq.virginia.gov; Fax: (804) 527-5106.

County Attorney Update