FLUVANNA COUNTY BOARD OF SUPERVISORS

REGULAR MEETING AGENDA

Carysbrook Performing Arts Center
8880 James Madison Hwy, Fork Union, VA 23055
February 15, 2023
Budget Work Session at 5:00 pm
Regular Meeting at 7:00 pm

TAB	AGENDA ITEMS
A – CALL TO ORDER	
B – PLEDGE OF ALLEGIANCE AND MOMENT OF SILENCE	
C – FLUVANNA COUNTY SCHOOLS BUDGET DISCUSSION	
E – CLOSED MEETING AND DINNER RECESS	
	RECESS – DINNER BREAK
	RECONVENE @ 7:00pm
TAB	**AGENDA ITEMS**
1 - CALL TO ORDER	
2 - PLEDGE OF ALLEGIANCE AND MOMENT OF SILENCE	
3 – ADOPTION OF AGENDA	
SPECIAL PRESENTATION	
	Resolution Honoring Bertha Armstrong – Eric Dahl, County Administrator
4 – COUNTY ADMINISTRATOR'S REPORT	
5 – PUBLIC COMMENTS #1 (5 minutes each)	
6 – PUBLIC HEARING	
A	SUP 22:04 S.B. Cox Inc. – Douglas Miles, Community Development Director
7 – ACTION MATTERS	
B	Kents Store Firehouse Remediation Contract – Eric Dahl, County Administrator
7A – APPOINTMENTS	
8 – PRESENTATIONS (normally not to exceed 10 minutes each)	
C	Pleasant Grove Park Projects Update – Aaron Spitzer, Director of Parks and Recreation
9 – CONSENT AGENDA	
D	Minutes of February 1, 2023 – Caitlin Solis, Clerk to the Board
E	Minutes of February 8, 2023 – Caitlin Solis, Clerk to the Board
F	Virginia Department of Environmental Quality Local Government Guarantee – Tori Melton, Director of Finance
G	Accounts Payable Report for January 2023 – Tori Melton, Director of Finance
H	Approval of Open Space Agreement for Sarah and Seth Radcliff – Andrew M. Sheridan, Jr., Commissioner of the Revenue

Fluvanna County is committed to providing an excellent quality of life for our citizens and businesses through the efficient delivery of core services and programs, while preserving the unique identity and rural character of the County.

10 – UNFINISHED BUSINESS

I Fluvanna County Community Center Renovation Update – Eric Dahl, County Administrator

11 – NEW BUSINESS

TBD

12 – PUBLIC COMMENTS #2 (5 minutes each)

13 – CLOSED MEETING

TBD

14 – ADJOURN

County Administrator Review

PLEDGE OF ALLEGIANCE

I pledge allegiance, to the flag,
of the United States of America,
and to the Republic for which it stands,
one nation, under God, indivisible,
with liberty and justice for all.

GENERAL RULES OF ORDER

1. It shall be the duty of the Chairman to maintain order and decorum at meetings. The Chairman shall speak to points of order in preference to all other members.

2. In maintaining decorum and propriety of conduct, the Chairman shall not be challenged and no debate shall be allowed until after the Chairman declares that order has been restored. In the event the Board wishes to debate the matter of the disorder or the bringing of order; the regular business may be suspended by vote of the Board to discuss the matter.

3. No member or citizen shall be allowed to use defamatory or abusive language directed at any member of the Board or other person, to create excessive noise, or in any way incite persons to use such tactics. The Chair shall be the judge of such breaches, however, the Board may by majority vote of the Board members present and voting to overrule the judgment of the Chair.

4. When a person engages in such breaches, the Chairman shall order the person's removal from the building, or may order the person to stand silent, or may, if necessary, order the person removed from the County property.

RULES OF PROCEDURE FOR PUBLIC HEARINGS

1. PURPOSE
   - The purpose of a public hearing is to receive testimony from the public on certain resolutions, ordinances or amendments prior to taking action.
   - A hearing is not a dialogue or debate. Its express purpose is to receive additional facts, comments and opinion on subject items.
2. SPEAKERS
   - Speakers should approach the lectern so they may be visible and audible to the Board.
   - Each speaker should clearly state his/her name and address.
   - All comments should be directed to the Board.
   - All questions should be directed to the Chairman. Members of the Board are not expected to respond to questions, and response to questions shall be made at the Chairman's discretion.
   - Speakers are encouraged to contact staff regarding unresolved concerns or to receive additional information.
   - Speakers with questions are encouraged to call County staff prior to the public hearing.
   - Speakers should be brief and avoid repetition of previously presented comments.
3. ACTION
   - At the conclusion of the public hearing on each item, the Chairman will close the public hearing.
   - The Board will proceed with its deliberation and will act on or formally postpone action on such item prior to proceeding to other agenda items.
   - Further public comment after the public hearing has been closed generally will not be permitted.

FLUVANNA COUNTY BOARD OF SUPERVISORS
AGENDA ITEM STAFF REPORT

MEETING DATE:	February 15, 2023					
AGENDA TITLE:	Resolution Honoring Bertha Armstrong					
MOTION(s):	**I move the Fluvanna County Board of Supervisors adopt the resolution entitled "A RESOLUTION HONORING MRS. BERTHA ARMSTRONG"**					
BOS 2 YEAR GOALS?	Yes	No	**If yes, which goal(s):**			
		X				
AGENDA CATEGORY:	Public Hearing	Action Matter	Presentation	Consent Agenda	Other	
		X				
STAFF CONTACT(S):	Caitlin Solis, Clerk to the Board					
PRESENTER(S):	Eric Dahl, County Administrator					
RECOMMENDATION:	Approve					
TIMING:	Routine					
DISCUSSION:	This is a resolution recognizing Bertha Armstrong's 52 years of service to the Monticello Area Community Action Agency (MACAA) in Fluvanna County.					
FISCAL IMPACT:	N/A					
POLICY IMPACT:	N/A					
LEGISLATIVE HISTORY:	N/A					
ENCLOSURES:	Resolution 06-2023					
REVIEWS COMPLETED:	Legal	Finance	Purchasing	HR	Other	
					X	

BOARD OF SUPERVISORS
County of Fluvanna
Palmyra, Virginia
RESOLUTION No. 06-2023

A RESOLUTION HONORING MRS. BERTHA ARMSTRONG

WHEREAS, Mrs. Bertha Armstrong, a lifelong and dedicated resident of Fluvanna County, has devoted her time and considerable talents to support and serve her community, and advocate most especially for those in need of assistance; and;

WHEREAS, Mrs. Bertha Armstrong, has completed fifty-two years of outstanding service to the Monticello Community Action Agency and to the County of Fluvanna and its residents; and

WHEREAS, Mrs. Armstrong has been a dedicated community servant in her fifty-two years employed by the Monticello Area Community Action Agency (MACAA) in various capacities, most recently as Rural Outreach Director, serving the counties of Fluvanna as well as the counties of Louisa, and Nelson; and

WHEREAS, Mrs. Bertha Armstrong has earned the admiration and respect of her co-workers, her employees, numerous volunteers, members of the Fluvanna community, county leaders, and the countless individuals and families whose lives she has impacted; and

WHEREAS, Mrs. Bertha Armstrong has served individuals and families facing crises by offering compassion and respect, providing food and clothing, securing material and financial resources to cover rent or utility costs, managing the Food Pantry and the Thrift Shop, and advocating for those in need; and

NOW, THEREFORE, BE IT RESOLVED, on this 15th of February 2023, that the FLUVANNA COUNTY BOARD OF SUPERVISORS does hereby recognize BERTHA ARMSTRONG for her dedicated service, compassionate leadership, and many contributions to the County of Fluvanna, with respect and gratitude; and

BE IT FURTHER RESOLVED the Board takes great pleasure in recognizing the significant contributions of Mrs. Armstrong and herewith expresses its sincere gratitude for the invaluable contributions to the County of Fluvanna and its residents.

THE FOREGOING RESOLUTION WAS DULY AND REGULARLY ADOPTED by the Fluvanna County Board of Supervisors of Fluvanna County on this 15th day of February 2023.

	AYE	NAY	ABSTAIN	ABSENT	MOTION	SECOND
Mozell H. Booker, Fork Union District						
Patricia B. Eager, Palmyra District						
Chris Fairchild, Cunningham District						
Anthony P. O'Brien, Rivanna District						
John M. Sheridan, Columbia District						

Attest:

_____
Mozell H. Booker, Chair
Fluvanna County Board of Supervisors

FLUVANNA COUNTY BOARD OF SUPERVISORS
AGENDA ITEM STAFF REPORT

TAB A

MEETING DATE:	February 15, 2023				
AGENDA TITLE:	SUP 22:04 S.B. Cox Inc.				
MOTION(s):	**I move that the Board of Supervisors (Approve/deny/defer) SUP 22:04 S.B. Cox Inc. a Special Use Permit request to permit a solid waste material recovery facility with respect to 90 +/- acres of Tax Map 4 Section A Parcel 27A in an I-2, General Industrial zoning district and subject to the eleven (11) case conditions found in the Staff Report.**				
BOS 2 YEAR GOALS?	Yes	No	**If yes, which goal(s):**	N/A	
		X			

AGENDA CATEGORY:	Public Hearing	Action Matter	Presentation	Consent Agenda	Other
	X				

STAFF CONTACT(S):	Douglas Miles, Community Development Director
PRESENTER(S):	Douglas Miles, Community Development Director
RECOMMENDATION:	At its meeting on January 10, 2023 the Planning Commission **recommended Approval** of SUP 22:04 S.B. Cox Inc. (4-0); Mr. Zimmer moved to recommend Approval and Vice Chair Lagomarsino seconded; AYES: Zimmer, Key, Lagomarsino, Bibb; Absent Goad.
TIMING:	Normal Public Hearing review process
DISCUSSION:	S.B. Cox Inc. is a family-run, Virginia-based demolition and recycling facility that has been in business for over 50 years. The applicant is requesting a Special Use Permit to construct and operate a solid waste material recovery facility for construction and demolition debris on an approximate sixteen (16) acre portion of Tax Map 4 Section A Parcel 27A and the remaining acreage could be developed with I-2 industrial uses.
FISCAL IMPACT:	The proposed industrial land use would provide additional County revenue taxes.
POLICY IMPACT:	Regarding SUP 22:04 S.B. Cox Inc the Fluvanna County Board of Supervisors may: - Approve this request, allowing the land use to be constructed; OR - Deny this request, preventing the land use from being constructed; OR - Defer this request and make a final decision at a future Board meeting date.
LEGISLATIVE HISTORY:	Review of a proposed Special Use Permit in accordance with Chapter 22 of the Fluvanna County Zoning Ordinance. The Planning Commission reviewed this SUP case request on January 10, 2023 through a Public Hearing review process.
ENCLOSURES:	S.B. Cox Inc Special Use Permit Staff Report with the Recommended Conditions

REVIEWS COMPLETED:	Legal	Finance	Purchasing	HR	Other
	X				

COUNTY OF FLUVANNA

"Responsive & Responsible Government"

132 Main Street
P.O. Box 540
Palmyra, VA 22963
(434) 591-1910
Fax (434) 591-1911
www.fluvannacounty.org

BOARD OF SUPERVISORS STAFF REPORT

To: Fluvanna County Board of Supervisors
From: Douglas Miles, AICP, CZA
Request: SUP for Materials Recovery Facility
District: Palmyra Election District

Applicant: S.B. Cox Inc, Richmond, VA

Representative: Ann Neil Cosby, Attorney with Wire Gill Richmond, VA

Requested Action: **SUP 22:04 S.B. Cox Inc.** A Special Use Permit request in the I-2, Industrial, General Zoning District to permit a solid waste material recovery facility with respect to 90 +/- acres of Tax Map 4 Section A Parcel 27A. The subject property is located generally south of Richmond Road (US 250) and at the terminus of Memory Lane (SR 698) in the Rural Residential Planning Area and the Palmyra Election District.

Existing Zoning: I-2, General Industrial Zoning District

Proposed Zoning: I-2 Zoning with an SUP to permit the use

Existing Land Use: Vacant

Applicant Summary:

S.B. Cox Inc. (Applicant) is a family-run, Virginia-based demolition and recycling facility that has been in business for over 50 years. The applicant is requesting a Special Use Permit to construct and operate a materials recovery facility for construction and demolition debris on an approximate sixteen (16) acre portion of Tax Map 4 Section A Parcel 27A. The property is currently zoned I-2, General Industrial and contains a total of ninety (90) acres and is currently owned by Amber Hill, LLC. The remainder of the property would be retained for future development as an industrial park. A Preliminary Site Plan prepared by LaBella Engineering, dated October 14, 2022 identifies the location of the Site and the location of the surrounding industrial park area, is included with this Special Use Permit application filed with the County.

Description of Proposed Use:

The Fluvanna County Zoning Ordinance defines a Solid waste material recovery facility as a solid waste management facility which may receive municipal solid waste and recyclables from off premises for processing and consolidation and shipment out of the County for further processing and disposal. (Zoning Definitions 22-22-1)

The applicant's proposed materials recovery facility use would be limited to construction and demolition debris and other inert materials and hazardous waste will not be transported to the Site. The applicant currently owns and operates materials recovery facilities in Richmond and Yorktown. Due to high demand and industry needs, the applicant is seeking to establish a third facility and plans to expand its operations onto this existing general industrial property in Fluvanna County. The underlying general industrial zoning allows for this use to be requested through a Special Use Permit (SUP) process with recommended SUP case conditions.

The applicant's Site operations at its planned Fluvanna Facility would be substantially similar to those at the applicant's existing locations. Materials from construction and demolition sites, primarily located in Charlottesville and surrounding areas, would be transported to the Site where they would be off-loaded into a mostly enclosed building for sorting purposes. The Sorting building is proposed to be approximately 22,500 square feet, and would be centrally located on the Site. A second 10,000 square foot building, the Multi-Purpose building, is proposed to act as the scale house, office space, shop space and storage. Both buildings will be thirty-five (35) feet in height which is well below the seventy (70) foot permitted height in the I-2 zoning district.

Materials in the Sorting building will be separated using reclamation equipment and sorted into lots of brick, concrete, steel and cardboard, etc. Most of the sorted materials that can be either recycled or reused will be loaded onto trailers and hauled off-site. Some of the sorted materials may be stored temporarily outside within designated storage areas. Concrete will be taken to an outside stockpile area where it will be periodically crushed into smaller aggregates for re-use as gravel, etc. The crushing operation will include dust suppression equipment, as required. The remaining waste debris will be hauled off-site to landfills outside of the County, as defined in the requested use definition for materials recovery facility land uses.

Materials Recovery Facility Operations:

The applicant proposes to operate the materials recovery facility like their other sites, Monday through Friday from 6:00 am to 6:00 pm and on Saturday from 6:00 am to Noon with no Sunday operations permitted and remaining in compliance with the Fluvanna County Noise Ordinance.

The Site is expected to have approximately 10-12 employees and will generate additional real estate and machinery and tools taxes to Fluvanna County with numerous trucks being parked and housed within the County at this proposed location. The applicant states they are a low-impact, high value company and employer that offers additional diversification of Fluvanna County's corporate and industrial tax base within an area of the County having similar industrial land uses.

They state recycling, recovery and beneficial re-use of our natural resources requires industrial innovation, commitment and true resourcefulness. The reduction and at times the elimination of construction site debris going into all of our existing landfills will further enhance the re-use of construction materials to prolong the life of these landfills and will return these materials through the beneficial re-use process. The applicant states that S. B. Cox Inc. has been a leader in the construction industry since 1963 and has a long history of environmental responsibility and looks forward to bringing its corporate presence to Fluvanna County into this industrially zoned area.

All outdoor uses will be shielded from view from adjacent properties and will not be visible from any public roadways. As identified on the Plan, there will be a one hundred (100) foot setback from all adjacent property lines. There may also be other industrial park buildings in the future located around the proposed land use and other buildings will screen and buffer the proposed use.

Site Screening and Buffer Areas:

The Fluvanna County Zoning Ordinance contains Landscaping requirements and Tree Protection options that can be selected by the applicant and his site consultant to provide the proper Buffer and Screening requirements while providing for the required VDOT site distance requirements:

Sec. 22-24-4. – MINIMUM STANDARDS

(A) The following shall be the minimum size of plant materials for site landscaping installation:

(1) Large shade trees—1.5" caliper (2) Medium shade trees—1.25" caliper
(3) Ornamental trees—1.25" caliper (4) Evergreen trees—5' in height
(5) Shrubs—18" in height (6) Ground cover—1 year plants

(B) All required landscaping shall be planted according to the following standards:

(1) All trees to be planted shall meet the American Standard for nursery stock published by the American Nursery and Landscape Association.

(2) The planting of trees shall be done in accordance with either the standardized landscape specifications jointly adopted by the Virginia Nursery and Landscape Association and the Virginia Society of Landscape Designers, or the Road and Bridge Specifications of the Virginia Department of Transportation.

(3) All required landscaping shall be planted between September 15 and June 30, provided that the ground is not frozen. (Ord. 8-1-12; Ord. 12-16-15)

Sec. 22-24-7. – SCREENING

(A) Screening shall be required in the following instances:

(1) Commercial and industrial uses shall be screened from view of adjacent properties in residential and agricultural zoning districts, except for commercial and industrial uses allowed by right in said districts.

(2) Parking lots, consisting of five (5) spaces or more, shall be screened from view of public roads, rights-of-way, and adjacent properties.

(3) Objectionable features, including but not limited to the following, shall be screened from the view of public roads, rights-of-way, and adjacent properties: i. Loading areas. ii. Refuse areas. iii. Storage yards. iv. Dry detention ponds. v. Maintenance areas.

(4) If the required screening is consistent with an approved Master Plan and is subject to the requirements of the R-3, Residential Planned Community zoning district.

(5) The Zoning Administrator may require the screening of any use, or portion thereof, upon determination that the use would otherwise have a direct negative visual impact on a property designated as historic by its inclusion within the Historic Preservation chapter of the approved Comprehensive Plan.

(B) When required, screening shall consist of the new plantings, existing vegetation, an opaque masonry wall or wooden fence, or combination thereof, to the reasonable satisfaction of the Zoning Administrator.

Unless otherwise specified within this chapter, one of the following landscaping treatment options shall be utilized to meet the minimum screening requirements:

(1) Evergreen Option: Two (2) rows of evergreen trees, shall be planted ten (10) feet on center, and staggered within a planting strip that is twenty-five (25) feet wide; or (Note: The applicant has chosen to increase the twenty-five (25) foot area to a minimum of a forty (40) foot wide area)

(2) Berm Option: Two (2) rows of evergreen shrubs shall be planted ten (10) feet on center and staggered. The berm shall be at least thirty (30) inches higher than the finished grade of the surrounding area and shall not have a slope steeper than 2:1. The berm shall be stabilized with groundcover or other vegetation;

(3) Mixed Vegetation Option: One (1) large shade tree, one (1) medium shade tree, one (1) evergreen tree, and three (3) evergreen shrubs for each twenty (20) linear feet, within a planting strip that is twenty-five (25) feet wide; or

(4) Woodlands Preservation Option: Existing woody vegetation shall be preserved as a buffer strip with a minimum width of seventy-five (75) feet. Additional tree or shrub plantings may be required by the Zoning Administrator. The woodlands preservation area shall be placed in a landscape easement, and the landscape plan shall demonstrate the techniques to be used for removing underbrush, pruning, and protecting the existing trees from any damage during site development;

(5) Structural Option: A wall or fence, no shorter than six (6) feet in height, shall be provided and one (1) evergreen tree or shrub shall be planted every ten (10) feet along the side of any such wall or fence facing a public street or use for which the screening shall benefit.

(C) Within commercial, industrial, and multi-family residential developments, dumpsters and other refuse areas visible from public roads, rights-of-way, adjacent properties, and parking areas shall be completely screened from view by a wall or fence constructed using architectural block,

brick, stone, vinyl, wood or a similar material that is compatible with the architecture of the principal structure. The use of durable, low-maintenance materials is encouraged.

(D) Parking lots of five (5) spaces or more shall be screened in accordance with Section 22-24-6 of this article. (Ord. 8-1-12)

The applicant and his site consultant have worked with the Zoning Administrator to incorporate the evergreen, mixed vegetation and structural options or combination thereof on the premises to provide the required buffers and screening but also to allow for on-site circulation of equipment.

The future general industrial park development will be required to screen any outside dumpsters and other refuse areas from adjacent properties and public roads and the parking areas shall be screened from view by site landscaping, fence or a wall compatible with the principal buildings.

Transportation Planning:

The applicant and his civil engineer they would provide a Traffic Management Plan to Fluvanna County and VDOT at the time of Administrative site plan review and approval. Daily truck traffic is anticipated to include dump trucks, roll-off trucks, and full tractor-trailers and in total about 100 trucks per day. Seventy-five (75) percent of the incoming trucks would enter the Site from the west on Route 250 from Charlottesville and points west. Seventy-five (75) percent of outbound trucks would exit the Site onto Route 250 towards Richmond and points east. The applicant and his civil engineer has been in discussions with the VDOT Louisa Residency Office and they will construct the required transportation improvements that VDOT determines are both warranted and necessary for public safety along Memory Lane and Richmond Road (Route 250).

The VDOT Louisa Land Use Engineer and LaBella Associates Site Engineers performed field work inspections together along Memory Lane to further determine what would be needed based upon the proposed truck traffic anticipated to be servicing the proposed land use which could include: 14 Dump trucks at 40,000 lbs; 52 Roll-off trucks at 40,000 lbs; 26 Pick-ups with trailers at 15,000 lbs; and 8 Tractor trailer trucks at 80,000 lbs for about 100 S.B. Cox company trucks to be travelling along Memory Lane at this facility. VDOT provided further transportation analysis during the October 27th Technical Review Committee (TRC) meeting and advised the Labella civil engineers of their specific comments which would be addressed during site plan approval:

Aaron Lebeau, PE, Land Use Engineer - Louisa Residency Office covering Fluvanna County:

Memory Lane must meet the AASHTO geometric design standards for an industrial type facility and they also need to avoid having any trucks stack up and be idle on Memory Lane with a gate.

Memory Lane will need to be inspected and videoed prior to construction and VDOT will need in writing that the applicant is responsible to repair all damages done to Memory Lane (SR 698) during construction as well as having that as a part of their Approved site construction plans.

Access must meet VDOT's commercial access standards and the site engineers need to utilize the 2021 VDOT Appendix F Access Management Design Standards for Entrances and Intersections.

Community Meeting and Richmond Site visit:

The applicant conducted a Community meeting on Wednesday, November 30, 2022 to discuss with the surrounding property owners their request to construct a Materials recovery facility that would require a Special Use Permit with certain conditions to operate on an I-2 zoned property.

The community had concerns relative to noise, increased truck traffic from the proposed use and the applicant and applicant's attorney were able to answer questions and provided display boards of the proposed site layout in relation to the surrounding property owner homes that are far away.

The applicant invited the Board Chairman, Commission Chairman and the Palmyra District Board member along with the County Administrator, Community Development Director and the Economic Development Director to visit their Richmond materials recovery facility on Friday, December 2nd where the sorting facility, concrete crushing operations and truck traffic at the use were found to be working well and in harmony with the residential neighborhood and mixed-use Rocketts Landing development. An adjacent residential property owner he came in person and spoke in support of S.B. Cox Inc. during the January 10th Planning Commission Public Hearing.

Planning Commission:

At their January 10, 2023 Planning Commission Public Hearing, there were public speakers who spoke in favor of the request and others who indicated they were against the proposed land use. The Planning Commission recommended Approval by a 4-0 vote and along with the eleven (11) recommended case conditions that would apply to the materials recover facility land use request.

***Conclusion*:**

When reviewing this Special Use Permit request, the Board of Supervisors should take into consideration any potential adverse impacts that the development may have on this portion of Fluvanna County such as truck traffic generation issues that have been analyzed by the County and VDOT in conjunction with the Applicant and the applicant's civil engineering consultant.

The Board of Supervisors should also take into consideration the potential positive impact this general industrial use would have in this industrial area of Zion Crossroads. The potential industrial park would also receive water and wastewater connections to allow for both new office and industrial uses to add to Fluvanna County's industrial tax base all within this industrial area.

Planning Commission and Staff Recommended Conditions:

1. The administrative site development plans will be in substantial conformance with the Preliminary Site Plan prepared by LaBella, dated October 14, 2022 and the Materials Recovery Facility Plan, prepared by LaBella, dated October 14, 2022; with both plans being subject to final engineering and revisions necessary to meet both the requirements

of these Special Use Permit conditions and as otherwise required by law, such as VDEQ, VDH and VDOT requirements.

2. The applicant shall inspect and record Memory Lane prior to site construction and VDOT will need in writing that the applicant is responsible to repair all damages done to Memory Lane (SR 698) during site construction as well as having that as a part of their approved site development plans.

3. The applicant shall construct or bond for construction the site entrance(s) to the proposed facilities to meet VDOT entrance and intersection requirements prior to the issuance of a Zoning Permit. The applicant shall notify VDOT and Fluvanna County in writing prior to commencing any construction or logging activity on the Site.

4. A Traffic Management Plan for the materials recovery facility use shall be provided to VDOT and Fluvanna County for site development plan review and approval purposes.

5. A minimum one hundred (100) foot buffer shall be maintained along all property lines that adjoin agricultural, residential or business districts. Land clearing is not permitted within this buffer area, except for the removal of dead or diseased vegetation and/or maintenance purposes. The applicant shall meet the required Zoning Ordinance buffer and screening requirements by supplementing the existing screening materials to the reasonable satisfaction of the Zoning Administrator.

6. The applicant will only accept construction or demolition waste and other inert materials with the sole intent to be recycled and all other solid waste will be transported outside of Fluvanna County to an approved sanitary landfill location.

7. The applicant will operate the materials recovery facility Monday through Friday, from 6:00 am to 6:00 pm and on Saturday from 6:00 am to Noon; with no Sunday operations.

8. The applicant will be responsible for compliance with the Fluvanna County lighting and noise ordinance requirements, that are amended from time to time.

9. The site shall be maintained in a neat and orderly manner so that the visual appearance from the public right-of-way and adjacent properties is acceptable to County officials.

10. The Board of Supervisors, or its representative, reserves the right to inspect the property for compliance with these conditions at any time, upon reasonable notice.

11. Under Section 22-17-4 F (2) of the Fluvanna County Code, the Board of Supervisors has the authority to revoke a Special Use Permit if the property owner has substantially breached the conditions of the Special Use Permit.

Suggested Motion:

I move that the Board of Supervisors (Approve/deny/defer) SUP 22:04 S.B. Cox Inc. a Special Use Permit request to permit a solid waste material recovery facility with respect to 90 +/- acres of Tax Map 4 Section A Parcel 27A in an I-2, General Industrial zoning district and subject to the eleven (11) case conditions found in the Staff Report.

Attachments:

Rezoning Application and Textual Statement
Community Meeting and County APO Letters
LaBella Associates Site Plans October 14, 2022
LaBella Associates Wetland Report October 2022
Youngblood & Tyler ALTA Survey October 10, 2022
VDOT Access Management Design Standards 2021

RECEIVED
NOV 17 2022
Fluvanna County Planning Dept

COMMONWEALTH OF VIRGINIA
COUNTY OF FLUVANNA
Application for Special Use Permit (SUP)

Owner of Record: Amber Hill, LLC
Address: 661 White Hall Road, Keswick, VA 22947
Phone: _____ Fax: _____
Email: dillard@cosnersbodyshop.com

Applicant of Record: S.B. Cox, Inc.
Address: 901 Potomac St., Richmond, VA 23231
Phone: 804.222.3500 Fax: _____
Email: Mike Barr (m.barr@sbcoxdemolition.com)

Representative: M. Ann Neil Cosby, Esq./Wire Gill LLP
Address: 9200 Forest Hill Ave., Ste. C-1, Richmond VA 23235
Phone: 804.447.0171 Fax: _____
Email ancosby@wiregill.com

Note: If applicant is anyone other than the owner of record, written authorization by the owner designating the applicant as the authorized agent for all matters concerning the request shall be filed with this application.

If property is in an Agricultural Forestal District, or Conservation Easement, please list information here:

Tax Map and Parcel(s) 4-A-27A

Acreage portion of 90 acre parcel **Zoning** I-2, Industrial (General)

Deed Book and Page: Deed Book 717 Page 776

Location of Parcel: Memory Lane (Rt. 698), approx. 0.35 miles south of Route 250

If any Deed Restrictions, please attach a copy

Request for an SUP for the purpose of: Materials Recovery Facility for Construction and Demolition Debris

*Ten copies of a sketch plan (8.5x11 inches or 11x17 inches) must be submitted, showing size and location of the lot, dimensions and location of the proposed building, structure or proposed use, and the dimensions and location of the existing structures on the lot.

By signing this application, the undersigned owner/applicant authorizes entry onto the property by County Employees, the Planning Commission, and the board of Supervisors during the normal discharge of their duties in regard to this request and acknowledges that county employees will make regular inspections of the site.

Date: 11/16/22 **Signature of Owner/Applicant:** [signature]

Subscribed and sworn to before me this 16th day of November 2022

Notary Public: Beverley G. MacDowell Register # 251362

My commission expires: 6/30/2026

Certification: Date:

BEVERLEY GRAE MACDOWELL NOTARY PUBLIC REG # 251362 MY COMMISSION EXPIRES 6/30/2026 COMMONWEALTH OF VIRGINIA

Office Use Only		
Date Received: 11/17/22	Pre-Application Meeting:	PH Sign Deposit Received: 11/21/22 $900.00 - 1026
Application #: SUP 22 : 04		
$800.00 fee plus mailing costs paid Check 1025	Mailing Costs: $20.00 Adjacent Property Owner(APO) after 1st 15, Certified Mail	
Amendment of Condition: $400.00 fee plus mailing costs paid:		
Telecommunications Tower fee plus mailing costs paid:	Telecom Consultant Review fee paid:	
Election District: Palmyra	Planning Area: Rural Residential	

Public Hearings	
Planning Commission	**Board of Supervisors**
Advertisement Dates:	Advertisement Dates:
APO Notification:	APO Notification:
Date of Hearing:	Date of Hearing
Decision:	Decision:

Commonwealth of Virginia

County of Fluvanna

Public Hearing Sign Deposit

Name: M. Ann Neil Cosby, Wire Gill LLP (for S.B. Cox, Applicant)

Address: 9200 Forest Hill Avenue, Suite C-1

City: Richmond

State: Virginia Zip Code: 23235

I hereby certify that the sign issued to me is my responsibility while in my possession. Incidents which cause damage, theft, or destruction of these signs will cause a partial or full forfeiture of thisdeposit.

Applicant Signature

Date 11/17/22

*Number of signs depends on number of roadways property adjoins.

OFFICE USE ONLY	
Application #: BZA____: ____ CPA____: ____ SUP 22 : 04 ZMP____: ____ ZTA____: ____	
$90 deposit paid per sign*: Check 10216	Approximate date to be returned:

Describe briefly the **improvements** proposed. State whether new buildings are to be constructed, existing buildings are to be used, or additions made to existing buildings.

NECESSITY OF USE: Describe the reason for the requested change.

PROTECTION OF ADJOINING PROPERTY: Describe the effects of the proposed use on adjacent property and the surrounding neighborhood. What protection will be offered adjoining property owners?

ENHANCEMENT OF COUNTY: Why does the applicant believe that this requested change would be advantageous to the County of Fluvanna? (Please substantiate with facts.)

PLAN: Furnish plot plan showing boundaries and dimensions of property, width of abutting right-of-ways, location and size of buildings on the site, roadways, walks, off-street parking and loading space, landscaping, etc. Architect's sketches showing elevations of proposed buildings and complete plans are desirable and may be required with the application.
Remarks:

Commonwealth of Virginia

County of Fluvanna

Special Use Permit Checklist

The following information shall be submitted with the application and is to be provided by the applicant for the processing of the application:

Applicant must supply	Staff Checklist
Completed Special Use Permit signed by the current owner(s) or lessee or written confirmation from the current owner or lessee granting the right to submit the application	
Ten (10) copies of a Site Plan for any expansion or new construction Include: • Plot plan or survey plat at an appropriate scale • Location and dimension of existing conditions and proposed development • *Commercial and Industrial Development*: parking, loading, signs, lighting, buffers and screening • Copy of the Tax Map showing the site (preferred) • General Location Map (preferred)	
Supporting photographs are not required, but suggested for evidence	

All maps and plans submitted are to be either 8.5"x 11" or 11"x 17". One original of any size may be for staff use at the public hearing.

Staff Only	Staff Checklist
Preliminary review by planning staff for completeness and content:	
• Technical Review Committee review and comment • Determine all adjacent property owners • Placed as a Public Hearing on the next available agenda of the Planning Commission.	
Notification of the scheduled Public Hearing to the following:	
• Applicant • All adjacent property owners • Local Newspaper advertisement	
Staff Report to include, but not be limited to:	
• General information regarding the application • Any information concerning utilities or transportation • Consistency with good planning practices • Consistency with the comprehensive plan • Consistency with adjacent land use • Any detriments to the health, safety and welfare of the community.	

For Applicant

The Special Use Permit application fee is made payable to the **County of Fluvanna.**

Meetings for the processing of the application

Applications must be submitted by the first working day of the month to have the process start that month. Applications received after the first working day will have the process start the following month.

Process:

1. Placed on next available Technical Review Committee Agenda.
2. Placed as a Public Hearing on the next available agenda of the Planning Commission the following month. Staff Report and Planning Commission recommendation forwarded to the Board.
3. Placed as a Public Hearing on the next available agenda of the Board of Supervisors (usually the same month as the Planning Commission).

Applicant or a representative must appear at the scheduled hearings.

The Technical Review Committee provides a professional critique of the application and plans. The Planning Commission may recommend to the Board of Supervisors: approval; approval subject to resubmittal or correction; or denial of the special use permit.

Board Actions

After considering all relevant information from the applicant and the public, the Board will deliberate on points addressed in the Staff Report.

The Board may approve; deny; or defer the request pending further consideration; or remand the case back to the Planning Commission for further consideration.

With **approval,** the development may proceed.

If **denied,** an appeal to the Courts may be prescribed by law

No similar request for a Special Use Permit for the same use at the same site may be made within one year after the denial.

Narrative Statement

I. Introduction.

S.B. Cox Inc. (the "Company" or "Applicant") is a family-run Virginia-based demolition and recycling company that has been in business for over 50 years. The Company is requesting a special use permit from Fluvanna County (the "County") to construct and operate a "materials recovery facility" (the "Facility") for construction and demolition debris on an approximately 16-acre portion (the "Site") of Tax Map 4 (A) 27A (the "Property"). The Property, which is currently zoned Industrial (I-2), contains a total of 90 acres and is currently owned by Amber Hill, LLC (the "Owner"). The remainder of the Property would be retained for future development as an industrial park. A preliminary "Site Plan", prepared by LaBella, dated October 14, 2022 (the "Plan"), identifying the location of the Site and the location of the surrounding industrial park area, is included as part of this Application.

II. Description of Proposed Use & Improvements

The Fluvanna County Zoning Ordinance defines a "solid waste material recovery facility" as "*a solid waste management facility which may receive municipal solid waste and recyclables from off premises for processing and consolidation and shipment out of the County for further processing or disposal.*"[1] The Company's proposed Facility would be limited to construction and demolition debris and other inert materials (the "Materials"). Hazardous waste will not be transported to the Site. The Company currently owns and operates materials recovery facilities in Richmond and Yorktown. Due to high demand and industry need, the Company is seeking to establish a third facility and hopes to expand its operations on existing industrial property in the County.

The Company's operations at the Fluvanna Facility would be substantially similar to those at the Company's existing locations. Materials from construction and demolition sites (primarily located in Charlottesville and the surrounding areas) will be transported to the Property where they will be off-loaded into a mostly enclosed building for sorting (the "Sorting Building"). The Sorting Building is proposed to be approximately 22,500 square feet, and would be centrally located on the Site. A second 10,000 square foot building (the "Multi-purpose Building") is proposed to act as the scale house, office spaces, shop spaces, and storage. Both buildings will be approximately thirty-five (35) feet in height (well below the 70'permitted height in the I-2 zoning district). Materials in the Sorting Building will be separated using reclamation equipment and sorted into lots of brick, concrete, steel, cardboard, etc. Some of the sorted Materials that can be recycled or reused will be loaded onto trailers and hauled offsite. Some of the sorted Materials may be stored temporarily outside in designated storage areas. Concrete will be taken to an outside stockpile area where it will be periodically crushed (1-2 times per month) into smaller aggregates for re-use. The crushing operation will include dust suppression

[1] Zoning Ordinance at Section 22-22-1.

(watering) equipment as required. The remaining waste debris will be hauled offsite to landfills outside the County.

All outdoor uses will be shielded from view from adjacent properties and will not be visible from any public roadways. As identified on the Plan, there will be a 100'setback from all adjacent property lines. There will be no land-clearing in the setback, and the Company will install additional landscaping or other means of screening (as may be necessary) in any area of the setback that does not have full screening from any adjacent property.

The Facility's proposed hours of operation are Monday through Friday, from 6:30 a.m., to 6:00 p.m., and from 6:00 a.m. to noon on Saturday. There would be no operations on Sunday. A traffic management plan for the Facility will be provided to the County at the time of site plan approval. Daily truck traffic is anticipated to include dump trucks, roll-off trucks, and pick-up and tractors trailers, and total approximately 100 trucks per day. 75% of the incoming trucks would enter the Site from west of Route 250, and 75% of outbound trucks would exit the Site onto Route 250 east. The Company is in discussions with the Virginia Department of Transportation ("VDOT") and will construct any transportation improvements that VDOT determines are warranted.

The Facility is expected to have approximately 10-12 employees and will generate additional real and personal property (Machinery and Tools) taxes to the County. It is a low-impact, high-value company that offers additional diversification of the County's corporate tax base. Recycling, recovery and reuse of our natural resources require innovation, commitment and resourcefulness. S.B. Cox has been a leader in the industry for more than 50 years. It has a long history of environmental responsibility and looks forward to bringing its corporate presence to the County.

OWNER'S WRITTEN AUTHORIZATION

I, Dillard Cosner, am the Managing Member of Amber Hill LLC ("Owner") and am authorized to act on the Owner's behalf. The Owner is the current owner of that certain property located in Fluvanna County, Virginia (the "County"), identified as Tax Map Number 4-A-27A (the "Property"). I hereby authorize S.B. Cox, Inc. (the "Applicant"), its successors, agents, and representatives, to act on the Owner's behalf to file for and seek a special use permit ("SUP") for the Property to allow the construction and operation of a "Materials Recovery Facility" (as that term is defined in the County Zoning Ordinance) on the Property. The Applicant is authorized to act on all matters concerning the SUP request.

Date: 11-15-2022 Amber Hill LLC

Name: Dillard Cosner
Title: Managing Member

COMMONWEALTH OF VIRGINIA
COUNTY/CITY OF Charlottesville

The foregoing authorization was subscribed, sworn to, and acknowledged before me this 15th day of November, 2022 before me by Dillard Cosner, as managing member of Amber Hill LLC.

Amy Elizabeth O'Brien
Notary Public
Reg #7168589
Commonwealth of Virginia
My Commission Expires November 30, 2024

Amy Elizabeth O'Brien
Notary Public

My Commission Expires: November 30, 2024
Registration Number: 7168589

WIRE GILL LLP

M. Ann Neil Cosby
ancosby@wiregill.com
804-447-0171

November 17, 2022

Dear Neighbor:

On behalf of S.B. Cox, Inc. (the "Company"), I am writing to invite you and other residents to an informational community meeting to learn about the Company's proposed use of the property identified as Tax Map Parcel 4-A-27A, located along Memory Lane (the former Cosner Brothers salvage yard). The Company is requesting a special use permit from the Board of Supervisors of Fluvanna County to construct and operate a "materials recovery facility" for construction and demolition debris on an approximately 16-acre portion of the property. The remainder of the property (approximately 84 acres) would be retained for future development as an industrial park.

The Fluvanna County Zoning Ordinance defines a "material recovery facility" as a facility where waste materials and recyclables are brought from off premises "for processing and consolidation and shipment out of the County for further processing or disposal." The Company's proposed facility would be limited to construction and demolition debris and other inert materials. Hazardous waste will not be transported to the property. The property will not be used as a landfill. Hours of operation would be Monday through Friday, from 6:00 a.m. to 6:00 p.m., and from 6:00 a.m. to noon on Saturday. There would be no operations on Sunday. All uses will be shielded from view from adjacent properties and will not be visible from any public roadways.

S.B. Cox Inc. is a family-run Virginia-based demolition and recycling company that has been in business for over 50 years. It currently owns and operates materials recovery facilities in Richmond and Yorktown. The Company has a long history of environmental responsibility and looks forward to bringing its corporate presence to the County.

We hope you can join us:

Wednesday, November 30, 2022
Doors open at 6:00 p.m., presentation to begin at 6:30 p.m.
Beaverdam Baptist Church
1794 Richmond Road Troy, VA 22974

Should you have any questions or like any additional information regarding this zoning case please contact me at (804) 447-0171, or ancosby@wiregill.com.

Sincerely,

M. Ann Neil Cosby

COUNTY OF FLUVANNA

"Responsive & Responsible Government"

132 Main Street
P.O. Box 540
Palmyra, VA 22963
(434) 591-1910
Fax (434) 591-1911
www.fluvannacounty.org

MEMORANDUM

Date: February 1, 2023

From: Valencia Porter

To: Douglas Miles

Subject: APO Memo Complete

Please be advised the attached letter went out to the attached list of Adjacent Property Owners for the February 15, 2023 Board of Supervisors meeting.

ADJACENT PROPERTY OWNERS SUP 22:04

TAX MAP	NAME	ADDRESS	CITY/STATE/ZIP
4-A-27	2428 RICHMOND ROAD LLC	POST OFFICE BOX 22	RUCKERSVILLE, VA 22968
4-A-20	MEMORY LANE PROPERTY LLC	POST OFFICE BOX 7427	CHARLOTTESVILLE, VA 22906
4-A-20A	PRIAM'S GATE LLC	295 MEMORY LANE	TROY, VA 22974
4-A-57B	DAVID W. & TERRESA Y. GOURLEY	390 BUCK RIDGE ROAD	TROY, VA 22974
4-47-9	SALVATORE ZAMBITO	394 GLEN CIRCLE	TROY, VA 22974
3-22-C	AMBER HILL LLC	661 WHITE HALL ROAD	KESWICK, VA 22947
4-A-28B	JAY DEVON WYANT	2266 RICHMOND ROAD	TROY, VA 22974
4-A-58	WALKER L. WARD & KATHERINE GAR	249 BUCK RIDGE ROAD	TROY, VA 22974
4-A-28B	CONSTANCE B & JAY DEVON WYANT	2266 RICHMOND ROAD	TROY, VA 22974

COUNTY OF FLUVANNA

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132 Main Street
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PUBLIC HEARING NOTICE

February 1, 2023

RE: SUP 22:04 S.B. Cox Inc. Materials Recovery Facility / Tax Map 4 Section A Parcel 27A

This is to notify you that the Fluvanna County Board of Supervisors will hold a public hearing on:

Meeting: Board of Supervisors Public Hearing

Date: **Wednesday, February 15, 2023 at 7:00 pm**

Location: Carysbrook Performing Arts Center
8880 James Madison Highway Fork Union, VA 23055

SUP 22:04 S.B. Cox Inc. – A Special Use Permit request in the I-2, Industrial, General Zoning District to permit a solid waste material recovery facility with respect to 90 +/- acres of Tax Map 4 Section A Parcel 27A. The subject property is located generally south of Richmond Road (US 250) and at the terminus of Memory Lane (SR 698) in the Rural Residential Planning Area and the Palmyra Election District.

Please be advised that you can attend the meeting in person, join the meeting via Zoom or by a phone call where you will have an opportunity to provide any Public comments. Instructions for participation in the Public Hearing will be available on the County's website along with the Meeting Agenda and Staff Report.

You can contact the Fluvanna County Planning & Community Development Department, 8:00 am – 5:00 pm, Monday through Friday. If you have any questions regarding the application or this Fluvanna County public hearing, please contact me at dmiles@fluvannacounty.org or call me at 434.591.1910 with questions.

Sincerely,

Douglas Miles

Douglas Miles, AICP, CZA
Community Development Director

ADJACENT PROPERTY OWNERS SUP 22:04

TAX MAP	NAME	ADDRESS	CITY/STATE/ZIP
4-A-27	2428 RICHMOND ROAD LLC	POST OFFICE BOX 22	RUCKERSVILLE, VA 22968
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4-A-57B	DAVID W. & TERRESA Y. GOURLEY	390 BUCK RIDGE ROAD	TROY, VA 22974
4-47-9	SALVATORE ZAMBITO	394 GLEN CIRCLE	TROY, VA 22974
3-22-C	AMBER HILL LLC	661 WHITE HALL ROAD	KESWICK, VA 22947
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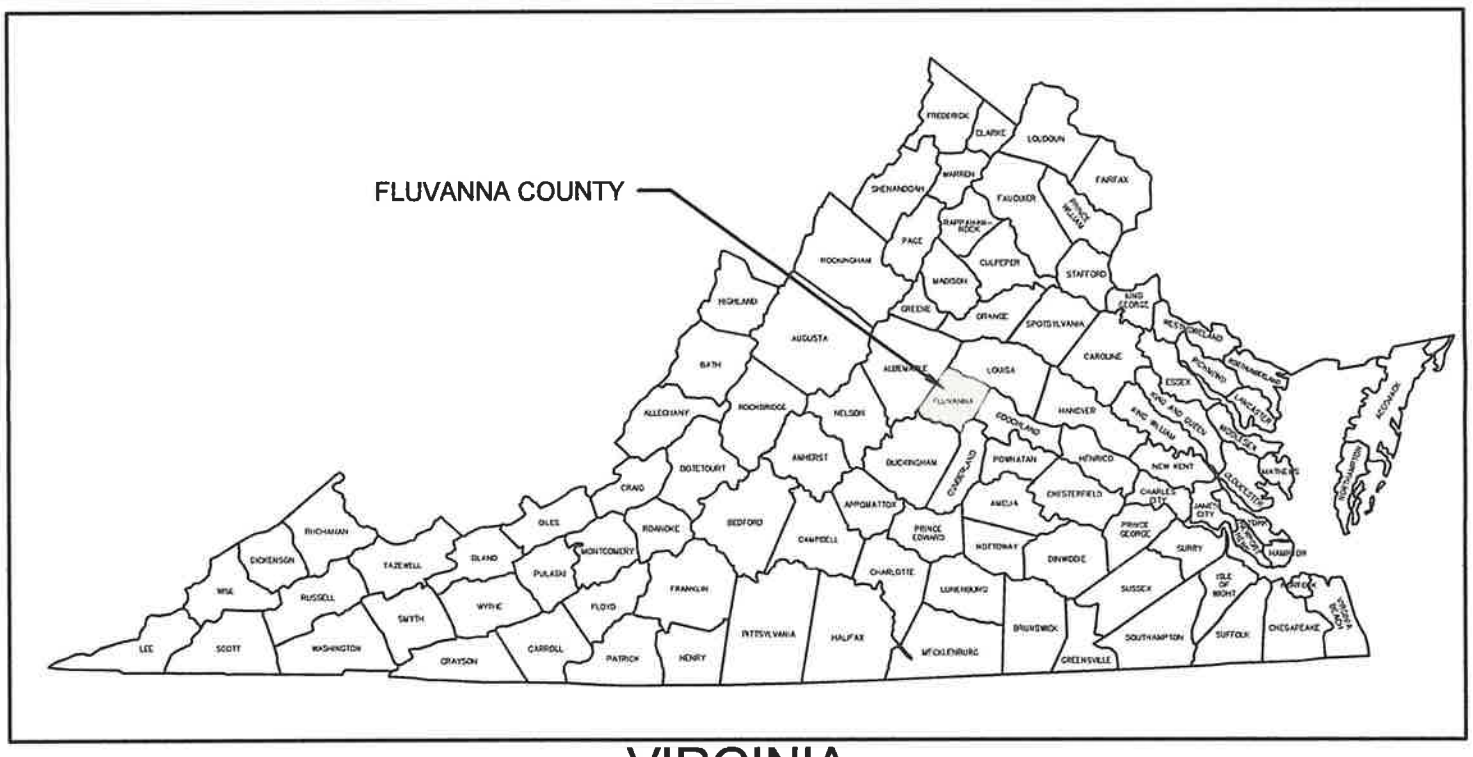
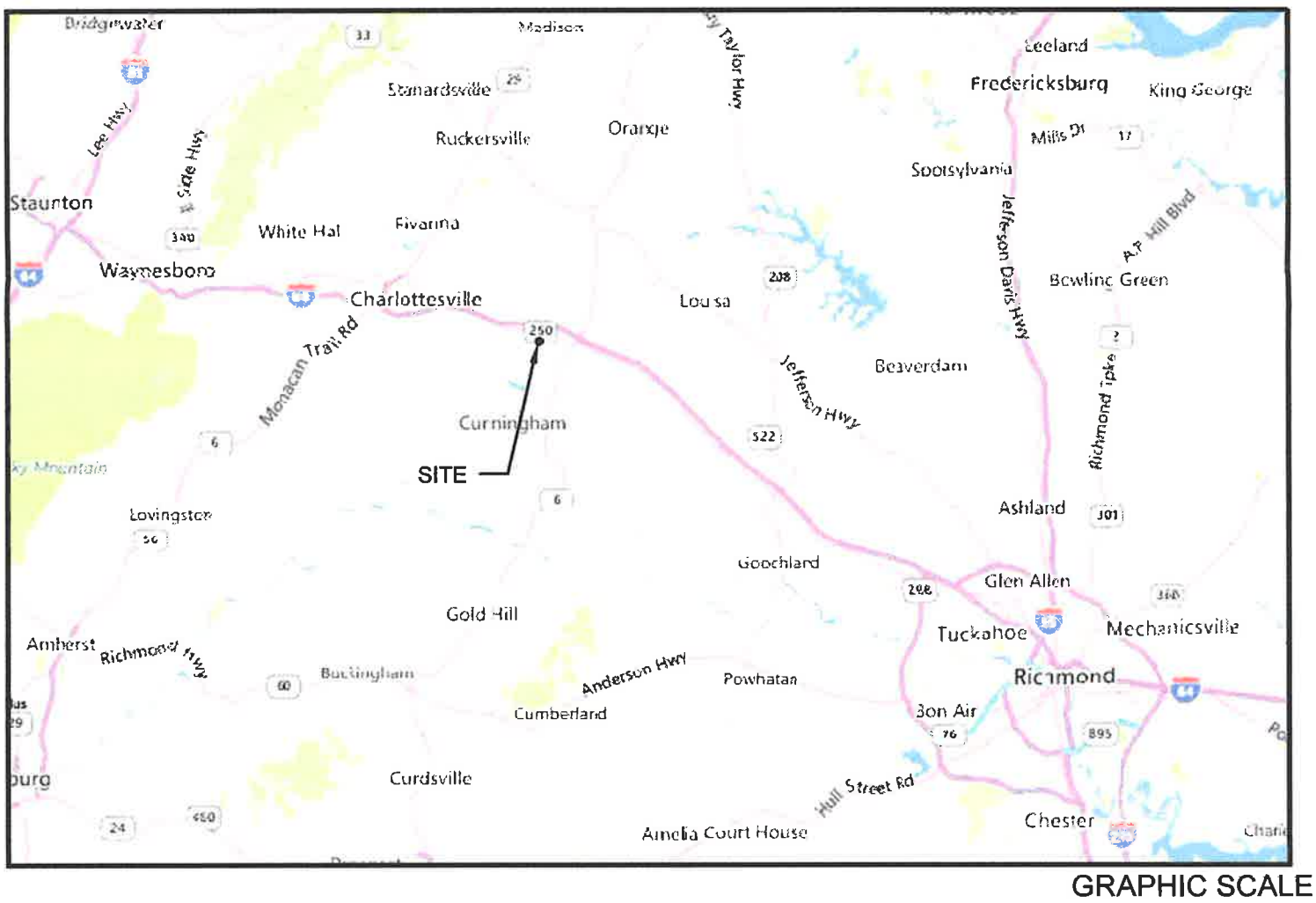
4-A-58	WALKER L. WARD & KATHERINE GAR	249 BUCK RIDGE ROAD	TROY, VA 22974
4-A-28B	CONSTANCE B & JAY DEVON WYANT	2266 RICHMOND ROAD	TROY, VA 22974



VIRGINIA

COUNTY LOCATION MAP
N.T.S.



VICINITY MAP

1"=2,000'

GRAPHIC SCALE

0 50,000 100,000 200,000

(FEET)

IMAGE OBTAINED FROM
HTTPS://WWW.BING.COM/MAPS/

L:\SB Cox\Fluvanna Transfer Station\, Site Location Map.dwg

LaBella
Powered by partnership.
1604 Ownby Lane
Richmond, VA 23220
804-355-4520
labellapc.com

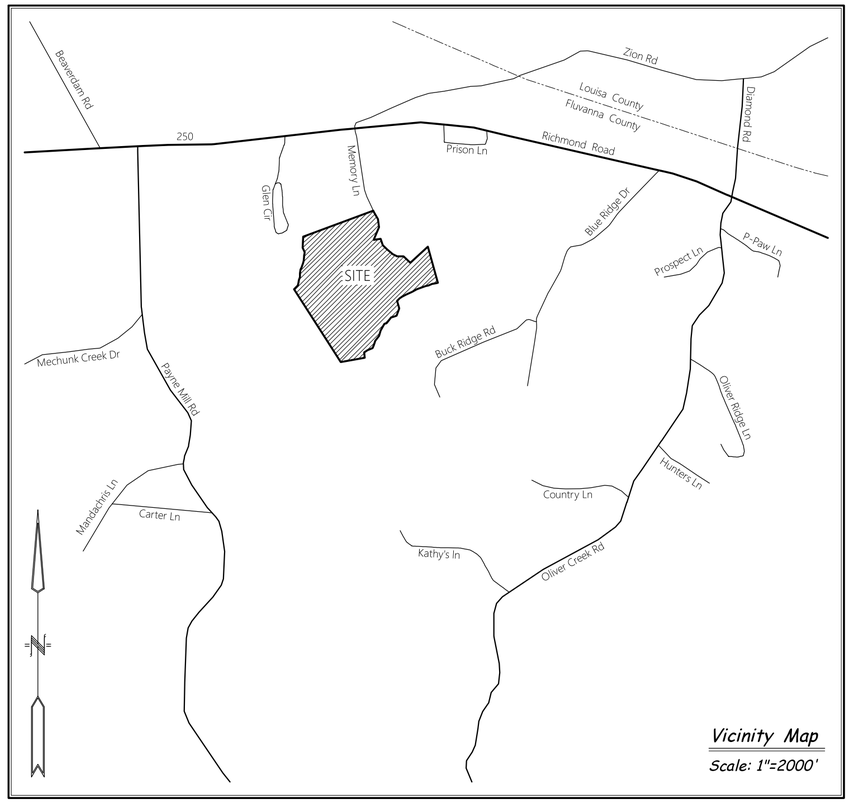
DRAWING NAME: **SITE LOCATION MAP**

ISSUED FOR: REPORT

DRAWN BY: CADD | DATE: 11/15/2022 | PROJECT NO.:

PROJECT NAME: **SB COX - AMBER HILLS MRF**
FLUVANNA COUNTY, VIRGINIA

DRAWING NUMBER: **1**



Schedule B Part II Exceptions

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part 1-Requirements are met. (Not A Survey Item)
2. Taxes, storm water, utility, recycling, and special assessments, which become due and payable subsequent to the effective date hereof, liens and supplemental taxes which may come due and all taxes for subsequent fiscal years. (Not A Survey Item)
3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term encroachment includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoing land.
4. The exact acreage and/or volume of land is not insured. (exact Acreage Shown)
5. Easement to Virginia Telephone & Telegraph Company, dated November 7, 1962, recorded December 14, 1962 in Deed Book 62 page 101. Grants easement to construct, operate maintain buried cables, wires and appurtenances thereto, at designated and undesignated locations, with rights of ingress, egress and clearage within 10' of said system. (Tele. Ped. as shown on plat)
6. Easement to Virginia Telephone & Telegraph Company, dated March 18, 1965, recorded July 27, 1966 in Deed Book 69 page 120. Grants easement to construct, operate maintain buried cables, wires and appurtenances thereto, at designated and undesignated locations, with rights of ingress, egress and clearage within 15' of said system. (Tele. Ped. as shown on plat)
7. Deed of Easement to the County of Fluvanna, dated October 31, 2018, recorded November 28, 2018, at Instrument No. 180003663. (Easement as shown on Plat)
8. Rights of others in and to the use of the existing road along portion of the northeastern property line and used for ingress and egress to Memory Lane.
9. Rights of upper and lower riparian owners in and to the use of the waters of any creeks, streams and/or branches, and the natural flow thereof. (Branches as shown on plat)
10. This policy does not insure as to the exact location of any boundary line of the land where such boundary line is established with reference to a river, creek, stream or similar watercourse.

Record Legal Description

PARCEL I
All that certain parcel or tract of land with improvements thereon and appurtenances thereto, situated in Fluvanna County, Virginia, containing 30 acres, more or less, shown on a plat by C.E. Watkins, S.F.C., dated October 29, 1915 and recorded in the Clerk's Office of the Circuit Court of Fluvanna County, Virginia in Deed Book 26 page 386, Less and except a 12.32 acre tract shown on a plat by Roudabush, Gale & Associates, Inc. dated March 6, 2006 (The Roudabush plat) and recorded with a deed dated March 17, 2006 in said Clerk's Office in Deed Book 677 page 247.

PARCEL II
All that certain parcel or tract of land with improvements thereon and appurtenances thereto, situated in Fluvanna County, Virginia, containing 93 acres, more or less, shown on a plat by C.E. Watkins, S.F.C. dated September 20, 1927 and recorded in said Clerk's Office in Deed Book 21, page 61, Less and Except a 3.411 acre tract shown on the Roudabush plat.
Less and except a 17.10 acre tract shown on a plat by Bryan J. Chambers dated June 19, 2017 and recorded in deed book 989 page 847.

Being part of the real estate conveyed to Amber Hill, L.L.C., a Virginia limited liability company, by two Deeds (i) from Twin Oak I, L.L.C., a Virginia limited liability company, dated February 21, 2007, recorded February 26, 2007, in the Clerk's Office, Circuit Court, Fluvanna County, Virginia in Deed Book 717, page 773 and (ii) from Twin Oak II, L.L.C., a Virginia limited liability company, dated February 21, 2007, recorded February 26, 2007, in the aforesaid Clerk's Office, in Deed Book 717, page 776, with a deed of correction dated October 28, 2010 and recorded in Deed Book 829 page 769.

As Surveyed Legal Description

Beginning at a PK Nail found in Memory Lane;
thence S 25°47'17" E a distance of 88.27'to a PK Nail found;
thence with a curve turning to the right with an arc length of 176.37', with a radius of 350.00', with a chord bearing of S 00°32'08" W, with a chord length of 174.51',to a PK Nail found;
thence S 20°45'48" W a distance of 259.52'to a 1/2" Rod found;
thence S 87°35'56" E a distance of 94.38'to a 1/2" Rod found;
thence S 62°08'03" E a distance of 19.47'to a 1/2" Rod found;
thence S 41°57'31" E a distance of 397.58'to a 1/2" Rod found;
thence S 83°17'21" E a distance of 99.29'to a 1/2" Rod found;
thence S 43°40'13" E a distance of 112.40'to a 1/2" Rod found;
thence S 57°09'07" E a distance of 24.62'to a 22" White oak;
thence N 77°56'45" E a distance of 87.62'to a 1/2" Rod found;
thence N 46°27'36" E a distance of 45.13'to a 1/2" Rod found;
thence N 59°38'21" E a distance of 313.16'to a 1/2" Rod found;
thence S 13°49'33" E a distance of 705.17'to a centerline creek corner;
With a 1/2" Rod found 15.28' NW of the centerline creek corner;
thence S 74°33'22" W a distance of 5.73'to a centerline creek corner;
thence S 83°02'41" W a distance of 40.03'to a centerline creek corner;
thence N 87°54'28" W a distance of 73.83'to a centerline creek corner;
thence S 17°34'42" W a distance of 54.31'to a centerline creek corner;
thence S 82°12'33" W a distance of 22.28'to a centerline creek corner;
thence N 89°10'30" W a distance of 90.88'to a centerline creek corner;
thence S 19°44'19" W a distance of 13.55'to a centerline creek corner;
thence S 15°44'01" E a distance of 36.02'to a centerline creek corner;
thence N 69°53'54" W a distance of 14.86'to a centerline creek corner;
thence N 61°04'56" W a distance of 32.85'to a centerline creek corner;
thence N 83°44'07" W a distance of 10.28'to a centerline creek corner;
thence S 24°22'50" W a distance of 8.28'to a centerline creek corner;
thence S 37°54'02" W a distance of 24.51'to a centerline creek corner;
thence S 14°00'26" E a distance of 10.35'to a centerline creek corner;
thence S 35°56'39" W a distance of 14.62'to a centerline creek corner;
thence N 62°13'45" W a distance of 16.40'to a centerline creek corner;
thence S 66°47'20" W a distance of 39.51'to a centerline creek corner;
thence N 85°38'02" W a distance of 38.60'to a centerline creek corner;
thence N 00°12'39" W a distance of 15.69'to a centerline creek corner;
thence N 77°50'02" W a distance of 16.73'to a centerline creek corner;
thence S 76°05'04" W a distance of 24.00'to a centerline creek corner;
thence S 27°25'05" W a distance of 20.09'to a centerline creek corner;
thence S 29°51'31" W a distance of 28.27'to a centerline creek corner;
thence S 61°32'10" W a distance of 33.07'to a centerline creek corner;
thence N 71°09'24" W a distance of 10.48'to a centerline creek corner;
thence N 82°27'07" W a distance of 28.88'to a centerline creek corner;
thence S 66°26'23" W a distance of 51.78'to a centerline creek corner;
thence S 82°11'08" W a distance of 53.74'to a centerline creek corner;
thence S 69°26'17" W a distance of 43.32'to a centerline creek corner;
thence S 09°34'15" E a distance of 17.70'to a centerline creek corner;
thence S 41°30'18" W a distance of 53.99'to a centerline creek corner;
thence S 65°20'59" W a distance of 68.86'to a centerline creek corner;
thence S 32°51'40" W a distance of 88.16'to a centerline creek corner;
thence S 09°39'15" E a distance of 23.52'to a centerline creek corner;
thence S 09°21'26" E a distance of 21.10'to a centerline creek corner;
thence S 61°32'40" E a distance of 23.48'to a centerline creek corner;
thence S 25°35'12" E a distance of 28.72'to a centerline creek corner;
thence S 10°39'48" E a distance of 27.60'to a centerline creek corner;
thence S 38°35'52" W a distance of 35.71'to a centerline creek corner;
thence S 14°57'05" W a distance of 35.47'to a centerline creek corner;
thence S 75°25'32" W a distance of 52.85'to a centerline creek corner;
thence S 45°00'33" W a distance of 48.84'to a centerline creek corner;
thence S 25°49'12" W a distance of 59.87'to a centerline creek corner;
thence S 39°35'43" W a distance of 96.85'to a centerline creek corner;
thence S 44°29'52" W a distance of 89.01'to a centerline creek corner;
thence S 38°04'16" W a distance of 138.84'to a centerline creek corner;
thence S 62°40'07" W a distance of 68.81'to a centerline creek corner;
thence S 50°25'19" W a distance of 37.12'to a centerline creek corner;
thence S 35°24'36" E a distance of 15.98'to a centerline creek corner;
thence S 17°30'58" W a distance of 17.05'to a centerline creek corner;
With a 1/4" Rod found 20.40' SW of the corner;
thence S 81°45'40" W a distance of 742.12'to a 1/2" Rod found;
thence N 30°40'52" W a distance of 1364.75'to a centerline creek corner;
With a 1/2" Rod found 6.36' SE of the centerline creek corner;
thence N 89°40'52" E a distance of 48.29'to a centerline creek corner;
thence N 03°49'33" E a distance of 20.45'to a centerline creek corner;
thence N 35°13'32" E a distance of 30.01'to a centerline creek corner;
thence N 21°28'30" W a distance of 34.49'to a centerline creek corner;
thence N 21°40'07" E a distance of 39.75'to a centerline creek corner;
thence N 04°25'10" E a distance of 35.17'to a centerline creek corner;
thence N 55°09'35" E a distance of 22.24'to a centerline creek corner;
thence N 34°29'32" W a distance of 20.33'to a centerline creek corner;
thence N 35°07'49" E a distance of 14.15'to a centerline creek corner;
thence S 69°41'14" E a distance of 22.14'to a centerline creek corner;
thence N 51°00'01" E a distance of 28.12'to a centerline creek corner;
thence N 53°02'39" W a distance of 36.15'to a centerline creek corner;
thence N 44°55'46" E a distance of 71.95'to a centerline creek corner;
thence N 30°45'28" E a distance of 32.38'to a centerline creek corner;
thence N 77°28'56" E a distance of 19.59'to a centerline creek corner;
thence N 42°23'46" E a distance of 64.62'to a centerline creek corner;
thence N 80°56'17" W a distance of 19.88'to a centerline creek corner;
thence N 04°42'49" W a distance of 18.48'to a centerline creek corner;
thence N 39°59'02" E a distance of 48.80'to a centerline creek corner;
thence N 04°01'30" E a distance of 43.96'to a centerline creek corner;
thence N 56°56'02" E a distance of 71.50'to a centerline creek corner;
thence N 33°24'53" W a distance of 48.33'to a centerline creek corner;
thence N 02°50'08" W a distance of 31.32'to a centerline creek corner;
thence N 78°29'03" E a distance of 32.90'to a centerline creek corner;
thence N 19°25'04" W a distance of 33.81'to a centerline creek corner;
thence N 50°06'20" E a distance of 16.38'to a centerline creek corner;
thence N 14°10'33" W a distance of 32.96'to a centerline creek corner;
thence N 43°15'23" E a distance of 40.01'to a centerline creek corner;
thence N 10°09'58" W a distance of 15.76'to a centerline creek corner;
thence N 63°52'25" W a distance of 45.54'to a centerline creek corner;
thence S 79°19'10" W a distance of 15.40'to a centerline creek corner;
thence N 42°34'09" W a distance of 24.48'to a centerline creek corner;
thence N 14°16'30" E a distance of 33.46'to a centerline creek corner;
thence N 09°50'00" W a distance of 77.44'to a centerline creek corner;
thence N 45°54'40" E a distance of 27.71'to a centerline creek corner;
thence S 82°55'00" E a distance of 20.27'to a centerline creek corner;
thence N 61°00'35" E a distance of 41.22'to a centerline creek corner;
thence S 86°51'06" E a distance of 53.90'to a centerline creek corner;
thence N 11°14'57" W a distance of 38.89'to a centerline creek corner;
thence leaving the creek, S 87°45'58" E a distance of 6.67'to a Axle found;
thence N 16°46'40" E a distance of 67.34'to a Axle found by Stone;
thence N 73°48'02" E a distance of 801.51'to a 1" Pipe found;
thence N 75°12'07" E a distance of 420.71'to a PK Nail found;
which is the point of beginning, having an area of 87.499 acres.

SOURCE OF TITLE

TMS 4-A-27A

AMBER HILL, L.L.C.
DB 717-773 DB 717-776
DB 829-769
Plat: DB 21-61 Plat: DB 677-249 & 251

Surveyor's Certificate

To Home Title Insurance Agency Inc. & SB Cox Inc., A Virginia Corporation

This is to Certify that this map or plat and the survey on which it is based were made in accordance with the 2021 minimum standard detail requirements for ALTA/NSPS land title surveys, jointly established and adopted by ALTA and NSPS, and included items 1, 2, 3, 4, 8, 11, 13, 19 and 20 of Table A thereof.

Date of Plat or Map October 10, 2022

Michael L. Parrish L.S.. No. 1525

COMMONWEALTH OF VIRGINIA
MICHAEL L. PARRISH No. 1525
LAND SURVEYOR

Notes

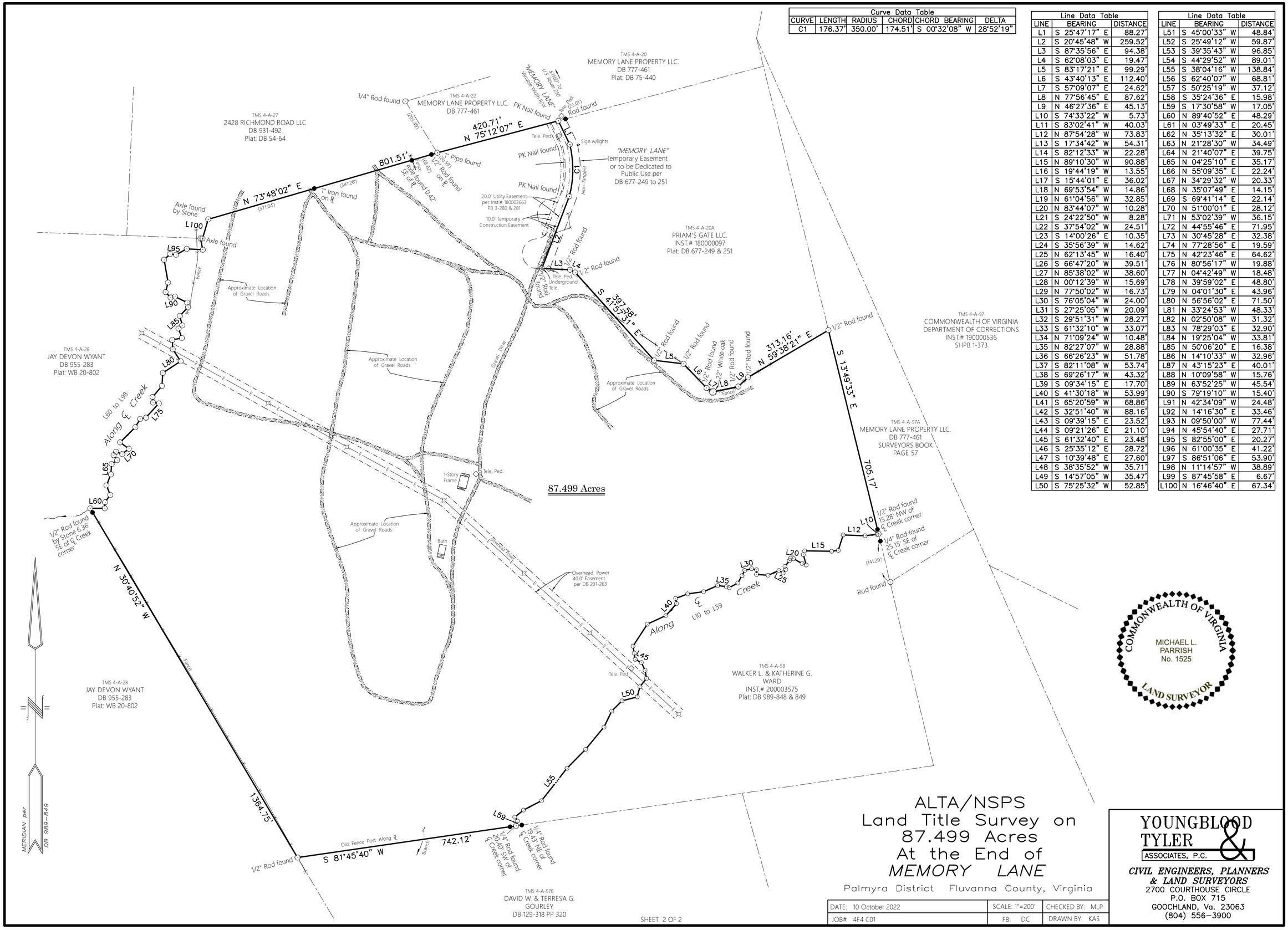
1. This plat is based on a current field survey.
2. This Parcel appears to be located in flood hazard Zone X as designated by Hud per FIRM Panel map number 51065C0060C effective date May 16, 2008
3. Survey performed with the benefit of a title report furnished by Home Title Insurance Agency Inc., File number HT22-0333, having a commitment date of October 2, 2022 at 8:00 A.M.
4. No evidence of existing cemeteries was provided to surveyor. No evidence of cemeteries was visible along perimeter of boundary, no internal search was preformed.
5. Fences meander across the Northern property lines as shown.
6. Interior gravel road locations taken from field data collected during the survey and Google earth imagery.

ALTA/NSPS Land Title Survey on 87.499 Acres At the End of *MEMORY LANE*

Palmyra District Fluvanna County, Virginia

DATE: 10 October 2022	SCALE: 1"=200'	CHECKED BY: MLP
JOB# 4F4 C01	FB: DC	DRAWN BY: KAS

YOUNGBLOOD TYLER & ASSOCIATES, P.C.
CIVIL ENGINEERS, PLANNERS & LAND SURVEYORS
2700 COURTHOUSE CIRCLE
P.O. BOX 715
GOOCHLAND, Va. 23063
(804) 556-3900



Curve Data Table					
CURVE	LENGTH	RADIUS	CHORD	CHORD BEARING	DELTA
C1	176.37'	350.00'	174.51'	S 00°32'08" W	28°52'19"

Line Data Table		
LINE	BEARING	DISTANCE
L1	S 25°47'17" E	88.27'
L2	S 20°45'48" W	259.52'
L3	S 87°35'56" E	94.38'
L4	S 62°08'03" E	19.47'
L5	S 83°17'21" E	99.29'
L6	S 43°40'13" E	112.40'
L7	S 57°09'07" E	24.62'
L8	N 77°56'45" E	87.62'
L9	N 46°27'36" E	45.13'
L10	S 74°33'22" W	5.73'
L11	S 83°02'41" W	40.03'
L12	N 87°54'28" W	73.83'
L13	S 17°34'42" W	54.31'
L14	S 82°12'33" W	22.28'
L15	N 89°10'30" W	90.88'
L16	S 19°44'19" W	13.55'
L17	S 15°44'01" E	36.02'
L18	N 69°53'54" W	14.86'
L19	N 61°04'56" W	32.85'
L20	N 83°44'07" W	10.28'
L21	S 24°22'50" W	8.28'
L22	S 37°54'02" W	24.51'
L23	S 14°00'26" E	10.35'
L24	S 35°56'39" W	14.62'
L25	N 62°13'45" W	16.40'
L26	S 66°47'20" W	39.51'
L27	N 85°38'02" W	38.60'
L28	N 00°12'39" W	15.69'
L29	N 77°50'02" W	16.73'
L30	S 76°05'04" W	24.00'
L31	S 27°25'05" W	20.09'
L32	S 29°51'31" W	28.27'
L33	S 61°32'10" W	33.07'
L34	N 71°09'24" W	10.48'
L35	N 82°27'07" W	28.88'
L36	S 66°26'23" W	51.78'
L37	S 82°11'08" W	53.74'
L38	S 69°26'17" W	43.32'
L39	S 09°34'15" E	17.70'
L40	S 41°30'18" W	53.99'
L41	S 65°20'59" W	68.86'
L42	S 32°51'40" W	88.16'
L43	S 09°39'15" E	23.52'
L44	S 09°21'26" E	21.10'
L45	S 61°32'40" E	23.48'
L46	S 25°35'12" E	28.72'
L47	S 10°39'48" E	27.60'
L48	S 38°35'52" W	35.71'
L49	S 14°57'05" W	35.47'
L50	S 75°25'32" W	52.85'

Line Data Table		
LINE	BEARING	DISTANCE
L51	S 45°00'33" W	48.84'
L52	S 25°49'12" W	59.87'
L53	S 39°35'43" W	96.85'
L54	S 44°29'52" W	89.01'
L55	S 38°04'16" W	138.84'
L56	S 62°40'07" W	68.81'
L57	S 50°25'19" W	37.12'
L58	S 35°24'36" E	15.98'
L59	S 17°30'58" W	17.05'
L60	N 89°40'52" E	48.29'
L61	N 03°49'33" E	20.45'
L62	N 35°13'32" E	30.01'
L63	N 21°28'30" W	34.49'
L64	N 21°40'07" E	39.75'
L65	N 04°25'10" E	35.17'
L66	N 55°09'35" E	22.24'
L67	N 34°29'32" W	20.33'
L68	N 35°07'49" E	14.15'
L69	S 69°41'14" E	22.14'
L70	N 51°00'01" E	28.12'
L71	N 53°02'39" W	36.15'
L72	N 44°55'46" E	71.95'
L73	N 30°45'28" E	32.38'
L74	N 77°28'56" E	19.59'
L75	N 42°23'46" E	64.62'
L76	N 80°56'17" W	19.88'
L77	N 04°42'49" W	18.48'
L78	N 39°59'02" E	48.80'
L79	N 04°01'30" E	43.96'
L80	N 56°56'02" E	71.50'
L81	N 33°24'53" W	48.33'
L82	N 02°50'08" W	31.32'
L83	N 78°29'03" E	32.90'
L84	N 19°25'04" W	33.81'
L85	N 50°06'20" E	16.38'
L86	N 14°10'33" W	32.96'
L87	N 43°15'23" E	40.01'
L88	N 10°09'58" W	15.76'
L89	N 63°52'25" W	45.54'
L90	S 79°19'10" W	15.40'
L91	N 42°34'09" W	24.48'
L92	N 14°16'30" E	33.46'
L93	N 09°50'00" W	77.44'
L94	N 45°54'40" E	27.71'
L95	S 82°55'00" E	20.27'
L96	N 61°00'35" E	41.22'
L97	S 86°51'06" E	53.90'
L98	N 11°14'57" W	38.89'
L99	S 87°45'58" E	6.67'
L100	N 16°46'40" E	67.34'

COMMONWEALTH OF VIRGINIA
MICHAEL L. PARRISH
No. 1525
LAND SURVEYOR

ALTA/NSPS Land Title Survey on 87.499 Acres At the End of *MEMORY LANE*

Palmyra District Fluvanna County, Virginia

DATE: 10 October 2022	SCALE: 1"=200'	CHECKED BY: MLP
JOB# 4F4 C01	FB: DC	DRAWN BY: KAS

YOUNGBLOOD TYLER & ASSOCIATES, P.C.
CIVIL ENGINEERS, PLANNERS & LAND SURVEYORS
2700 COURTHOUSE CIRCLE
P.O. BOX 715
GOOCHLAND, Va. 23063
(804) 556-3900

LEGEND:

- PROPERTY LINE
- PROPERTY LINE SETBACK (SHOWN IN WHITE)
- PROPOSED MATERIAL RECOVERY FACILITY
- PROPOSED LOT
- STREAM OR WETLAND (SEE NOTE 4)
- STREAM OR WETLAND BUFFER
- PROPOSED ROAD
- EXISTING UNPAVED ROAD

SITE PLAN NOTES:

1. Tax parcel: 4-A-27A, 677-250, 21-61
2. [illegible]
3. Zoning : I-2, Industrial, General
4. Stream and wetland information is from a field delineation conducted by LaBella Associates October 4 -6, 2022, and is subject to verification by USACE.
5. Property line is from Fluvanna County GIS, and as not been field-verified.
6. Proposed features are based on initial site concept design and are intended to illustrate what may be constructed. Actual site development, including locations of buildings, roads, and stormwater management features may differ.

GRAPHIC SCALE
0 100 200 400
(FEET)

LaBella
Powered by partnership.
1604 Ownby Lane
Richmond, VA 23220
804-355-4520
labellapc.com

PRELIMINARY
NOT FOR CONSTRUCTION

S.B. COX, INC.
901 POTOMAC STREET
RICHMOND, VA 23231

FLUVANNA MATERIAL RECOVERY FACILITY
TROY, VIRGINIA

NO	DATE:	DESCRIPTION:
Revisions		

PROJECT NUMBER:

DRAWN BY: JBM
REVIEWED BY: LBJ
ISSUED FOR: PUBLIC NOTICE
DATE: 10/14/2022
DRAWING NAME:

SITE PLAN

DRAWING NUMBER:

1

LEGEND:

- PROPERTY LINE
- PROPERTY LINE SETBACK (SHOWN IN WHITE)
- PROPOSED MATERIAL RECOVERY FACILITY
- PROPOSED LOT
- STREAM OR WETLAND (SEE NOTE 4)
- STREAM OR WETLAND BUFFER
- PROPOSED ROAD
- PROPOSED PAVING
- PROPOSED BUILDING

GENERAL NOTES:

1. Stream and wetland information is from a field delineation conducted by LaBella Associates October 4 -6, 2022, and is subject to verification by USACE.
2. Property line is from Fluvanna County GIS, and as not been field-verified.
3. Proposed features are based on initial site concept design and are intended to illustrate what may be constructed. Actual site development, including locations of buildings, roads, and stormwater management features may differ.

GRAPHIC SCALE
0 25 50 100
(FEET)

LaBella
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1604 Ownby Lane
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S.B. COX, INC.
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RICHMOND, VA 23231

FLUVANNA MATERIAL RECOVERY FACILITY
TROY, VIRGINIA

NO	DATE:	DESCRIPTION
Revisions		

PROJECT NUMBER:

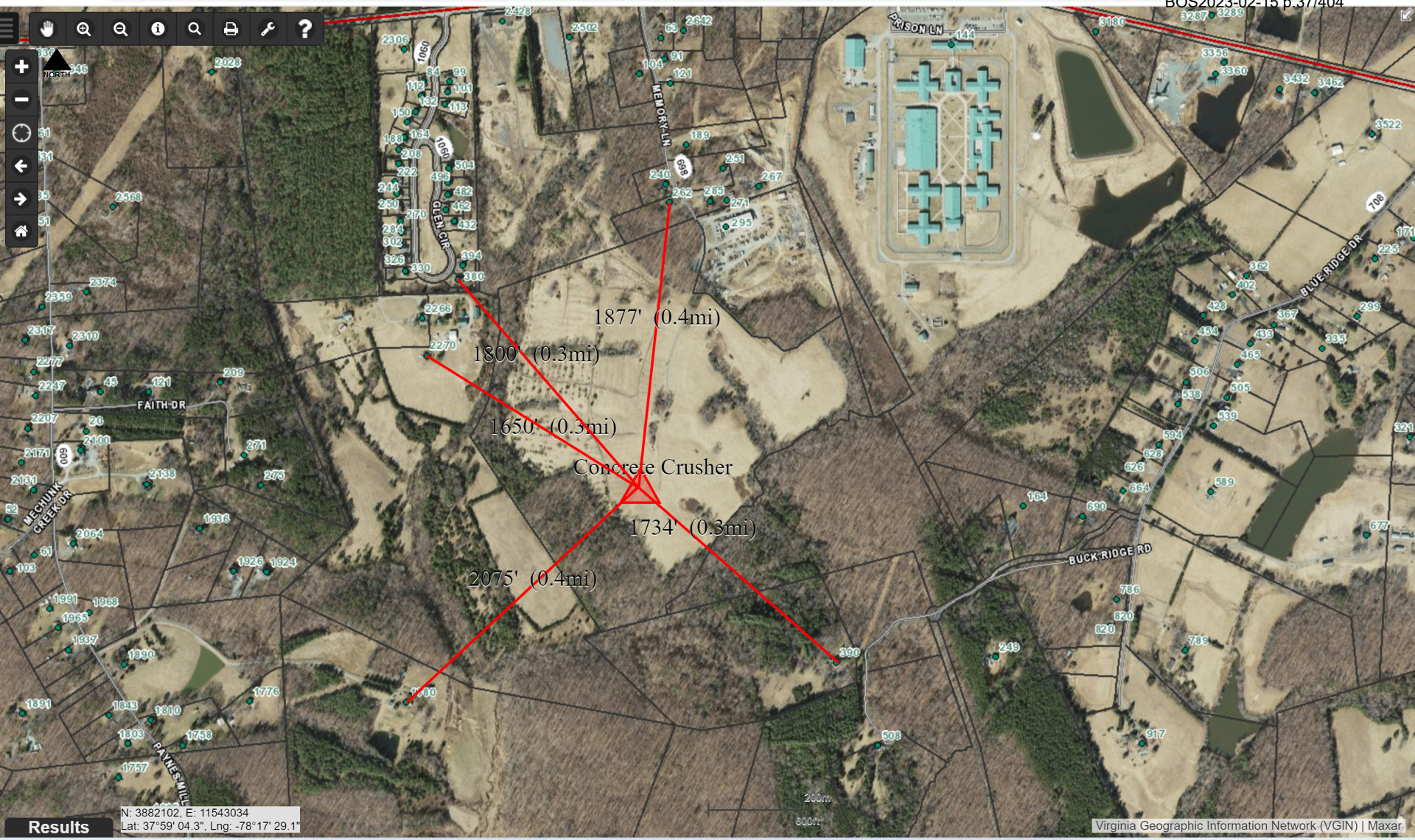
DRAWN BY: JBM
REVIEWED BY: LBJ
ISSUED FOR: PUBLIC NOTICE
DATE: 10/14/2022

DRAWING NAME:

MATERIAL RECOVERY FACILITY PLAN

DRAWING NUMBER:

1


1877' (0.4mi)
1800' (0.3mi)
1650' (0.3mi)
Concrete Crusher
1734' (0.3mi)
2075' (0.4mi)
PRISON LN
MEMORY LN
GLEN CIR
FAITH DR
MECHUNK CREEK DR
BUCK RIDGE RD
BLUE RIDGE DR
PAYNES MILL
N: 3882102, E: 11543034
Lat: 37°59' 04.3", Lng: -78°17' 29.1"
Results
Virginia Geographic Information Network (VGIN) | Maxar

WETLAND AND STREAM DELINEATION REPORT

Amber Hill Property Development
Richmond Road, Parcel No. 4 A 27A
Troy, Fluvanna County, Virginia
LaBella Project No. 2224136

Prepared For: S.B. Cox, Inc.
901 Potomac Street
Richmond, Virginia 23231
Mr. Mike Barr
m.barr@sbcoxdemolition.com

Prepared By: LaBella Associates, D.P.C.
1604 Ownby Lane
Richmond, Virginia 23220

Date: October 2022

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

S.B. Cox, Inc. (Client) retained LaBella Associates, D.P.C. (LaBella) to perform a wetland and stream delineation for the Amber Hill Property Development (the Project). For the purposes of the wetland and stream delineation, the Project Study Area is defined as a 90-acre area located along Richmond Road in Troy, Fluvanna County, Virginia consisting of open fields in the central portion and densely wooded forests along the boundaries of the Study Area. The Study Area is further identified as Tax Map No. 4 A 27A. Please refer to Appendix A, Figure 1 for the Study Area location and boundary. The geographic coordinates of the approximate Study Area center are 37.978117 (Latitude), -78.276668 (Longitude) (NAD83). Wetland and stream delineation field work was performed on October 4-7, 2022.

1.2 PURPOSE

This report was prepared for the purpose of obtaining concurrence from the United States Army Corps of Engineers (USACE)–Norfolk District and the Virginia Department of Environmental Quality (DEQ) Valley Region on jurisdictional wetland and stream boundaries within the Study Area, in support of the Project. Specific tasks performed for this report include a field delineation of potentially jurisdictional Waters of the United States (WOUS) encompassing wetlands and streams, and a detailed description of the delineated waters based on hydrology, vegetation, and soils information collected in the field.

This report describes the results of the delineation and data collection efforts performed by LaBella, and a description of the wetlands and streams that were delineated. This document is intended to provide the information required to support a Jurisdictional Determination (JD) with the USACE-Norfolk District and DEQ to support permitting needs (e.g. Joint Permit Application), if regulatory permit authorizations are required.

2.0 METHODOLOGY

2.1 RESOURCES

Materials and literature supporting this investigation are derived from a number of sources, including: United States Geological Survey (USGS) 7.5-minute Topographic Quadrangles; United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Fluvanna County, Virginia Soil Survey (USDA-NRCS, 2022); USDA-NRCS Soil Map Unit shapefiles; USDA-NRCS Field Indicators of Hydric Soils in the United States (USDA-NRCS, 2018); Munsell Soil Color Charts (Kollmorgen Corporation, 1988); Federal Emergency Management Agency (FEMA) digital Flood Hazard data; United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) shapefiles; Vascular plant names follow nomenclature found in the USDA PLANTS database (USDA, 2019). Wetland indicator status for vegetative species was determined by reference to the National Wetland Plant List (Lichvar et al., 2018). Jurisdictional features are characterized according to the NWI mapped wetlands and deepwater habitat classification system (Cowardin, 1979).

2.2 WOUS JURISDICTIONAL AREA DELINEATION

LaBella field staff performed the wetland and stream delineation within the Study Area on October 4 to 7, 2022, in accordance with the methods presented in the *1987 Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987), as supplemented by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Supplement, Version 2.0 (USACE, 2012).*

Wetland and stream boundaries were defined in the field with sequentially-numbered pink surveyor's flagging or pink pin flags. Each flag was digitally recorded using a USACE-approved sub-foot Global Positioning System unit. Data and observations were collected throughout the Study Area, from both the wetland and its associated upland area, referred to as data points. Data points help determine and locate the wetland boundaries with field data verification of the upland areas. These data points were recorded on the USACE Eastern Mountains and Piedmont Wetland Determination Data Forms (Appendix B).

During the field reconnaissance, the Study Area was also observed for streams that would potentially be considered jurisdictional by state and/or federal regulatory agencies. Field indicators such as the presence of an ordinary high-water mark (OHWM) as well as observed characteristics such as flow, substrate composition, presence/absence of defined bed and banks, origin of hydrologic source, presence/absence of vegetation in the stream channel, and composition and relative abundance of resident benthic macroinvertebrates to classify onsite streams into three stream types: ephemeral, intermittent, and perennial. Identified streams were also assessed for stream order using a Perennial Stream flow determination worksheet in accordance with the North Carolina Division of Water Quality's "Perennial Stream Reconnaissance Protocols" version 4.11 guidance (NCDWQ, 2010).

Representative photographs were taken of the data point locations, delineated wetlands, and streams within the Study Area (Appendix C).

The USACE and DEQ have jurisdiction of WOUS under section 404 of the Clean Water Act (CWA) and Section 401 under the State Water Control Board, respectively. The USACE-Norfolk District does not have jurisdiction over isolated wetlands or ephemeral stream channels; however, DEQ has jurisdiction over these features.

3.0 PHYSICAL CHARACTERISTICS AND RESOURCES

3.1 PHYSIOGRAPHY

The Project is located in the South Atlantic and Gulf Slope Cash Crops, Forest, and Livestock Land Resource Region (LRR P), Southern Piedmont Major Land Resource Area (MLRA 136). The Study Area topography consists of a hill peak in the center of the property and steep slopes to the southeast and west. The Study Area consists of old successional field in the central portion of the site and dense forested land along the north, east, south, and west site boundaries. In addition, there are tree lined low lying areas along the west and east slopes. Elevations within the Study Area range from approximately 375 feet above mean sea level (AMSL) to approximately 450 feet AMSL.

3.2 SOILS

The Soil Survey of Fluvanna County, NRCS Web Soil Survey indicates there are 8 soil map units within the Project Study Area, as outlined in Table 1.

Table 1. Soil Map units within the Study Area

NRCS Soil Map Unit	Map Unit Symbol	Drainage Class	Hydric Soil?	Hydric Rating (%)
Manteo silt loam, rolling phase	Mf	Somewhat excessively drained	No	0
Mixed alluvial land, poorly drained	Ml	Poorly drained	Yes	85
Nason silt loam, eroded rolling phase	Nd	Well drained	No	0
Nason silt loam, eroded undulating phase	Ne	Well drained	Yes	3
Nason silt loam, rolling phase	Nf	Well drained	Yes	3
Nason silt loam, undulating phase	Ng	Well drained	Yes	3
Tatum silt loam, undulating phase	Tc	Well drained	Yes	3
Worsham silt loam	Wf	Poorly drained	Yes	85

Source: USDA, NRCS, 1958; Soil Survey Staff, 2021

The Hydric Soil ratings outlined in Table 1 and the Web Soil Survey map provided in Appendix D, indicate there are 6 soil map units containing hydric components. Mixed alluvial land, poorly drained (Ml) has a hydric component of 85 percent, Nason silt loam, eroded undulating phase (Ne) has a hydric component of 3 percent, Nason silt loam, rolling phase (Nf) has a hydric component of 3 percent, Nason silt loam, undulating phase (Ng) has a hydric component of 3 percent, Tatum silt loam, undulating phase (Tc) has a hydric component of 3 percent, and Worsham silt loam (Wf) has a hydric component of 85 percent.

3.3 HYDROLOGY

The Study Area is located in the Rivanna watershed (USGS Hydrologic Unit Code (HUC) 02080204). There are multiple wetlands and streams located throughout the Study Area with their main sources of hydrology being a high groundwater table in the low-lying areas and stream valleys. The County of Fluvanna receives an average of 41.36 inches of precipitation annually (NRCC, 2020).

4.0 AGENCY RESOURCES

4.1 USFWS NATIONAL WETLAND INVENTORY (NWI)

USFWS NWI mapping indicates there are 2 NWI-mapped streams and 1 NWI-mapped wetland within the Study Area (refer to Appendix A, Figure 2), as outlined in Table 2.

Table 2. USFWS-NWI Mapped Wetlands within the Study Area

NWI Wetland Code	Classification Code description	Delineated Wetland
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	Stream G
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	Stream C
PFO1A	Palustrine, Forested, Broad-leaved Deciduous, Temporary Flooded	Wetland C

4.3 FEMA 100-YEAR FLOOD ZONES

No FEMA 100-Year Flood Zones are associated with the Study Area. The closest FEMA 100-Year Flood Zone is approximately 1.5 miles west of the Study Area and is associated with the Rivanna River (refer to Appendix A, Figure 4).

5.0 RESULTS

LaBella field staff delineated 1 palustrine emergent (PEM), 5 palustrine forested (PFO) wetlands, and 11 streams identified as ephemeral, intermittent and/or perennial within the Study Area (See Appendix A, Figure 5 and 6). Tables 3 and 4 provide areas and classifications of the delineated wetlands. The remainder of the Study Area is considered to be upland habitat consisting of dense forest and open field areas. These habitats lack wetland hydrology and hydric soils.

Table 3. Delineated Wetlands

Wetland ID	Cowardin Classification	Acreage On-site	Square Footage in Study Area	Latitude, Longitude (NAD83)	Jurisdiction
Wetland A	PEM	0.01	244	37.97931376, -78.27552534	USACE, VADEQ
Wetland B	PFO	0.10	4,572	37.97790723, -78.27462919	USACE, VADEQ
Wetland C	PFO	0.11	5,061	37.97510760, -78.27612749	USACE, VADEQ
Wetland D	PFO	0.04	1,593	37.97687171, -78.27459282	USACE, VADEQ
Wetland E	PFO	0.06	2,452	37.97770135, -78.28068052	USACE, VADEQ
Wetland F	PFO	0.31	13,663	37.97868666, -78.27242600	USACE, VADEQ

Table 4. Delineated Streams

Stream ID	Flow Regime	Stream Length in Study Area (lf)	Acreage in Study Area	Stream Bed Substrate	Latitude, Longitude (NAD83)	Jurisdiction
Stream A	Intermittent	896	0.07	Silt, Clay	37.97876685, -78.27543692	USACE VADEQ
Stream B	Ephemeral	66	0.005	Silt, Clay	37.97819545, -78.27489915	USACE VADEQ
Stream C	Perennial	506	0.07	Clay, Gravel, Cobble	37.97638155, -78.27447186	USACE VADEQ
Stream D	Ephemeral	186	0.01	Silt, Clay	37.97460815, -78.2764379	USACE VADEQ
Stream E	Ephemeral	75	0.01	Silt, Clay	37.97460815, -78.2764379	USACE VADEQ
Stream F	Intermittent	253	0.02	Silt, Clay, Gravel	37.974501, -78.276921	USACE VADEQ
	Ephemeral	192	0.01	Silt, Clay	37.975242, -78.277207	USACE VADEQ
Stream G	Perennial	1,064	0.14	Clay, Gravel, Cobble, Boulder	37.97850067, -78.28053488	USACE VADEQ
Stream H	Intermittent	870	0.06	Silt, Clay, Gravel	37.9790933, -78.27741066	USACE VADEQ
Stream J	Ephemeral	136	0.003	Silt, Clay	37.97732821, -78.2739070	USACE VADEQ
Stream K	Intermittent	659	0.05	Silt, Clay, Cobble	37.978254, -78.272328	USACE VADEQ
Stream L	Intermittent	203	0.01	Silt, Clay, Cobble	37.97850503, -78.27230134	USACE VADEQ

5.1 WETLANDS

5.1.1 Wetland A

Wetland A is a 0.01-acre PEM wetland that is located in the east-central portion of the Study Area. Wetland A connects to the eastern bank of Stream A. At the time of the site visit, Wetland A appeared to have a hydrologic regime driven by precipitation and a high groundwater table.

The plant community of Wetland A was dominated by willow oak (*Quercus phellos),* deer-tongue rosette grass (*Dichanthelium clandestinum*), and goldenrod (*Oligoneuron spp.).* At the time of the site visit, hydrology indicators observed include high-water table, saturation, drainage patterns, and geomorphic position. The first five inches of the soil profile consisted of dark brown (10YR 3/3) clay with light yellowish brown (10YR 6/4) and yellowish red (5YR 4/6) redoximorphic concentrations. The below five to ten inches consisted of brownish yellow (10YR 6/6) silty clay with a pale brown (10YR 6/3) and yellowish red (5YR 5/8) redoximorphic concentrations in the pore lining. The below ten to eighteen inches consisted of strong brown (7.5YR 5/6) with light brown (7.5YR 6/3) and dark reddish brown (5YR 3/4) redoximorphic concentrations in the pore lining.

5.1.2 Wetland B

Wetland B is a 0.10-acre PFO wetland that is located in the eastern portion of the Study Area. Wetland A connects to the eastern bank of Stream A. At the time of the site visit, Wetland B appeared to have a hydrologic regime driven by drainage, precipitation, and a high groundwater table.

The plant community of Wetland B was dominated by red maple (*Acer rubrum)*, eastern redcedar (*Juniperus virginiana var. virginiana)*, northern spicebush (*Lindera benzoin),* sweetgum (*Liquidambar styraciflua),* and Japanese stilt grass (*Microstegium vimineum).* At the time of the site visit, hydrology indicators observed include surface water, high-water table, drainage patterns, and geomorphic position. The first three inches of the sandy clay soil profile consisted of depleted black (10YR 2/1) with red (2.5YR 4/6) redoximorphic concentrations. The below four to twelve inches consisted of depleted very dark gray (2.5YR 3/1) with red (2.5YR 4/6) redoximorphic concentrations.

5.1.3 Wetland C

Wetland C is a 0.11-acre PFO wetland that is located in the southwestern corner of the Study Area. Wetland C connects to Stream D and E. At the time of the site visit, Wetland C appeared to have a hydrologic regime driven by drainage, precipitation, and a high groundwater table.

The plant community of Wetland C was dominated by red maple, blackgum (*Nyssa sylvatica)*, northern spicebush, sweetgum, New York fern (*Parathelypteris noveboracensis),* Japanese stilt grass, and eastern poison ivy (*Toxicodendron radicans).* At the time of the site visit, hydrology indicators observed include surface water, high-water table, saturation, water-stained leaves, drainage patterns, crayfish burrows, and geomorphic position. The first twelve inches of the saturated, silty clay soil profile consisted of depleted very dark grayish brown (10YR 3/2) with red (2.5YR 4/6) redoximorphic concentrations in the pore lining.

5.1.4 Wetland D

Wetland D is a 0.04-acre PFO wetland that is located along the southeastern boundary of the Study Area. Wetland C connects to Stream C and continues east off the Study Area. At the time of the site visit, Wetland D appeared to have a hydrologic regime driven by drainage, precipitation, and a high groundwater table.

The plant community of Wetland D was dominated by red maple, northern spicebush, Japanese stilt grass, New York fern, and eastern poison ivy. At the time of the site visit, hydrology indicators observed include high-water table, saturation, water-stained leaves, geomorphic position, microtopographic relief, and fac-neutral test. The first five inches of the silty clay soil profile consisted of depleted very dark gray (7.5YR 3/1) with a depleted grayish brown (10YR 5/2) redoximorphic concentrations. The below five to eighteen inches consisted of depleted gray (10YR5/1) with yellowish red (5YR 4/6) redoximorphic concentrations.

5.1.5 Wetland E

Wetland E is a 0.06-acre PFO wetland that is located in the western corner of the Study Area. Wetland E connects to Stream G. At the time of the site visit, Wetland E appeared to have a hydrologic regime driven by drainage, precipitation, and a high groundwater table.

The plant community of Wetland E was dominated by red maple, eastern redcedar, flowering dogwood (*Cornus florida)*, American holly (*Ilex opaca)*, Japanese stilt grass, netted chain fern (*Woodwardia areolate),* New York fern, and eastern poison ivy. At the time of the site visit, hydrology indicators observed include surface water, high-water table, saturation, drainage patterns, and geomorphic position. The first three inches of the silty clay consisted of depleted very dark gray (7.5YR 3/1) with depleted brown (7.5YR 5/2) redoximorphic concentrations. The below three to eighteen inches consisted of brownish yellow (10YR 6/6) with depleted light gray (10YR 7/1) and depleted black (10YR 2/1) redoximorphic concentrations.

5.1.6 Wetland F

Wetland F is a 0.31-acre PFO wetland that is located in the eastern corner of the Study Area. Wetland F connects to Streams K and L and continues east of the Study Area. At the time of the site visit, Wetland F appeared to have a hydrologic regime driven by precipitation, and a high groundwater table.

The plant community of Wetland F was dominated by red maple, American sycamore (*Platanus occidentalis),* sweetgum, Japanese stilt grass, and eastern poison ivy. At the time of the site visit, hydrology indicators observed include surface water, high-water table, saturation, crayfish burrows, and geomorphic position. The first 10 inches of the silty clay consisted of depleted dark gray (7.5YR 4/1) with strong brown (7.5YR 5/8) redoximorphic concentrations. The below ten to eighteen inches consisted of depleted light gray (10YR 7/1) with strong brown (7.5YR 5/8) redoximorphic concentrations.

5.2 STREAMS

5.2.1 Stream A

Stream A is an intermittent stream located in the eastern portion of the Study Area. Stream A flows north to south across the east-central portion of the Study Area and continues south of the Study Area. Stream A connects to Wetland A and B and flows into Stream C south of the Study Area. The on-site portion of Stream A is approximately 896 linear feet long and 0.07 acres in size with a streambed substrate of silt and clay.

5.2.2 Stream B

Stream B is an ephemeral stream located in the east-central portion of the Study Area. Stream B flows west to east across the into Stream A. Stream B is approximately 66 linear feet long and 0.005 acres in size with a streambed substrate of silt and clay.

5.2.3 Stream C

Stream C is a perennial stream located along the southern boundary of the Study Area. Stream C flows east to west and traverses the property multiple times along the southern boundary of the Study Area. Stream C connects to Stream F as well as Wetlands C and Wetland D. In addition, Streams E, J and K flow to the south towards an offsite portion of Stream C. The on-site portion of Stream C is approximately 506 linear feet long and 0.07-acres in size with a streambed substrate of clay, gravel, and cobble.

5.2.4 Stream D

Stream D is an ephemeral stream located in the southwestern portion of the Study Area. Stream D flows north to south. Stream D connects to Stream E and then flows into Stream C south of the Study Area. Stream D is approximately 186 linear feet long and 0.01-acres in size with a streambed substrate of silt and clay.

5.2.5 Stream E

Stream E is an ephemeral stream located in the southwestern portions of the Study Area. Stream E flows north to south. Stream E connects to Stream D and then flows into Stream C south of the Study Area. Stream E is approximately 75 linear feet long and 0.01-acres in size with a streambed substrate of silt and clay.

5.2.6 Stream F

Stream F is an intermittent and ephemeral stream located in the southern corner of the Study Area. Stream F flows north to south across the southwestern portion of the Study area where it connects to Stream C to the south. The ephemeral portion of Stream F is approximately 192 linear feet long and 0.01-acres in size with a streambed substrate of silt and clay. The stream is ephemeral in the northern portion of the stream and becomes intermittent as the stream flows into Stream C. The intermittent portion of Stream F is approximately 253 linear feet long and 0.02-acres in size with a streambed substrate of silt, clay, and gravel. Stream F becomes more sinuous and consisted of a more defined bed and bank as the stream changes from ephemeral to intermittent.

5.2.7 Stream G

Stream G is a perennial stream located along the western boundary of the Study Area. Stream G flows north to south and traverses the property multiple times along the western boundary of the Study Area. Stream G connects to Stream H and Wetland E, both of which drain towards Stream G. The on-site portion of Stream G is approximately 1,064 linear feet long and 0.14-acres in size with a streambed substrate of clay, gravel, cobbles, and boulders.

5.2.8 Stream H

Stream H is an intermittent stream located on the western portion of the Study Area. Stream H flows east to west across the western portion of the Study Area and connects to Stream G. Stream H is approximately 870 linear feet long and 0.06-acres in size with a streambed substrate of silt, clay, and gravel.

5.2.9 Stream J

Stream J is an ephemeral stream located along the southeastern/south-central boundary of the Study Area. Stream J flows north to south and connects to Stream C south of the Study Area. The on-site portion of Stream J is approximately 136 linear feet long and 0.003-acres in size with a streambed substrate of silt and clay.

5.2.10 Stream K

Stream K is an intermittent stream located in the eastern portion of the Study Area. Stream K flows north to south and connects to Stream L and Wetland F. The on-site portion of Stream K is approximately 659 linear feet long and 0.05-acres in size with a streambed substrate of silt and clay.

5.2.11 Stream L

Stream L is an intermittent stream located in the eastern portion of the Study Area. Stream L flows north to south and connects to Stream K and Wetland F. The on-site portion of Stream L is approximately 203 linear feet long and 0.01-acres in size with a streambed substrate of silt and clay.

6.0 CONCLUSIONS

6.1 Summary

LaBella delineated 1 palustrine emergent (PEM), 5 palustrine forested (PFO) wetlands, and 11 streams identified as ephemeral, intermittent and/or perennial within the Study Area. On-site wetland acreage is approximately 0.63 acres and linear footage of on-site streams is approximately 5,106 linear feet. The wetlands were identified based on the observed presence of hydrophytic vegetation, hydric soils, and wetland hydrology indicators. The primary functions provided by all on-site wetlands appear to include water quality improvement and nutrient production and cycling. The streams were identified by evidence of an ordinary high-water mark and a defined bed and bank, and by evidence of baseflow (groundwater seepage).

6.2 Regulatory and Permitting Conclusions

All identified and delineated wetlands and streams are considered to be jurisdictional to USACE–Norfolk District and DEQ Valley Region under their respective jurisdictions, under the Clean Water Act. Any Project-related filling or disturbances within the delineated boundaries of all aforementioned WOTUS will require federal CWA Section 404 authorization through the USACE and a CWA Section 401 Water Quality Certification from the DEQ.

Agency field verification of these boundaries is needed by the USACE and DEQ in order to obtain a preliminary Jurisdictional Determination (PJD). LaBella Associates can contact the USACE to schedule a field meeting to conduct a WOUS boundary confirmation. This process takes an average of {three to four} months depending on the availability of USACE personnel and USACE field office. If any potential impacts are proposed, a PJD is required in order to begin the permitting process through the applicable regulatory agencies.

7.0 SIGNATURE OF WETLAND PROFESSIONALS

We appreciate the opportunity to serve your professional environmental needs. If you have any questions, please do not hesitate to contact Kaelyn Davis at 804-301-4424.

Report Prepared By:

Katherine Waguespack
Environmental Scientist

Report Prepared By:

Kaelyn Davis
Southeast Regional Environmental Manager

8.0 REFERENCES

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APPENDIX A

FIGURES

Creator: KW Reviewer: LD

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Wetland and Stream Delineation Report

Amber Hill
Property Development
Richmond Road
Troy, Fluvanna County, VA

N

0 1,000 2,000 Feet

1 inch = 2,000 feet

Legend

Study Area

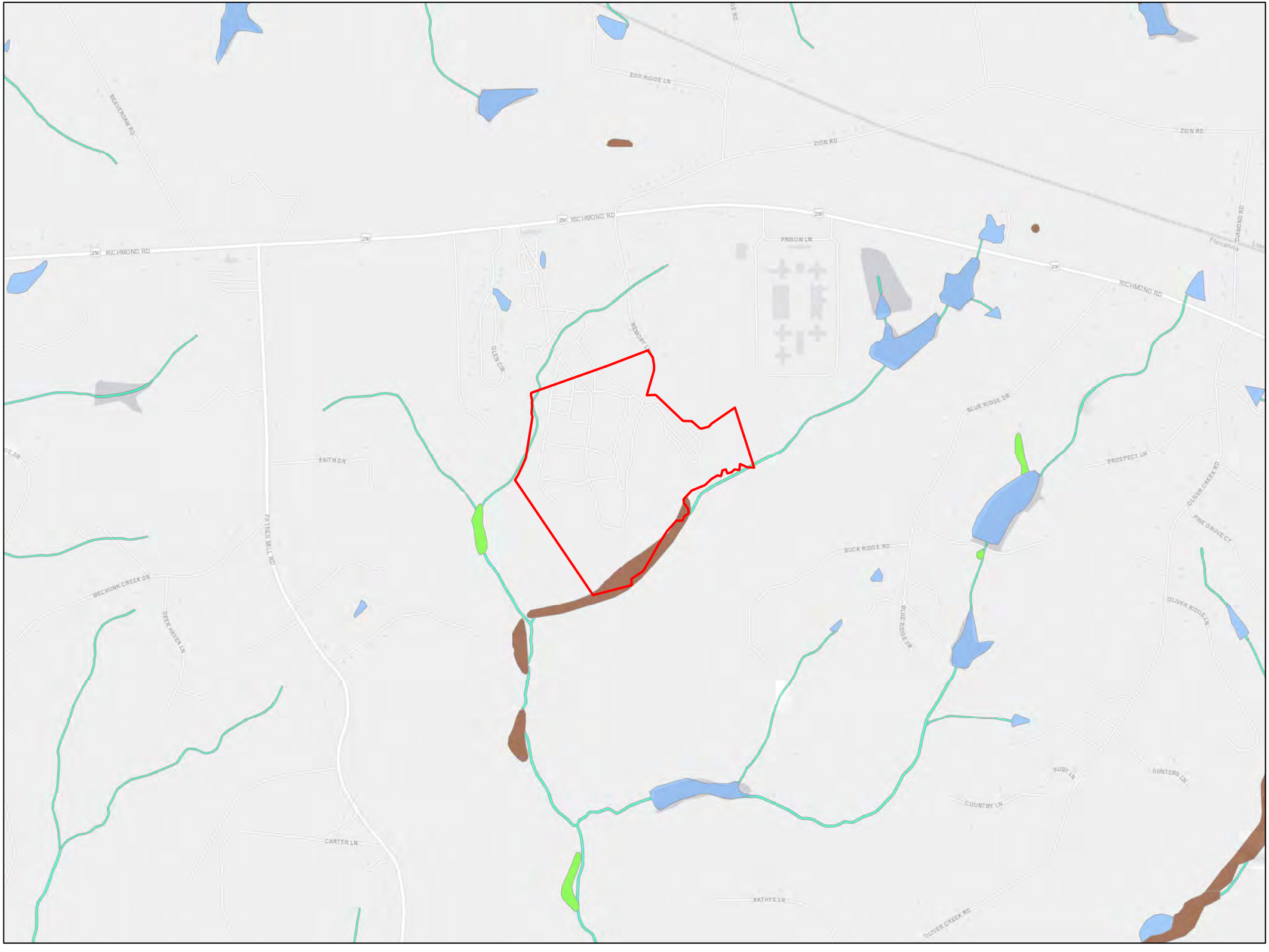
Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Basemap: ESRI USA Topo Map (Updated: 2020) in reference to USGS Topographic Boyd Tavern Quadrangle (1967).

USGS Site Location

FIGURE 1

LaBella Project No: 2224136
Date: October 2022

Creator: KW Reviewer: LD



LaBella
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S.B Cox, Inc.

Wetland and Stream Delineation Report

Amber Hill Property Development Richmond Road Troy, Fluvanna County, VA

N

0 500 1,000 Feet

1 inch = 1,000 feet

Legend

- Study Area

National Wetland Inventory

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine
- Estuarine and Marine Wetland
- Estuarine and Marine Deepwater
- Other

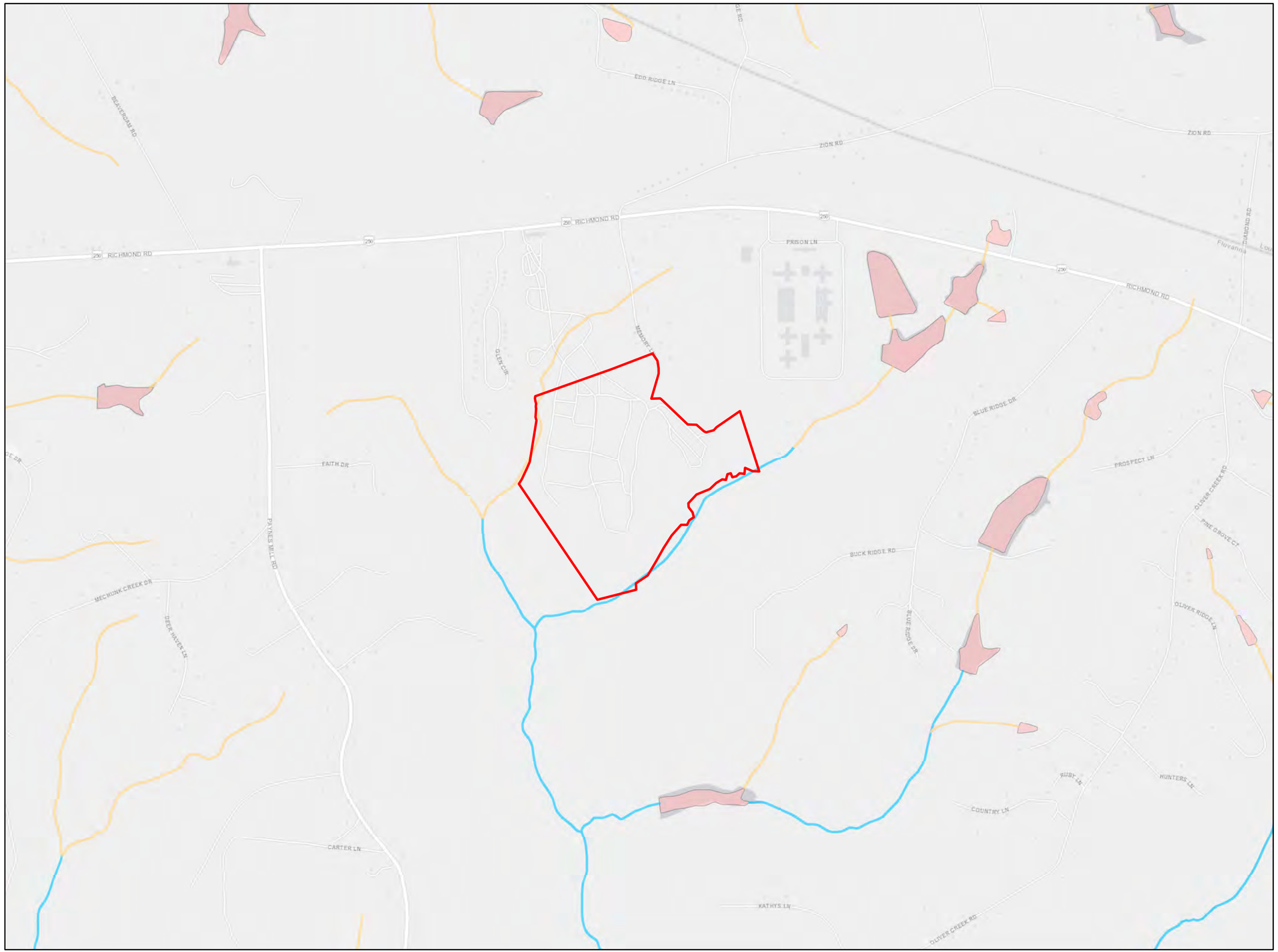
Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Esri, HERE, Garmin, (c) OpenStreetMap contributors 2022.

NWI-Mapped Resources

FIGURE 2

LaBella Project No: 2224136
Date: October 2022

Creator: KW Reviewer: LD



LaBella
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S.B Cox, Inc.

Wetland and Stream Delineation Report

Amber Hill
Property Development
Richmond Road
Troy, Fluvanna County, VA

N

0 500 1,000 Feet

1 inch = 1,000 feet

Legend

- Study Area

VA-Mapped Resources

- Ephemeral Channel
- Intermittent Channel
- Perennial Channel
- Stream/River
- Lakes/Reservoirs

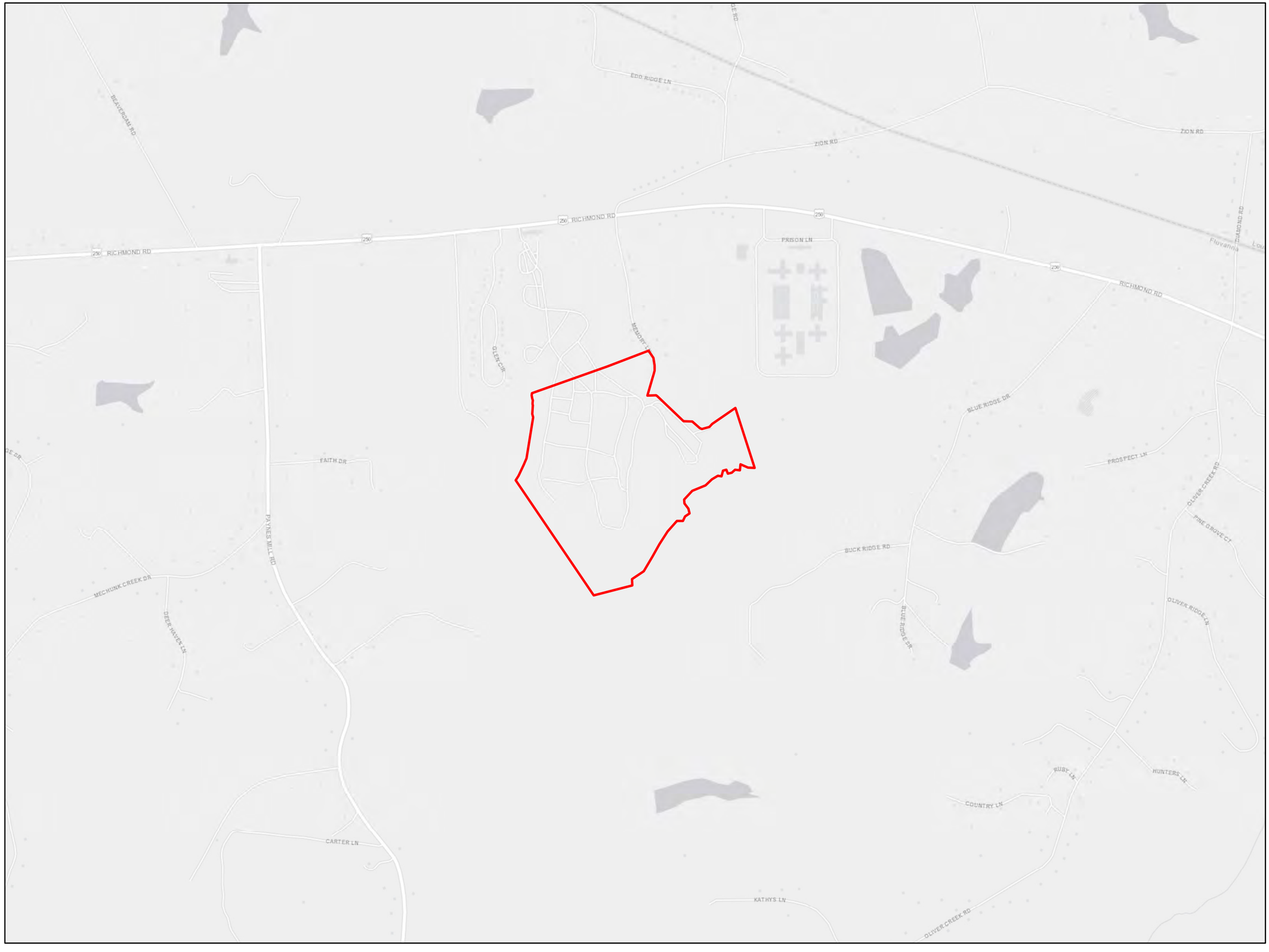
Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Esri, HERE, Garmin, (c) OpenStreetMap contributors 2022.

VA-Mapped Resources

FIGURE 3

LaBella Project No: 2224136
Date: October 2022

Creator: KW Reviewer: LD



LaBella
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Wetland and Stream Delineation Report

Amber Hill
Property Development
Richmond Road
Troy, Fluvanna County, VA

N

0 500 1,000 Feet

1 inch = 1,000 feet

Legend

- Study Area
- FEMA Floodway
- 100-Year FEMA Flood Zone

Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Esri, HERE, Garmin, (c) OpenStreetMap contributors 2022.
3. FEMA: 51065C0060C effective 05/16/2008

FEMA Flood Zones

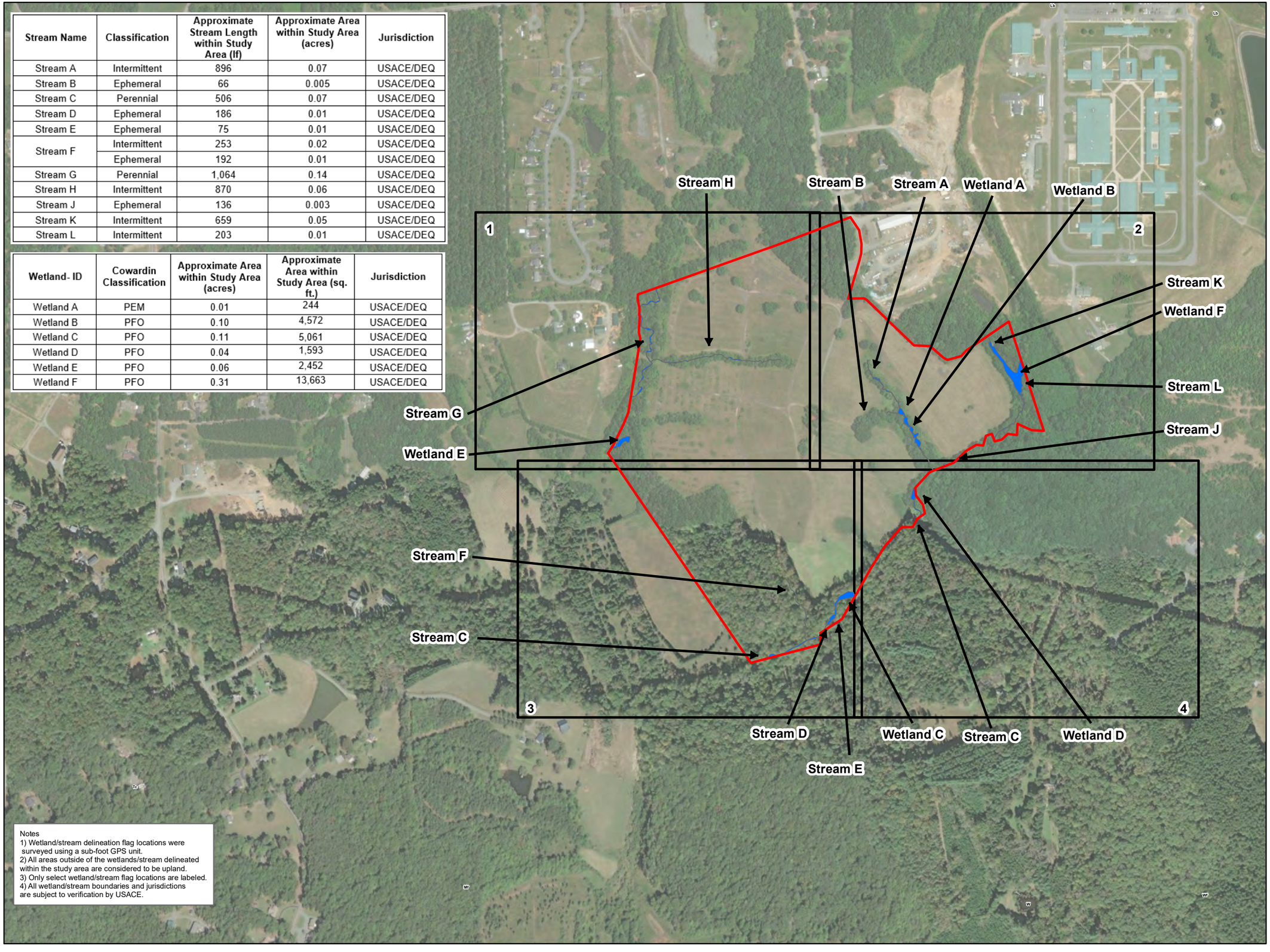
FIGURE 4

LaBella Project No: 2224136
Date: October 2022

Creator: KW Reviewer: LD

Stream Name	Classification	Approximate Stream Length within Study Area (lf)	Approximate Area within Study Area (acres)	Jurisdiction
Stream A	Intermittent	896	0.07	USACE/DEQ
Stream B	Ephemeral	66	0.005	USACE/DEQ
Stream C	Perennial	506	0.07	USACE/DEQ
Stream D	Ephemeral	186	0.01	USACE/DEQ
Stream E	Ephemeral	75	0.01	USACE/DEQ
Stream F	Intermittent	253	0.02	USACE/DEQ
	Ephemeral	192	0.01	USACE/DEQ
Stream G	Perennial	1,064	0.14	USACE/DEQ
Stream H	Intermittent	870	0.06	USACE/DEQ
Stream J	Ephemeral	136	0.003	USACE/DEQ
Stream K	Intermittent	659	0.05	USACE/DEQ
Stream L	Intermittent	203	0.01	USACE/DEQ

Wetland- ID	Cowardin Classification	Approximate Area within Study Area (acres)	Approximate Area within Study Area (sq. ft.)	Jurisdiction
Wetland A	PEM	0.01	244	USACE/DEQ
Wetland B	PFO	0.10	4,572	USACE/DEQ
Wetland C	PFO	0.11	5,061	USACE/DEQ
Wetland D	PFO	0.04	1,593	USACE/DEQ
Wetland E	PFO	0.06	2,452	USACE/DEQ
Wetland F	PFO	0.31	13,663	USACE/DEQ



Notes
1) Wetland/stream delineation flag locations were surveyed using a sub-foot GPS unit.
2) All areas outside of the wetlands/stream delineated within the study area are considered to be upland.
3) Only select wetland/stream flag locations are labeled.
4) All wetland/stream boundaries and jurisdictions are subject to verification by USACE.

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Wetland and Stream Delineation Report

Amber Hill Property Development Richmond Road Fluvanna County, VA

N

0 275 550 Feet

1 inch = 550 feet

Legend

- Study
- Delineated Wetlands and Streams

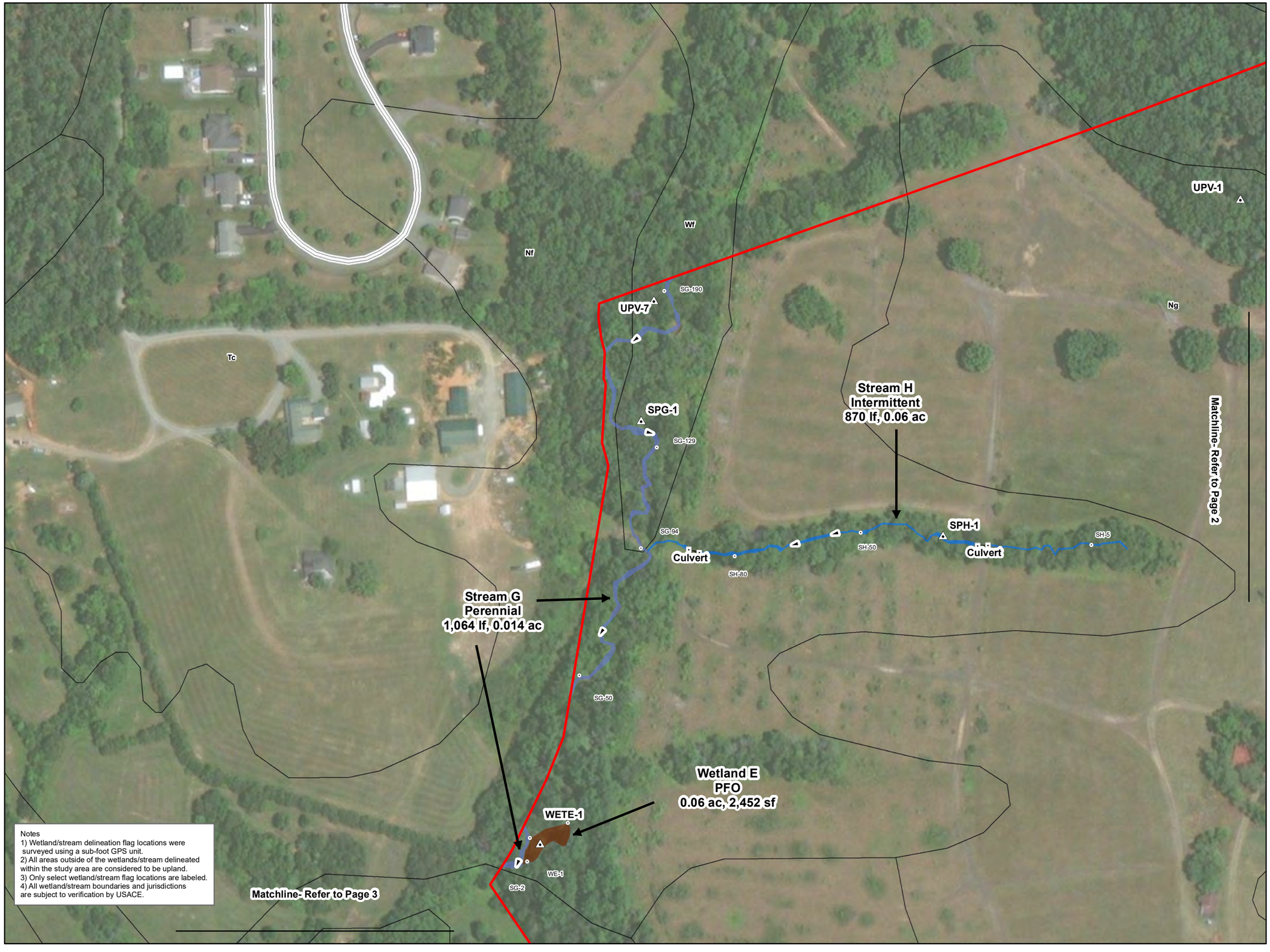
Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Basemap: Esri, DigitalGloce, GeoEye, Earthstar, Geographics, CNES/Airbus DS, USDA, USGS AeroGRID, IGN, and GIS User Community, 2022.

Overview Map

FIGURE 5

LaBella Project No: 2224136
Date: October 2022

Creator: KW Reviewer: LD



Notes
1) Wetland/stream delineation flag locations were surveyed using a sub-foot GPS unit.
2) All areas outside of the wetlands/stream delineated within the study area are considered to be upland.
3) Only select wetland/stream flag locations are labeled.
4) All wetland/stream boundaries and jurisdictions are subject to verification by USACE.

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Wetland and Stream Delineation Report

Amber Hill Property Development Richmond Road Fluvanna County, VA

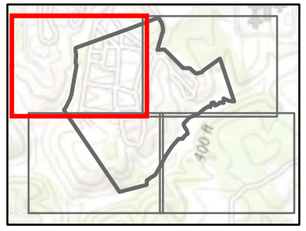
N

0 75 150 Feet

1 inch = 150 feet

Legend

- Study Area
- Data Point Location
- Wetland/Stream Flag Location
- Culvert
- Forested Wetland (PFO)
- Emergent Wetland (PEM)
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Culvert Area
- Stream Flow Direction
- Road
- Soil



Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Mapped soil data were obtained from the NRCSonline Soil Data (soildatamart.nrcs.usda.gov)
3. Road: VDOT, 2022.
4. Basemap: Esri, DigitalGloce, GeoEye, Earthstar, Geographics, CNES/Airbus DS, USDA, USGS AeroGRID, IGN, and GIS User Community, 2022.

Wetland and Stream Delineation Survey

FIGURE 6

Page 1 of 4

LaBella Project No: 2224136
Date: October 2022

Creator: KW Reviewer: LD

UPV-1

Lb

Nf

Matchline- Refer to Page 1

Wetland A
PEM
0.01 ac, 244 sf

UPA-1

Stream A
Intermittent
896 lf, 0.07 ac

SA-1

SPA-1

WETA-1

Wetland B
PFO
0.1 ac, 4,572 sf

SA-50

Stream B
Ephemeral
66 lf, 0.005 ac

SPB-1

UPV-2

WETB-1

UPB-1

SA-78/WB-25

Nf

SJ-1

SA-90

SK-5

SK-16

Stream K
Intermittent
659 lf, 0.05 ac

UPF-1

Wetland F
PFO
0.31 ac, 13,663 sf

WF-11

WF-29

WETF-1

Stream L
Intermittent
203 lf, 0.01 ac

SK-30

UPV-8

Wf

SPK-1

SK-60

Stream J
Ephemeral
136 lf, 0.003 ac

Matchline- Refer to Page 4

Notes
1) Wetland/stream delineation flag locations were surveyed using a sub-foot GPS unit.
2) All areas outside of the wetlands/stream delineated within the study area are considered to be upland.
3) Only select wetland/stream flag locations are labeled.
4) All wetland/stream boundaries and jurisdictions are subject to verification by USACE.

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Wetland and Stream Delineation Report

Amber Hill Property Development Richmond Road Fluvanna County, VA

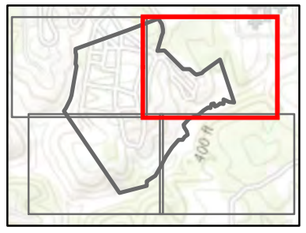
N

0 75 150 Feet

1 inch = 150 feet

Legend

- Study Area
- Data Point Location
- Wetland/Stream Flag Location
- Culvert
- Forested Wetland (PFO)
- Emergent Wetland (PEM)
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Culvert Area
- Stream Flow Direction
- Road
- Soil



Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Mapped soil data were obtained from the NRCSonline Soil Data (soildatamart.nrcs.usda.gov)
3. Road: VDOT, 2022.
4. Basemap: Esri, DigitalGloce, GeoEye, Earthstar, Geographics, CNES/Airbus DS, USDA, USGS AeroGRID, IGN, and GIS User Community, 2022.

Wetland and Stream Delineation Survey

FIGURE 6

LaBella Project No: 2224136
Date: October 2022

Creator: KW Reviewer: LD

Matchline- Refer to Page 1

Tc

Mf

Te

Ne

Me

Nd

MI

UPV-6

UPV-5

SPC-1

Wetland C
PFO
0.11 ac, 5,061 sf

Stream F
Ephemeral
192 lf, 0.01 ac

Stream E
Ephemeral
75 lf, 0.01 ac

Stream F
Intermittent
253 lf, 0.02 ac

Stream C
Perennial
506 lf, 0.07 ac

Stream D
Ephemeral
186 lf, 0.01 ac

WETC-1

SF-29

SF-20

WC-12

SD-1

SE-1

SF-10

SC-103

SF-1/SC-108

SC-20

Matchline- Refer to Page 4

Notes
1) Wetland/stream delineation flag locations were surveyed using a sub-foot GPS unit.
2) All areas outside of the wetlands/stream delineated within the study area are considered to be upland.
3) Only select wetland/stream flag locations are labeled.
4) All wetland/stream boundaries and jurisdictions are subject to verification by USACE.

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S.B Cox, Inc.

Wetland and Stream Delineation Report

Amber Hill Property Development Richmond Road Fluvanna County, VA

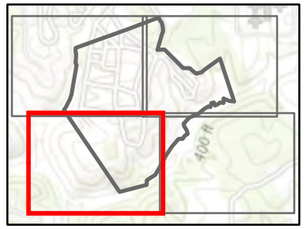
N

0 75 150 Feet

1 inch = 150 feet

Legend

- Study Area
- Data Point Location
- Wetland/Stream Flag Location
- Culvert
- Forested Wetland (PFO)
- Emergent Wetland (PEM)
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Culvert Area
- Stream Flow Direction
- Road
- Soil



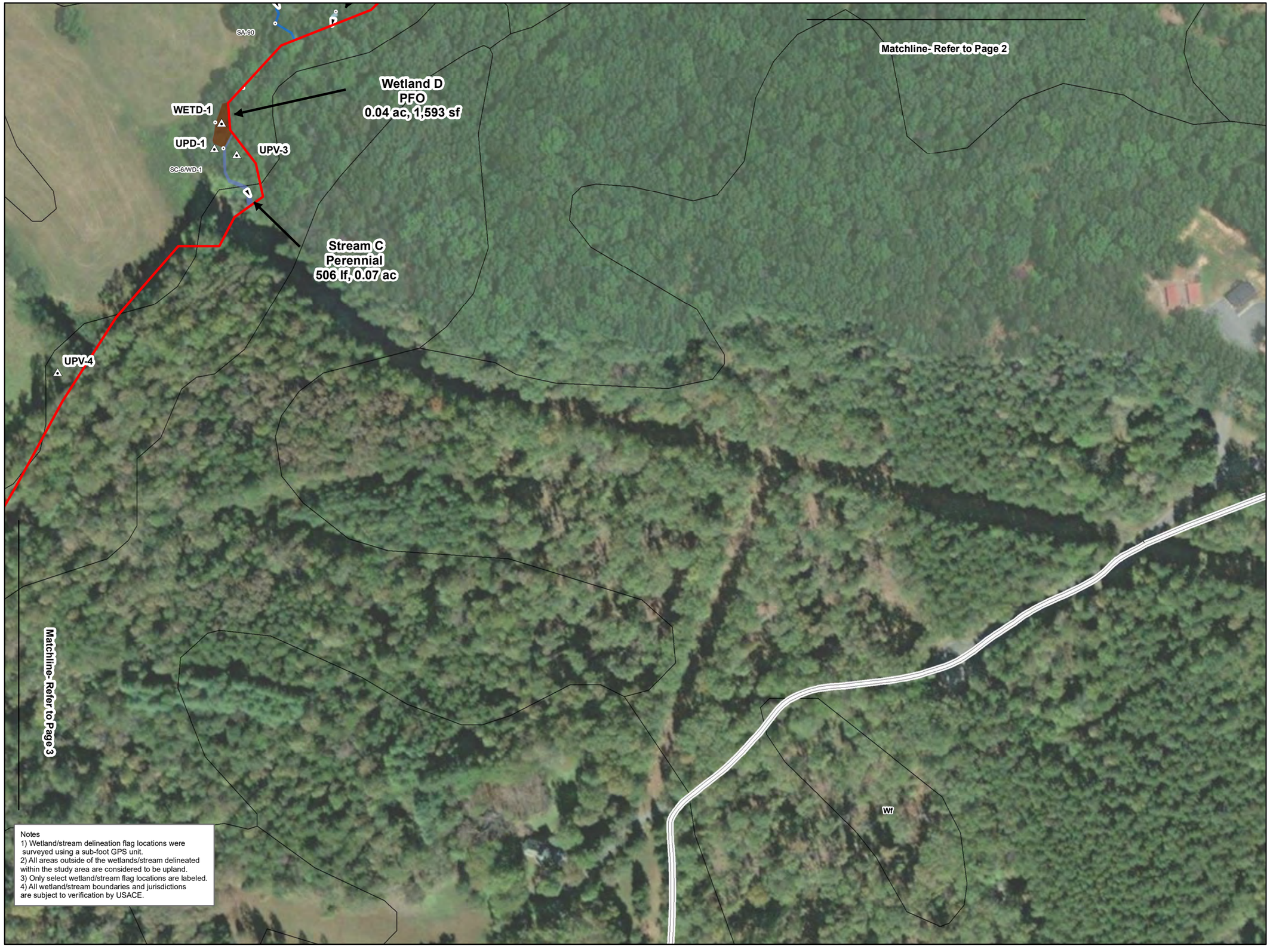
Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Mapped soil data were obtained from the NRCSonline Soil Data (soildatamart.nrcs.usda.gov)
3. Road: VDOT, 2022.
4. Basemap: Esri, DigitalGloce, GeoEye, Earthstar, Geographics, CNES/Airbus DS, USDA, USGS AeroGRID, IGN, and GIS User Community, 2022.

Wetland and Stream Delineation Survey

FIGURE 6

LaBella Project No: 2224136
Date: October 2022

Creator: KW Reviewer: LD



Notes
1) Wetland/stream delineation flag locations were surveyed using a sub-foot GPS unit.
2) All areas outside of the wetlands/stream delineated within the study area are considered to be upland.
3) Only select wetland/stream flag locations are labeled.
4) All wetland/stream boundaries and jurisdictions are subject to verification by USACE.

LaBella
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S.B Cox, Inc.

Wetland and Stream Delineation Report

Amber Hill Property Development Richmond Road Fluvanna County, VA

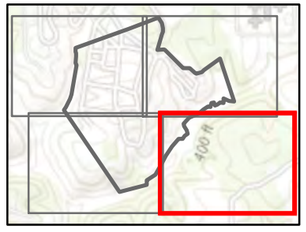
N

0 75 150 Feet

1 inch = 150 feet

Legend

- Study Area
- Data Point Location
- Wetland/Stream Flag Location
- Culvert
- Forested Wetland (PFO)
- Emergent Wetland (PEM)
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Culvert Area
- Stream Flow Direction
- Road
- Soil



Sources:
1. Study Area: Created by LaBella using information provided by the client.
2. Mapped soil data were obtained from the NRCSonline Soil Data (soildatamart.nrcs.usda.gov)
3. Road: VDOT, 2022.
4. Basemap: Esri, DigitalGloce, GeoEye, Earthstar, Geographics, CNES/Airbus DS, USDA, USGS AeroGRID, IGN, and GIS User Community, 2022.

Wetland and Stream Delineation Survey

FIGURE 6

LaBella Project No: 2224136
Date: October 2022

APPENDIX B

Data Forms

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development City/County: Troy, Fluvanna County Sampling Date: 10/04/2022
Applicant/Owner: State: Virginia Sampling Point: UPA-1
Investigator(s): KD, KW, MA Section, Township, Range:
Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont Lat: 37.979326 Long: 78.275499 Datum:
Soil Map Unit Name: Nason silt loam, rolling phase (Nf) NWI classification: None.
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	Yes	No X
Hydric Soil Present?	Yes	No X			
Wetland Hydrology Present?	Yes	No X			

Remarks:
Upland data point for Wetland A

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes	No X	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):	**Wetland Hydrology Present?**	Yes No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: UPA-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus falcata* / Southern red oak	30	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size:)			
1. *Quercus phellos* / Willow oak	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5	= Total Cover	
50% of total cover: 2	20% of total cover: 1		
Herb Stratum (Plot size:)			
1. *Microstegium vimineum* / Japanese stilt grass	60	Yes	FAC
2. *Dichanthelium clandestinum* / Deer-tongue rosette grass	40	Yes	FAC
3. *Solidago altissima* / Canada goldenrod	15	No	FACU
4. *Rosa multiflora* / Multiflora rose, Multiflora rosa	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	125	= Total Cover	
50% of total cover: 62	20% of total cover: 25		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	105	x 3 =	315
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	160 (A)		535 (B)

Prevalence Index = B/A = 3.34

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPA-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6		100					Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/04/2022
Applicant/Owner: | State: Virginia | Sampling Point: UPB-1
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Hill slope | Local relief (concave, convex, none): convex | Slope (%): 5
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.97783017 | Long: -78.27445039 | Datum:
Soil Map Unit Name: Nason silt loam, rolling phase (Nf) | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	
Hydric Soil Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point for Wetland B

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: UPB-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum* / Red maple	50	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum (Plot size:)			
1. *Platanus occidentalis* / American sycamore	15	Yes	FACW
2. *Lindera melissifolia* / Southern spicebush	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25	= Total Cover	
50% of total cover: 12	20% of total cover: 5		
Herb Stratum (Plot size:)			
1. *Microstegium vimineum* / Japanese stilt grass	80	Yes	FAC
2. *Juncus effusus* / Common bog rush, Soft or lamp rush	80	Yes	FACW
3. *Eupatorium perfoliatum* / Common boneset	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	165	= Total Cover	
50% of total cover: 82	20% of total cover: 33		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	100	x 2 =	200
FAC species	130	x 3 =	390
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	240 (A)		600 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPB-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/4	100					Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/05/2022
Applicant/Owner: | State: Virginia | Sampling Point: UPF-1
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Hillslope | Local relief (concave, convex, none): concave | Slope (%): 0-3
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.97897669 | Long: -78.27238178 | Datum:
Soil Map Unit Name: Nason silt loam, rolling phase (Nf) | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?**	Yes ____	No X
Hydric Soil Present?	Yes ____	No X			
Wetland Hydrology Present?	Yes ____	No X			

Remarks: Upland data point for PFO Wetland F

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No X	Depth (inches):	
Water Table Present?	Yes ____ No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ____ No X	Depth (inches):	

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: UPF-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua* / Sweetgum	50	Yes	FAC
2. *Quercus falcata* / Southern red oak	40	Yes	FACU
3. *Juniperus virginiana* / Eastern red-cedar	40	Yes	FACU
4.			
5.			
6.			
7.			
	130	= Total Cover	
50% of total cover: 65	20% of total cover: 26		
Sapling/Shrub Stratum (Plot size:)			
1. *Fagus grandifolia* / American beech	20	Yes	FACU
2. *Quercus falcata* / Southern red oak	15	Yes	FACU
3. *Acer rubrum* / Red maple	15	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
	50	= Total Cover	
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size:)			
1. *Toxicodendron radicans* / Eastern poison ivy	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
50% of total cover: 2	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals:	185 (A)		670 (B)

Prevalence Index = B/A = 3.62

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPF-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 5/3	90	10YR 8/1	5	D	M	Clay	
			2.5YR 4/6	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development City/County: Troy, Fluvanna County Sampling Date: 10/04/2022
Applicant/Owner: State: Virginia Sampling Point: UPV-1
Investigator(s): KD, KW, MA Section, Township, Range:
Landform (hillslope, terrace, etc): Hill slope Local relief (concave, convex, none): convex Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont Lat: 37.98067983 Long: -78.27667229 Datum:
Soil Map Unit Name: Nason silt loam, undulating phase (Ng) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	Yes	No X
Hydric Soil Present?	Yes	No X			
Wetland Hydrology Present?	Yes	No X			

Remarks: Upland voucher point 1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes	No X	Depth (inches):	**Wetland Hydrology Present?**	Yes No X
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: UPV-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus alba* / White oak	70	Yes	FACU
2. *Quercus rubra* / Northern red oak	70	Yes	FACU
3. *Nyssa sylvatica* / Blackgum	70	Yes	FAC
4.			
5.			
6.			
7.			
	210	= Total Cover	
50% of total cover: 105	20% of total cover: 42		
Sapling/Shrub Stratum (Plot size:)			
1. *Nyssa sylvatica* / Blackgum	60	Yes	FAC
2. *Acer rubrum* / Red maple	40	Yes	FAC
3. *Vaccinium angustifolium* / Late lowbush blueberry	30	Yes	FACU
4. *Vaccinium stamineum* / Deerberry	20	No	FACU
5.			
6.			
7.			
8.			
9.			
	150	= Total Cover	
50% of total cover: 75	20% of total cover: 30		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	170	x 3 =	510
FACU species	190	x 4 =	760
UPL species	0	x 5 =	0
Column Totals:	360 (A)		1270 (B)

Prevalence Index = B/A = 3.53

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPV-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/6	85	7.5YR 3/2	10	C	PL	Silty Clay	
	7.5YR 4/6	5						
10-18	10YR 4/6	75	10YR 6/6	25	C	M	Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development City/County: Troy, Fluvanna County Sampling Date: 10/04/2022
Applicant/Owner: State: Virginia Sampling Point: UPV-2
Investigator(s): KD, KW, MA Section, Township, Range:
Landform (hillslope, terrace, etc): Hill slope Local relief (concave, convex, none): concave Slope (%): 5
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont Lat: 37.97816336 Long: -78.27536802 Datum:
Soil Map Unit Name: Nason silt loam, rolling phase (Nf) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes No X
Hydric Soil Present? Yes No X
Wetland Hydrology Present? Yes No X

Is the Sampled Area within a Wetland? Yes No X

Remarks: Upland voucher point 2

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches):
Water Table Present? Yes No X Depth (inches):
Saturation Present? Yes No X Depth (inches):
(includes capillary fringe)

Wetland Hydrology Present? Yes No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: UPV-2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum* / Red maple	80	Yes	FAC
2. *Quercus rubra* / Northern red oak	50	Yes	FACU
3. *Juniperus virginiana* / Eastern red-cedar	10	No	FACU
4.			
5.			
6.			
7.			
	140	= Total Cover	
50% of total cover: 70		20% of total cover:	28

Sapling/Shrub Stratum (Plot size:)			
1. *Lindera melissifolia* / Southern spicebush	40	Yes	OBL
2. *Juniperus virginiana* / Eastern red-cedar	20	Yes	FACU
3. *Ilex opaca* / American holly	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	65	= Total Cover	
50% of total cover: 32		20% of total cover:	13

Herb Stratum (Plot size:)			
1. *Microstegium vimineum* / Japanese stilt grass	90	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
50% of total cover: 45		20% of total cover:	18

Woody Vine Stratum (Plot size:)			
1. *Smilax auriculata* / Ear-leaf greenbrier	60	No	FACU
2. *Rosa multiflora* / Multiflora rose, Multiflora rosa	60	No	FACU
3.			
4.			
5.			
	120	= Total Cover	
50% of total cover: 60		20% of total cover:	24

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	0	x 2 =	0
FAC species	170	x 3 =	510
FACU species	205	x 4 =	820
UPL species	0	x 5 =	0
Column Totals:	415 (A)		1370 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPV-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/4	100					Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/04/2022
Applicant/Owner: S.B Cox, Inc. | State: Virginia | Sampling Point: UPV-3
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Flat | Local relief (concave, convex, none): none | Slope (%): 2
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.9767236 | Long: -78.27450797 | Datum:
Soil Map Unit Name: Nason silt loam, rolling phase (Nf) | NWI classification: None.
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	
Hydric Soil Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X	

Remarks: Upland voucher point 3

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: UPV-3

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua* / Sweetgum	90	Yes	FAC
2. *Juniperus virginiana* / Eastern red-cedar	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	95	= Total Cover	
50% of total cover: 47	20% of total cover: 19		
Sapling/Shrub Stratum (Plot size:)			
1. *Lindera melissifolia* / Southern spicebush	60	Yes	OBL
2. *Liquidambar styraciflua* / Sweetgum	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	90	= Total Cover	
50% of total cover: 45	20% of total cover: 18		
Herb Stratum (Plot size:)			
1. *Microstegium vimineum* / Japanese stilt grass	90	Yes	FAC
2. *Parathelypteris noveboracensis* / New york fern	3	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	93	= Total Cover	
50% of total cover: 46	20% of total cover: 19		
Woody Vine Stratum (Plot size:)			
1. *Smilax auriculata* / Ear-leaf greenbrier	10	Yes	FACU
2.			
3.			
4.			
5.			
	10	= Total Cover	
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	0	x 2 =	0
FAC species	213	x 3 =	639
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	288 (A)		759 (B)

Prevalence Index = B/A = 2.64

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPV-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	7.5YR 4/4	100					Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/04/2022
Applicant/Owner: S.B Cox, Inc, | State: Virginia | Sampling Point: UPV-4
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Hillslope | Local relief (concave, convex, none): concave | Slope (%): 1-3
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.97570783 | Long: -78.2755854 | Datum:
Soil Map Unit Name: Mixed alluvial land, poorly drained (Ml) | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	
Hydric Soil Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X	

Remarks: Upland voucher point 4

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: UPV-4

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua* / Sweetgum	80	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
50% of total cover: 40	20% of total cover: 16		

Sapling/Shrub Stratum (Plot size:)			
1. *Liquidambar styraciflua* / Sweetgum	50	Yes	FAC
2. *Lindera benzoin* / Northern spicebush	40	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	90	= Total Cover	
50% of total cover: 45	20% of total cover: 18		

Herb Stratum (Plot size:)			
1. *Microstegium vimineum* / Japanese stilt grass	90	Yes	FAC
2. *Impatiens glandulifera* / Ornamental jewelweed, Policeman's	50	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	140	= Total Cover	
50% of total cover: 70	20% of total cover: 28		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	260	x 3 =	780
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	310 (A)		880 (B)

Prevalence Index = B/A = 2.84

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPV-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 5/4	70	2.5YR 4/6	30			Silty Clay	
7-8	2.5Y 6/4	85	7.5YR 5/8	15				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development City/County: Troy, Fluvanna County Sampling Date: 10/05/2022
Applicant/Owner: S.B Cox State: Virginia Sampling Point: UPV-5
Investigator(s): KD, KW, MA Section, Township, Range:
Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): concave Slope (%): 7
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont Lat: 37.974569 Long: -78.2777278 Datum:
Soil Map Unit Name: Nason silt loam, eroded rolling phase (Nd) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	Yes	No X
Hydric Soil Present?	Yes	No X			
Wetland Hydrology Present?	Yes	No X			

Remarks:
UPV-5

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: UPV-5

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fagus grandifolia* / American beech	80	Yes	FACU
2. *Acer rubrum* / Red maple	40	Yes	FAC
3. *Liriodendron tulipifera* / Tuliptree	30	Yes	FACU
4.			
5.			
6.			
7.			
	150	= Total Cover	
50% of total cover: 75	20% of total cover: 30		
Sapling/Shrub Stratum (Plot size:)			
1. *Fagus grandifolia* / American beech	80	Yes	FACU
2. *Ilex opaca* / American holly	5	No	FACU
3. *Juniperus virginiana var. virginiana* / Eastern redcedar	5	No	NI
4. *Quercus alba* / White oak	2	No	FACU
5.			
6.			
7.			
8.			
9.			
	92	= Total Cover	
50% of total cover: 46	20% of total cover: 18		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size:)			
1. *Smilax auriculata* / Ear-leaf greenbrier	15	Yes	FACU
2. *Toxicodendron radicans* / Eastern poison ivy	5	Yes	FAC
3.			
4.			
5.			
	20	= Total Cover	
50% of total cover: 10	20% of total cover: 4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	212	x 4 =	848
UPL species	5	x 5 =	25
Column Totals:	262 (A)		1008 (B)

Prevalence Index = B/A = 3.85

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPV-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 5/4	100					Silty Clay	Dry
10-18	7.5YR 5/8	90	7.5YR 3/2	10	C	M	Silty Clay	Dry

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/04/2022
Applicant/Owner: S.B Cox, Inc | State: Virginia | Sampling Point: UPV-6
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Hillslope | Local relief (concave, convex, none): concave | Slope (%): 1-2
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.975927 | Long: -78.278662 | Datum:
Soil Map Unit Name: Nason silt loam, eroded undulating phase | NWI classification: None.
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X			

Remarks: Upland voucher point 6

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):	
Water Table Present?	Yes ____	No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches):	

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: UPV-6

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fagus grandifolia* / American beech	90	Yes	FACU
2. *Nyssa sylvatica* / Blackgum	20	No	FAC
3. *Pinus virginiana* / Virginia pine		No	NI
4. *Quercus alba* / White oak		No	FACU
5.			
6.			
7.			
	110	= Total Cover	
50% of total cover: 55		20% of total cover: 22	

Sapling/Shrub Stratum (Plot size:)			
1. *Juniperus virginiana var. virginiana* / Eastern redcedar	50	Yes	NI
2. *Acer rubrum* / Red maple	30	Yes	FAC
3. *Ilex opaca* / American holly	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	85	= Total Cover	
50% of total cover: 42		20% of total cover: 17	

Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
50% of total cover: 0		20% of total cover: 0	

Woody Vine Stratum (Plot size:)			
1. *Smilax auriculata* / Ear-leaf greenbrier	20	Yes	FACU
2.			
3.			
4.			
5.			
	20	= Total Cover	
50% of total cover: 10		20% of total cover: 4	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	115	x 4 =	460
UPL species	50	x 5 =	250
Column Totals:	215 (A)		860 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPV-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5YR 5/8	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/05/2022
Applicant/Owner: S.B. Cox, Inc. | State: Virginia | Sampling Point: UPV-7
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Toe of Slope, Stream valley | Local relief (concave, convex, none): concave | Slope (%): 0-2
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.98009243 | Long: -78.28015417 | Datum:
Soil Map Unit Name: Worsham silt loam (Wf) | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?**	Yes ____	No X
Hydric Soil Present?	Yes ____	No X			
Wetland Hydrology Present?	Yes ____	No X			

Remarks: Upland voucher point 7

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No X	Depth (inches):	
Water Table Present?	Yes ____ No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ____ No X	Depth (inches):	

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: UPV-7

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fagus grandifolia* / American beech	80	Yes	FACU
2. *Nyssa sylvatica* / Blackgum	50	Yes	FAC
3. *Pinus virginiana* / Virginia pine	30	No	NI
4.			
5.			
6.			
7.			
	160	= Total Cover	
50% of total cover: 80	20% of total cover: 32		
Sapling/Shrub Stratum (Plot size:)			
1. *Fagus grandifolia* / American beech	30	Yes	FACU
2. *Ilex opaca* / American holly	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	50	= Total Cover	
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size:)			
1. *Smilax auriculata* / Ear-leaf greenbrier	20	Yes	FACU
2.			
3.			
4.			
5.			
	20	= Total Cover	
50% of total cover: 10	20% of total cover: 4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	150	x 4 =	600
UPL species	30	x 5 =	150
Column Totals:	230 (A)		900 (B)

Prevalence Index = B/A = 3.91

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPV-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 4/4	100						Top Soil
3-18	7.5YR 6/6	70	7.5YR 5/8	30			Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/05/2022
Applicant/Owner: S.B. Cox, Inc. | State: Virginia | Sampling Point: UPV-8
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Flat | Local relief (concave, convex, none): none | Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.97819458 | Long: -78.27227692 | Datum:
Soil Map Unit Name: Worsham silt loam (Wf) | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	
Hydric Soil Present?	Yes ___	No X	**Is the Sampled Area within a Wetland?** Yes ___ No X
Wetland Hydrology Present?	Yes ___	No X	

Remarks: Upland voucher point 8

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: UPV-8

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum* / Red maple	70	Yes	FAC
2. *Liriodendron tulipifera* / Tuliptree	30	No	FACU
3. *Quercus phellos* / Willow oak	20	No	FAC
4. *Pinus virginiana* / Virginia pine	50	Yes	NI
5. *Juniperus virginiana var. virginiana* / Eastern redcedar	50	Yes	NI
6.			
7.			
	220	= Total Cover	
50% of total cover: 110		20% of total cover:	44

Sapling/Shrub Stratum (Plot size:)			
1. *Fagus grandifolia* / American beech	40	Yes	FACU
2. *Acer rubrum* / Red maple	10	No	FAC
3. *Liquidambar styraciflua* / Sweetgum	20	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
	70	= Total Cover	
50% of total cover: 35		20% of total cover:	14

Herb Stratum (Plot size:)			
1. *Polystichum acrostichoides* / Christmas fern	30	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30	= Total Cover	
50% of total cover: 15		20% of total cover:	6

Woody Vine Stratum (Plot size:)			
1. *Toxicodendron radicans* / Eastern poison ivy	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
50% of total cover: 2		20% of total cover:	1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	125	x 3 =	375
FACU species	100	x 4 =	400
UPL species	100	x 5 =	500
Column Totals:	325 (A)		1275 (B)

Prevalence Index = B/A = 3.92

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPV-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 5/3	90	10YR 8/1	5			Clay	
	2.5YR 4/6	5						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/04/2022
Applicant/Owner: S.B. Cox, Inc | State: Virginia | Sampling Point: WETA-1
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Stream valley | Local relief (concave, convex, none): concave | Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.97875859 | Long: -78.2753855 | Datum:
Soil Map Unit Name: Nason silt loam, rolling phase (Nf) | NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	
Hydric Soil Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Data point for PEM Wetland A

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0.5
Water Table Present?	Yes X	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: WETA-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
50% of total cover: 0		20% of total cover: 0	

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0	= Total Cover	
50% of total cover: 0		20% of total cover: 0	

Herb Stratum (Plot size: 10x10)			
1. *Microstegium vimineum* / Japanese stilt grass	100	Yes	FAC
2. *Impatiens glandulifera* / Ornamental jewelweed, Policeman's	70	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	170	= Total Cover	
50% of total cover: 85		20% of total cover: 34	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0		20% of total cover: 0	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	170 (A)		440 (B)

Prevalence Index = B/A = 2.59

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WETA-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	90	2.5YR 4/6	10	D	M	Sandy Clay	
6-12	2.5Y 3/1	90	7.5YR 5/6	90	D	PL	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/04/2022
Applicant/Owner: S.B. Cox, Inc. | State: Virginia | Sampling Point: WETB-1
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Hillslope near stream | Local relief (concave, convex, none): concave | Slope (%): 1-2
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.97790723 | Long: -78.27462919 | Datum:
Soil Map Unit Name: Nason silt loam, rolling phase (Nf) | NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	
Hydric Soil Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Data point for PFO Wetland B

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0-2
Water Table Present?	Yes X	No ____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 3

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: WETB-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum* / Red maple	70	Yes	FAC
2. *Juniperus virginiana var. virginiana* / Eastern redcedar	40	Yes	NI
3.			
4.			
5.			
6.			
7.			
	110	= Total Cover	
50% of total cover: 55	20% of total cover: 22		

Sapling/Shrub Stratum (Plot size:)			
1. *Lindera benzoin* / Northern spicebush	80	Yes	FAC
2. *Liquidambar styraciflua* / Sweetgum	40	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	120	= Total Cover	
50% of total cover: 60	20% of total cover: 24		

Herb Stratum (Plot size:)			
1. *Microstegium vimineum* / Japanese stilt grass	90	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
50% of total cover: 45	20% of total cover: 18		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	280	x 3 =	840
FACU species	0	x 4 =	0
UPL species	40	x 5 =	200
Column Totals:	320 (A)		1040 (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WETB-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	95	2.5YR 4/6	5			Sandy Clay	
4-12	2.5Y 3/1	95	2.5YR 4/6		D	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/04/2022
Applicant/Owner: S.B. Cox, Inc. | State: Virginia | Sampling Point: WETC-1
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Toe of slope | Local relief (concave, convex, none): concave | Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.97510761 | Long: -78.2761275 | Datum:
Soil Map Unit Name: Nason silt loam, rolling phase (Nf) and Mixed alluvial land, poorly drained (Ml) | NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	
Hydric Soil Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Data point for PFO Wetland C

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 3
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: WETC-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum* / Red maple	70	Yes	FAC
2. *Nyssa sylvatica* / Blackgum	60	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	130	= Total Cover	
50% of total cover: 65	20% of total cover: 26		
Sapling/Shrub Stratum (Plot size:)			
1. *Lindera benzoin* / Northern spicebush	90	Yes	FAC
2. *Liquidambar styraciflua* / Sweetgum	70	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	160	= Total Cover	
50% of total cover: 80	20% of total cover: 32		
Herb Stratum (Plot size:)			
1. *Parathelypteris noveboracensis* / New york fern	80	Yes	FAC
2. *Microstegium vimineum* / Japanese stilt grass	50	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	130	= Total Cover	
50% of total cover: 65	20% of total cover: 26		
Woody Vine Stratum (Plot size:)			
1. *Toxicodendron radicans* / Eastern poison ivy	20	Yes	FAC
2.			
3.			
4.			
5.			
	20	= Total Cover	
50% of total cover: 10	20% of total cover: 4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	440	x 3 =	1320
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	440 (A)		1320 (B)

Prevalence Index = B/A = 3.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WETC-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	90	2.5YR 4/6	10	C	PL	Silty Clay	Saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/04/2022
Applicant/Owner: S.B Cox, Inc. | State: Virginia | Sampling Point: WETD-1
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Depression | Local relief (concave, convex, none): concave | Slope (%): 3
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.97687171 | Long: -78.27459282 | Datum:
Soil Map Unit Name: Nason silt loam, rolling phase (Nf) | NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	
Hydric Soil Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Data point for PFO Wetland D

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: WETD-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum* / Red maple	50	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
50% of total cover: 25	20% of total cover:	10	

Sapling/Shrub Stratum (Plot size:)			
1. *Lindera benzoin* / Northern spicebush	50	Yes	FAC
2. *Juniperus virginiana* / Eastern red-cedar	15	No	FACU
3. *Cornus florida* / Flowering dogwood	5	No	FACU
4. *Liquidambar styraciflua* / Sweetgum	5	No	FAC
5. *Liriodendron tulipifera* / Tuliptree	2	No	FACU
6.			
7.			
8.			
9.			
	77	= Total Cover	
50% of total cover: 38	20% of total cover:	15	

Herb Stratum (Plot size:)			
1. *Microstegium vimineum* / Japanese stilt grass	90	Yes	FAC
2. *Parathelypteris noveboracensis* / New york fern	50	Yes	FAC
3. *Dichanthelium clandestinum* / Deer-tongue rosette grass	20	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	160	= Total Cover	
50% of total cover: 80	20% of total cover:	32	

Woody Vine Stratum (Plot size:)			
1. *Toxicodendron radicans* / Eastern poison ivy	30	Yes	FAC
2.			
3.			
4.			
5.			
	30	= Total Cover	
50% of total cover: 15	20% of total cover:	6	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	295	x 3 =	885
FACU species	22	x 4 =	88
UPL species	0	x 5 =	0
Column Totals:	317 (A)		973 (B)

Prevalence Index = B/A = 3.07

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WETD-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5YR 3/1	90	10YR 5/2	10	C	M	Silty Clay	
5-18	10YR 5/1	90	5YR 4/6	10	C	M	Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/05/2022
Applicant/Owner: S.B. Cox, Inc. | State: Virginia | Sampling Point: WETE-1
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Toe of slope, stream valley | Local relief (concave, convex, none): concave | Slope (%): 0-1
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.97770135 | Long: -78.28068052 | Datum:
Soil Map Unit Name: Nason silt loam, rolling phase (Nf) | NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	
Hydric Soil Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Data point for PFO Wetland E

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0-6
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: WETE-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum* / Red maple	60	Yes	FAC
2. *Juniperus virginiana var. virginiana* / Eastern redcedar	10	No	NI
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum (Plot size:)			
1. *Cornus florida* / Flowering dogwood	50	Yes	FACU
2. *Ilex opaca* / American holly	30	Yes	FACU
3. *Quercus alba* / White oak	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	85	= Total Cover	
50% of total cover: 42	20% of total cover: 17		
Herb Stratum (Plot size:)			
1. *Microstegium vimineum* / Japanese stilt grass	86	Yes	FAC
2. *Woodwardia areolata* / Netted chain fern	70	Yes	FACW
3. *Parathelypteris noveboracensis* / New york fern	60	Yes	FAC
4. *Dichanthelium clandestinum* / Deer-tongue rosette grass	50	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	266	= Total Cover	
50% of total cover: 133	20% of total cover: 53		
Woody Vine Stratum (Plot size:)			
1. *Toxicodendron radicans* / Eastern poison ivy	30	Yes	FAC
2.			
3.			
4.			
5.			
	30	= Total Cover	
50% of total cover: 15	20% of total cover: 6		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	286	x 3 =	858
FACU species	85	x 4 =	340
UPL species	10	x 5 =	50
Column Totals:	451 (A)		1388 (B)

Prevalence Index = B/A = 3.08

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WETE-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 3/1	95	7.5YR 5/2	5	C	M	Silty Clay	
3-18	10YR 6/6	70	10YR 7/1	25	C	M	Silty Clay	
	10YR 2/1	5						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Amber Hill Project Development | City/County: Troy, Fluvanna County | Sampling Date: 10/05/2022
Applicant/Owner: S.B. Cox, Inc. | State: Virginia | Sampling Point: WETF-1
Investigator(s): KD, KW, MA | Section, Township, Range:
Landform (hillslope, terrace, etc): Depression | Local relief (concave, convex, none): none | Slope (%): 0
Subregion (LRR or MLRA): MLRA 136- Southern Piedmont | Lat: 37.97868667 | Long: -78.27242601 | Datum:
Soil Map Unit Name: Nason silt loam, rolling phase (Nf) and Worsham silt loam (Wf) | NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	
Hydric Soil Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Data point for PFO Wetland F

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0-3
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants. Sampling Point: WETF-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus falcata* / Southern red oak	50	Yes	FACU
2. *Acer rubrum* / Red maple	50	Yes	FAC
3. *Platanus occidentalis* / American sycamore	30	Yes	FACW
4.			
5.			
6.			
7.			
	130	= Total Cover	
50% of total cover: 65	20% of total cover: 26		
Sapling/Shrub Stratum (Plot size:)			
1. *Liquidambar styraciflua* / Sweetgum	80	Yes	FAC
2. *Cornus florida* / Flowering dogwood	10	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	90	= Total Cover	
50% of total cover: 45	20% of total cover: 18		
Herb Stratum (Plot size:)			
1. *Microstegium vimineum* / Japanese stilt grass	90	Yes	FAC
2. *Symphyotrichum lateriflorum var. angustifolium* / Calico aster	5	No	NI
3. *Juniperus virginiana* / Eastern red-cedar	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size:)			
1. *Toxicodendron radicans* / Eastern poison ivy	30	Yes	FAC
2.			
3.			
4.			
5.			
	30	= Total Cover	
50% of total cover: 15	20% of total cover: 6		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	250	x 3 =	750
FACU species	65	x 4 =	260
UPL species	5	x 5 =	25
Column Totals:	350 (A)		1095 (B)

Prevalence Index = B/A = 3.13

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata

Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WETF-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	7.5YR 4/1	90	7.5YR 5/8	10	D	M	Silty Clay	
10-18	10YR 7/1	90	7.5YR 5/8	10	D	M	Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147,148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present. unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 10/04/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.97876685,
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.27543692
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 19.5	**Stream Determination (circle one)** Ephemeral **Intermittent** Perennial	**Other** *e.g. Quad Name*: Boyd Tavern, VA

A. Geomorphology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	**1**	2	3
2. Sinuosity of channel along thalweg	0	1	**2**	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	**1**	2	3
4. Particle size of stream substrate	**0**	1	2	3
5. Active/relict floodplain	**0**	1	2	3
6. Depositional bars or benches	**0**	1	2	3
7. Recent alluvial deposits	**0**	1	2	3
8. Headcuts	0	1	**2**	3
9. Grade control	0	**0.5**	1	1.5
10. Natural valley	0	0.5	**1**	1.5
11. Second or greater order channel	**No = 0**		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)				
12. Presence of Baseflow	0	**1**	2	3
13. Iron oxidizing bacteria	**0**	1	2	3
14. Leaf litter	**1.5**	1	0.5	0
15. Sediment on plants or debris	0	**0.5**	1	1.5
16. Organic debris lines or piles	0	**0.5**	1	1.5
17. Soil-based evidence of high water table?	No = 0		**Yes = 3**	

C. Biology (Subtotal = 5.5)				
18. Fibrous roots in streambed	3	2	**1**	0
19. Rooted upland plants in streambed	**3**	2	1	0
20. Macrobenthos (note diversity and abundance)	**0**	1	2	3
21. Aquatic Mollusks	**0**	1	2	3
22. Fish	**0**	0.5	1	1.5
23. Crayfish	0	0.5	**1**	1.5
24. Amphibians	0	**0.5**	1	1.5
25. Algae	**0**	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 **Other = 0**			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream A

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 10/04/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.97819545,
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.27489915
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 9.75	**Stream Determination (circle one)** **Ephemeral** Intermittent Perennial	**Other** *e.g. Quad Name*: Boyd Tavern, VA

A. Geomorphology (Subtotal = 1)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	(0)	1	2	3
2. Sinuosity of channel along thalweg	(0)	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	(No = 0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 4.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		(Yes = 3)	

C. Biology (Subtotal = 4.25)				
18. Fibrous roots in streambed	3	2	1	(0)
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	0	(0.5)	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	(FACW = 0.75; OBL = 1.5 Other = 0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream B

Sketch:

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 10/04/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.97638155
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.27447186
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 33	**Stream Determination (circle one)** Ephemeral Intermittent **Perennial**	**Other** *e.g. Quad Name*: Boyd Tavern, VA

A. Geomorphology (Subtotal = 16)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	**2**	3
2. Sinuosity of channel along thalweg	0	1	2	**3**
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	**2**	3
4. Particle size of stream substrate	0	1	2	**3**
5. Active/relict floodplain	**0**	1	2	3
6. Depositional bars or benches	0	1	**2**	3
7. Recent alluvial deposits	**0**	1	2	3
8. Headcuts	**0**	1	2	3
9. Grade control	**0**	0.5	1	1.5
10. Natural valley	0	0.5	**1**	1.5
11. Second or greater order channel	No = 0			**Yes = 3**

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8.5)				
12. Presence of Baseflow	0	1	2	**3**
13. Iron oxidizing bacteria	**0**	1	2	3
14. Leaf litter	**1.5**	1	0.5	0
15. Sediment on plants or debris	0	0.5	**1**	1.5
16. Organic debris lines or piles	**0**	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0			**Yes = 3**

C. Biology (Subtotal = 8.5)				
18. Fibrous roots in streambed	3	**2**	1	0
19. Rooted upland plants in streambed	**3**	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	**2**	3
21. Aquatic Mollusks	**0**	1	2	3
22. Fish	**0**	0.5	1	1.5
23. Crayfish	0	0.5	**1**	1.5
24. Amphibians	0	**0.5**	1	1.5
25. Algae	**0**	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5		**Other = 0**	

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream C -A

Sketch:

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 10/04/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.97638155
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.27447186
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 33	**Stream Determination (circle one)** Ephemeral Intermitten **Perennial**	**Other** *e.g. Quad Name*: Boyd Tavern, VA

A. Geomorphology (Subtotal = 16)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	**2**	3
2. Sinuosity of channel along thalweg	0	1	2	**3**
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	**2**	3
4. Particle size of stream substrate	0	1	2	**3**
5. Active/relict floodplain	**0**	1	2	3
6. Depositional bars or benches	0	1	**2**	3
7. Recent alluvial deposits	**0**	1	2	3
8. Headcuts	**0**	1	2	3
9. Grade control	**0**	0.5	1	1.5
10. Natural valley	0	0.5	**1**	1.5
11. Second or greater order channel	No = 0			**Yes = 3**

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8.5)				
12. Presence of Baseflow	0	1	2	**3**
13. Iron oxidizing bacteria	**0**	1	2	3
14. Leaf litter	**1.5**	1	0.5	0
15. Sediment on plants or debris	0	0.5	**1**	1.5
16. Organic debris lines or piles	**0**	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0			**Yes = 3**

C. Biology (Subtotal = 8.5)				
18. Fibrous roots in streambed	3	**2**	1	0
19. Rooted upland plants in streambed	**3**	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	**2**	3
21. Aquatic Mollusks	**0**	1	2	3
22. Fish	**0**	0.5	1	1.5
23. Crayfish	0	0.5	**1**	1.5
24. Amphibians	0	**0.5**	1	1.5
25. Algae	**0**	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5		**Other = 0**	

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream C -A

Sketch:

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 10/04/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.97638155
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.27447186
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 42.5	**Stream Determination (circle one)** Ephemeral Intermitten **Perennial**	**Other** *e.g. Quad Name*: Boyd Tavern, VA

A. Geomorphology (Subtotal = 21.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	**3**
2. Sinuosity of channel along thalweg	0	1	2	**3**
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	**3**
4. Particle size of stream substrate	0	1	2	**3**
5. Active/relict floodplain	0	**1**	2	3
6. Depositional bars or benches	0	1	**2**	3
7. Recent alluvial deposits	0	**1**	2	3
8. Headcuts	0	**1**	2	3
9. Grade control	**0**	0.5	1	1.5
10. Natural valley	0	0.5	1	**1.5**
11. Second or greater order channel	No = 0		**Yes = 3**	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7.5)				
12. Presence of Baseflow	0	1	2	**3**
13. Iron oxidizing bacteria	**0**	1	2	3
14. Leaf litter	1.5	**1**	0.5	0
15. Sediment on plants or debris	0	**0.5**	1	1.5
16. Organic debris lines or piles	**0**	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		**Yes = 3**	

C. Biology (Subtotal = 13.5)				
18. Fibrous roots in streambed	3	**2**	1	0
19. Rooted upland plants in streambed	**3**	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	**3**
21. Aquatic Mollusks	**0**	1	2	3
22. Fish	0	0.5	1	**1.5**
23. Crayfish	0	0.5	1	**1.5**
24. Amphibians	0	0.5	1	**1.5**
25. Algae	0	0.5	**1**	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5		**Other = 0**	

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream C -B

Sketch:

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 10/06/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.97460815
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.2764379
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 16.75	**Stream Determination (circle one)** **Ephemeral** Intermittent Perennial	**Other** *e.g. Quad Name*: Boyd Tavern, VA

A. Geomorphology (Subtotal = 5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	(0)	0.5	1	1.5
11. Second or greater order channel		(No = 0)	Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	0.5	(1)	1.5
16. Organic debris lines or piles	0	0.5	1	(1.5)
17. Soil-based evidence of high water table?		No = 0	(Yes = 3)	

C. Biology (Subtotal = 5.25)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	0	0.5	(1)	1.5
24. Amphibians	0	(0.5)	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed		(FACW = 0.75; OBL = 1.5 Other = 0)		

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream D

Sketch:

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 10/06/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.97460815
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.2764379
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 18	**Stream Determination (circle one)** **Ephemeral** Intermittent Perennial	**Other** *e.g. Quad Name*: Boyd Tavern, VA

A. Geomorphology (Subtotal = 7)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	(0)	1	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	(0)	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	0.5	(1)	1.5
16. Organic debris lines or piles	0	0.5	1	(1.5)
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 4.5)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	0	0.5	(1)	1.5
24. Amphibians	0	(0.5)	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream E

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 10/06/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.974501
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.276921
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 19.0	**Stream Determination (circle one)** Ephemeral **Intermittent** Perennial	**Other** Boyd Tavern Quad *e.g. Quad Name*:

A. Geomorphology (Subtotal = 10.0)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	**3**
2. Sinuosity of channel along thalweg	0	**1**	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	**1**	2	3
4. Particle size of stream substrate	0	1	**2**	3
5. Active/relict floodplain	**0**	1	2	3
6. Depositional bars or benches	**0**	1	2	3
7. Recent alluvial deposits	**0**	1	2	3
8. Headcuts	0	1	**2**	3
9. Grade control	**0**	0.5	1	1.5
10. Natural valley	0	0.5	**1**	1.5
11. Second or greater order channel	**No = 0**		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7.0)				
12. Presence of Baseflow	0	**1**	2	3
13. Iron oxidizing bacteria	0	**1**	2	3
14. Leaf litter	1.5	1	**0.5**	0
15. Sediment on plants or debris	0	**0.5**	1	1.5
16. Organic debris lines or piles	0	0.5	**1**	1.5
17. Soil-based evidence of high water table?	No = 0		**Yes = 3**	

C. Biology (Subtotal = 2.0)				
18. Fibrous roots in streambed	3	2	**1**	0
19. Rooted upland plants in streambed	3	2	**1**	0
20. Macrobenthos (note diversity and abundance)	**0**	1	2	3
21. Aquatic Mollusks	**0**	1	2	3
22. Fish	**0**	0.5	1	1.5
23. Crayfish	**0**	0.5	1	1.5
24. Amphibians	**0**	0.5	1	1.5
25. Algae	**0**	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 **Other = 0**			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream F, intermittent reach

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 10/06/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.975242
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.277207
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 12.5	**Stream Determination (circle one)** **Ephemeral** **Intermittent** **Perennial**	**Other** Boyd Tavern Quad *e.g. Quad Name*:

A. Geomorphology (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	(0)	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	(No = 0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	0	(1)	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		(Yes = 3)	

C. Biology (Subtotal = 2.0)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	2	(1)	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 (Other = 0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream F, ephemeral reach

Sketch:

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 10/06/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.97850067
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.28053488
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 40	**Stream Determination (circle one)** Ephemeral Intermitten **Perennial**	**Other** *e.g. Quad Name*: Boyd Tavern, VA

A. Geomorphology (Subtotal = 21.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	**3**
2. Sinuosity of channel along thalweg	0	1	2	**3**
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	**3**
4. Particle size of stream substrate	0	1	2	**3**
5. Active/relict floodplain	**0**	1	2	3
6. Depositional bars or benches	0	1	2	**3**
7. Recent alluvial deposits	0	1	**2**	3
8. Headcuts	0	1	**2**	3
9. Grade control	0	0.5	1	**1.5**
10. Natural valley	0	0.5	**1**	1.5
11. Second or greater order channel	**No = 0**		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7.5)				
12. Presence of Baseflow	0	1	**2**	3
13. Iron oxidizing bacteria	**0**	1	2	3
14. Leaf litter	1.5	1	**0.5**	0
15. Sediment on plants or debris	0	0.5	**1**	1.5
16. Organic debris lines or piles	0	0.5	**1**	1.5
17. Soil-based evidence of high water table?	No = 0		**Yes = 3**	

C. Biology (Subtotal = 11)				
18. Fibrous roots in streambed	3	2	**1**	0
19. Rooted upland plants in streambed	**3**	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	**3**
21. Aquatic Mollusks	**0**	1	2	3
22. Fish	0	0.5	**1**	1.5
23. Crayfish	0	**0.5**	1	1.5
24. Amphibians	0	0.5	1	**1.5**
25. Algae	0	0.5	**1**	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 **Other = 0**			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream G

Sketch:

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 10/06/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.9790933
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.27741066
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 24	**Stream Determination (circle one)** Ephemeral **[Intermittent]** Perennial	**Other** *e.g. Quad Name*: Boyd Tavern, VA

A. Geomorphology (Subtotal = 12)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	[3]
2. Sinuosity of channel along thalweg	0	1	[2]	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	[2]	3
4. Particle size of stream substrate	0	[1]	2	3
5. Active/relict floodplain	0	[1]	2	3
6. Depositional bars or benches	[0]	1	2	3
7. Recent alluvial deposits	[0]	1	2	3
8. Headcuts	[0]	1	2	3
9. Grade control	0	0.5	[1]	1.5
10. Natural valley	0	0.5	[1]	1.5
11. Second or greater order channel	[No = 0]		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6)				
12. Presence of Baseflow	0	[1]	2	3
13. Iron oxidizing bacteria	[0]	1	2	3
14. Leaf litter	1.5	1	[0.5]	0
15. Sediment on plants or debris	0	[0.5]	1	1.5
16. Organic debris lines or piles	0	0.5	[1]	1.5
17. Soil-based evidence of high water table?	No = 0		[Yes = 3]	

C. Biology (Subtotal = 6)				
18. Fibrous roots in streambed	[3]	2	1	0
19. Rooted upland plants in streambed	[3]	2	1	0
20. Macrobenthos (note diversity and abundance)	[0]	1	2	3
21. Aquatic Mollusks	[0]	1	2	3
22. Fish	[0]	0.5	1	1.5
23. Crayfish	[0]	0.5	1	1.5
24. Amphibians	[0]	0.5	1	1.5
25. Algae	[0]	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5		[Other = 0]	

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream H

Sketch:

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 10/05/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.97732821
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.2739070
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 17	**Stream Determination (circle one)** **Ephemeral** Intermittent Perennial	**Other** *e.g. Quad Name*: Boyd Tavern, VA

A. Geomorphology (Subtotal = 5.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	**1**	2	3
2. Sinuosity of channel along thalweg	0	**1**	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	**0**	1	2	3
4. Particle size of stream substrate	0	**1**	2	3
5. Active/relict floodplain	0	1	**2**	3
6. Depositional bars or benches	**0**	1	2	3
7. Recent alluvial deposits	**0**	1	2	3
8. Headcuts	**0**	1	2	3
9. Grade control	**0**	0.5	1	1.5
10. Natural valley	0	**0.5**	1	1.5
11. Second or greater order channel	**No = 0**		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 5)				
12. Presence of Baseflow	0	**1**	2	3
13. Iron oxidizing bacteria	**0**	1	2	3
14. Leaf litter	1.5	1	0.5	**0**
15. Sediment on plants or debris	0	**0.5**	1	1.5
16. Organic debris lines or piles	0	**0.5**	1	1.5
17. Soil-based evidence of high water table?	No = 0		**Yes = 3**	

C. Biology (Subtotal = 6.5)				
18. Fibrous roots in streambed	**3**	2	1	0
19. Rooted upland plants in streambed	**3**	2	1	0
20. Macrobenthos (note diversity and abundance)	**0**	1	2	3
21. Aquatic Mollusks	**0**	1	2	3
22. Fish	**0**	0.5	1	1.5
23. Crayfish	**0**	0.5	1	1.5
24. Amphibians	**0**	0.5	1	1.5
25. Algae	0	**0.5**	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5		**Other = 0**	

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream J

Sketch:

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 10/05/2022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.978254
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.272328
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 29	**Stream Determination (circle one)** Ephemeral **Intermittent** Perennial	**Other** *e.g. Quad Name*: Boyd Tavern, VA

A. Geomorphology (Subtotal = 16.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	**3**
2. Sinuosity of channel along thalweg	0	1	2	**3**
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	**1**	2	3
4. Particle size of stream substrate	0	1	**2**	3
5. Active/relict floodplain	0	**1**	2	3
6. Depositional bars or benches	**0**	1	2	3
7. Recent alluvial deposits	0	**1**	2	3
8. Headcuts	**0**	1	2	3
9. Grade control	0	0.5	1	**1.5**
10. Natural valley	0	0.5	**1**	1.5
11. Second or greater order channel	No = 0		**Yes = 3**	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6)				
12. Presence of Baseflow	0	**1**	2	3
13. Iron oxidizing bacteria	**0**	1	2	3
14. Leaf litter	1.5	1	**0.5**	0
15. Sediment on plants or debris	0	**0.5**	1	1.5
16. Organic debris lines or piles	0	0.5	**1**	1.5
17. Soil-based evidence of high water table?	No = 0		**Yes = 3**	

C. Biology (Subtotal = 6.5)				
18. Fibrous roots in streambed	3	**2**	1	0
19. Rooted upland plants in streambed	**3**	2	1	0
20. Macrobenthos (note diversity and abundance)	**0**	1	2	3
21. Aquatic Mollusks	**0**	1	2	3
22. Fish	**0**	0.5	1	1.5
23. Crayfish	0	**0.5**	1	1.5
24. Amphibians	0	**0.5**	1	1.5
25. Algae	0	**0.5**	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5		**Other = 0**	

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream K

Sketch:

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 10/062022	**Project/Site:** Amber Hill Property Development	**Latitude:** 37.97850503
Evaluator: KD, KW, MA	**County:** Fluvanna	**Longitude:** -78.27230134
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 20.5	**Stream Determination (circle one)** Ephemeral **[Intermittent]** Perennial	**Other** *e.g. Quad Name*: Boyd Tavern, VA

A. Geomorphology (Subtotal = 8)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	[2]	3
2. Sinuosity of channel along thalweg	0	1	2	[3]
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	[0]	1	2	3
4. Particle size of stream substrate	0	[1]	2	3
5. Active/relict floodplain	0	[1]	2	3
6. Depositional bars or benches	[0]	1	2	3
7. Recent alluvial deposits	[0]	1	2	3
8. Headcuts	[0]	1	2	3
9. Grade control	[0]	0.5	1	1.5
10. Natural valley	0	0.5	[1]	1.5
11. Second or greater order channel	No = [0]		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 5)				
12. Presence of Baseflow	[0]	1	2	3
13. Iron oxidizing bacteria	[0]	1	2	3
14. Leaf litter	1.5	1	[0.5]	0
15. Sediment on plants or debris	0	[0.5]	1	1.5
16. Organic debris lines or piles	0	0.5	[1]	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = [3]	

C. Biology (Subtotal = 7.5)				
18. Fibrous roots in streambed	[3]	2	1	0
19. Rooted upland plants in streambed	[3]	2	1	0
20. Macrobenthos (note diversity and abundance)	[0]	1	2	3
21. Aquatic Mollusks	[0]	1	2	3
22. Fish	[0]	0.5	1	1.5
23. Crayfish	0	[0.5]	1	1.5
24. Amphibians	0	[0.5]	1	1.5
25. Algae	0	[0.5]	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5		Other = [0]	

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream L

Sketch:

APPENDIX C

Photo Log

Wetland and Stream Delineation Photos – Amber Hill Property Development

Troy, Fluvanna County on October 04-07, 2022

View of PEM Wetland A facing south

View of PFO Wetland B facing west

View of PFO Wetland C facing south

View of PFO Wetland F facing north

View of intermittent Stream A facing north

View of intermittent Stream A facing south

View of ephemeral Stream B facing east

View of perennial Stream C facing west

View of perennial Stream C facing west

View of ephemeral Stream D facing east

View of ephemeral Stream E facing east

View of intermittent Stream F facing south

View of ephemeral Stream F facing north

View of perennial Stream G facing north

View of perennial Stream G facing south

View of intermittent Stream H

View of ephemeral Stream J facing south

View of intermittent Stream K facing north

View of intermittent Stream L facing north

View of UPV-1 facing west

View of UPV-2 facing south

View of UPV-3 facing north

View of UPV-5 facing north

View of UPV-6 facing west

View of UPV-7 facing north

View of UPV-8 facing north

View of eastern portion of Study Area facing south

View of western portion of Study Area facing north

APPENDIX D

Hydric Soil Map

Hydric Rating by Map Unit—Fluvanna County, Virginia
(Study_Area)

Map Scale: 1:6,240 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Hydric Rating by Map Unit—Fluvanna County, Virginia
(Study_Area)

MAP LEGEND

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

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

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 1:15,800.

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: Fluvanna County, Virginia
Survey Area Data: Version 17, Aug 26, 2022

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

Date(s) aerial images were photographed: Oct 14, 2019—Sep 23, 2020

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.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Mf	Manteo silt loam, rolling phase	0	3.1	3.4%
Ml	Mixed alluvial land, poorly drained	85	1.5	1.7%
Nd	Nason silt loam, eroded rolling phase	0	6.9	7.7%
Ne	Nason silt loam, eroded undulating phase	3	4.5	5.1%
Nf	Nason silt loam, rolling phase	3	35.9	40.3%
Ng	Nason silt loam, undulating phase	3	29.9	33.6%
Tc	Tatum silt loam, undulating phase	3	3.8	4.3%
Wf	Worsham silt loam	85	3.5	3.9%
Totals for Area of Interest			**89.1**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

APPENDIX F

Access Management Design Standards for Entrances and Intersections

PREFACE

The access management regulations and standards do not apply in cities, towns of more than 3,500 and in counties (Henrico and Arlington) that maintain their secondary roads (they do apply on primary routes in these two counties). Such localities, though, may choose to apply them to roads they maintain.

The 2007 General Assembly unanimously approved legislation *(Chapter 863)* proposed by the Governor to direct VDOT's commissioner to develop, solicit public input on, and publish access management regulations and standards by December 31, 2007 to become effective July 1, 2008. The legislative goals for access management are to:

- Reduce traffic congestion,
- Enhance public safety by decreasing traffic crash rates,
- Support economic development by promoting the efficient movement of people and goods,
- Reduce the need for new highways and road widening by maximizing the performance of the existing state highways, and
- Preserve the public investment in new highways.

To assure that a wide variety of viewpoints were considered, multiple techniques were used to gain public input on the draft regulations and standards. The commissioner approved and published the regulations and standards in December 2007.

The access management regulations and standards were implemented in phases. The first phase applied to VDOT highways classified as principal arterials taking effect July 1, 2008 and second phase applies to minor arterials, collectors and local streets which became effective October 14, 2009.

For regulatory efficiency and streamlining on December 5, 2013 the two sets of access management regulations were consolidated into one: the *Access Management Regulations 24VAC30-73*, applying to all state maintained* highways.

This Appendix, therefore, contains the standards for the design of intersections, turning lanes, and entrances and for the spacing of entrances, intersections, traffic signals, median crossovers that apply to all state highways: principal arterials, minor arterials, collectors, and local streets. If a design standard cannot be met a design exception or waiver is required. If a spacing standard cannot be met, a spacing exception is required. For more information, see "Exceptions to the Spacing Standards" and "Exceptions/Waivers to the Design Standards" in Section 2.

NOTE:

1. Maps of state highways by functional classification and information on the access management program are on the VDOT Functional Classification web site @ https://www.virginiadot.org/projects/fxn_class/maps.asp.
2. The standards do not apply to proposed VDOT minor arterials, collectors and local streets if the construction design plans were presented at a VDOT public hearing prior to October 14, 2009 or principal arterials prior to July 1, 2008.

* Added 1/21

APPENDIX F ACCESS MANAGEMENT DESIGN STANDARDS FOR ENTRANCES AND INTERSECTIONS

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SECTION 4 – ENTRANCE DESIGN

* Rev. 1/21

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DEFINITIONS

Acceleration Lane: An auxiliary lane, including tapered areas, that enables a motorist to increase its speed to a rate that enables it to safely merge with through traffic.

Access: Any entrance, median crossover, traffic signal, interchange, or other means of providing for the movement of vehicles to or from the roadway system. Also, the ability to enter and exit a land parcel from an adjacent highway.

Access Management: The systematic control of the location, spacing, design, and operation of entrances, median crossovers, traffic signals, and interchanges for the purpose of providing vehicular access to land development in a manner that preserves the safety and efficiency of the transportation system.

Access* **Throat:** The distance parallel to the centerline of an access to the first on-site location at which a driver can make a right turn or a left turn, measured on highways with curb and gutter, from the face of the curb, and on highways without a curb and gutter, from the edge of the shoulder.

Access Width: The distance edge-to-edge of an access measured at the right-of-way line.

Agritourism Entrance: "Agritourism activity" as "any activity carried out on a farm or ranch that allows members of the general public, for recreational, entertainment, or educational purposes, to view or enjoy rural activities, including farming, wineries, ranching, historical, cultural, harvest-your-own activities, or natural activities and attractions, *Code of Va. §3.2-6400*.

Arterial: A major highway intended to serve through traffic where access is carefully controlled, generally highways of regional importance, intended to serve moderate to high volumes of traffic traveling relatively long distances and at higher speeds.

Auxiliary Lane: The portion of the roadway adjoining the traveled way for speed change, turning, storage for turning, weaving, truck climbing, and other purposes supplementary to through-traffic movement.

Channelization: The separation or regulation of conflicting traffic movements into definite paths of travel by traffic islands or pavement marking to facilitate safe and orderly movements of vehicles, pedestrians and bicyclists.

Collector: The functional classification of a highway that provides land access service and traffic circulation within residential, commercial, and industrial areas. The collector system distributes trips from principal and minor arterials through the area to the ultimate destination. Conversely, collectors also collect traffic from local streets in residential neighborhoods and channel it into the arterial system.

Commercial Entrance: Any entrance serving land uses that generate more than 50 vehicular trips per day or the trip generation equivalent of more than five individual private residences or lots for individual private residences using the methodology in the Institute of Transportation Engineers Trip Generation.

* Rev. 1/21

Conflict: A traffic conflict occurs when the paths of vehicles intersect, an event that causes a driver to take evasive action to avoid collision with another vehicle, usually designated by a braking application or evasive lane change.

Conflict Point*: An area where traffic either merges, diverges or crosses. Each conflict point is a potential collision.

Corner Clearance: The distance an entrance on a minor side street needs to be separated from the minor side street's intersection with a major roadway. It is aimed at preventing the location of entrances within the functional area of an intersection. The major roadway will have the higher functional classification (excluding local streets), or will have the higher traffic volume.

Deceleration Lane: A speed-change lane including tapered areas that enables a turning vehicle to exit a through lane and slow to a safe speed to complete its turn.

Design Speed: The selected speed used to determine the geometric design features of the highway.

Design Vehicle - A design vehicle is a selected motor vehicle whose weight, dimensions and operating characteristics are used to establish highway design.

Divided Highway: A highway on which traffic traveling in opposite directions is physically separated by a median.

Engineer: The Engineer representing the Virginia Department of Transportation.

Entrance: Any driveway or other means of providing for the movement of vehicles to or from the state highway system.

Egress: The exit of vehicular traffic from a property to a highway.

Exception: Permission to depart from standards because of the unique circumstances of the site or project.

Frontage Road: A road that generally runs parallel to a highway between the highway right-of-way and the front building setback line of the abutting properties and provides access to the abutting properties for the purpose of reducing the number of entrances to the highway and removing the abutting property traffic from through traffic on the highway.

Full Access: Access point which allows left-in and left-out movements and right-in and right-out movements.

Functional Area of an Intersection: The area beyond the physical intersection that comprises decision and maneuver distance, plus any required vehicle storage length, and is protected through corner clearance standards and connection spacing standards.

Functional Classification: The federal system of classifying groups of highways according to the character of service they are intended to provide. Each highway is assigned a functional classification based on the highway's intended purpose of providing priority to through traffic movement or adjoining property access. The functional classification system groups highways into three basic categories identified as (1) arterial, with the function to provide

through movement of traffic; (2) collector, with the function of supplying a combination of through movement and access to property; and (3) local, with the function of providing access to property.

Grade Separation: A crossing of two highways or a highway and a railroad, or a highway and a pedestrian walkway, at different elevations.

Gradient or Grade: The rate or percentage change in slope, measured along the centerline of the highway or entrance, either ascending or descending from or along the highway.

Highway, Street, or Road: A public right of way for purposes of vehicular travel, including the entire area within the right-of-way.

Ingress: The entrance of vehicular traffic into a property from a highway.

Interchange: A grade-separated system of access to and from highways that includes directional ramps for access to and from crossroads.

Intersection: An at-grade crossing of two or more highways in a “T” three leg design or four leg design*, a median crossover, or full access entrances directly across from each other on an undivided highway.

Intersection Sight Distance: The sight distance required at entrances and intersections to allow the driver of a stopped vehicle a sufficient view of the intersecting highway to decide when to enter, or cross, the intersecting highway.

Legal Speed Limit: The speed limit set forth on signs lawfully posted on a highway or in the absence of such signs the speed limit established by Title 46.2, Chapter 8, Article 8 of the Code of Virginia

Limited Access Highway: A highway especially designed for through traffic over which abutters have no easement or right of light, air, or access by reason of the fact that their property abuts upon the limited access highway.

Local Streets/Roads: The functional classification for highways that comprise all facilities that are not collectors or arterials. Local streets serve primarily to provide direct access to abutting land and to other streets.

Low Volume Commercial Entrance: Any entrance, other than a private entrance, serving five or fewer individual residences or lots for individual residences on a privately owned and maintained road or land uses that generate 50 or fewer vehicular trips per day using the methodology in the Institute of Transportation Engineers Trip Generation.

Median: That portion of a divided highway that separates opposing traffic flows, not including center two-way left-turn lanes, can be traversable or non-traversable.

* Rev. 7/14

Median Crossover: An opening in a nontraversable median that can be designed to provide for crossing, left turns and U-turns. See “Median Crossover (Directional)” and “Median Crossover (Full)”.

Median Crossover (Directional): An opening in a restrictive median that provides for specific movements and physically restricts other movements.

Median Crossover (Full): An opening in a restrictive median that provides for crossing, left turns and U-turns.

Median, Non-traversable (Restrictive Median): A physical barrier that separates traffic traveling in opposite directions, such as a concrete barrier or landscaped island.

Median, Traversable (Nonrestrictive Median): A median that by its design does not physically discourage or prevent vehicles from entering upon or crossing over it, including painted medians.

Merge: The process by which two separate traffic streams moving in the same direction combine or unite to form a single stream.

Minor Arterial: The functional classification for highways that interconnect with and augment the principal arterial system. Minor arterials distribute traffic to smaller geographic areas providing service between and within communities.

Moderate Volume Commercial Entrance: A commercial entrance along highways with shoulders with certain site and design criteria reduced. Site requirements are: maximum highway vehicles per day: 5,000, maximum entrance vehicles per day: 200, maximum entrance percent truck trips of vehicles per day: 10%.*

Operating Speed: The speed at which drivers are observed operating their vehicles during free-flow conditions with the 85th percentile of the distribution of observed speeds being the most frequently used measure of the operating speed of a location or geometric feature.

Passing Sight Distance: The length of roadway that the driver of the passing vehicle must be able to see initially, in order to make a passing maneuver safely.

Partial Access Entrance: Entrance with movements limited to right-in or right-out or both, with or without left-in movements.

Peak Hour Volume: The largest number of vehicles passing over a designated section of a street during the busiest 60-minute period within a 24-hour period.

Phase (Signal): That portion of a traffic signal cycle allocated to a specific traffic movement or combination of movements.

Primary Highway: The system of state highways assigned route numbers under 600.

* Rev. 1/15

Principal Arterial: The functional classification for a major highway intended to serve through traffic where access is carefully controlled, generally highways of regional importance, with moderate to high volumes of traffic traveling relatively long distances and at higher speeds.

Private Subdivision Road or Street Entrance: A commercial entrance for a road or street that serves more than five individual properties and is privately owned and maintained.

Private Entrance: An entrance that serves up to two private residences and is used for the exclusive benefit of the occupants or an entrance that allows agricultural operations to obtain access to fields or an entrance to civil and communication infrastructure facilities that generate 10 or fewer trips per day such as cell towers, pump stations, and stormwater management basins.

Ramp Terminal: That portion of a ramp adjacent to the through traveled way, including speed-change lanes, tapers, and islands. Ramp terminals may be the at-grade type, as at the crossroad terminal of diamond or partial cloverleaf interchanges, or the free-flow type where ramp traffic merges with or diverges from high-speed through traffic at flat angles.

Right-of-way: That property within the systems of state highways that is open or may be opened for public travel or use or both in the Commonwealth. This definition includes those public rights-of-way in which the Commonwealth has a prescriptive easement for maintenance and public travel. The property includes the traveled way and associated boundary lines and parking and recreation areas.

Roadway: The portion of a highway, including shoulders (graded and paved), for vehicular use. A divided highway has two or more roadways.

Roundabout: A circular intersection with yield control of all entering traffic, right-of-way assigned to traffic within the circular roadway, and channelized approaches and a central island that deflect entering traffic to the right.

Rural Area: The areas outside the boundaries of urbanized areas and urban places (see Urban Area).*

Secondary Highway: The system of state highways assigned route numbers 600 and above.

Shared Entrance: A single entrance to provide access to two or more adjoining parcels.

Shoulder: The portion of the highway that lies between the edge of the traveled way and the break point, excluding turn lanes.

Sight Distance: The distance visible to the driver of a vehicle when the view is unobstructed by traffic.

Sight Triangle: An area of unobstructed sight distance along both approaches of an entrance.

* Rev. 1/12

Signal Progression: The progressive movement of traffic, at a planned rate of speed without stopping, through adjacent signalized locations within a traffic control system.

Signal Spacing: The distance between traffic signals along a highway.

Stopping Sight Distance: The distance required by a driver of a vehicle, traveling at a given speed, to bring the vehicle to a stop after an object on the highway becomes visible, including the distance traveled during the driver's perception and reaction times and the vehicle braking distance.

Storage Length: Lane footage added to a deceleration lane to store the maximum number of vehicles likely to accumulate during a peak period, so as not to interfere with the through-travel lanes.

Taper: The widening of pavement to allow the redirection and transition of vehicles around or into a turn lane; of two types: (a) redirect tapers necessary for the redirection of vehicles along the traveled way; and (b) transition tapers for turn lanes that allow the turning vehicle to transition from or to the traveled way, to or from a turn lane.

Through Movement: The predominant direction of traffic flow through an intersection, straight on most major roads, although the predominant flow of traffic occasionally is in a right or left-turning direction.

Traveled Way: The portion of the roadway that allows for the movement of through traffic, including vehicles, transit, and freight. It does not include such facilities as curb and gutter, shoulders, turn lanes, bicycle facilities, sidewalks, or parking lanes. Divided highways are made up of two separate roadways, each with its own travel way.

Turn Lane: A separate lane for the purpose of enabling a vehicle that is entering or leaving a highway to increase or decrease its speed to a rate at which it can more safely merge or diverge with through traffic; acceleration and deceleration lanes.

Urban Area: An urbanized area (population of 50,000 and over), or an urban place as designated by the Bureau of the Census (population of 5,000 or more) and not within any urbanized area, with boundaries fixed by State and local officials and approved by the Federal Highway Administration.*

VPH: The number of vehicles per hour, usually referring to vehicles in a peak hour.

Warrant: The criteria by which the need for a safety treatment or highway improvement can be determined.

Weaving: The crossing of two or more traffic streams traveling in the same general direction along a significant length of highway, without the aid of traffic control devices. Weaving areas are formed when a merge area is closely followed by a diverge area, or when an entrance ramp is closely followed by an exit ramp and the two ramps are joined by an auxiliary lane.

* Rev. 1/12

SECTION 1- INTRODUCTION

Access Management Concepts

Access management provides a systematic approach to balancing the access and mobility necessities of a roadway. Access management can be defined as the process of managing access to land development, while simultaneously preserving the flow of traffic on the surrounding public road system.

Property owners have a right to reasonable access to the general system of streets and highways. In conjunction, adjacent roadway users have the right to freedom of movement, safety, and efficient expenditure of public funds. Balancing these interests is critical at locations where significant changes to the transportation system and/or surrounding land uses are occurring. The safe and efficient operation of the transportation system calls for effectively managing highway access, via entrances, streets, or other access points.

The specific techniques for managing access involve the application of established traffic engineering and planning principles. Ideally, these principles will:

- Limit the number of traffic conflicts;
- Separate basic conflict areas;
- Separate turning volumes from through movements;
- Provide sufficient spacing between at-grade intersections;
- Maintain progressive speeds along arterials;
- Provide adequate on-site storage lanes.

The application of these principles will minimize disruptions to through traffic caused by entrances and intersections. More specifically, good access management can:

- Reduce crashes and crash potential;
- Preserve roadway capacity and the useful life of roads;
- Decrease travel time and congestion;
- Improve access to properties;
- Coordinate land use and transportation decisions;
- Improve air quality;
- Maintain travel efficiency and related economic prosperity.

Functional Classification

The Federal Highway Administration's (FHWA) "Functional Classification Guidelines" state that Functional Classification is the process by which streets and highways are grouped into classes or systems, according to the character of service they are intended to provide.

Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads. It becomes necessary then to determine how this travel can be channelized within the network in a logical and efficient manner.

Functional classification defines the nature of this channelization process by defining the part that any particular road should play in serving the flow of trips through a highway network. Allied to the idea of traffic channelization is the dual role the highway network plays in providing (1) access to property, and (2) travel mobility. Mobility can be provided at varying levels, usually referred to as "level of service." It can incorporate a wide range of elements (e.g., riding comfort and freedom from speed changes) but the most basic is operating speed or trip travel time. The four major functional classifications are:

- Principal arterial is a major highway intended to serve through traffic where access is carefully controlled, generally highways of regional importance, with moderate to high volumes of traffic traveling relatively long distances and at higher speeds.

- Minor arterials are highways that interconnect with and augment the principal arterial system. Minor arterials distribute traffic to smaller geographic areas providing service between and within communities.

- Collector is a highway that provides land access service and traffic circulation within residential, commercial, and industrial areas. The collector system distributes trips from principal and minor arterials through the area to the ultimate destination. Conversely, collectors also collect traffic from local streets in residential neighborhoods and channel it into the arterial system.

- Local streets/roads comprise all facilities that are not collectors or arterials. Local streets serve primarily to provide direct access to abutting land and to other streets.*

Functional Classification of State Highways

Information on the process for establishing a functional classification for a new road or for changing the functional classification for an existing highway is available on the VDOT web site at VDOT's *Functional Classification* home page. Maps identifying the functional classification of all state highways are also presented on this web site.

* Rev. 1/12

Schematic of a Functionally Classified Roadway Network

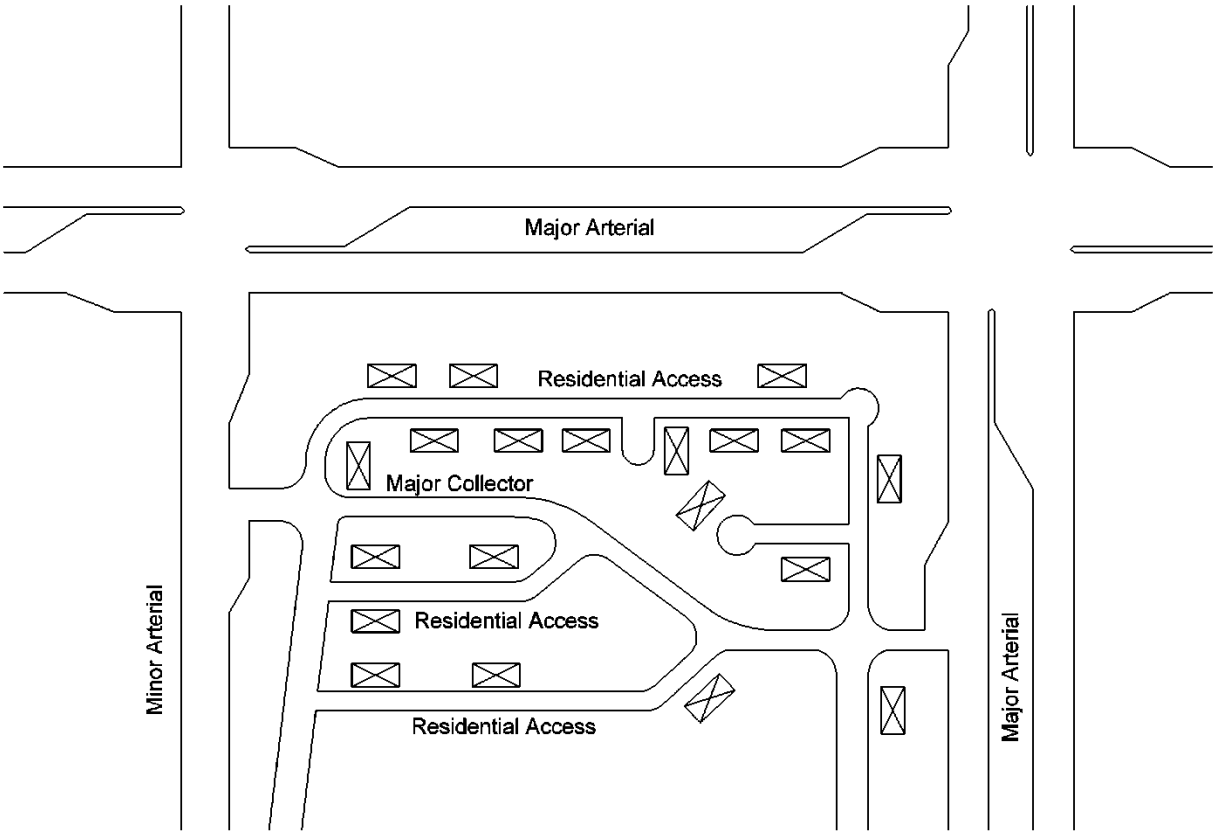


FIGURE 1-1 FUNCTIONALLY CLASSIFIED ROADWAY SCHEMATIC

Source: Transportation Research Board, *Access Management Manual*, 2003

Access Control Policy (Full and Partial)

Defined levels pertaining to access for roadways have been established and documented by the Transportation Research Board (TRB). These categories proposed by TRB have been incorporated into various DOT procedures, including VDOT's. The proposed categories are as follows:

- Level of importance of roadways within the jurisdiction
- Characteristics of system roadways
- Land use and growth management goals
- Current and potential future presence of pedestrians, bicyclists and transit
- Engineering judgment

- VDOT and LOCALITY MANAGED PROJECTS
  - On VDOT managed projects, see the current policy on Limited Access Establishment and Change Guidelines in *Section 2E.5 Proposed Right of Way and Limited Access.*
  - On locality managed projects, the locality should consult their VDOT Project Coordinator for information on limited access. See the current policy on Limited Access Establishment and Change Guidelines in *Section 2E.5 Proposed Right of way and Limited Access*.

- NHS & INTERSTATE SYSTEMS
  - Access control beyond the ramp terminals should be affected by purchasing access rights, providing frontage roads, controlling added corner right-of-way areas, or prohibiting driveways. At a minimum, such control shall* extend beyond the ramp terminal at least 100 ft. in urban areas and 300 ft. in rural areas. However, in areas of high traffic volume, where the potential exists for development which would create operational or safety problems, longer lengths of access control should be provided. If access control of 100 ft. minimum in urban areas and 300 ft. minimum in rural areas **cannot** be extended beyond the ramp terminal an LD-448 Form (Design Waiver Request) is required.

    Source: A Policy on Design Standards Interstate System, AASHTO January 2016

However, VDOT has established spacing standards for commercial entrances and intersections in the vicinity of interchanges which are much greater than the AASHTO limits mentioned above. These standards are in this Appendix in Table 2-3, Figure 2-9, Table 2-4 and Figure 2-10. Alternate spacing standards for use in highly urbanized areas that have gone through the appropriate planning process are available in Appendix B-2 (Multimodal Design Standards For Mixed-Use Urban Centers). Not meeting these spacing standards will require an approved access management waiver (AM-E and AM-W), which can be accessed at *http://vdotforms.vdot.virginia.gov/SearchResults.aspx?lngDivisionID=40.*

* Added 1/21

GUIDELINES*

See the chart below for the categories for Types of Access Control.

CONTROL OF ACCESS	FULL	LIMITED OR PARTIAL	LIMITED OR PARTIAL	NONE
AASHTO Design Classification	Freeways	Arterials (Expressways) (Principal and Minor)	Collectors (Boulevards) (Major and Minor)	Local Streets and Roads (Thoroughfares)
Functional Purpose	High Mobility, Limited Access	High Mobility, Low to Moderate Access	Moderate Mobility, Low to Moderate Access	Moderate to Low Mobility, High Access
Design Speed	50 mph to 70 mph	30 mph to 70 mph	20 mph to 60 mph	20 mph to 50 mph

The following guidance is provided to assist in determining whether or not a facility should be granted any form of access control:

Level of Importance (Functional Classification) of Roadways within the Jurisdiction

- See chart above

- **Characteristics of System Roadways**
  - FHWA coordination and approval for all Interstate Systems
  - Documents both existing and proposed roadways features
    - Traffic volumes, including vehicle classification
    - Speed
    - Geometric design
    - Nature of the supporting street system
    - Level of proposed and existing access (connections)

- **Land Use and Growth Management Goals and Objectives**
  - Collaboration with Localities (Cities and Counties)
  - Future planning or growth management objectives
    - Land use
    - Density
    - Parcel size
    - Zoning restrictions

* Added 7/17

- **Current and Potential Future Presence of Pedestrians, Bicyclists and Transit* See 2004 CTB Bicycle and Pedestrian Accommodations Policy at *http://www.virginiadot.org/programs/resources/bike_ped_policy.pdf***
    - Addressed by means of
        - Roadway and Traffic Engineering design standards and I&IMs
        - Traffic-calming practices

- **Engineering Judgment**
    - Prior experience with related roadway conditions

TYPES AND USAGE

Types of Access Control:

- **Full Control of Access**

  Connections to a facility provided only via ramps at interchanges. All cross streets are grade separated. No private driveway connections are allowed. See *Chapter 2E LIMITED ACCESS ESTABLISHMENT AND CHANGE GUIDELINES*.

- **Limited Control of Access**

  Connections to a facility provided via ramps at interchanges (major crossings) and at-grade intersections (minor crossings and service roads). No private driveway connections allowed. See *Chapter 2E LIMITED ACCESS ESTABLISHMENT AND CHANGE GUIDELINES*.

- **Partial Control of Access**

  Connections to a facility provided via ramps at interchanges, at-grade intersections, and commercial and private entrances. Private driveway connections are normally defined as a maximum of one connection per parcel and should usually be limited to right-in / right-out. One connection is defined as one ingress and one egress point. The use of shared or consolidated connections is highly encouraged. Connections may be restricted or prohibited if alternate access is available through other adjacent public facilities.

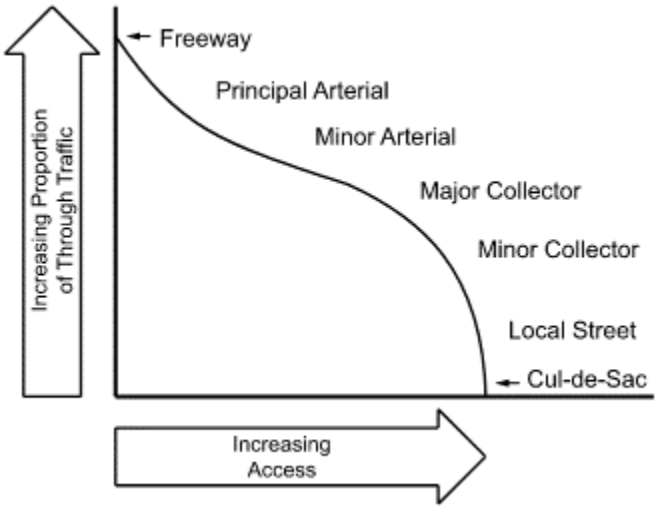
* Added 7/17

- **No Control of Access**

  Connections to a facility provided via ramps at interchanges, at-grade intersections, and private driveways. No physical restrictions, i.e., a control of access fence. Normally, private driveway connections are defined as one connection per parcel. Additional connections may be considered if they are justified and if such connections do not negatively impact traffic operations and public safety.

Relationship of Functionally Classified Systems in Serving Traffic Mobility and Land Access

Source: 2018*, AASHTO, *A Policy on Geometric Design of Highways and Streets*, Chapter 1, Section 1.4.2



It was pointed out in the discussion above that the concept of traffic channelization leads logically not only to a functional hierarchy of systems, but also to a parallel hierarchy of relative travel distances served by those systems. This hierarchy of travel distances can be related logically to a desirable functional specialization in meeting the access and mobility requirements. Local facilities emphasize the land access function. Arterials emphasize a high level of mobility for through movement. Collectors offer a compromise between both functions. This is illustrated conceptually above.

Functional classification can be applied in planning highway system development, determining the jurisdictional responsibility for particular systems, and in fiscal planning. These applications of functional classification are discussed in "*A Guide for Functional Highway Classification*."

* Rev 10/20

SECTION 2 – INTERSECTION DESIGN; SPACING STANDARDS

Intersection Design Objectives

Intersection design, including entrances, must consider the following items:

- Total approach traffic, design hourly volumes, and turning volumes.
- Composition of traffic (percent of passenger cars, buses, trucks, etc.)
- Operating speed of vehicles
- Functional Classification of Highways
- Adjacent land use
- Physical and Environmental Characteristics
- Pedestrian and Bicycle Accommodation

Major objectives of traffic design concern safety, operational efficiency and driver expectation through consideration of the following:

- The design should fit the natural transitional paths and operating characteristics of drivers and vehicles. Smooth transitions should be provided for changes in direction.
- Grades at intersections should be as nearly level as possible.
- Sight distances must be sufficient to enable drivers to prepare for and avoid potential conflicts.
- On major roadways, intersections must be evenly spaced to enhance the synchronization of signals, increase driver comfort, improve traffic operation, and reduce fuel consumption and vehicle emissions.

Intersection Design Principles

Intersection Design Principles
• Limit Number of Conflict Points • Coordinate Design and Traffic Control • Avoid Complex Maneuvers • Separate Conflict Points • Favor Major Flows • Segregate Movements • Accommodate Pedestrians and Bicyclists • Determine Design Vehicle • Utilize Auto Turn to Verify Vehicle Turning Movement* • Consider a Roundabout Design

Intersection design principles are as follows:

- Limit the number of conflict points. The number of conflict points among vehicular movements increases significantly as the number of intersection legs increase. For example, an intersection with four two-way legs has 32 total conflict points, but an intersection with six two-way legs has 172 conflict points. Intersections with more than four two-way legs should be avoided wherever possible.

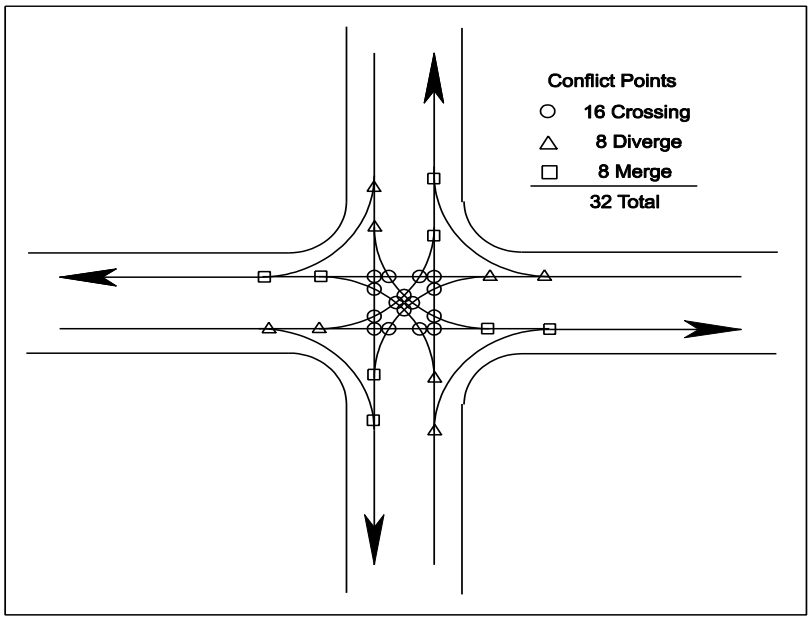


FIGURE 2-1 CONFLICT POINTS

Source: Transportation Research Board, *Access Management Manual*

* Rev. 1/14

- Coordinate design and traffic control. Maneuvers at intersections accomplished at low relative speeds require a minimum of traffic control devices. Maneuvers accomplished at high relative speeds are undesirable unless traffic controls such as stop signs or traffic signals are provided. Designs should separate vehicles making conflicting movements. Intersection design should be accomplished simultaneously with the development of traffic control plans.

- Avoid multiple and compound merging or diverging movements. These require complex driver decisions and create additional conflicts.

- Separate conflict points. Intersection hazards and delays are increased when intersection maneuver areas are too close together or when they overlap. Conflicts should be separated to provide drivers with sufficient time (and distance) between successive maneuvers for them to cope with the traffic conflicts one at a time.

- Favor the heaviest and fastest flows. The heaviest volume and higher speed flows should be given preference in intersection design to minimize hazard and delay.

- Minimize the area of the conflict. Excessive intersection area causes driver confusion and inefficient operations. Large areas are inherent with long curb return radii and in skewed and multiple-approach intersections. Channelization should be employed to limit the intersection and to guide drivers.

- Segregate movements. On higher speed roadways, separate turn lanes* should be provided at intersections when there are appreciable volumes of traffic traveling at different speeds. Separate turning lanes should be provided for left and right turning vehicles. Left turns necessitate direct crossings of opposing vehicle paths and are usually made at speeds of 10 mph or less for reasons of safety and economy.

  Right turns are also usually made at minimum speeds. However, right turns do not involve potential conflicts of such severity as left turns, and are more suited to individual treatment because they take place at the outside of the intersection area. Therefore, right turns may be designed for higher than minimum speeds where adequate right-of-way is available for wider turns.

- Accommodate the needs of pedestrians and bicyclists. For example, when pedestrians must cross wide streets, refuge islands are important for pedestrian safety. See Figures 3-25 and 3-28 for illustrations. The VDOT web page *Bicycling and Walking in Virginia* provides information on VDOT policies for accommodating pedestrians and bicyclists on state highways.

  A detailed discussion on adapting highways for pedestrians and bicyclists is presented later in this section.

* Rev. 1/21

- Consider the design vehicle. The shapes and dimensions of turning paths vary for different turning speeds, different angles of turn, and different types and sizes of vehicles. The design vehicle must be identified and utilize Auto Turn to verify the design.* See Table 4-3 for Design Vehicle Chart.

- Consider a roundabout design. Roundabouts offer an attractive design alternative to conventional intersections. Roundabouts are circular intersections with specific design and traffic control features that convert all vehicular movements to right turns and force traffic to enter and circulate at lower, more consistent speeds. The safety benefits of low vehicle speeds include less severe and less frequent crashes. See the Roundabouts Section for additional information on the use of, and VDOT's efforts to promote, roundabouts.

At-grade intersections must provide for anticipated turning and crossing movements. AASHTO's *A Policy on Geometric Design of Highways and Streets*, "Intersections" should be reviewed for additional information to be considered in the design since the site conditions, alignment, sight distance, the need for turning lanes and other factors enter into the type of intersection design which would satisfy the design hour volume of traffic, the character or composition of traffic, and the design speed.

A Highway Capacity Manual (HCM) capacity or other appropriate analysis (Corsim/Synchro) shall be performed for intersection capacity and signalization requirements, and include a queuing analysis.

Sufficient offset dimensions, pavement widths, pluses, and radii shall be shown in the plans by the Engineer to insure that sign islands are properly positioned. Care should be taken in the design of four-lane roadways with intersecting two-lane roadways.

If traffic conditions clearly warrant a four-lane divided design for the two–lane road at the intersection, the divided design must be constructed for a sufficient distance to allow for the approaching divided design and the subsequent stop condition ahead to be properly signed. The four-lane divided design should not be constructed unless it is clearly warranted and the approaches can be properly signed or the minor road is expected to be improved to a divided status in the near future.

* Rev. 1/14

Examples of typical geometric design applications are presented in Figure 2-3 and Figure 2-4. Note: These examples are not all-inclusive. Other options maybe developed, which would require VDOT approval.

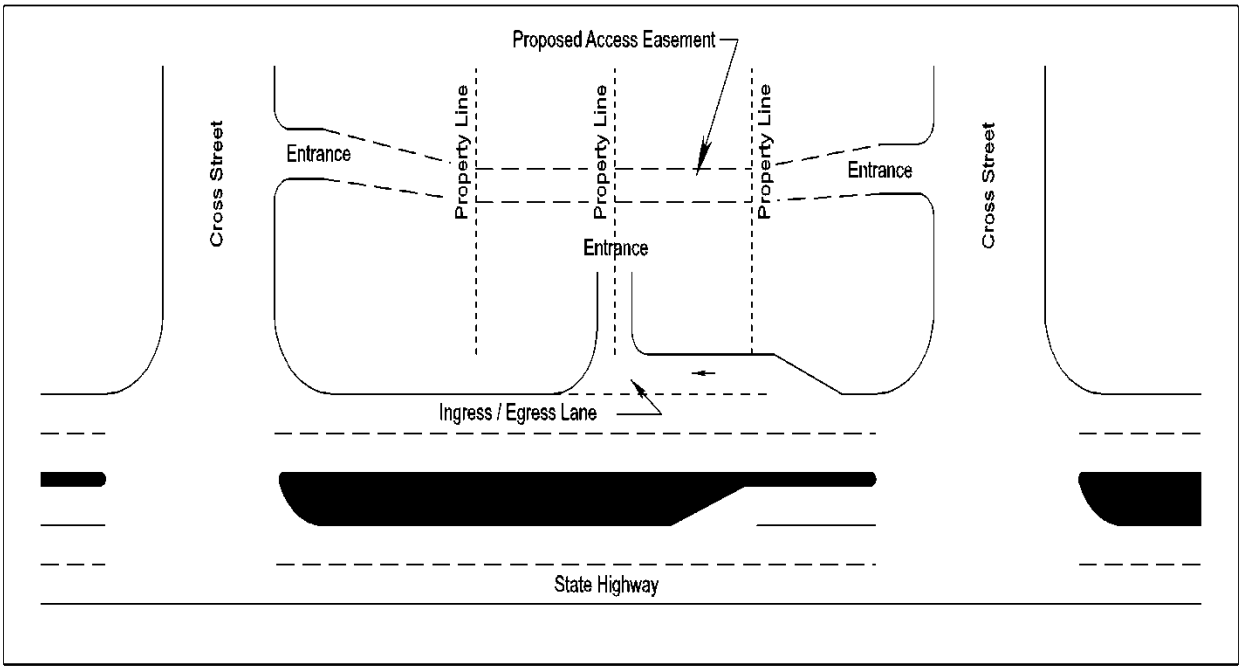


FIGURE 2-2 VEHICULAR CIRCULATION BETWEEN ADJOINING PROPERTIES

Reg. 24VAC 30-73-120.C4

Note: All access point* design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodation

* Rev. 1/21

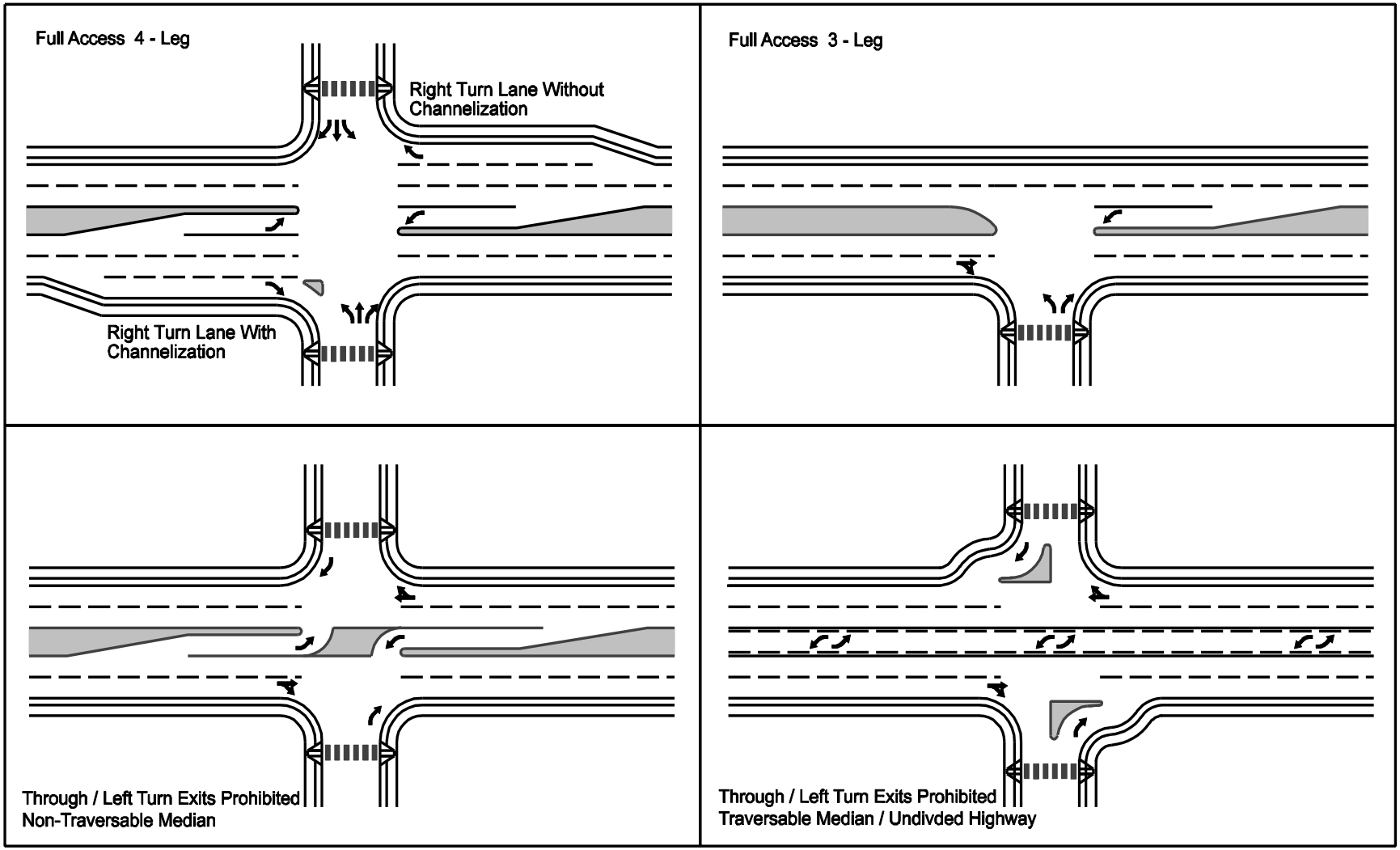


FIGURE 2-3 TYPES OF ACCESS CHANNELIZATION

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

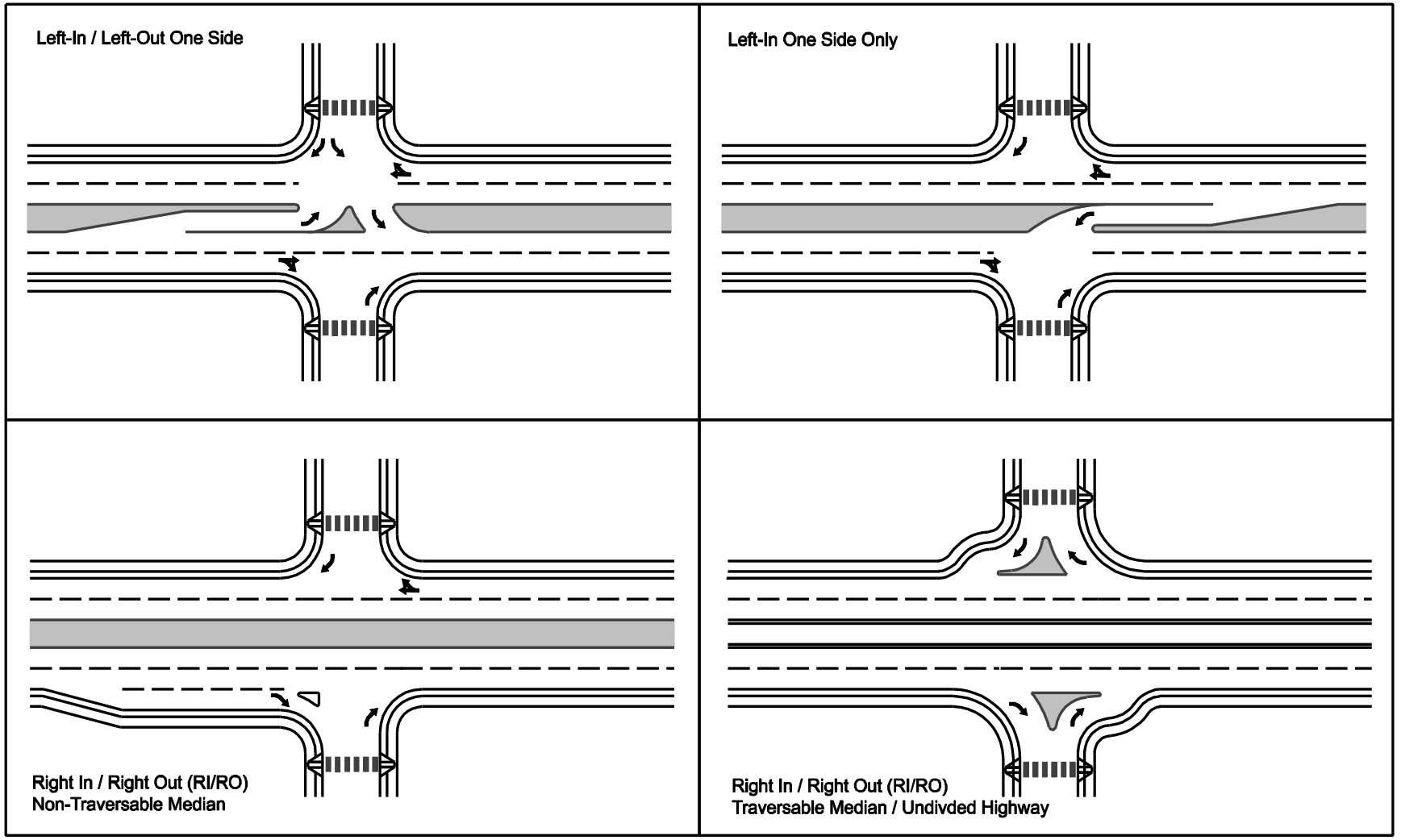


FIGURE 2-4 TYPES OF ACCESS CHANNELIZATION

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

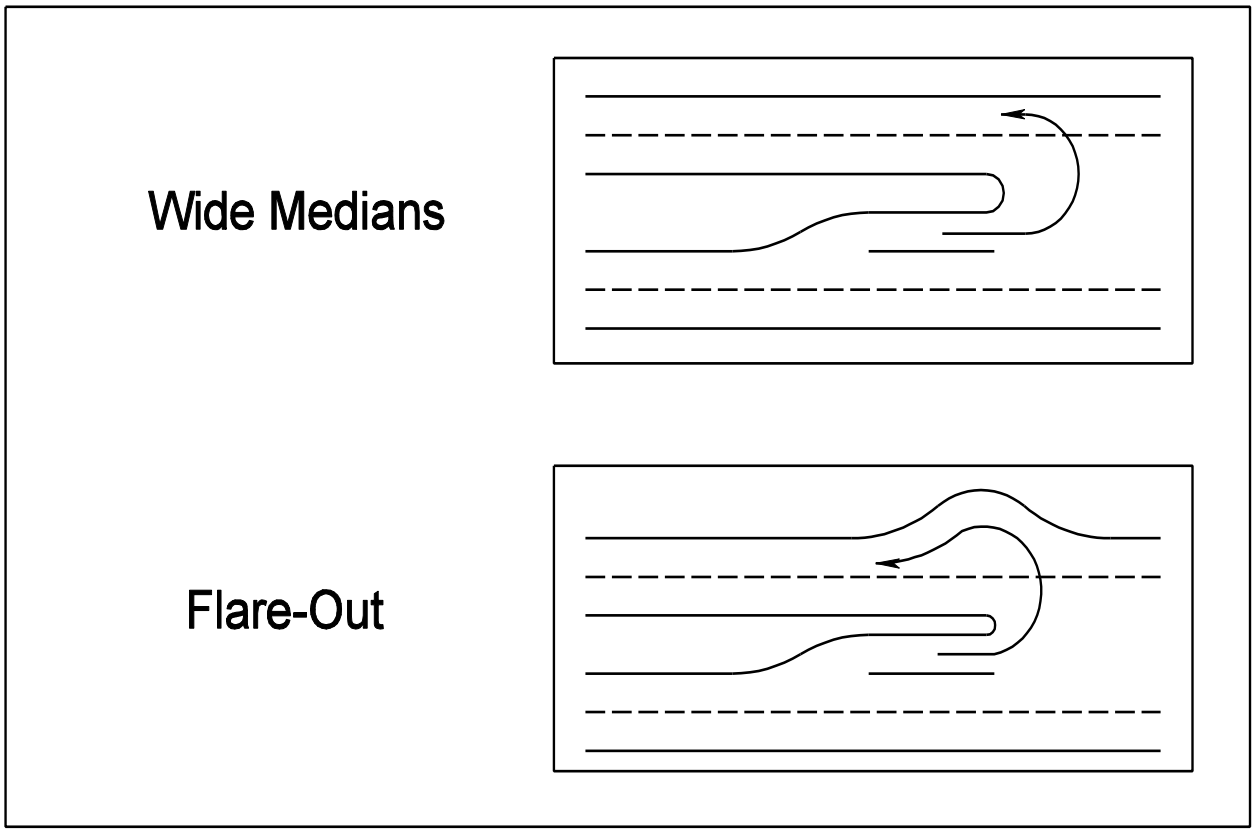


FIGURE 2-5 U-TURN DESIGN OPTIONS

Minimum Angle of Intersections

Streets should intersect at right angles; however, intersecting angles between 60 and 90 degrees are allowed.

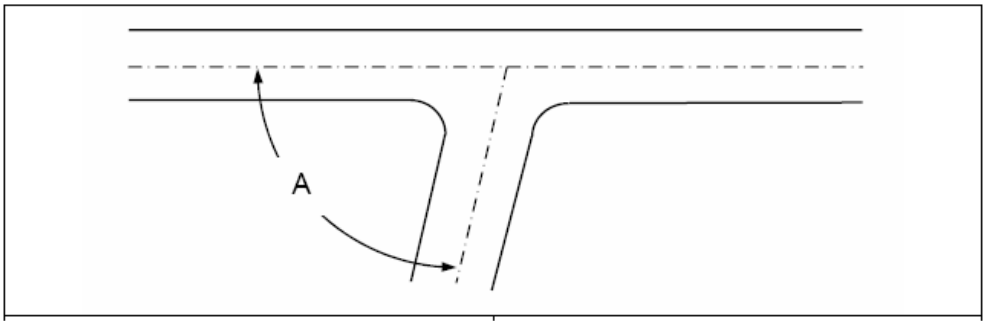


FIGURE 2-6 MINIMUM ANGLE OF INTERSECTIONS

Source: 2018* AASHTO “Green Book”, Section 9.4.2* A = Minimum 60 degrees

* Rev 10/20

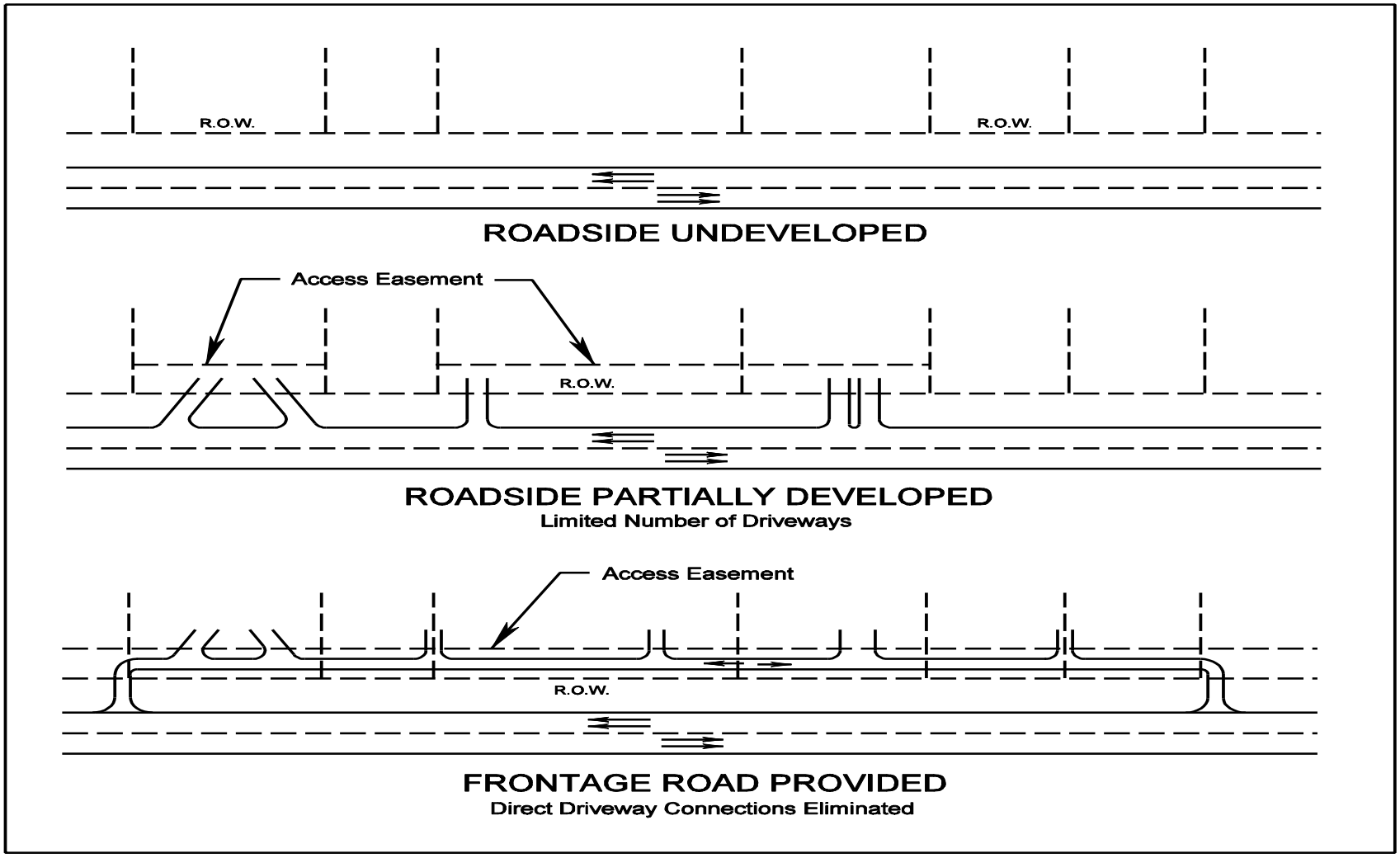


FIGURE 2-7 ACCESS DEVELOPMENT SCENARIO ALONG A STATE HIGHWAY

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

ILLUSTRATION OF ENTRANCE AND INTERSECTION SPACING

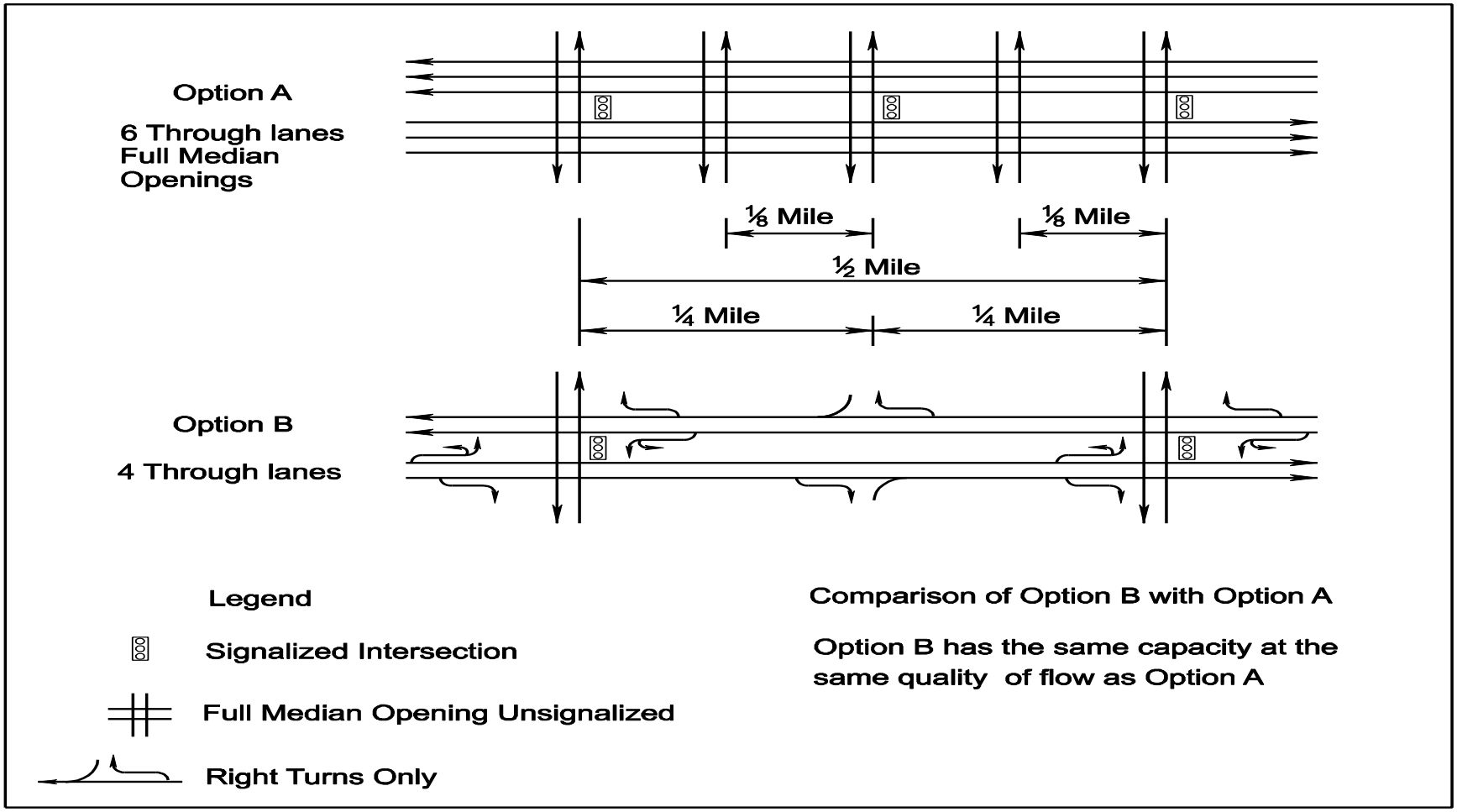


FIGURE 2-8 ILLUSTRATION OF ENTRANCE AND INTERSECTION SPACING

Source: TRB, *Access Management Manual*, Dated 2003

Signalized Intersection Spacing

One of the variables involved in the planning, design and operation of signalized arterial streets is "Signalized Intersection Spacing" (See Table 2-2). Efficient traffic progression is essential on arterials in order to maximize safety and capacity. Moreover, at high progression efficiencies, fewer vehicles are required to come to a stop. Deceleration noise is reduced: thus, vehicle emissions, fuel consumption and delay are minimized. Since capacity will always be an issue on an urban arterial once urban development has occurred, the signal spacing must be such that very high progression efficiencies can be obtained over a wide range of through and turn volumes which change over time and which differ by time of day.

Selecting long and uniform signalized intersection spacing is an essential element in establishing spacing standards. Several studies have found that the number of crashes and crash rates increases with the frequency of traffic signals. For example, an increase in signal density from 2.0 or less to 2.1 to 4.0 signals per mile can result in a 70% increase in the average crash rate – from about 2.8 to 4.8 crashes per million vehicle miles. The increased number of signals per mile also results in poor fuel efficiency and excessive vehicle emissions.

(Source: TRB *Access Management Manual*. 2003)

Signalized Intersection Spacing
• Essential to Movement Function • Parameters - Speed - Cycle Length ("Green" Band desired) - Signal Spacing - Efficiency of Progression - Vehicle Mix - Grade - Queuing - Emergency Preemptions

Source: NHI Course No. 15255, additions made by Committee.

Arterials are intended to provide a high degree of mobility and serve the longer trips. Since movement, not access, is the principal function, access management is essential in order to preserve capacity and safety. [AASHTO's "*A Policy on the Geometric Design of Highways and Streets*" (Green Book)]. Further, the adoption of functional design, in lieu of volume based design, represents a major change in the philosophy of planning and design of street and highway systems.

A uniform signal spacing of ½ mile provides for efficient signal progression at speeds of 30 mph to 60 mph along arterials. At these speeds maximum flow rates are achieved and fuel consumption and emissions are kept to a minimum.

Generally a ½ -mile spacing will enable traffic flow at a wide range of speeds with cycle lengths ranging from 60 to 120 seconds. ½-mile spacing is needed to provide efficient progressions at 30 mph with a 120-second cycle commonly used in developed urban areas during peak hours. At slower speeds the increase in headway will result in a serious reduction in flow rate. (Source: TRB *Access Management Manual*. 2003)

Cycle Length (s)	Spacing			
	1/8 mi (600 ft.)	1/4 mi (1,320 ft.)	1/3 mi (1,760 ft.)	1/2 mi (2,640 ft.)
	Progression Speed (mph)			
60	15	30	40	60
70	13	26	34	51
80	11	22	30	45
90	10	20	27	40
100	9	18	24	36
110	8	16	22	33
120	7.5	15	20	30

TABLE 2-1 RELATIONSHIP BETWEEN SPEED, CYCLE LENGTH & SIGNAL SPACING

Source: TRB: *Access Management Manual*, 2003

General Intersection and Access Spacing Criteria

When locating a new access point, there are typically three factors that determine minimum spacing between the subject access location and existing access points on the roadway:

1. Functional classification: This is defined using VDOT's functional classification map and includes principal arterials, major/minor collectors, and local streets.

2. Design speed: This is the speed determined for design and correlation of the roadway's physical features that influence vehicle operation. As detailed in VDOT *RDM Appendix A1*, the design speed for roadways with a posted speed of 45 mph or less is at least equal to the posted speed. For roadways with a posted speed of 50 mph or higher, the design speed is at least 5 mph higher than the posted speed. Where design speed is not available, the posted speed should be used.

3. Existing and proposed access types: Types of access typically include signalized intersections, unsignalized intersections/full median crossovers, full access entrances/directional median crossovers, partial access entrances, roundabouts, interchange ramps, and innovative intersections/interchanges.

An example of how to apply the spacing standards in Table 2-2 is depicted in Figure 2-8.1.

Three additional factors that should be considered when locating an access are corner clearance, right turn lanes, and the functional area of the intersection.*

Corner clearance is the minimum distance accesses on the minor roadway need to be separated from an intersection to prevent queued vehicles from backing up into the highway or blocking accesses near the intersection. This separation protects the functional area of the intersection. The corner clearance distance will apply where it is greater than the Table 2-2 spacing standard. See Corner Clearance in Section 4 for more information.

It may be appropriate to provide a right turn lane at an access entering a site. When a right turn lane will be installed at an access, the length of the turn lane needs to be considered when locating the access. See Right Turn Lanes in Section 3 for more information.

Access points must avoid being located within the functional area of a signalized intersection. See Commercial Entrance Separation from an Intersection in Section 4 for more information.

The following sections outline minimum spacing standards for various access configurations, functional classifications, and speeds. With the exception of roundabouts, spacing distances are measured from centerline to centerline.

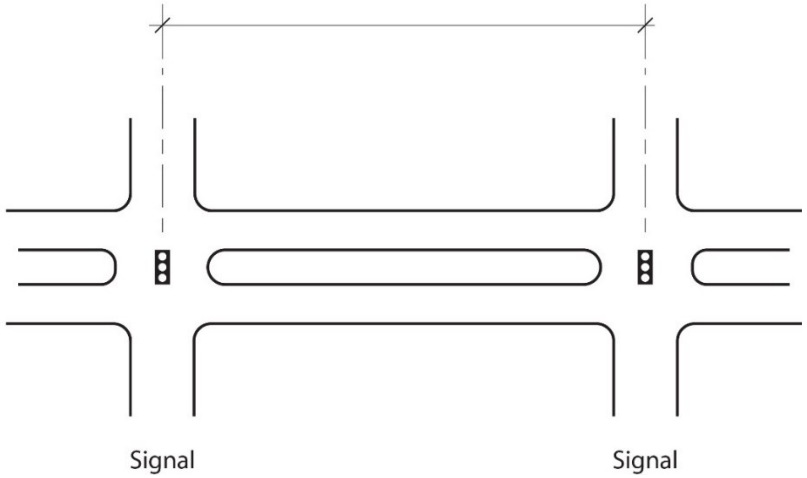
* Added 1/21

For an explanation of terms used in Table 2-2, see the Definitions section. Note also the access spacing applies to accesses on the same side of the roadway. See Figure 4-6 for guidance on offsetting accesses on opposite sides of a roadway.*

Other criteria that may need to be considered for new median crossover spacing is presented later in this section.

Type 1: Signalized Intersection Spacing

Type 1 spacing applies only to spacing from one signalized intersection to another, regardless of the number of intersection legs. Spacing with a signalized three-leg intersection is the same as a typical four-leg intersection.



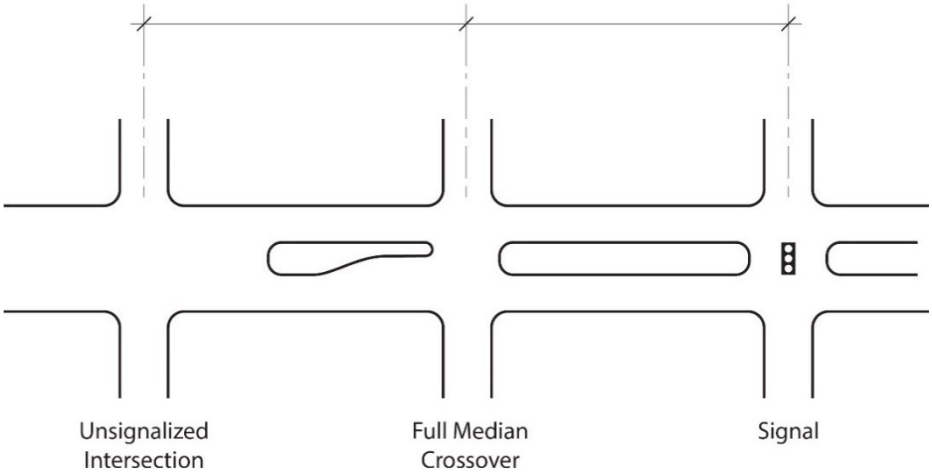
Spacing is allocated in fractions of a mile: (1/2 mile, 2,640 ft.); (1/3 mile, 1,760 ft.); (1/4 mile, 1,320 ft.); (1/5 mile, 1,050 ft.); (1/6 mile, 880 ft.), (1/8 mile, 660 ft.).

It is based on (i) the Signalized Intersection Spacing section and Table 2-1 and (ii) Transportation and Land Development by Vergil Stover and Frank Koepke, Institute of Transportation Engineers: "Traffic signal control applied in a sequential pattern according to specific spacing criteria optimize traffic efficiency" …"to reduce fuel consumption, reduce delay, reduce vehicular emissions and improve safety."

Type 2: Unsignalized Intersection/Full Crossover Spacing

Type 2 spacing applies to spacing from unsignalized intersection to other signalized and unsignalized intersections. Full median crossovers qualify as unsignalized intersections, but unsignalized three-leg intersections do not.

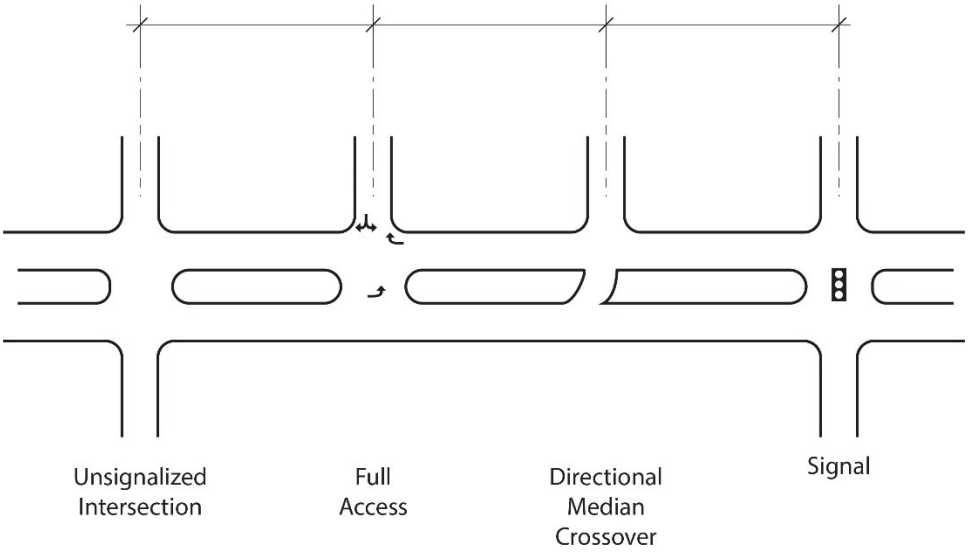
* Rev. 7/20



Intersections and full median crossovers need ample spacing to accommodate the complex situations faced by motorists from vehicular deceleration, acceleration, and numerous conflict points associated with vehicular movements such as crossing and left and right turns. At a four-way intersection, these traffic movements create 32 conflicts (collision) points (see Figure 2-1). Intersections and full median crossovers also may become signalized over time. Spacing is allocated in fractions of a mile.

Type 3: Full Access/Directional Crossover Spacing

Type 3 spacing applies to spacing from full access/directional crossovers to other signalized intersections, unsignalized intersections, full accesses, and directional median crossovers. Three-leg unsignalized accesses on two-lane roads* are considered to be a Type 3 access if no turning movements are restricted. If turning movements are restricted at an unsignalized three-leg on a two-lane road, Type 4 spacing applies.



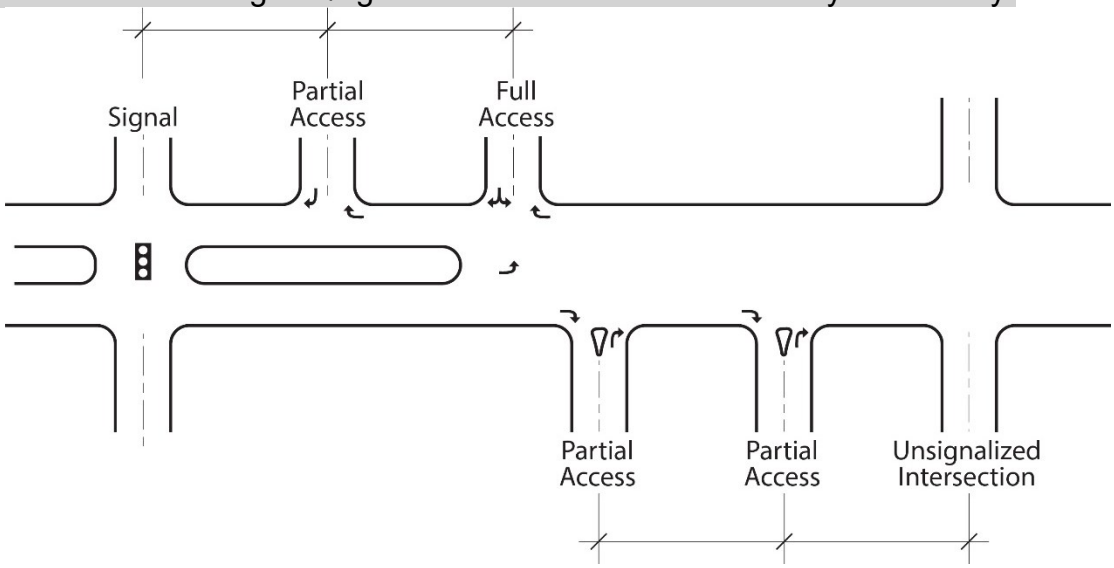
Spacing can be less than unsignalized intersection and full median crossover spacing. Full accesses on a four-lane roadway have only 11 potential conflict (collision) points and directional crossovers on a four-lane roadway only have six. However, studies have demonstrated that the majority of access-related vehicular crashes involve multiple left

* Added 1/21

turn movements. The spacing is based on intersection sight distance for both four and two-lane highways to assure that motorists approaching an access and those turning out of the access have sufficient time to react to highway and access traffic and to merge safely when making right and left turns. Again, the purpose is to maintain the capacity and safety of the highway.*

Type 4: Partial Access Spacing

Type 4 spacing applies to spacing from partial accesses to other signalized intersections, unsignalized intersections, full accesses, directional crossovers, and partial accesses. Partial accesses are right-in/right-out and can either be one-way or two-way.



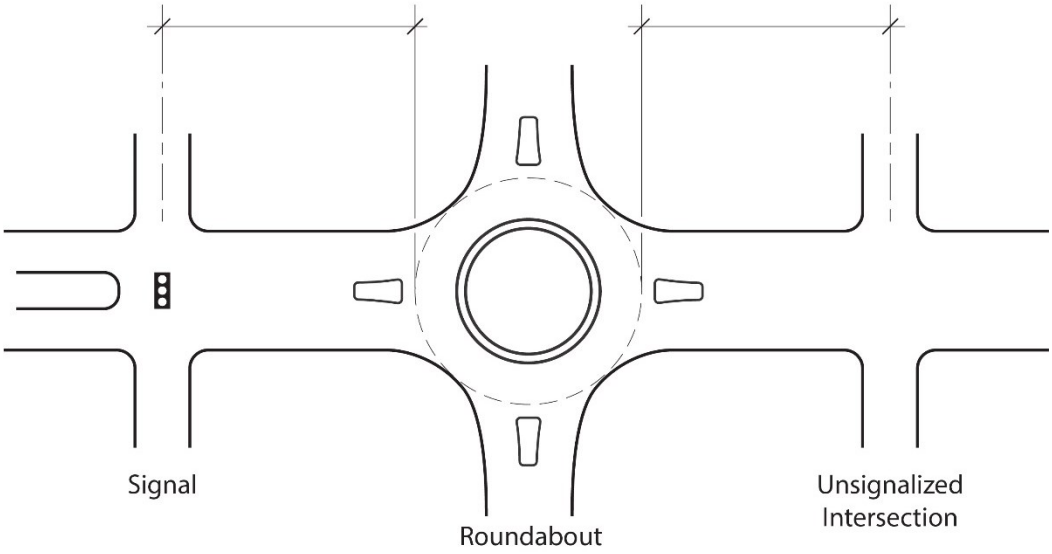
Left turn movements are limited (right-in/right-out with or without left in only movement). If a directional median crossover is involved the directional median crossover spacing applies to the access. The focus is on making sure motorists have sufficient time to be able to see/react to a vehicle slowing down to turn into the access or to a vehicle exiting the access and stop in time to avoid a collision. Stopping sight distance can be used for this purpose. See Figure 4-4 for illustrations of right in/right out with or without left in commercial access channelization island options. Also see “Restricting Left Turn Movements at Commercial Entrances” for additional information.

Roundabout Spacing

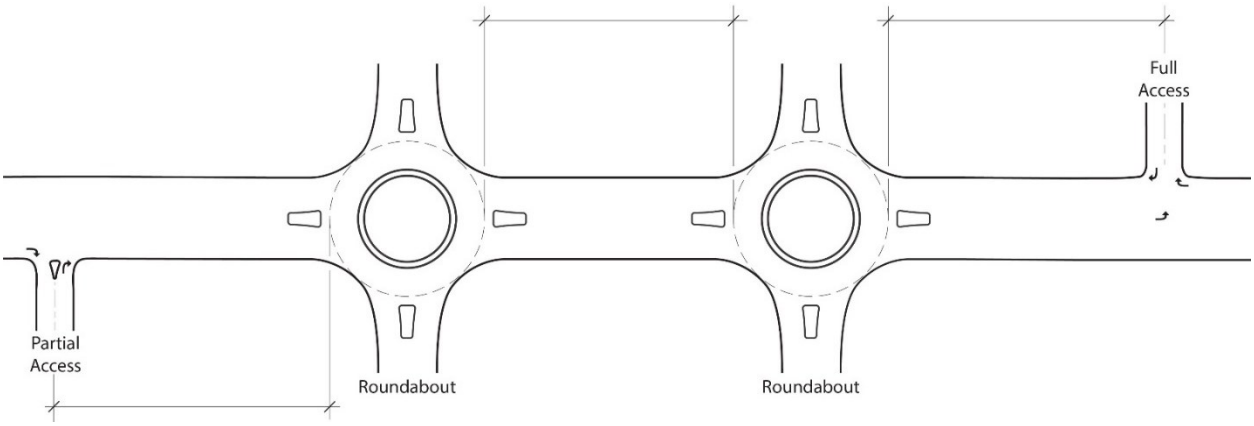
The following spacing types apply to roundabouts:

- Type 2 Spacing – Spacing from roundabouts to other signalized/unsignalized intersections and full or directional median crossovers.

* Rev. 7/20



- Type 4 Spacing – Spacing from roundabouts to other roundabouts, full accesses, and partial accesses.*



When determining the distance between a roundabout and another access, the measurement is not taken from the centerline. Instead, the point of reference is the outer edge of the inscribed circle diameter (Yield Line) on the nearest approach.

Spacing for commercial accesses on local streets with roundabouts is discussed in Note 1 to Table 2-2. In summary, no commercial access shall be within 115 feet minimum measured from the outer edge of the inscribed circle of a Roundabout.

* Rev. 7/20

Functional Classification	Design Speed (See Note 2)	Minimum Spacing (Distance) in Feet			
		Type 1 (Signalized)	Type 2 (Unsignalized/ Full Crossover)	Type 3 (Full Access /Directional Crossover)	Type 4 (Partial Access)
Principal Arterial	≤ 30 mph 35 to 45 mph ≥ 50 mph	1,050 1,320 2,640	880 1,050 1,320	440 565 750	250 305 495
Minor Arterial	≤ 30 mph 35 to 45 mph ≥ 50 mph	880 1,050 1,320	660 660 1,050	355 470 555	200 250 425
Collector	≤ 30 mph 35 to 45 mph ≥ 50 mph	660 660 1,050	440 440 660	225 335 445	200 250 360
Local Street	See Note 1				

TABLE 2-2 MINIMUM SPACING STANDARDS FOR COMMERCIAL ACCESSES, INTERSECTIONS AND MEDIAN CROSSOVERS*

Notes to Table 2-2:

1. **Local Street Spacing** – No commercial entrance shall be allowed within the functional area of an intersection without prior approval from the Engineer at the Residency or District. For commercial entrances on local streets (not individual private entrance driveways to homes), a spacing distance of 50 feet between entrance radii is specified to assure a minimum separation between such entrances (illustrated in Figure 4-11).

No commercial entrance shall be within 115 feet minimum measured from the outer edge of the inscribed circle of a Roundabout, without prior approval from the Engineer at the Residency or District. If an entrance is approved within the 115 feet of the outer edge of the inscribed circle it shall be “Right-In, Right-Out” Only (115’ feet minimum is based on the stopping sight distance for 20 mph).

2. **Design Speed** – Per VDOT *RDM Appendix A1*, the design speed for roadways with a posted speed of 45 mph or less is at least equal to the posted speed. For roadways with a posted speed of 50 mph or higher, the design speed is at least 5 mph higher than the posted speed. Where design speed is not available, the posted speed should be used.

* Rev. 7/20

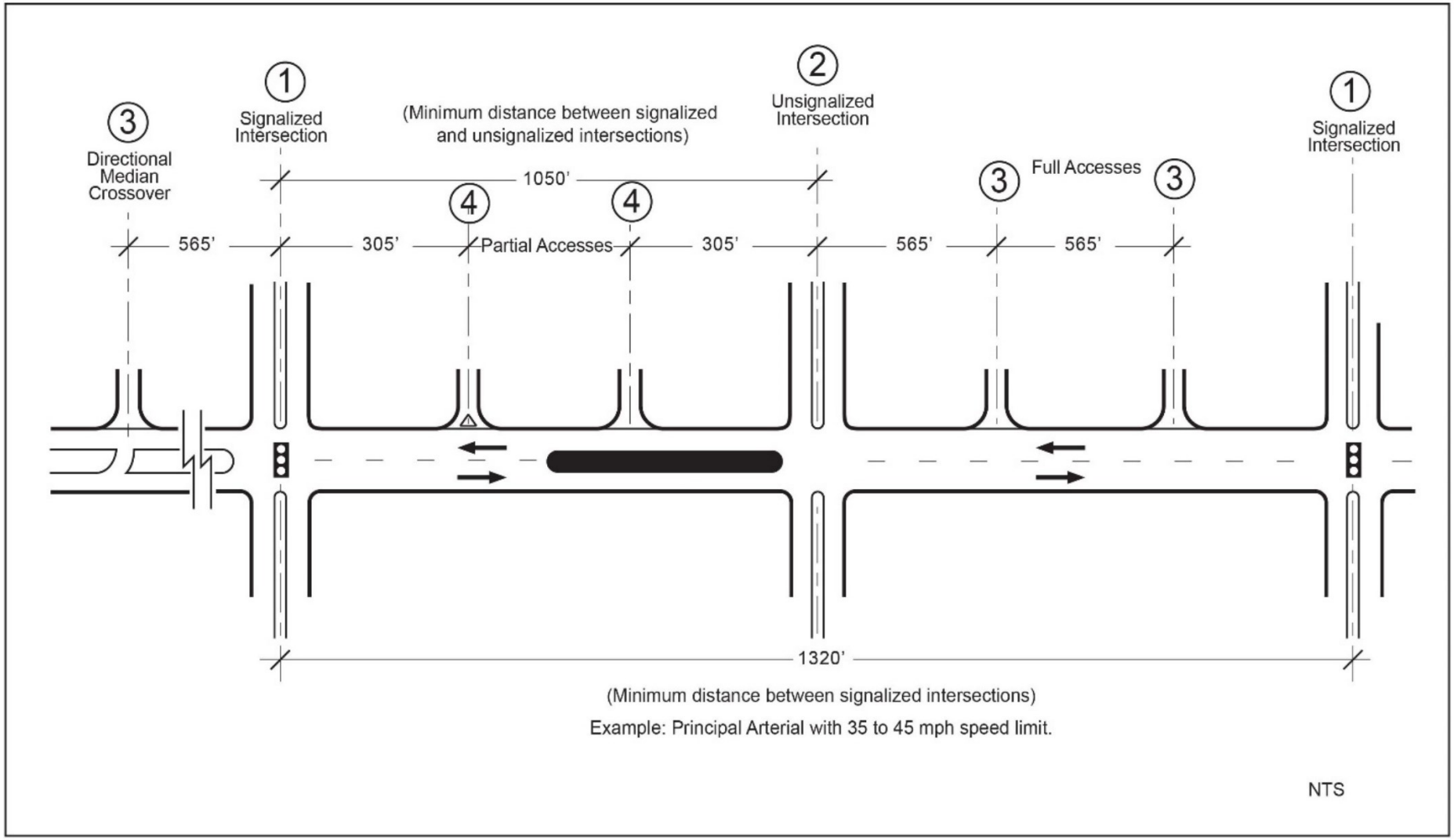


FIGURE 2-8.1 ILLUSTRATION OF THE RELATIONSHIP BETWEEN SPACING STANDARDS*

* Rev. 7/20

Spacing Standards for Commercial Accesses/Intersections Near Interchange Ramps

The spacing standards near interchange ramps focus on safe ramp exit and entry movements. Greater separation between Ramp Terminals (see definition of Ramp Terminal) and other accesses is necessary for multilane versus two-lane highways. This is because the motorist's maneuvers at multilane roads are more complex, such as crossing through lanes to reach a left turn lane at an intersection.

The minimum spacing standards for accesses near interchange areas on multilane crossroads are shown in Table 2-3. If the off and/or on ramp connects to a continuous auxiliary lane, the spacing distance is measured from where the AASHTO calculated acceleration or deceleration lane and taper would end if there were no continuous auxiliary lane.

Note: For Limited Access Line Fence Requirements / Placement, see Figures 2E-19 and 2E-20* and for FHWA Minimum Limited Access Control: 100' Urban and 300' Rural, see bottom of Figure *2E-19 of the Road Design Manual.**

For multilane crossroads, the spacing standards apply to both signalized intersections and commercial accesses regardless of the interchange configuration. The three types of spacing to consider are shown in **Figure 2-9**. Generally, the standards consider the distance between the interchange ramps and right-in/right-out accesses, directional median crossovers, and four-legged intersections.

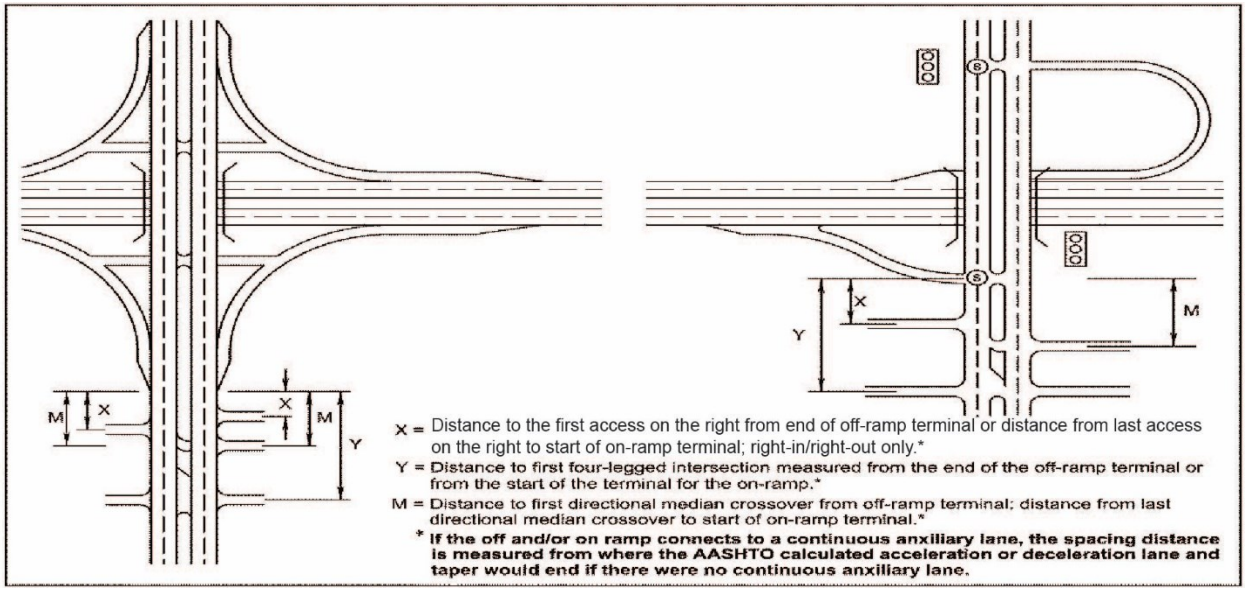


FIGURE 2-9 ACCESS CONTROL ON MULTILANE CROSSROADS AT INTERCHANGES

The minimum spacing standards for accesses near interchange areas on multi-lane crossroads are shown in Table 2-3.

* Rev 10/20

Minimum Spacing Standards for Accesses Near Interchange Areas on Multilane Crossroads		
X (Right-in/Right-out)	**M (Directional Median Crossover)**	**Y (Four-legged Intersection)**
750’	990’	1320’

TABLE 2-3 MINIMUM SPACING STANDARDS FOR ACCESSES NEAR INTERCHANGE AREAS ON MULTI LANE CROSSROADS*

Source: *Access Control Design on Highway Interchanges, 2008*.

For two-lane crossroads, the spacing standards for accesses near interchange areas apply to signalized intersections, unsignalized intersections, and commercial accesses regardless of the interchange configuration. The three types of spacing to consider are shown in Figure 2-10. Generally, the standards consider the distance between the interchange ramps and downstream accesses, upstream accesses, and four-legged intersections.

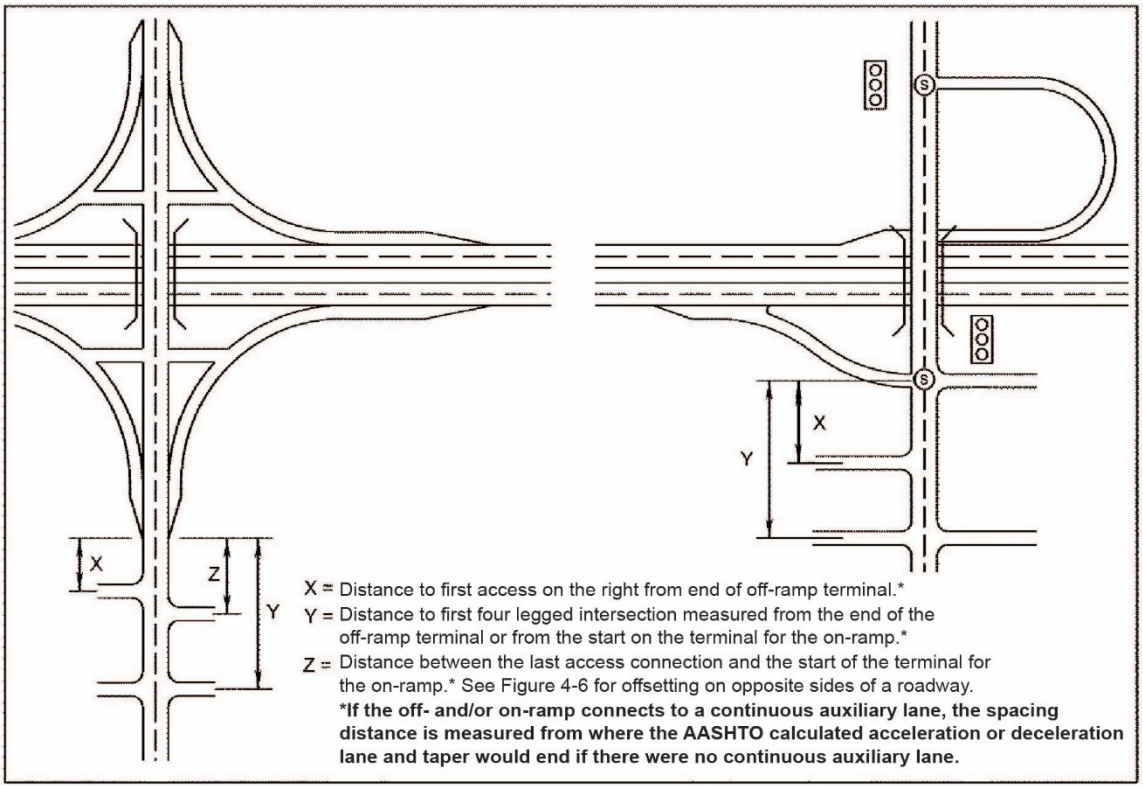


FIGURE 2-10 ACCESS CONTROL ON TWO-LANE CROSSROADS AT INTERCHANGES

The minimum spacing standards for accesses near interchange areas on two-lane crossroads are shown in Table 2-4.

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Minimum Spacing Standards for Accesses Near Interchange Areas on Two-Lane Crossroads	
X (Downstream Access) or Z (Upstream Access)	**Y (Four-legged Intersection)**
750’	1320’

TABLE 2-4 MINIMUM SPACING STANDARDS FOR ACCESSES* NEAR INTERCHANGE AREAS ON TWO-LANE CROSSROADS

Source: *Access Control Design on Highway Interchanges, 2008.*
H. Rakha, A. M. Flintsch, M. Arafeh, G. Abdel-Salam, D. Dua, and M. Abbas.
Virginia Tech Transportation Institute, Blacksburg, VA

Innovative Intersection and Interchange Spacing Considerations

Implementation of innovative intersections and interchanges is one strategy VDOT uses to improve safety and mobility for all road users. VDOT has developed an Innovative Intersections and Interchanges webpage to provide additional information and resources to understand these designs. This webpage can be accessed at http://www.virginiadot.org/innovativeintersections/.

Innovative intersections and interchanges often include multiple access points that constitute the entire intersection or interchange. For example, a typical Restricted Crossing U-turn (RCUT) intersection includes one intersection with the cross-street and two crossovers separated from the main intersection to allow for U-turn movements. As such, these designs may require different spacing considerations from the criteria outlined in Table 2-2 to ensure the multiple accesses work as a system.

The following sections provide current best practices and establish the spacing and design parameters of innovative intersections and interchanges.

Sight Distance for U-turns

Several innovative intersection and interchange configurations make greater use of U-turn maneuvers. However, U-turns are more complicated than typical left-turn or crossing maneuvers and require additional time to perform the maneuver and accelerate. As such, the minimum sight distance needed to complete a U-turn is greater than left-turn or crossing maneuvers. Florida Department of Transportation (FDOT) has developed sight distance calculations for U-turns using the following assumptions:

- Passenger vehicle
- 2.0 seconds reaction time
- Additional time required to perform the U-turn maneuver
- Acceleration beginning from 0 mph

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- AASHTO Green Book speed/distance/acceleration figures*
- 50-foot clearance factor

Based on these assumptions, the following sight distance values were calculated below for speed limits between 35 mph and 60 mph.

U-Turn Intersection Sight Distance	
Speed (mph)	Sight Distance (ft.)
35	520
40	640
45	830
50	1,040
55	1,250
60	1,540

Adapted from Source: FDOT 2014 Median Handbook and NCHRP Report 524, page 21, Table 8.

Best Practice Spacing Considerations

Many innovative intersection and interchange types have main and secondary intersections. FHWA research has covered several types and provides some best practices on spacing required for the design.

While some types have special considerations, there are common considerations that should be accounted for when determining the spacing between main and secondary intersections. Design speeds for the mainline and crossroad are important to consider. Current spacing recommendations by FHWA typically assume a mainline speed of at least 40 mph and lower speeds for the crossroad.

Intersection control types, particularly the use of signals at secondary intersections, is also important. When signals are not used, greater spacing may be required in some cases. When signals are used at secondary intersections, operational analyses should be conducted. Spacing should provide adequate queue storage to avoid spillback between the main and secondary intersections, as well as enable queues to clear during a signal cycle. Lastly, corridor progression should be considered where signals are proximate to the innovative intersection or interchange. Research has found that longer spacing distances can degrade progression when not properly considered.*

From a design perspective, placement of signal equipment may also impact intersection spacing. Factors that may impact spacing include proximity to power source, equipment placement outside of sight lines, and maintenance access. Spacing should also provide adequate room for signing and pavement markings.

Lastly, spacing impacts right-of-way, construction, and maintenance costs. Unnecessarily long distances between main and secondary intersections can increase these costs, as

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well as translate into more vehicle-hours of travel. This reduces the overall benefit of the design and may impact project/design approval and driver compliance.*

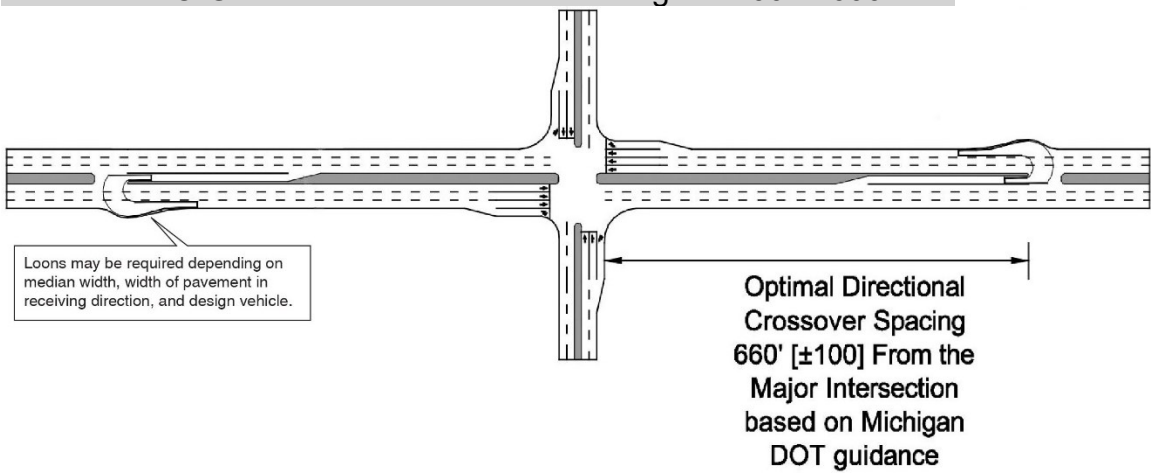
VDOT Spacing and Design Needs

While these are general considerations, FHWA research provides a basis for VDOT to establish spacing and design guidance for innovative intersections and interchanges and forms the basis for VDOT's desired spacing design parameters for innovative intersections and interchanges. Spacing guidance for RCUTs, MUTs, Displaced Left Turns, and Quadrant Roadways outlined below shall be considered standards to meet VDOT requirements. Failure to meet these requirements may result in the design not being approved, lengthen the approval process, and/or require Access Management Waivers/Exceptions.

For all innovative intersections and interchanges, Type 4 (Partial) accesses may be allowed between main and secondary intersections if spacing conforms with Table 2-2.

Access should also be avoided at secondary intersections. Additional spacing needs by type are summarized below:

- **Median U-Turns (MUTs)** – FHWA's Median U-Turn Intersection Informational Guide (August 2014) is VDOT's basis for MUT spacing standards. For additional information on this alternative intersection design, the guide is available online at https://safety.fhwa.dot.gov/intersection/alter_design/pdf/fhwasa14069_mut_infoguide.pdf. Research by the Michigan Department of Transportation (MDOT) determined that 660 feet (±100 feet) provides appropriate spacing between the main intersection and crossovers. This estimate is based in part on the deceleration length required for the major street having a posted speed of 45 mph. The AASHTO Green Book recommends a range of 400 to 600 feet.



Adapted from Source: FHWA, *Median U-Turn Intersection Informational Guide, 2014.*

MDOT has also provided guidance for the minimum distance between consecutive U-turn crossovers. The desirable separation is 150 feet and the minimum separation is 100 feet.

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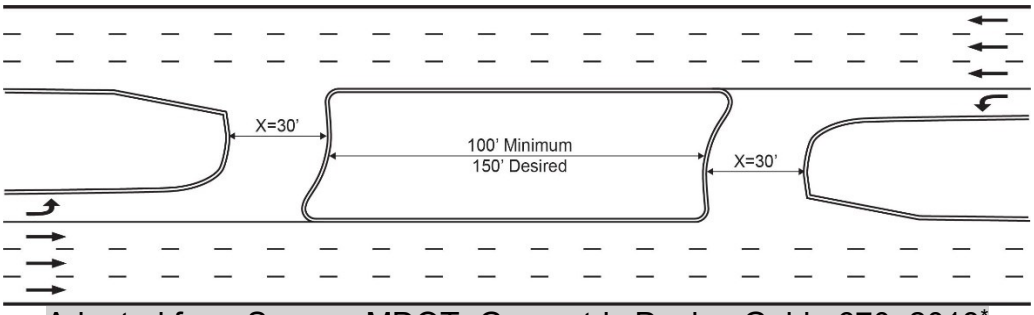

Adapted from Source: MDOT, Geometric Design Guide 670, 2018*

- **Restricted Crossing U-Turns (RCUTs)** – FHWA's Restricted Crossing U-Turn Intersection Informational Guide (August 2014) is VDOT's basis for RCUT spacing standards. For additional information, the guide can be accessed online at https://safety.fhwa.dot.gov/intersection/alter_design/pdf/fhwasa14070_rcut_infoguide.pdf. MUTs are similar to RCUTs and spacing guidance is typically consistent between the two. MDOT recommends a distance of 660 feet (±100 feet) between the main intersection and crossover. The AASHTO Green Book recommends a range of 400 to 600 feet.

  Type of control can vary for RCUT intersections, which results in different spacing standards. Merge- or yield-controlled RCUT intersections constructed in Maryland have one-lane minor street approaches and one-lane crossovers. The distance from the minor street to the crossover is typically 2,000 to 2,600 feet, substantially longer than for other types of RCUT intersections. The additional spacing assures there is adequate distance for acceleration, weaving, deceleration, and tapers.

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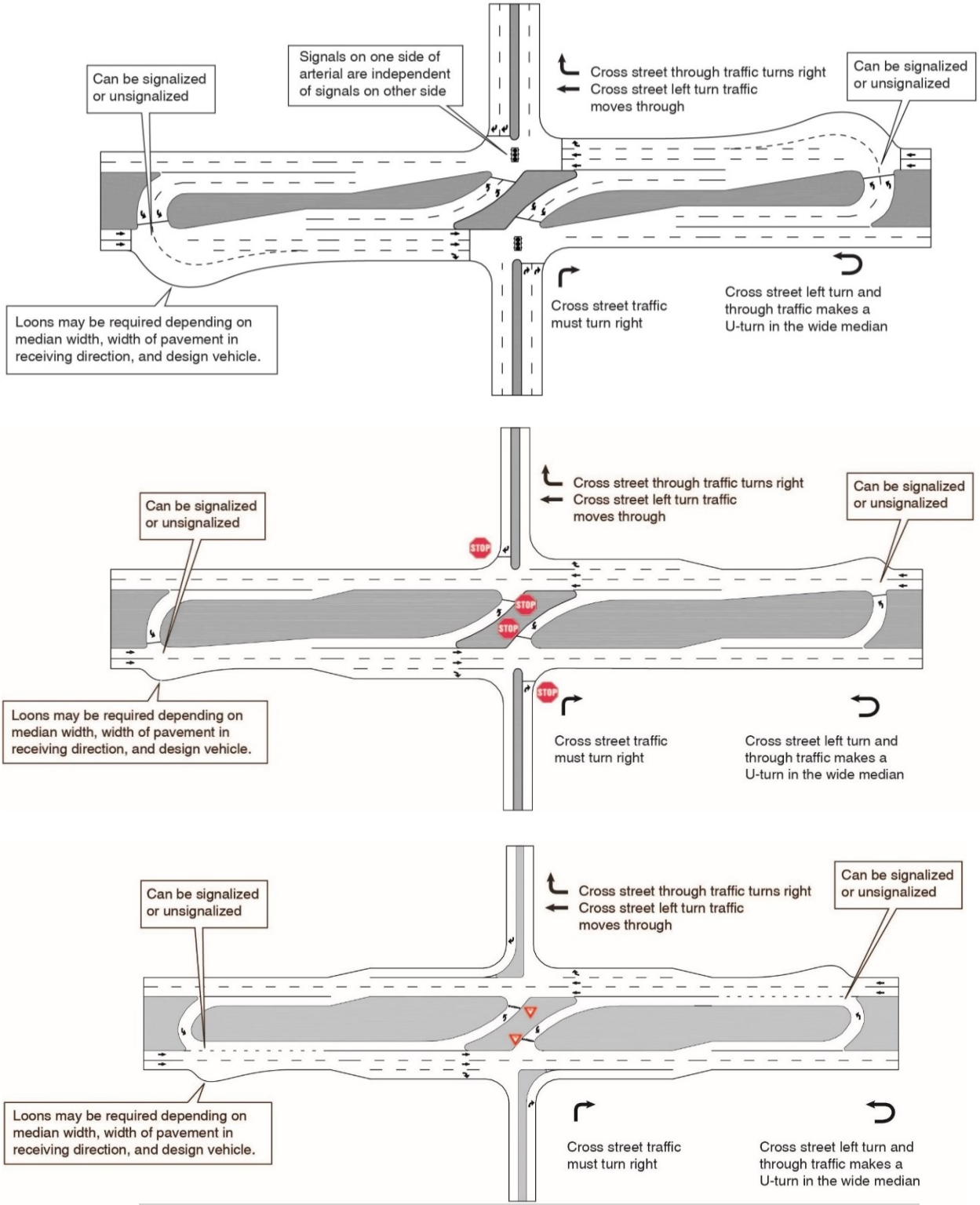

Adapted from Source: FHWA, *Restricted Crossing U-Turn Intersection Informational Guide, 2014*.*

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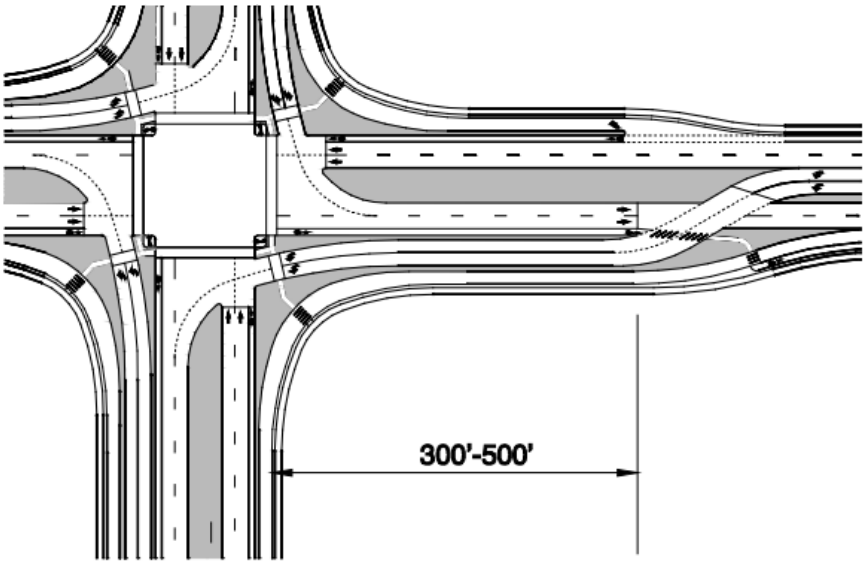
- **Displaced Left Turns** – FHWA's Displaced Left Turn Intersection Informational Guide (August 2014) is VDOT's basis for this design's spacing standards. For additional information from FHWA, the guide is available online at https://safety.fhwa.dot.gov/intersection/alter_design/pdf/fhwasa14068_dlt_infoguide.pdf. Research has generally found 300-500 feet to be adequate spacing between the main intersection and each upstream crossover intersection. With this intersection type, operations are especially important to consider because research indicates that intersection spacing influences the phase time that can be allocated to the left-turn crossover.*



Source: FHWA, *Displaced Left Turn Intersection Informational Guide, 2014*.

- **Quadrant Roadways** – FHWA's Alternative Intersections/Interchanges: Informational Report, Chapter 5 (April 2010) is VDOT's basis for this design's spacing standards. For additional information from FHWA, the report is available online at https://www.fhwa.dot.gov/publications/research/safety/09060/005.cfm. FHWA research has generally found 500 feet provides appropriate spacing between main and secondary intersections. This distance assumes the mainline design speed is 40 mph, roadways intersect at 90 degrees, the connecting road design speed is 30 mph, and typical cross sections are used.

  To ensure efficient operations at the secondary intersections, the intersections shall have three legs. Therefore, other accesses are not to be installed directly opposite the connecting roadway.

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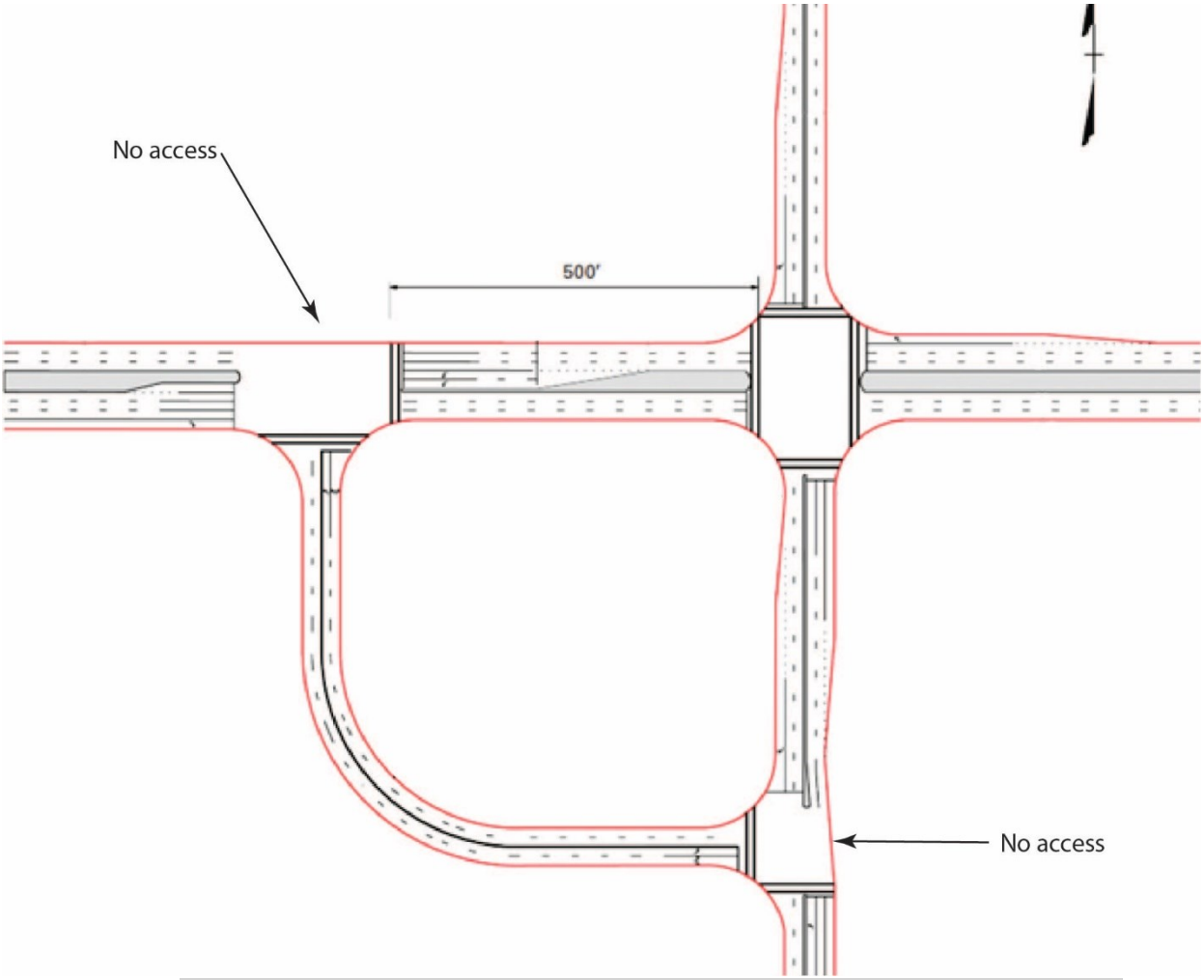

Adapted from Source: FHWA, *Alternative Intersections/Interchanges: Informational Report, Chapter 5*, 2010.*

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Exceptions/Waivers to the Spacing Standards/Access Management Requirements

The Access Management Regulations (*24VAC30-73-120*) identify potential exceptions to the spacing standards for commercial entrances, intersections, and median crossovers found in Table 2-2, Table 2-3, Table 2-4 and Figure 4-4 corner clearance in this Appendix. The Regulations also establish access management requirements for shared use access points*, cross parcel access, and functional area of intersections and identify potential exceptions to these requirements. Exceptions to the spacing standards and access management requirements are referenced in section *24VAC30-73-120* of the Access Management Regulations. See the VDOT Access Management web page for the regulations at *www.virginiadot.org/projects/accessmgt* .

For commercial entrances, intersections, and median crossovers (new or to be relocated) proposed for private sector land development projects, the Access Management Regulations specify the documentation to be submitted to justify an exception to the spacing standards and access management requirements. A request for an exception shall be submitted to the District Engineer/Administrator or designee using Exception Form *AM-E*.

For highway construction or reconstruction projects on roadways owned and maintained by VDOT, a request for a waiver to the spacing standards shall be submitted to the District Location and Design Engineer using Waiver Form *AM-W*. This form is available on the VDOT web site at *http://vdotforms.vdot.virginia.gov/.*

Exceptions / Waivers to the Design Standards

For both land development and highway construction projects **on VDOT owned and maintained roadways only**, the appropriate intersection sight distance from Table 2-5 must be met for all commercial entrances, intersections, and median crossovers. If intersection sight distance cannot be met and a design waiver is granted (see below), then the minimum stopping sight distance from *Table A1-1 in Appendix A1* must be met.

If stopping sight distance cannot be met, a request for a design exception (Form *LD-440*) shall be submitted. If intersection sight distance cannot be met, a request for a design waiver (Form *LD-448*) shall be submitted. See *IIM-LD-227* for information on the exception and waiver review process for sight distance. *IIM-LD-227* is available at *http://www.virginiadot.org/business/locdes/rd-ii-memoranda-index.asp.*

Section 24VAC30-73-50B in the Access Management Regulations also provides details on the stopping sight distance exception process.

For both private developments and highway construction projects, if any design standard in *Appendix F* (everything except Table 2-2, Table 2-3, Table 2-4 spacing standards, corner clearance, shared use entrances, cross parcel access, and functional area of intersections) cannot be met, a request for a design exception (Form *LD-440*) or design waiver (Form *LD-448*) shall be submitted in accordance with *IIM-LD-227*, available on the VDOT web site at *http://www.virginiadot.org/business/locdes/rd-ii-memoranda-index.asp.*

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Traffic Signals and Median Crossovers

Traffic signals and median crossovers offer potential benefits to intersection operations, capacity, and safety. However, if traffic signals are unjustified, designed (timing and phasing) or spaced improperly, they can have adverse impacts on motorist operations, capacity and safety. Median crossovers that are unjustified or spaced improperly can also have adverse impacts on motorist operations, capacity and safety. Therefore, the removal of traffic signals and median crossovers is desirable when it can be done safely.

Certain roads within Virginia are designated as part of the Arterial Preservation Network (APN) – major roadways outside of municipal corporate limits that serve a critical function for mobility. Because of the potential impact on through travel, traffic signal installation on APN highways requires additional approval than other highways.

See *IIM-TMPD-2* (Corridor Planning Studies – Arterial Management Plans)* for more information on the Arterial Preservation Network

The *Arterial Preservation Network (APN)* is shown on a statewide map.

Below is VDOT's policy on Traffic Signals and Median Crossovers:

Removal of a Traffic Signal

Following engineering review of current signal operations, timings and traffic patterns, a decision can be made to eliminate a signal. The removal should be phased to include determining the type of control necessary post-signal, removing sight distance obstacles, informing the public of the potential removal, flash or cover the heads for 90 days and analyze the operations and remove the signal if the data confirms the signal is no longer justified. For additional information, see (*MUTCD Chapter 4B*).

- **Responsible Person:** District Traffic Engineer

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Installation of a Traffic Signal (*24VAC30-315-10*)

The selection and use of traffic control signals shall* be based on a Signal Justification Report (SJR) engineering study that evaluates whether the signal is both warranted (as based on the signal warrants of the MUTCD) and justified, as per the latest effective revision to *IIM-TE-387.* The SJR shall consider the impacts of the proposed signal on traffic, pedestrian, bicycle operations and safety, and whether spacing to adjacent intersections and entrances will be in accordance with the Access Management Spacing Standards.

The proposed installation of any new traffic signals on the APN shall be approved by the District Engineer and the State Traffic Engineer, as per *IIM-TE-387.* There is no official appeal process for a denied traffic signal. For additional information see: *MUTCD Chapters 4B & 4C*; RDM App. F, Table 2-2; *IIIM-TE-387.*

Innovative Intersections and Interchanges as detailed in *Appendix A3* of this Manual, shall be considered and analyzed when reconstructing or constructing new signalized or unsignalized intersections. Unsignalized Innovative Intersections, including but not limited to Roundabouts, are the Department's preferred alternative if the analysis shows that they are feasible. On any roadway corridor designated as APN, intersections or new access points shall **not** have a new traffic signal installed until these alternatives have been evaluated and determined to be **not** feasible or appropriate for the location. For additional information see: *VA Supplement to the MUTCD Part 4.*

- Responsible Person: District Engineer and the State Traffic Engineer for new signal(s) on the APN; District Traffic Engineer for new signal(s) on all other roadways.

Addition, Relocation and/or Closing of a Median Crossover

Median Crossover Location Approval Process:

Overview

Tables 2-2 through 2-5 show the minimum median crossover spacing and sight distance requirements to be applied on all divided highways without full control of access. Median crossovers not meeting these minimums will only be allowed after an individual traffic safety and operational study and approval as outlined below.

The following are some factors, but not all inclusive, that should be considered in the study, if applicable: Operating speed, volume and composition of traffic for median crossover and through routes, signal operation and traffic progression, accidents with and without additional median crossover, number of U-turns, weaving maneuvers, alternative solution(s), capacity analysis, etc.

All Additions, Relocations and/or Closings of a Median Crossover require approval as indicated on the following pages.

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Median Crossovers Requested by the Private Sector (APN) *

Any new median crossover designated on the APN shall not be installed unless approved by the State Location & Design Engineer. The basic process is the same as for non-APN roadways (see below).

- **Responsible Person:** State Location and Design Engineer (New Median Crossovers)

The District Transportation and Land Use Director should consult with the responsible District Traffic Engineer concerning private sector (developer) requests to relocate or close an existing median crossover on VDOT owned and maintained highways. **A median crossover request that complies with the spacing standards, the sight distance requirements, and all other engineering standards may be approved by the District Engineer or designee.**

- **Responsible Person:** District Traffic Engineer

Median Crossovers Requested by the Private Sector (Non-APN)

The District Transportation and Land Use Director should consult with the responsible District Traffic Engineer concerning private sector (developer) requests for a new median crossover or to relocate or close an existing median crossover on VDOT owned and maintained highways. **A median crossover request that complies with the spacing standards, the sight distance requirements, and all other engineering standards may be approved by the District Engineer or designee.**

- **Responsible Person:** District Traffic Engineer

For private sector project related median crossover requests **that do not meet the spacing standards,** a spacing exception must be approved by the District Engineer or designee as described in the "Exceptions to the Spacing Standards" section above. Traffic studies as outlined above must accompany the request for a median crossover location that does not meet the minimum spacing standards.

- **Responsible Person:** District Traffic Engineer

The approval of the addition, relocation or closing of median crossovers on an existing VDOT highway **that do not meet the sight distance requirements or other engineering standards** shall be the duty of the responsible District Traffic Engineer with the concurrence of the State Location and Design Engineer. It shall be the duty of the responsible District Traffic Engineer to coordinate such changes with the State Location and Design Engineer in order that these revisions of median crossovers may be properly recorded on the original plans.

- **Responsible Person:** District Traffic Engineer and State Location & Design Engineer

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Median Crossovers on a Highway Construction Project (APN) *

Any new median crossover designated on the APN shall be approved by the State Location & Design Engineer. The basic process is the same for non-APN roadways (see below). The closing of a median crossover shall be approved by the District Engineer and the responsible District Traffic Engineer.

- **Responsible Person:** State Location & Design Engineer (New Median Crossovers)
- **Responsible Person:** District Engineer and responsible District Traffic Engineer (Closing a Median Crossovers)

Median Crossovers on a Highway Construction Project (Non-APN)

The determination of any new median crossover or the closing of an existing median crossover shall be the result of field inspection recommendations of the District Engineer and the responsible District Traffic Engineer.

- **Responsible Person:** District Engineer and the responsible District Traffic Engineer

As part of a highway construction project, median crossover spacing less than shown as minimum in Tables 2-2, Table 2-3 and Table 2-4, will be considered when required by existing intersecting public highways or streets with a current ADT of 100 or greater and must be submitted for approval to the District Location and Design Engineer using Form AM-W. All plans at the public hearing stage are to show only those median crossovers at public highways and streets which meet these criteria or at other locations that preliminary planning and traffic studies have warranted.

- **Responsible Person:** District Location & Design Engineer

The approval of median crossovers that do **not** meet sight distance or other engineering standards shall be the responsibility of the responsible District Traffic Engineer and the State Location and Design Engineer, with the final responsibility for the location of median crossover layout on plans resting with the State Location and Design Engineer. Plans at right-of-way stage are to indicate the median crossovers as determined and approved by the above criteria.

- **Responsible Person:** State Location & Design Engineer

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Any plans that are revised during construction for the addition or deletion of median crossovers where spacing standards or engineering standards are **not** met shall be approved by the District Location and Design Engineer, the responsible District Traffic Engineer, and/or the State Location and Design Engineer in accordance with the approval process outlined above.

- **Responsible Person:** District Location and Design Engineer (Spacing), District Engineer/Administrator (Closings) or State Location and Design Engineer (Sight Distance)

Signalized and Unsignalized Intersection Design (Corner Island Designs)

At-grade intersections must provide adequately for anticipated turning and crossing movements.

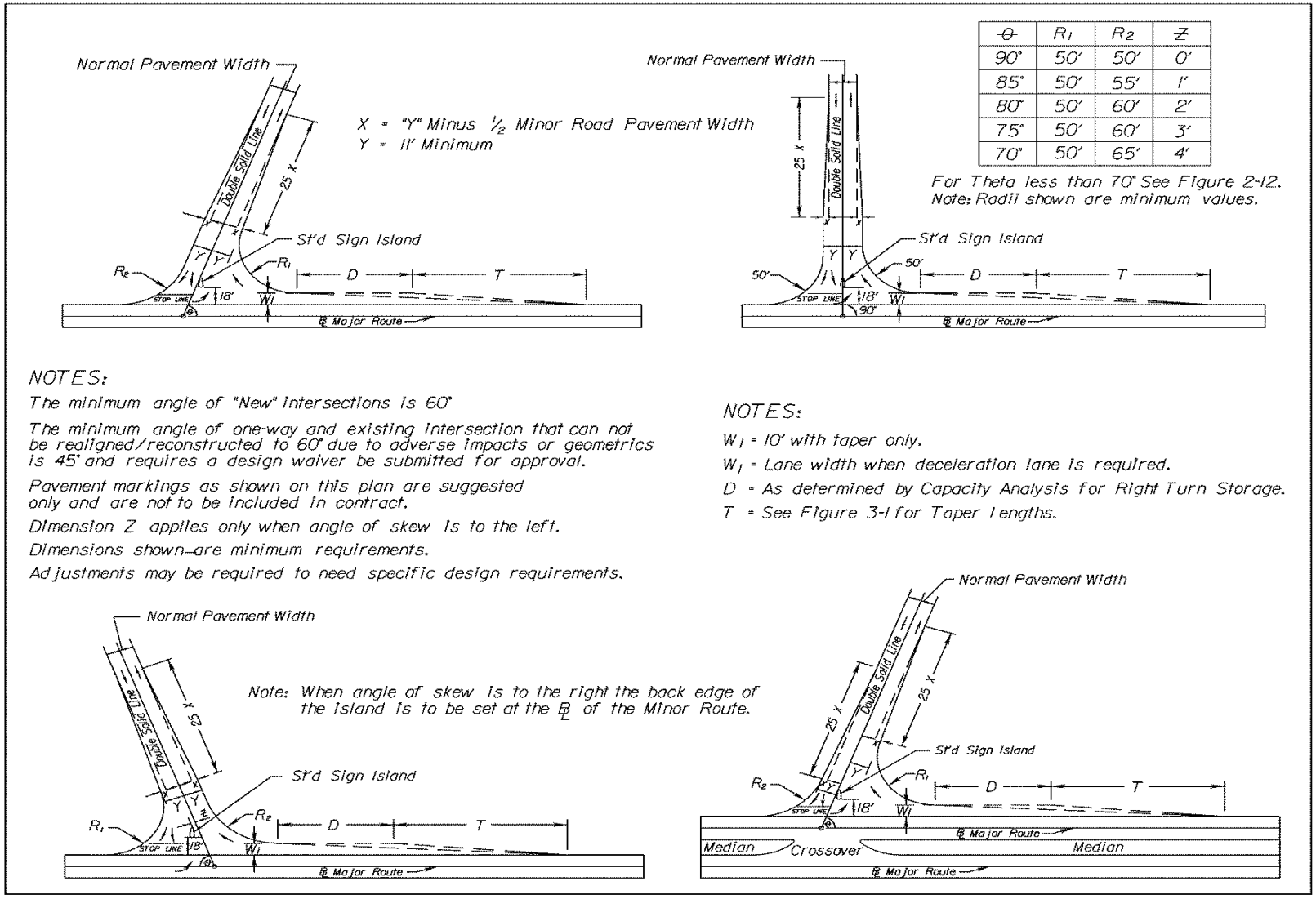
For shoulder (Rural) applications, Figures 2-11 and 2-12 provides the Engineer with the basic types of intersection designs and minimum dimensions, radii, skews, angles, and the types of island separations, etc. Also see AASHTO Green Book, Chapter 9, Section 9.6.3, Figure 9-39.

For curb and gutter (Urban) applications see AASHTO Green Book, Chapter 9, Section 9.6.3, Figure 9-38 (Intersections). This chapter provides additional information to be considered in the design since the site conditions, alignment, grades, sight distance, and the need for turning lanes and other factors enter into the type of intersection design.

Sufficient offset dimensions, pavement widths, and radii shall be shown in the plans by the designer to insure that the sign island is properly positioned.

Care should be taken in the design of four-lane roadways with intersecting two-lane roadways. If traffic conditions clearly warrant a four-lane divided design for the two-lane road at the intersection, the divided design must be constructed for a sufficient distance to allow for the approaching divided design and the subsequent stop condition ahead to be properly signed. The four-lane divided design should not be constructed unless it is clearly warranted and the approaches can be properly signed or an adjacent significant segment of* the minor road is expected to be improved to a divided status in the near future.

* Added 1/21



Θ	R1	R2	Z
90°	50'	50'	0'
85°	50'	55'	1'
80°	50'	60'	2'
75°	50'	60'	3'
70°	50'	65'	4'

For Theta less than 70° See Figure 2-12.
Note: Radii shown are minimum values.

NOTES:

The minimum angle of "New" intersections is 60°

The minimum angle of one-way and existing intersection that can not be realigned/reconstructed to 60° due to adverse impacts or geometrics is 45° and requires a design waiver be submitted for approval.

Pavement markings as shown on this plan are suggested only and are not to be included in contract.

Dimension Z applies only when angle of skew is to the left.

Dimensions shown–are minimum requirements.

Adjustments may be required to need specific design requirements.

NOTES:

W_1 = 10' with taper only.

W_1 = Lane width when deceleration lane is required.

D = As determined by Capacity Analysis for Right Turn Storage.

T = See Figure 3-1 for Taper Lengths.

Note: When angle of skew is to the right the back edge of the island is to be set at the ℄ of the Minor Route.

FIGURE 2-11 INTERSECTION DESIGN FOR RURAL APPLICATIONS WITH OR WITHOUT STANDARD SI-1 SIGN ISLAND DESIGN*

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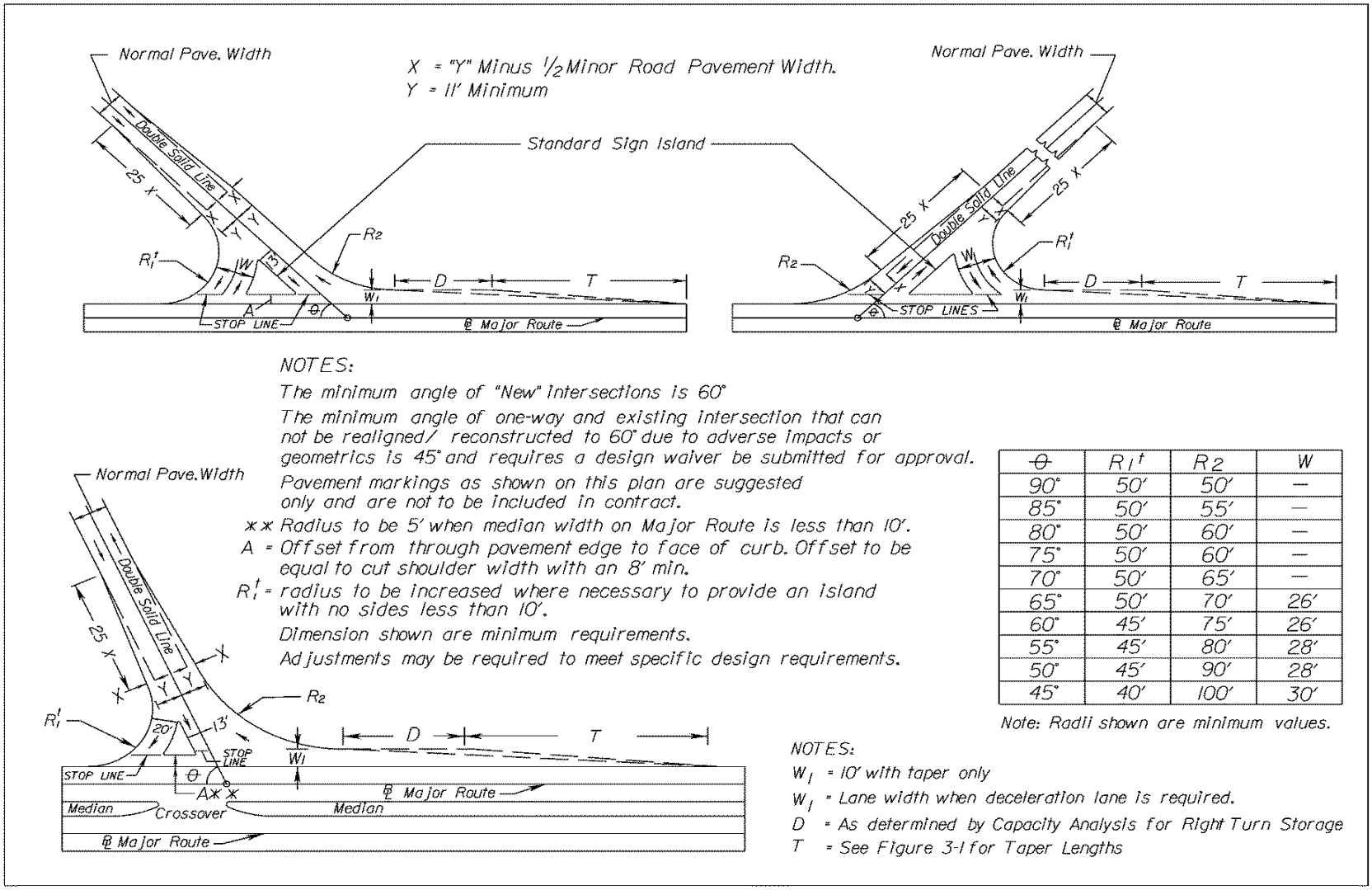

θ	R1'	R2	W
90°	50'	50'	—
85°	50'	55'	—
80°	50'	60'	—
75°	50'	60'	—
70°	50'	65'	—
65°	50'	70'	26'
60°	45'	75'	26'
55°	45'	80'	28'
50°	45'	90'	28'
45°	40'	100'	30'

Note: Radii shown are minimum values.

NOTES:
W_1 = 10' with taper only
W_1 = Lane width when deceleration lane is required.
D = As determined by Capacity Analysis for Right Turn Storage
T = See Figure 3-1 for Taper Lengths

FIGURE 2-12 INTERSECTION DESIGN FOR RURAL APPLICATIONS WITH OR WITHOUT STANDARD SI-2 OR SI-3 SIGN ISLAND DESIGN*

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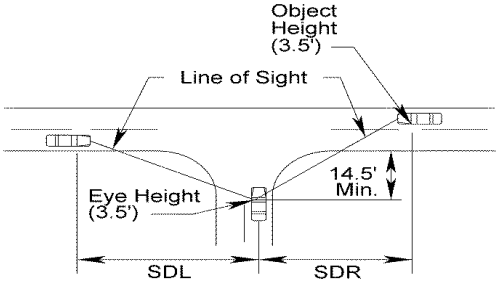
Intersection Sight Distance

The following table shows intersection sight distance requirements for various speeds along major roads:



SDR = Sight Distance Right (For a vehicle making a left turn)
SDL = Sight Distance Left (For a vehicle making a right or left turn)

Height of Eye 3.5'											**Height of Object 3.5'**	
Design Speed (mph)**		**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**
SDL=SDR: 2 Lane Major Road	**In Feet**	225	280	335	390	445	500	555	610	665	720	775
SDR: 4 Lane Major Road (Undivided) or 3 Lane		250	315	375	440	500	565	625	690	750	815	875
SDL: 4 Lane Major Road (Undivided) or 3 Lane		240	295	355	415	475	530	590	650	710	765	825
SDR: 4 Lane Major Road (Divided – 18' Median)		275	340	410	480	545	615	680	750	820	885	955
SDL: 4 Lane Major Road (Divided – 18' Median)		240	295	355	415	475	530	590	650	710	765	825
SDR: 5 Lane Major Road (continuous two-way turn-lane)		265	335	400	465	530	600	665	730	800	860	930
SDL: 5 Lane Major Road (continuous two-way turn-lane)		250	315	375	440	500	565	625	690	750	815	875
SDR: 6 Lane Major Road (Divided – 18' Median)		290	360	430	505	575	645	720	790	860	935	1005
SDL: 6 Lane Major Road (Divided – 18' Median)		250	315	375	440	500	565	625	690	750	815	875
SDL: (Where left turns are physically restricted)		210	260	310	365	415	465	515	566	620	670	725

TABLE 2-5 INTERSECTION SIGHT DISTANCE

Source: 2018 AASHTO Green Book, Chapter 9, Section 9.5.3

******For all tables, use design speed if available, if not use legal speed.

Note: Both SDR and SDL must be met at the entrance or intersection, unless left turns are physically restricted by a median or channelization island; then only SDL is needed. Intersection sight distance determinations apply both horizontally and vertically, measured in each direction, and are to be based on a height of driver's eye of 3.5' and a height of object 3.5'.

The term "Major Road" refers to the road with the higher functional classification, or if both have the same classification, the road with the higher volume.

Intersection sight distance does not control the access spacing for entrances and intersections shown in Table 2-2.

For major roadways of more than four lanes, large truck volumes on a minor road or median crossover, or median widths over 60', see AASHTO's *A Policy on Geometric Design of Highways and Streets.*

The Engineer must check each entrance and intersection to insure that adequate sight distance is provided. On a typical two-lane road horizontal curve there are numerous objects that restrict sight distance such as cut slopes, buildings, vegetation, vehicles, etc.

These obstructions should be considered when reviewing commercial entrances. A divided highway can have similar problems. It is very important to obtain adequate intersection sight distance for all "New" and "Reconstructed" commercial entrances from the access point as well as the left turn position into the access point. If the minimum intersection sight distance values in the table mentioned above cannot be met, including applying the adjustment factors for sight distances based on approach grades, a Design Waiver shall be requested in accordance with *IIM-LD-227*, see 2018 AASHTO Green Book, Chapter 9, Section 9.5.3 for further guidance. Design Waiver and Design Exception requirements are based on the following;

1) Design Waiver – Meets Stopping Sight Distance but not Intersection Stopping Sight Distance.
2) Design Exception – Does not meet the minimum Stopping Sight Distance *(See Appendix A1* for Stopping Sight Distance Table A1-1).

The Intersection Sight Distance values in the table above permit a vehicle stopped on a minor road or median crossover, to cross the major road safely or merge safely in the case of turns.

The Intersection Sight Distance table above is based on the following criteria:

The AASHTO Green Book shows that it requires 7.5 seconds for a passenger car to turn left onto a two-lane road. For a passenger vehicle to turn right into the first lane, the Green Book shows that only 6.5 seconds is required because drivers making right turns generally accept gaps that slightly shorter than those accepted in making left turns.

The reference to 18' median in Table 2-5 applies to medians up to 18' in width (18' or less). An 18' median is equivalent to 1 ½ lanes, and requires an additional 0.75 s for a passenger car to cross and an additional 1.05 s for a truck to cross.* For medians up to this width there is not sufficient room to stop so more sight distance is needed. For wider

* Rev 7/21

medians, there would be room to stop in the middle of the highway so sight distance can be less.

Stopping Sight Distance

Stopping sight distances exceeding those shown in the table below should be used as basis for design wherever practical.

In computing and measuring stopping sight distances, the height of the driver's eye is estimated to be 3.5 feet and the height of the object to be seen by the driver is 2 feet, equivalent to the taillight height of a passenger car. The "K Values" shown are a coefficient by which the algebraic difference in grade may be multiplied to determine the length in feet of the vertical curve that will provide minimum sight distance. Crest vertical curves shall meet or exceed AASHTO design criteria for Stopping Sight Distance, not the "k" Values. The "K" valves for sag vertical curves take into account the headlight sight distance.

Height of Eye 3.5'								**Height of Object 2'**		
Design Speed (mph) **	25	30	35	40	45	50	55	60	65	70	75
Min. Sight Distance (ft.)	155	200	250	305	360	425	495	570	645	730	820

Source: 2018* AASHTO Green Book, Chapter 3, Section 3.2.2

Minimum K Value For:											
Crest Vertical Curves	12	19	29	44	61	84	114	151	193	247	312
Sag Vertical Curves	26	37	49	64	79	96	115	136	157	181	206

TABLE 2- 6 STOPPING SIGHT DISTANCE

Source: 2018* AASHTO Green Book, Chapter 3, Section 3.4.6*
**For all tables, use design speed if available, if not use legal speed limit.

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When a highway is on a grade, the sight distances in the table below shall be used.

Design Speed (mph) **	Stopping Sight Distance on Grades					
	Downgrades			Upgrades		
	3%	6%	9%	3%	6%	9%
15	80	82	85	75	74	73
20	116	120	126	109	107	104
25	158	165	173	147	143	140
30	205	215	227	200	184	179
35	257	271	287	237	229	222
40	315	333	354	289	278	269
45	378	400	427	344	331	320
50	446	474	507	405	388	375
55	520	553	593	469	450	433
60	598	638	686	538	515	495
65	682	728	785	612	584	561
70	771	825	891	690	658	631
75	866	927	1003	772	736	704

TABLE 2-7 STOPPING SIGHT DISTANCE ON GRADES

(See 2018* AASHTO Green Book, Chapter 3, Section 3.2.2)

**For all tables, use design speed if available, if not use legal speed limit.

Connection grades are to provide for a smooth tie-in with the mainline edge of pavement in accordance with *Appendix F, Section 2-INTERSECTING CROSS ROAD GRADES* and are to provide for adequate sight distance.

Current practice is to eliminate scuppers on most bridge designs. For this reason a minimum gradient of 0.5 percent is desirable to facilitate surface run-off. There will be instances where flatter gradients are required, through vertical curves, long water crossings, etc.; therefore, the water should be removed by means of inlets in lieu of open scuppers. Gradients are to be computed to as few decimal places as possible and should be in numbers evenly divisible by four, where feasible.

All grades are to be checked, as accurately as possible at this stage. See GS standards or proper minimum vertical clearances at underpasses and overpasses.

Minimum vertical clearances for structures or limits of work at grade crossing of railroads are to be obtained from the Department of Rail and Public Transportation.

Drainage of the existing terrain and adequate cover for drainage structures are also important factors to be considered in designing grades.

Proposed grades for roadside ditches and/or special design ditches are to be shown on corresponding profile sheet. See Chapter 7 of VDOT *Drainage Manual*.

* Rev 10/20

Conflicts with utilities are to be avoided wherever practicable. See VDOT *Survey Manual*, Chapter 8 for additional analysis information.

The Department of Motor Vehicles'* permit policy allows vehicles with excess heights to operate on our highways under an over-height permit. In view of this, 14'-0" has been accepted as the maximum allowable height to be provided for during construction, reconstruction, or maintenance operations. Every effort must be made to insure that a minimum vertical clearance of 14'-2" is provided on existing grade separation structures during construction, reconstruction, or maintenance. If temporary reduction in the vertical clearance below 14'-2" is unavoidable and is apparent in the design stage, the VDOT Structure and Bridge Division is to be advised when the project is turned in to the Construction Division.

The following information is to be furnished so that over-height permit holders can be notified:

- Route, county, and mile post
- Name of railroad or route overpass
- Minimum overhead clearance prior to change
- Minimum overhead clearance after change

Date of change
Temporary or permanent

* Rev. 1/21

Median Crossovers

(With and Without Connections)

The shape of the median end for the crossover* should generally be symmetrical when the median width is less than 10' and the median opening length is not excessive, but the bullet nose can be effectively used to reduce the opening. For a median width of 10' or more, the bullet nose design should be used instead of a semicircular design at 3-leg and 4-leg intersections.

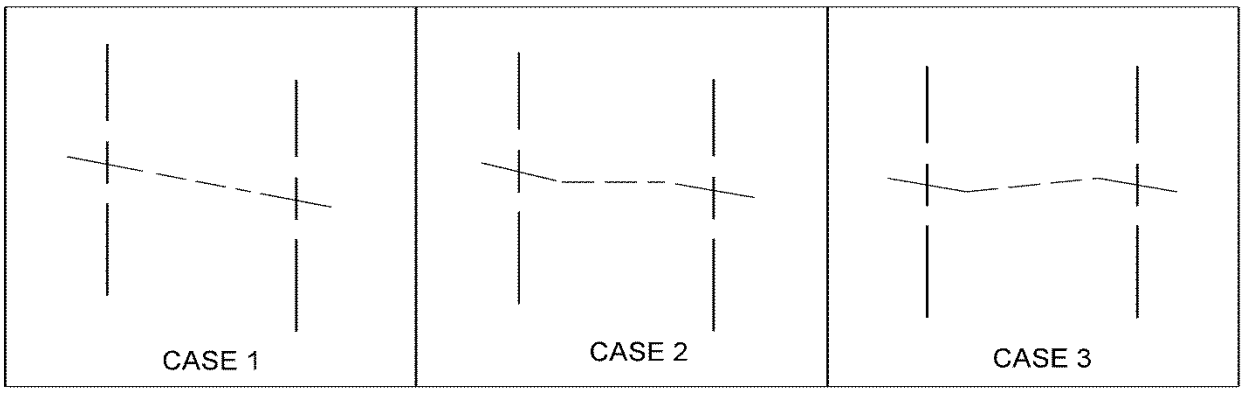
The length of the median crossover and the shape of the median end are controlled by the width of the median and the turning radii. A wide median opening can be reduced at skewed intersections by utilizing modifications of the bullet nose design. Additional information may be obtained from the Access Spacing Table 2-2 and AASHTO's *A Policy on Geometric Design of Highways and Streets* (Median Openings).

New median crossovers must demonstrate that left-turn storage space is met. Use appropriate turning movement software for analysis (such as Auto-Turn).

Median Crossover Grades

On divided highways with depressed medians, there are generally three cases by which superelevation is determined for the opposing traffic lanes.

Case 1 is for the superelevation of all lanes to be obtained along a single plane. Case 2 is for the median pavement edges to be held at the same, or close to the same elevation. Case 3 is for each baseline elevation to be approximately the same, with a corresponding difference in elevation of the median pavement edges. Thus, the grade of the lane on the outside of the curve is higher than the inside lane. The various methods are illustrated below.



Source: AASHTO Green Book, Chapter 3, Section 3.3.8

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* Rev. 1/21

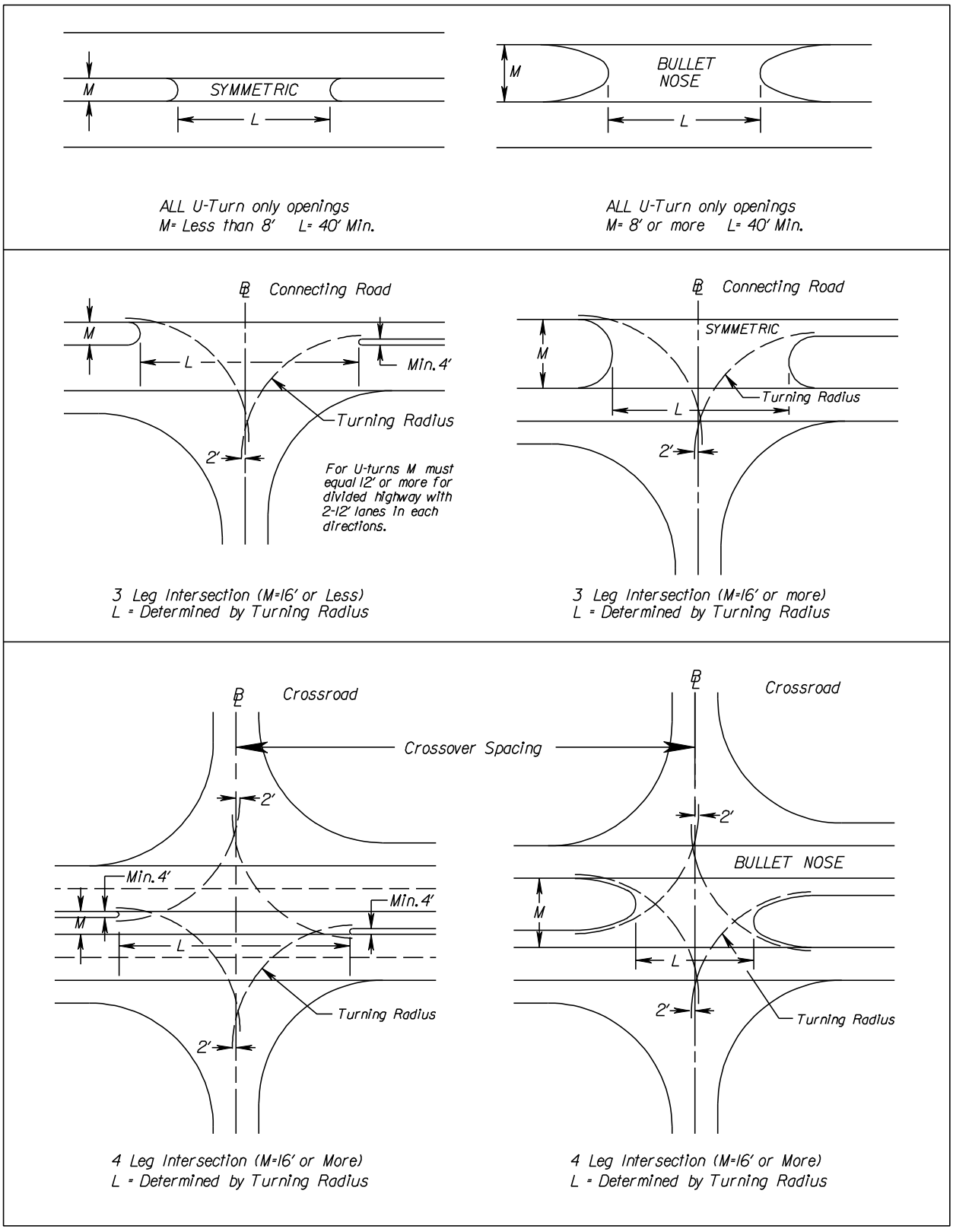

FIGURE 2-13 MEDIAN CROSSOVERS WITH AND WITHOUT CONNECTIONS*

* Rev. 1/14

The Engineer is to study the requirements of each particular situation. In the case of a facility without median crossovers, Case 2* above is generally acceptable on superelevated curves. This will allow the median area to be properly graded without creating an adverse design situation.

Case 3 generally results in an undesirable situation and must be used with caution.

In a case where a median crossover is proposed, particularly in conjunction with a connecting road within the limits of a superelevated curve, the designer shall pay particular attention to the path which must be traversed by vehicles using the median crossover.

In most cases, the application of the superelevation in a single plane (Case 1) is the acceptable method. This will allow a vehicle to cross from one lane to the other without negotiating several different gradients. As noted, herein, this will require the adjustment of the mainline grades.

The desirable grade on a median crossover is between 0.5% and 5%. The maximum grade should never exceed 10% as safe turning movements above this level are difficult. It is especially important at locations, such as truck stops and other businesses generating large vehicular traffic, that median crossover grades fall in the category of less than 5%. A desirable maximum algebraic difference of a median crossover crown line is 4 or 5 percent, but it may be as high as 8 percent at the locations where there are few trucks or school buses and low speeds.

Additionally, sight distances must be checked for values shown in the Table 2-5 Intersection Sight Distance.

Any deviation from these values is to be brought to the attention of the State Location and Design Engineer.

The grade on a median crossover is measured from the edge of shoulder to the edge of shoulder, unless left turn lanes are provided, in which case the grade is applied from the edge of pavement of the left turn lanes to the edge of pavement of the opposite left turn lane. This is more clearly shown in the following diagram:

Determination of Grade on a Crossover

In preparing plans for field inspection, the gradient at each median crossover is to be plotted graphically.

* Rev. 7/15

Intersecting Cross Road Grades

The grade of a connecting facility must be carefully studied when approaching an intersection where the mainline is superelevated. A smooth grade tie-in is desirable, with sufficient area on a relatively flat grade for a vehicle to stop before entering the main roadway. Also, when a connection is on the outside of a superelevated curve, the grade must be designed so that the connection is visible to a driver on the main roadway desiring to turn onto the connections.

Every attempt must be made to provide an adequate area for this vehicular stoppage, giving full consideration to the horizontal and vertical sight distances.

The desirable tie-in is one that is no steeper than the pavement cross slope whether this is superelevated or the normal crown. The maximum difference between the pavement cross slope and the approach road grade shall not exceed 8% at stop intersections or 4% at continuous-movement intersections. The stoppage area should be a minimum of 50' before beginning the steeper grade. (See AASHTO's *A Policy on Geometric Design of Highways and Streets*).

Innovative Intersection and Interchange Policies

Roundabout Policy

VDOT recognizes that Roundabouts are frequently able to address safety and operational objectives better than other types of intersections (signalized and unsignalized)* in both urban and rural environments and on high-speed and low-speed highways.

Therefore, it is VDOT policy that Roundabouts or other Innovative Intersections / Interchanges shall be considered when a project includes reconstructing or constructing new intersection(s), signalized or unsignalized (Roundabout HJR 594, 2003). Roundabouts and other Innovative Intersections / Interchanges shall be screened using the Department's *Virginia Junction Screening Tool (VJuST)*. When the VJuST shows that a Roundabout or other Innovative Intersection / Interchange configuration is a feasible alternative, it is considered the Department's preferred alternative due to the proven substantial safety and operational benefits as well as the reduction in the Department's long-term maintenance costs for traffic signals.

If VJuST determines that a Roundabout is a feasible alternative, then a traffic analysis and preliminary layout should be developed and analyzed in more detail. In such case, the Engineer shall provide an analysis of each intersection to determine if a roundabout is a feasible alternative based on site constraints, including right-of-way, environmental factors and other design constraints. The advantages and disadvantages of constructing a Roundabout shall be documented for each intersection.

* Rev. 7/19

The Department's **Roundabout Analysis Selection Tools** listed below shall be used for a more detailed screening and to develop a planning-level cost comparison between a Roundabout and a traditional signalized intersection*

1-Roundabout Screening Criteria
2-Roundabout Cost Comparison Tool Manual v2.5
3-Roundabout Cost Comparison Tool v2.5
4-Roundabout Design Guidance

Innovative Intersection and Interchange Policy

Conventional intersections are not always the most effective traffic control. Innovative Intersections / Interchanges, including but not limited to Roundabouts, can provide innovative solutions to address safety and operational objectives better in both urban and rural environments and on both high-speed and low-speed highways. Innovative Intersections / Interchanges are defined as non-traditional intersection designs that improve operations and safety by reducing the overall number of conflicting movements and/or signal phases.

Therefore, it is VDOT's Innovative Intersection and Interchange policy that:

- On the Arterial Preservation Network (APN) [Mapping of which can be found at this hyperlink: Innovative Intersections / Interchanges, including but not limited to Roundabouts, **shall** be considered when a project includes constructing or reconstructing any new intersection(s). For the purposes of this requirement, "reconstruction" includes signalization of an unsignalized intersection.

- Innovative Intersection designs **shall** be considered prior to the construction of a new grade-separated interchange as a replacement for an existing at-grade intersection.

- For projects involving new freeway interchanges or reconstruction of existing freeway interchanges, Innovative Interchange configurations **shall** be considered.

Innovative Intersection and interchange controls shall be analyzed to determine benefits and impacts including safety, delay reduction, right-of-way and environmental impacts. During the preliminary engineering phase, it is not necessary to consider all Innovative Intersection/interchange configurations; engineering judgment should be used to identify which configurations are potentially applicable.

* Rev. 7/19

The *Virginia Junction Screening Tool (VJuST)* shall* be used to determine which Innovative Intersection / Interchange control configurations including but not limited to Roundabouts, are most deserving of further investigation at a particular location. Those configurations deserving further investigation will then be analyzed more comprehensively in accordance with *VDOT's Traffic Operation Safety Analysis Manual (TOSAM).* A Preliminary layout and right of way and construction cost for each feasible alternative shall be developed and the advantages and disadvantages of constructing each of the feasible alternatives shall be documented for each alternative analyzed.

For new signals or Innovative Intersections / Interchanges on the APN, the District Traffic Engineer shall provide a recommendation to the Innovative Intersection Review Committee as to the preferred Innovative Intersection / Interchange alternative for the location, based on safety, operational, environmental, right of way and/or Common Sense Engineering benefits, for their concurrence.

Below are examples of Innovative Intersection and Interchange Control Types that VDOT currently recognizes as effective traffic control treatments:

Intersections

- Displaced Left-Turn (DLT)
- Median U-Turn (MUT)
- Restricted Crossing U-Turn (RCUT)
- Continuous Green-T (CGT)
- Quadrant Roadway (QR)
- Jug-handle
- Roundabouts

Interchanges

- Diverging Diamond Interchange (DDI)
- Single Point Urban Interchange
- Double Roundabout Interchange

* Rev. 7/19

For Details of these Innovative Intersections and interchanges, including roundabouts, see *Appendix A3* of this Manual.

Other Innovative Intersection and interchange designs may be developed in the future and will be listed in *Appendix A3* of this Manual.

For more information on the above mentioned Innovative Intersection Designs see: *http://www.virginiadot.org/info/alternative_intersection_informational_design_guides.asp* *https://safety.fhwa.dot.gov/intersection/alter_design/* *

Accommodating Pedestrians and Bicyclists

According to the Commonwealth Transportation Board's adopted *Policy for Integrating Bicycle and Pedestrian Accommodations*, bicycling and walking are fundamental travel modes and integral components of an efficient transportation network. Appropriate bicycle and pedestrian accommodations provide the public, including the disabled community, with

- Access to the transportation network;
- Connectivity with other modes of transportation; and
- Independent mobility regardless of age, physical constraints, or income.

Effective bicycle and pedestrian accommodations enhance the quality of life and health, strengthen communities, increase safety for all highway users, reduce congestion, and can benefit the environment. Bicycling and walking are successfully accommodated when travel by these modes is efficient, safe, and comfortable for the public. It is important that the consideration and provision of bicycling and walking accommodations be consistently incorporated into the decision-making process for Virginia's transportation network.

The VDOT web site contains a number of resources on accommodating pedestrian and bicycle facilities as well as facility design guidelines.

VDOT's *Designated Bicycle and Pedestrian Accommodations* provides design standards for bicycle and pedestrian facilities (e.g. designated bicycle lanes at least 4 feet in width, providing striping for bicycle lanes, asphalt or concrete sidewalks at least 5 feet in width, pedestrian islands at intersections and roundabouts).

* Rev. 7/17

Bicycle and Pedestrian Facility Guidelines are presented in *Appendix A(1), Section A(1)-1*[*] of the *Road Design Manual*. For information on curb ramps and sidewalks, see *IIM-LD-55*. Also see *MUTCD*, Chapter 9, Traffic Control for Bicycle Facilities

Standards for Intersection Crosswalk Markings can be found on page 3B-27 in the *Manual for Uniform Traffic Control Devices* and *Standards for Pedestrian and Bicycle Markings for Roundabouts* are described on pages 3B-44 and 3B-45.

Figure 3-25 offers a basic illustration of these pedestrian and bicycle concepts along a highway corridor and at an intersection.

An Internal Bicycle and Pedestrian Task Force is responsible for ensuring consistent implementation of bicycle and pedestrian policies within VDOT, while the Bicycle Accommodations Review Team evaluates proposed plans to ensure consistency in bicycle and pedestrian facility design. For additional information see the *State Bicycle and Pedestrian Program* web page on the VDOT web site.

Managing Access to the Highway and Pedestrian/Bicyclist Safety

Numerous entrances and intersections create safety problems for pedestrians and bicyclists. Every entrance and intersection creates pedestrian-vehicle, bicyclist-vehicle and vehicle-vehicle conflicts. Pedestrians and bicyclists are especially vulnerable to vehicular left turns because they are small visual objects compared to vehicles and not clearly visible to drivers who are focusing on the opposing traffic when they begin a left turn. Left turns account for a high number of crashes with bicyclists and pedestrians.

Reducing the number of entrances and limiting access from one or more directions improves pedestrian and bicyclist safety:

- The number of conflict locations is minimized;
- Lowering the driver workload, as well as that of pedestrians and bicyclists, improves safety and simultaneously improves traffic flow.
- Pedestrian/bicyclist crossing is enhanced with median refuge areas; and
- Accommodating the disabled is easier, as the need for special treatments at entrances is reduced.

Figure 2-23 illustrates how each entrance creates eight potential conflict points for pedestrians and bicyclists. Reducing the number of entrances and restricting left turn movements lowers these potential crash points.

[*] Rev. 7/18

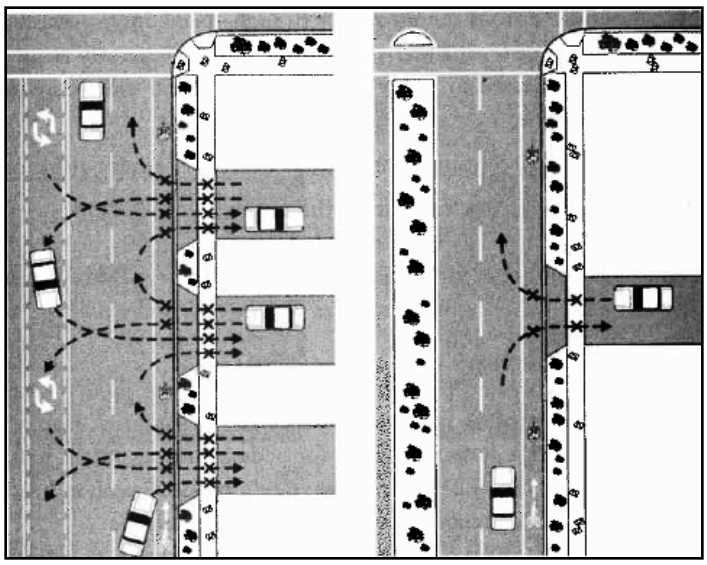

FIGURE 2-23 REDUCING THE NUMBER OF ENTRANCES BENEFITS PEDESTRIANS AND BICYLISTS

Source: *Transportation & Land Development 2nd Edition 2003*, Koepke and Stover

Once the pattern of entrances and intersections is established, it is difficult to retroactively reduce, consolidate, or eliminate existing entrances to make existing roads more attractive to bicyclists and pedestrians.

However, mid-block crosswalks can be considered to provide locations for pedestrians and bicyclists to cross arterials between intersections where pedestrian/bicyclist attractors are located on opposite sides of a roadway. Mid-block crossings can provide:

- Visual cues to allow approaching motorists to anticipate pedestrian activity and unexpected stopped vehicles, and
- Reasonable opportunities to cross during heavy traffic periods, when there are few natural gaps in the traffic streams.

A traffic engineering investigation study will need to evaluate the proposed location and design. Conditions to examine include: sight distance, speeds, volumes, crash experiences, illumination, number and type of pedestrians, and the location of pedestrian generators. Design considerations include median refuge area, pavement markings, advance warning signs for vehicular traffic, and coordinating potential pedestrian/bicyclist activated crossing signals with the traffic signal timing on the highway so as to not interfere with traffic progression.

The Federal Highway Administration's web site contains a variety of research reports on techniques for improving pedestrian and bicyclist safety along the highway:
https://www.fhwa.dot.gov/publications/research/safety/pedbike/research/current.htm

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References for Section 2: Intersections

1. "*Highway Capacity Manual*" Special Report 209, Transportation Research Board, National Research Council, Washington, D.C. (2000).
2. *Manual of Uniform Traffic Control Devices for Streets and Highways*, Federal Highway Administration, Washington, D.C. (2003).
3. Levinson, H.S. "*The Capacity of Shared Left Turn Lanes*" Transportation Research Record 1225. Transportation Research Board, National Research Council, Washington, D.C. (1989).
4. *Roundabouts: An Informational Guide*, Federal Highway Administration, Washington D.C. (2000).
5. Stover, V.G. and Koepke, F., *Transportation and Land Development*, Institute of Transportation Engineers, Washington, D.C. (2002).

SECTION 3 – TURNING LANES

Turn Lane Criteria for Single and Dual Lanes

Right and left-turn lanes shall* be provided for traffic in both directions in the design of intersections and left turn lanes for median crossovers and in one direction for directional median openings (see Figure 3-25 illustration) on non-access controlled four-lane or greater divided highways using the criteria as shown in Figure 3-1 and adjusted upward as determined by Figure 3-3 or by capacity analysis for left-turn storage.

Left-turn lanes shall also be established on two-lane and four lane highways where needed for storage of left-turn vehicles and/or prevention of thru-traffic delay using the criteria shown in Figure 3-1. See Figures 3-5 through 3-21 for warrants for left-turn storage lanes on two-lane highways and Figure 3-3 for four-lane highways.

Intersections with low right turn volumes shall be evaluated in accordance with Figures 3-26 and 3-27.

LENGTH OF STORAGE (*)		TAPER - Rural (*)	
Rural - For Design Speeds 50 MPH or Higher	*L - 200' min. (For 240 or fewer vehicles during peak hour, making turn)	- For Design Speeds 35 MPH or Higher	**T - 200' Min.
Rural - For Design Speeds 45 MPH or Less	*L - 100' min. (For 60 or fewer vehicles during peak hour, making turn)	- For Design Speeds 30 MPH or Less	**T - 100' Min. (single) **T - 200' Min. (dual)
*Distance L to be adjusted upward as determined by capacity analysis for Left and Right Turn Storage.		**Tapers are to be straight-line unless local policy requires reverse curves. In congested areas the taper length may be reduced to increase storage length. However, a design waiver shall be required.	
LENGTH OF STORAGE		TAPER - Urban	
Urban - Length determined by capacity analysis for Left and Right Turn Storage (100' Minimum)		- For Design Speeds 50 MPH or Higher	**T - 200' Min.
		- For Design Speeds 45 MPH or Less	**T - 100' Min. (single) **T - 150' Min. (dual)

FIGURE 3-1 RIGHT AND LEFT TURN LANE CRITERIA FOR SINGLE AND DUAL LANES

(*) For instructions on selection of design speed, see *Appendix A1.*

* Rev. 7/18

Taper rates: Rural - 8:1 for design speeds 30 mph and less, 15:1 for design speeds 35 mph and greater. Urban - 8:1 for design speeds 45 mph and less, 15:1 for design speeds 50 mph and greater. For urban dual lane taper (150' min.), See 2018* AASHTO Green Book, Chapter 9, Section 9.7.2.3.

Note: Taper lengths shown above were compiled using these formulas and were rounded up.

For Four-Lane Highways

Storage Length "S" to be adjusted upward as determined by Figure 3-3 or by capacity analysis for left-turn storage lanes on four-lane or greater highways.

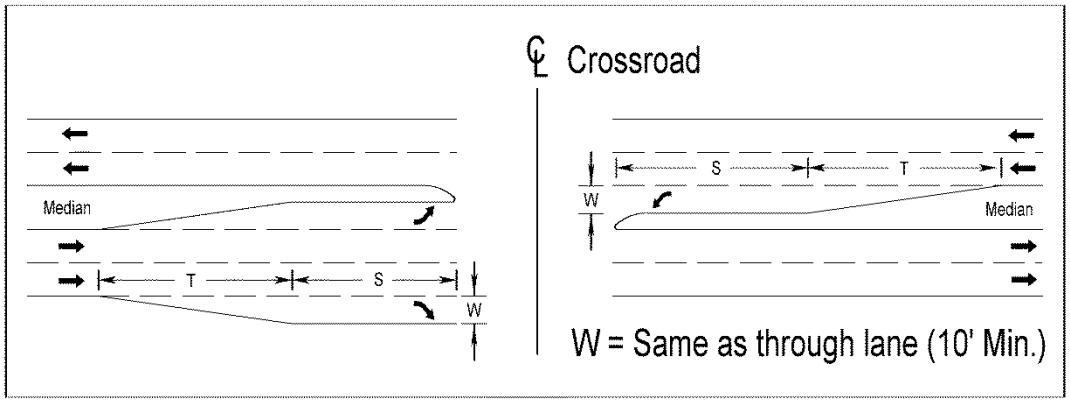

FIGURE 3-2 LEFT AND RIGHT TURN STORAGE AND TAPER LENGTHS

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Warrants for Left Turn Storage Lanes on Four-Lane Highways

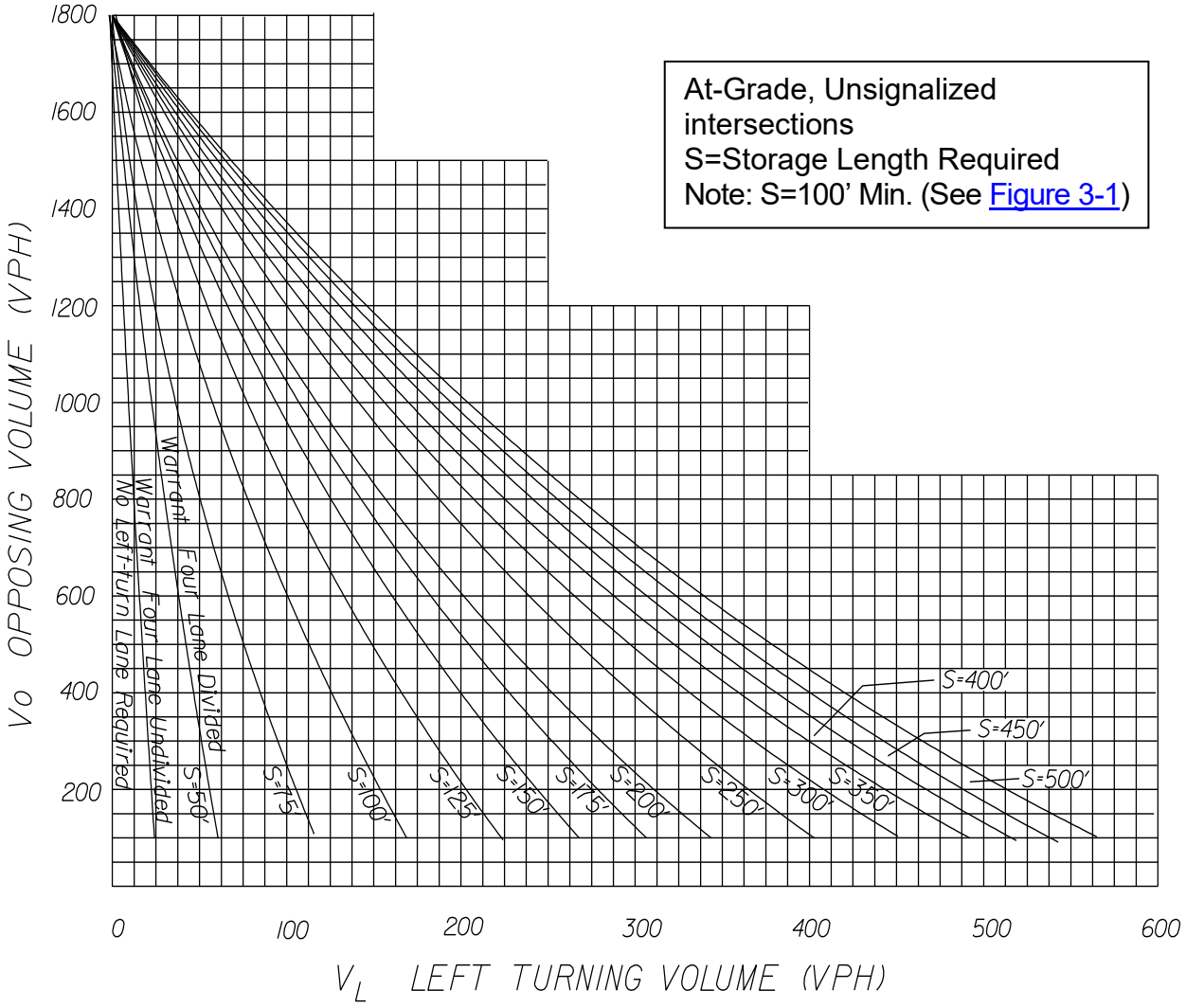


FIGURE 3-3 WARRANTS FOR LEFT TURN STORAGE LANES ON FOUR LANE HIGHWAYS

Figure 3-3 was derived from *Highway Research Report No. 211*.

Opposing volume and left turning volume in vehicles per hour (VPH) are used for left turn storage lane warrants on four-lane highways.

For plan detail requirements when curb and/or gutter are used, see VDOT's *Road Design Manual, Section 2E.3* on the VDOT web site: *http://www.virginiadot.org/business/locdes/rdmanual-index.asp.*

For Two-lane Highways

Storage Length "S" to be adjusted upward as determined by Figures 3-5 through 3-21 or by a capacity analysis for left-turn storage. A capacity analysis is defined as a detailed analysis of the location in accordance with the guidelines contained in the current issue of the *Highway Capacity Manual* for intersection capacity and signalization requirements.

In general, when left-turn volumes are higher than 100 VPH, an exclusive left-turn should be considered.

Dual left-turn lanes should be considered when left turn hourly volumes exceed 300 VPH.

Left-turn lanes shall also be established on two-lane highways where traffic volumes are high enough to warrant them.

Warrants for Left Turn Storage Lanes on Two-Lane Highways

Advancing volume and opposing volumes (VPH), speed and percent left turns are used to determine whether a left turn storage lane is warranted on two-lane highways.

Research on left-turn accommodations at unsignalized intersections produced warrants for the installation of left-turn lanes and bypass lanes that account for those factors. Figures 3-5 through 3-21 provide warrants for left-turn storage lanes on two-lane highways based on 5 to 30 percent left-turn volumes and design speeds of 40, 50, and 60 MPH. Additional storage length is required for 10 to 50 percent truck volumes. They were derived from Highway Research Record No. 211, Figures 2 through 19, for required storage length determinations.

Suggested Left-Turn Lane Warrants Based on Results from Benefit–Cost Evaluations for Intersections on Arterials in Urban Areas show traffic-volume-based guidelines where left-turn lanes should be provided and are presented in the 2018 AASHTO Greenbook in the following locations:

- Table 9-24 and Figure 9-35 for arterials in urban areas
- Table 9-25 and Figure 9-36 for two-lane highways in rural area
- Table 9-26 and Figure 9-37 for four-lane highways in rural areas

These three tables and three figures are applicable at unsignalized intersections with streets and driveways where the major road is uncontrolled and the minor-road approaches are stop- or yield-controlled. The volume-based guidelines or warrants presented in Tables 9-24 through 9-26 and Figures 9-35 through 9-37 indicate situations where a left-turn lane may be desirable, not necessarily situations where a left-turn lane is definitely needed*.

Additional information on left-turn lanes, including their suggested lengths, can be found in NCHRP Synthesis 225, NCHRP Report 279, and NCHRP Report 745*.

* Added 10/20

WARRANT FOR LEFT-TURN STORAGE LANES ON TWO-LANE HIGHWAY

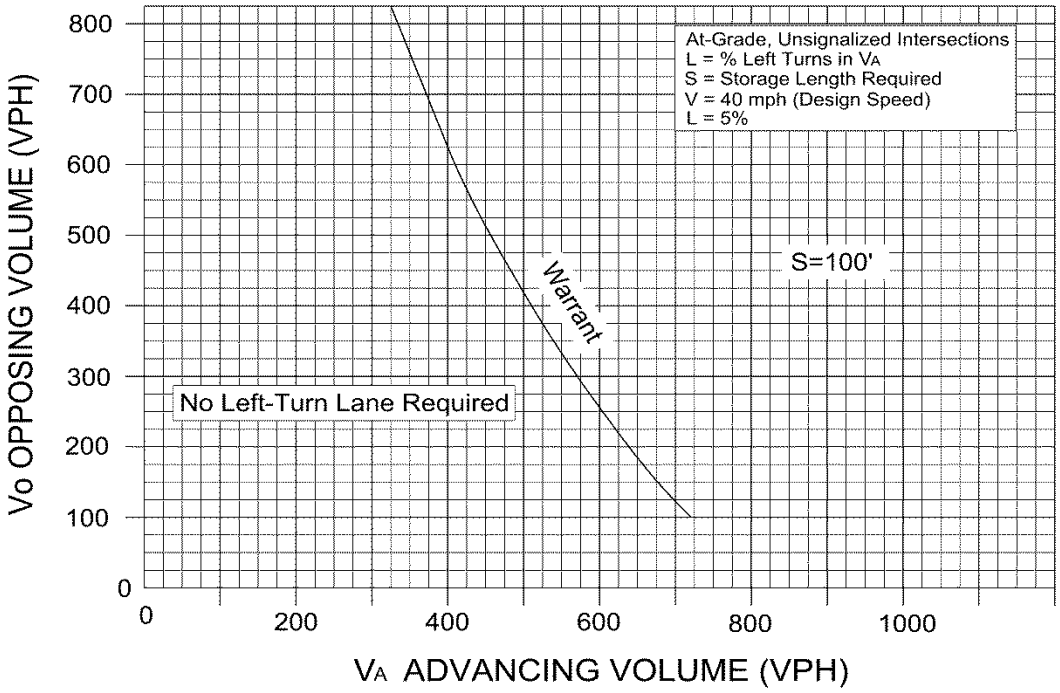


FIGURE 3-4 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

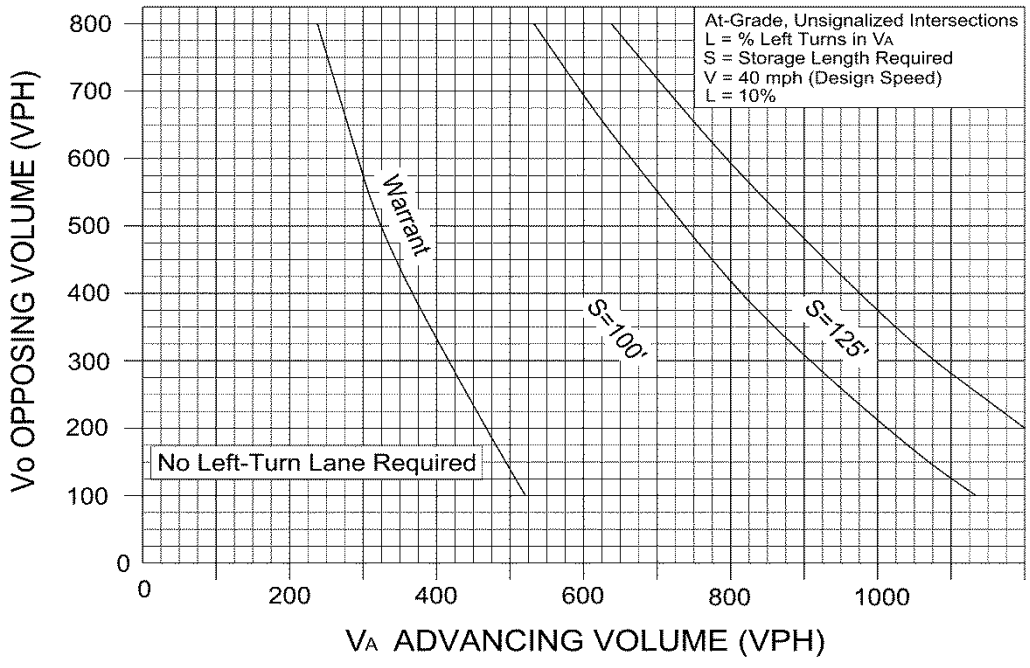


FIGURE 3-5 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

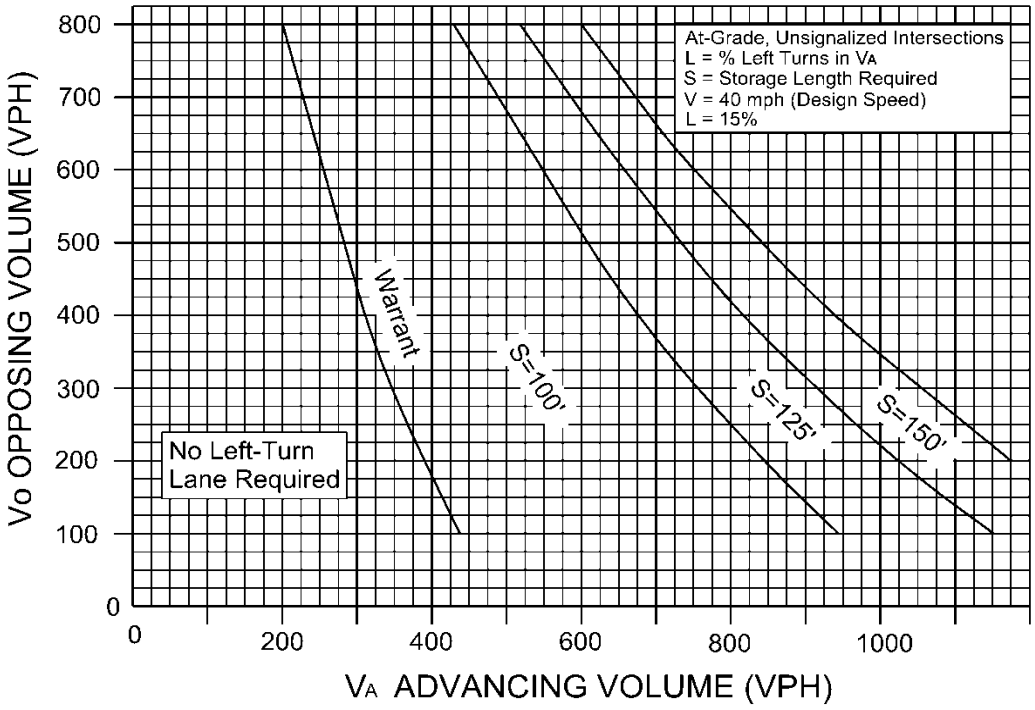


FIGURE 3-6 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

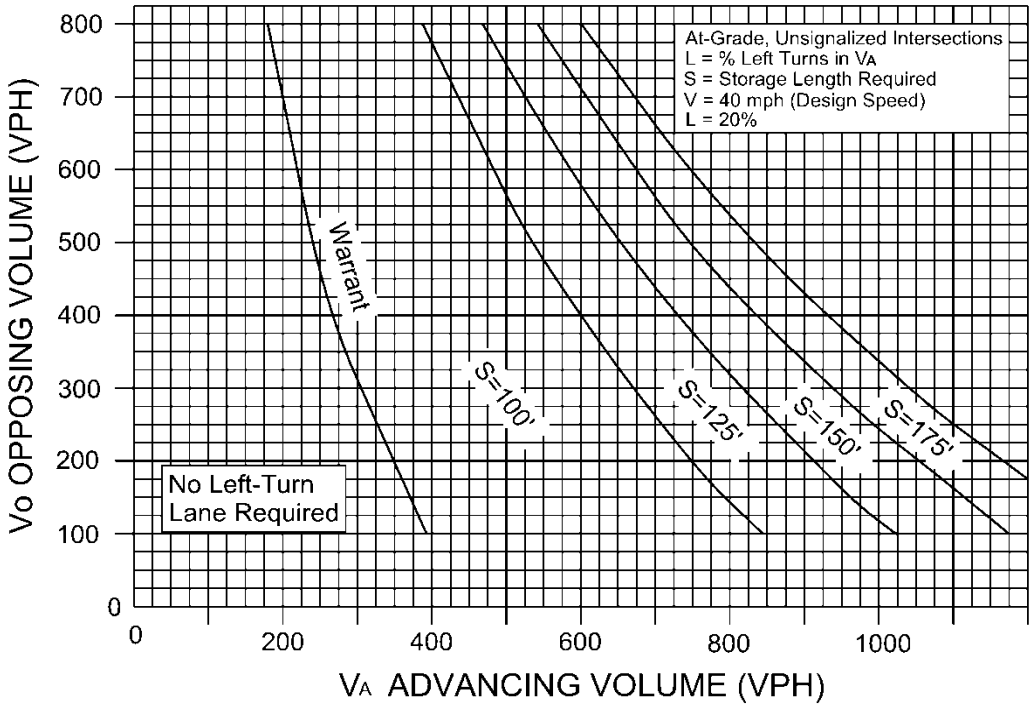


FIGURE 3-7 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

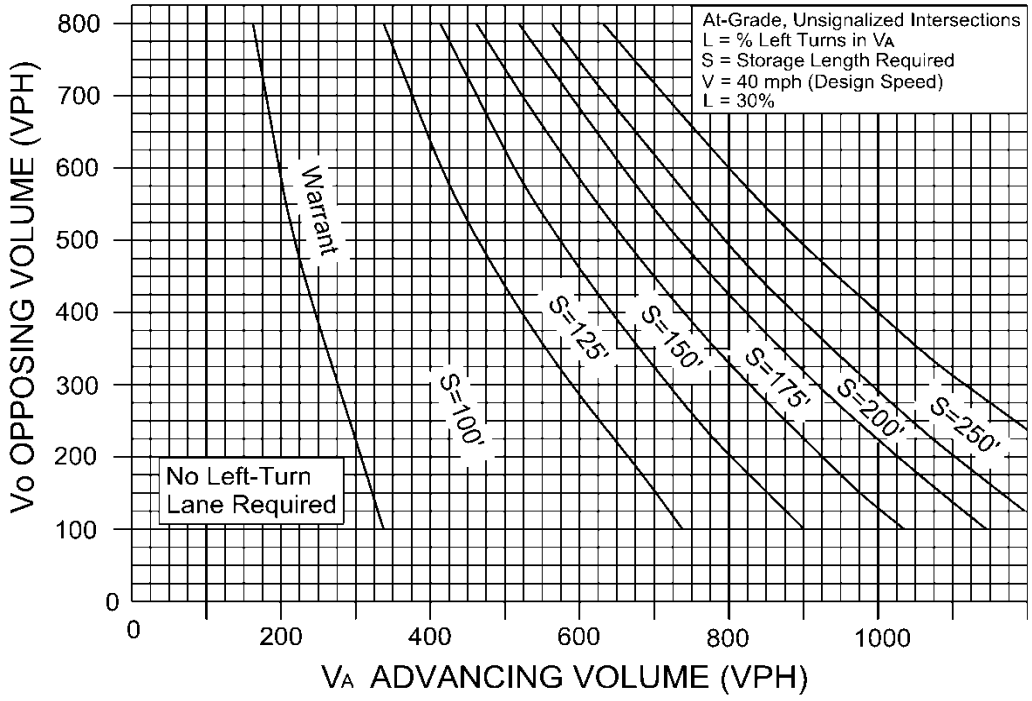


FIGURE 3-8 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

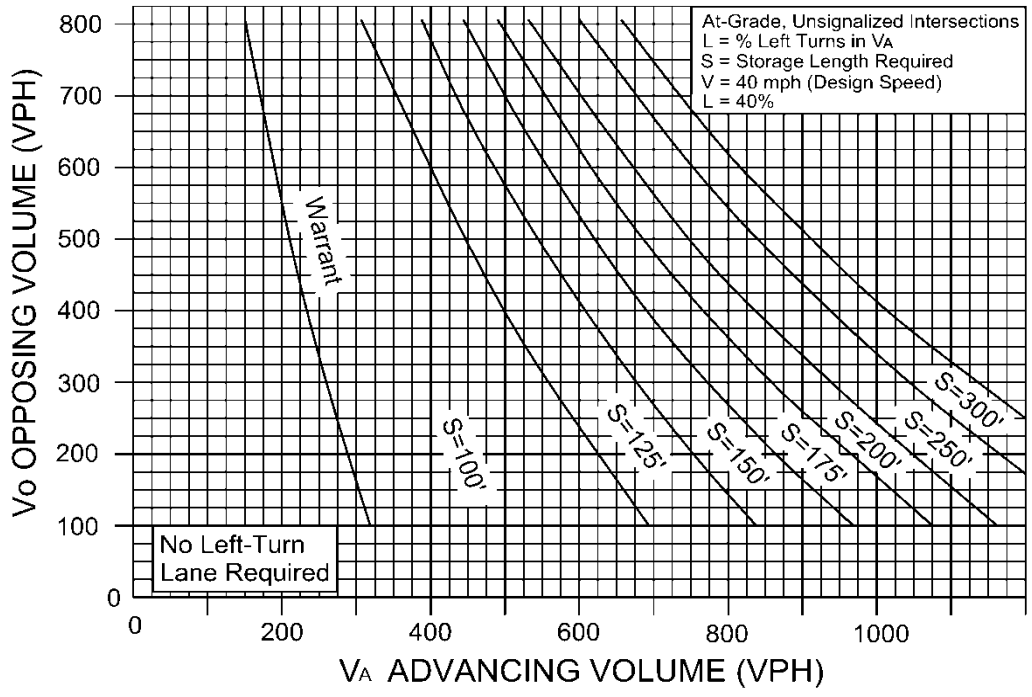


FIGURE 3-9 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

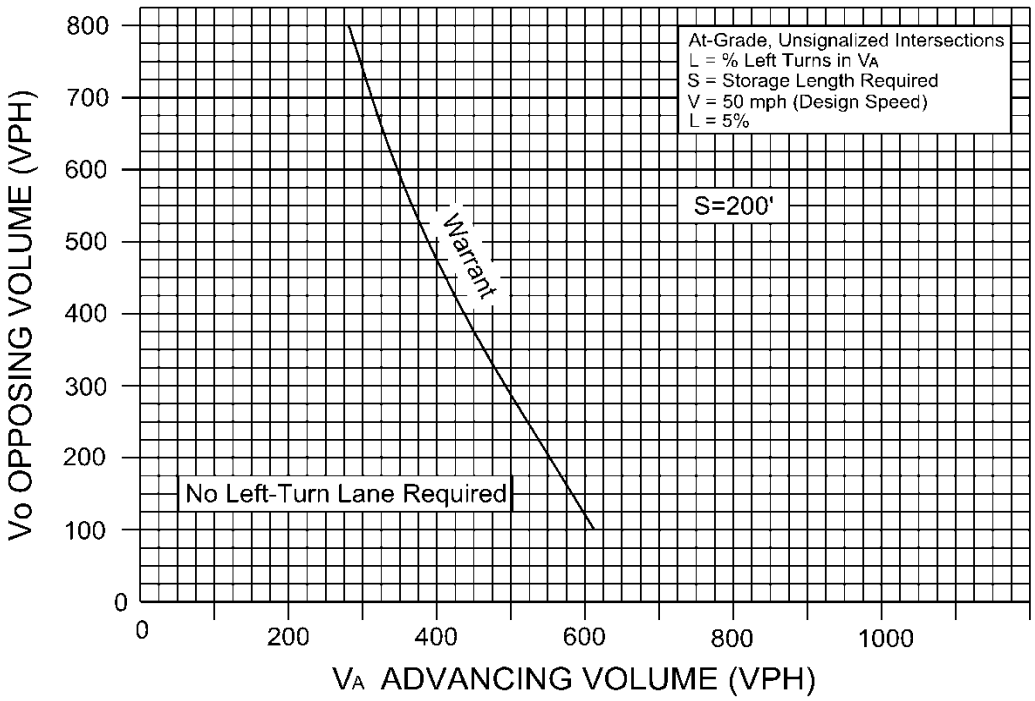


FIGURE 3-10 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

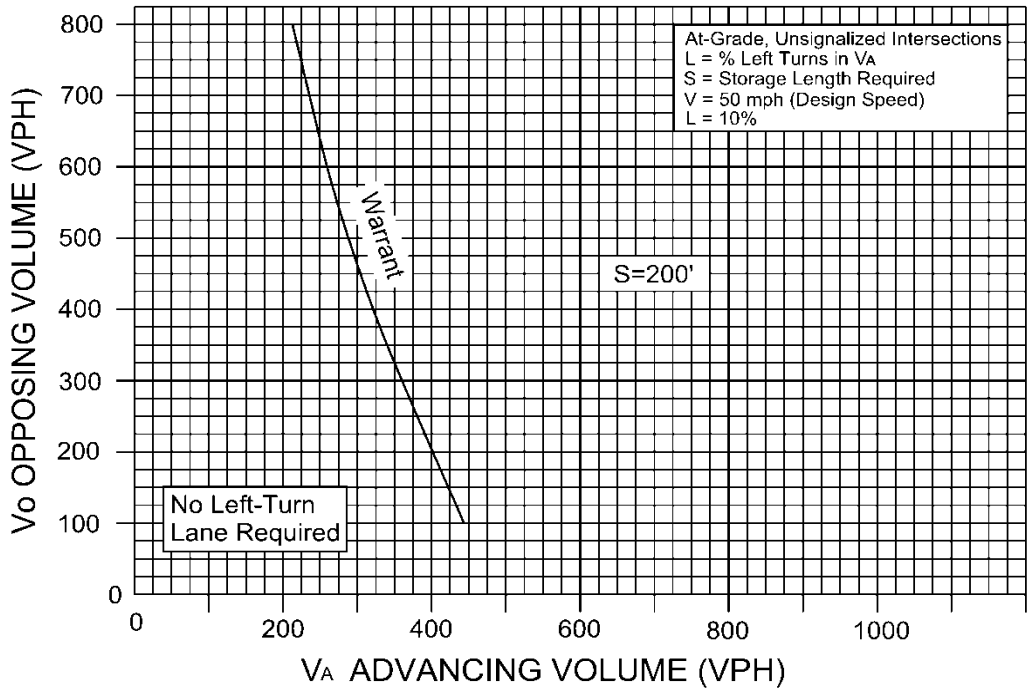


FIGURE 3-11 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

WARRANT FOR LEFT-TURN STORAGE LANES ON TWO-LANE HIGHWAY

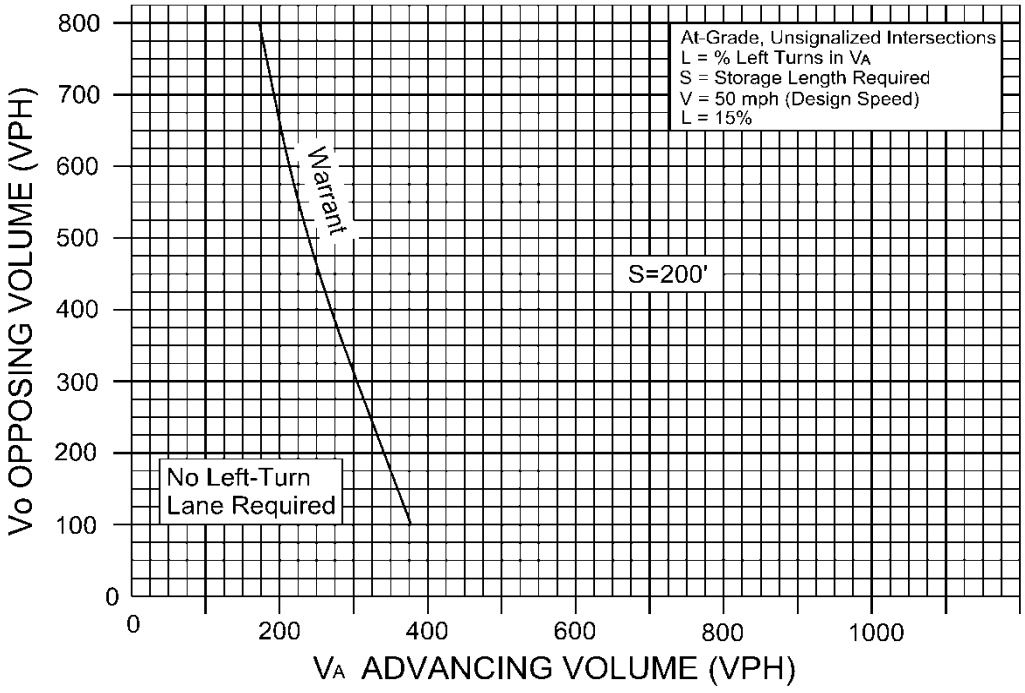


FIGURE 3-12 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

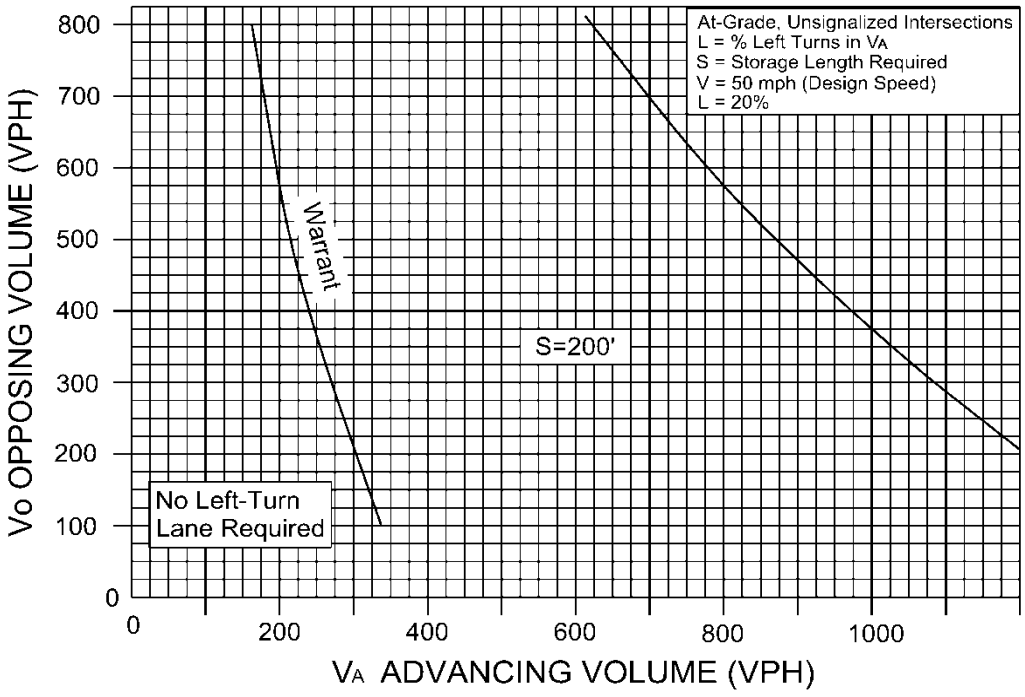


FIGURE 3-13 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

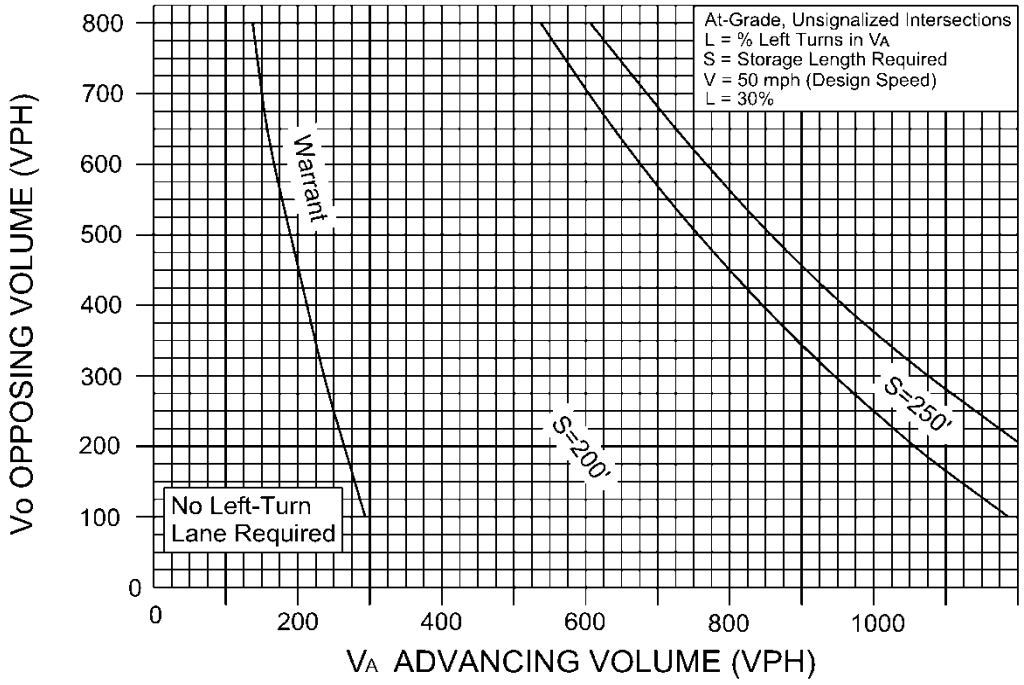


FIGURE 3-14 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

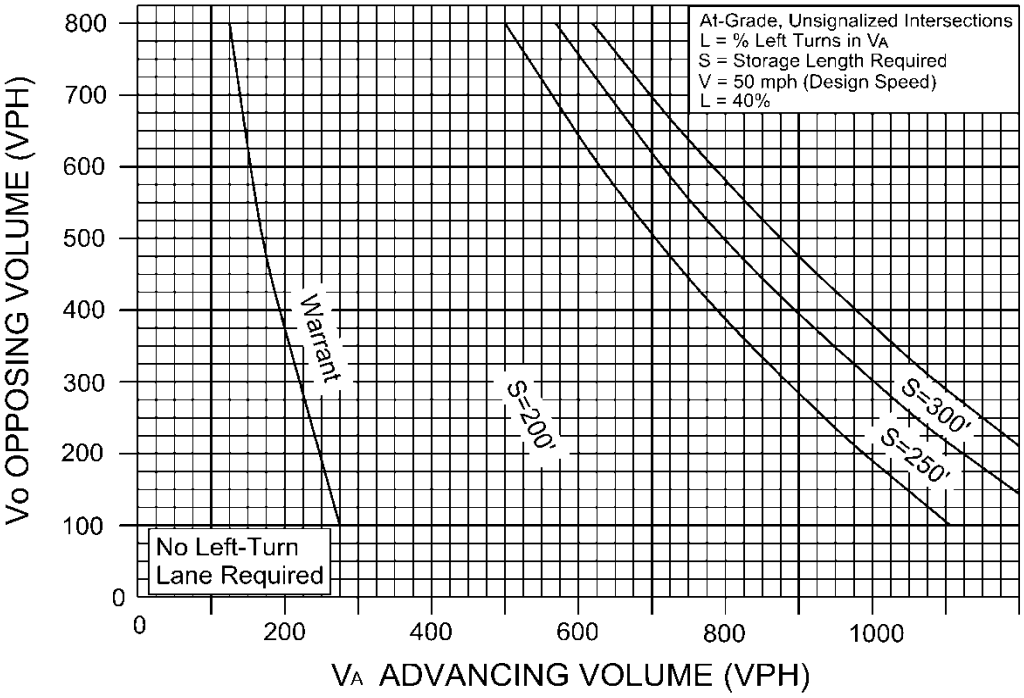


FIGURE 3-15 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

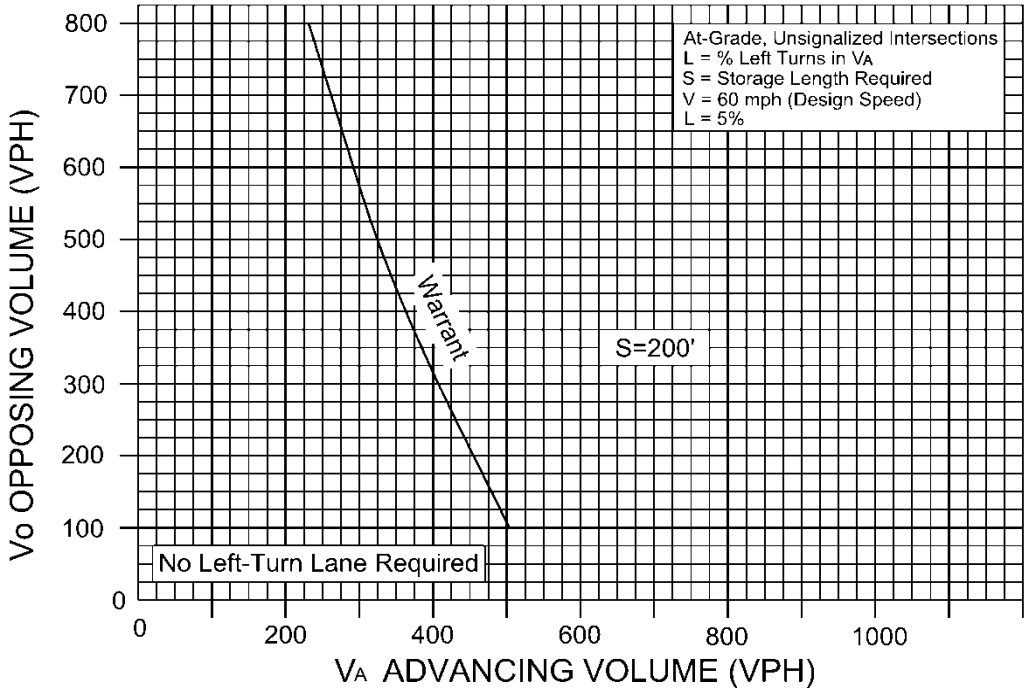


FIGURE 3-16 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

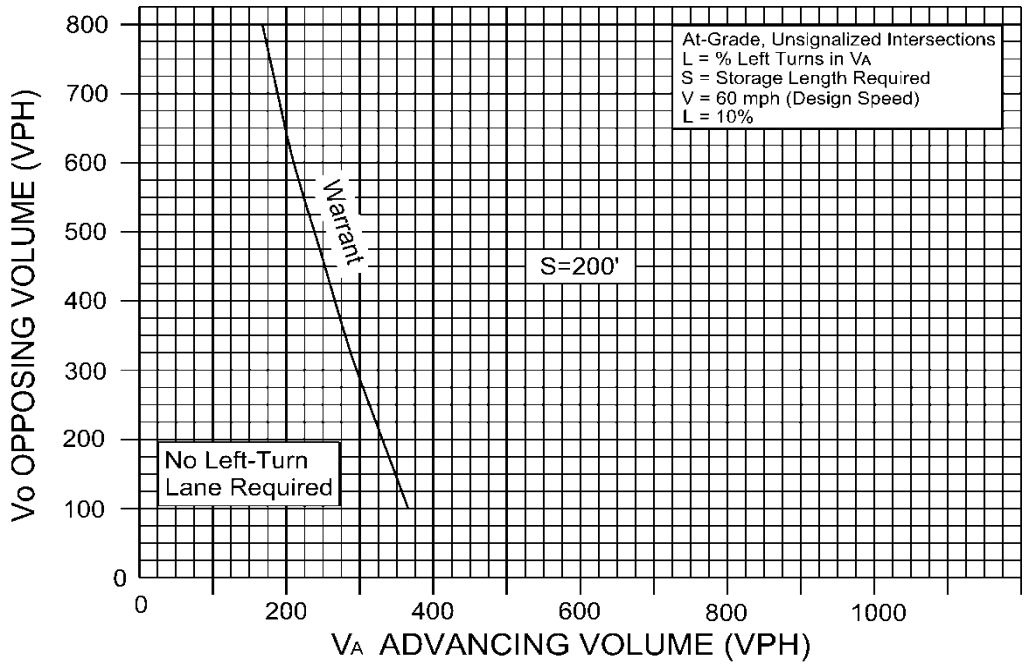


FIGURE 3-17 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

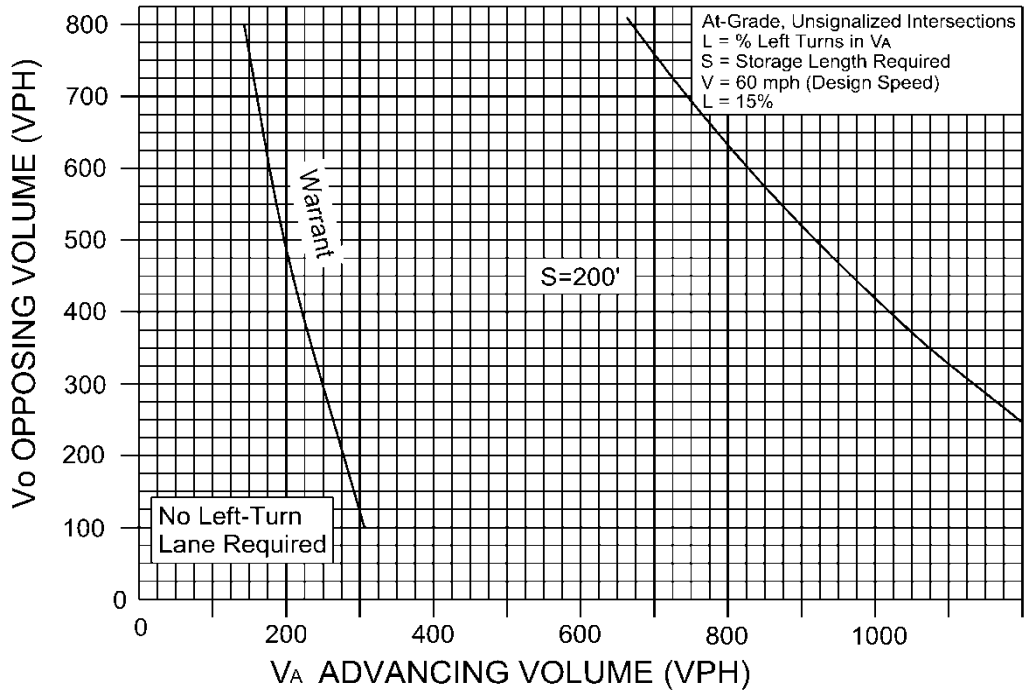


FIGURE 3-18 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

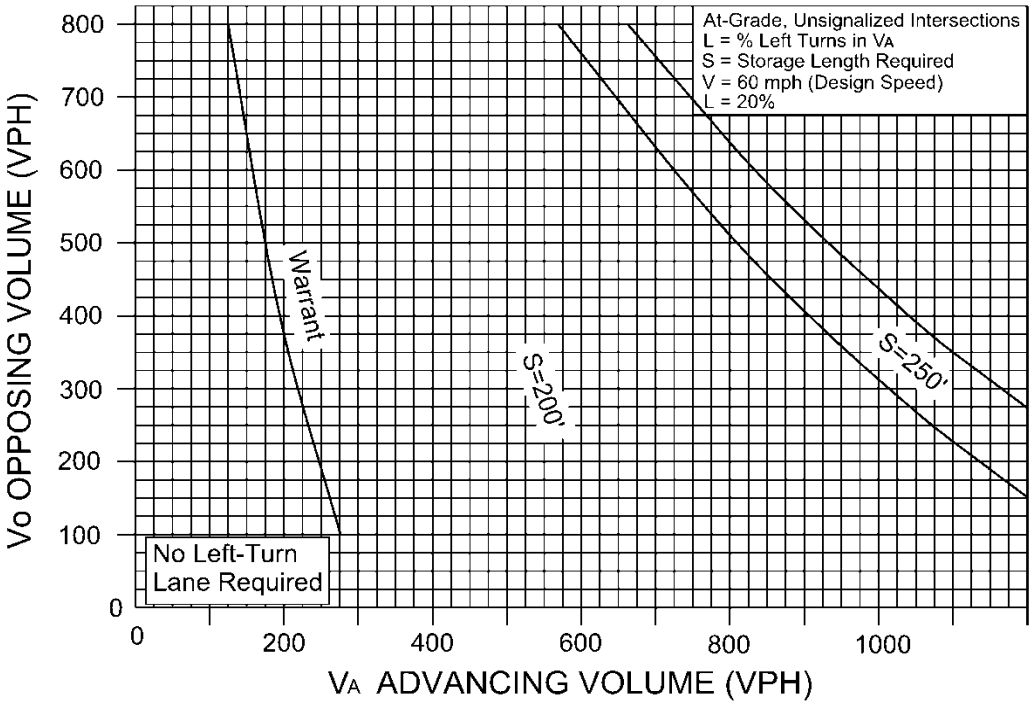


FIGURE 3-19 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

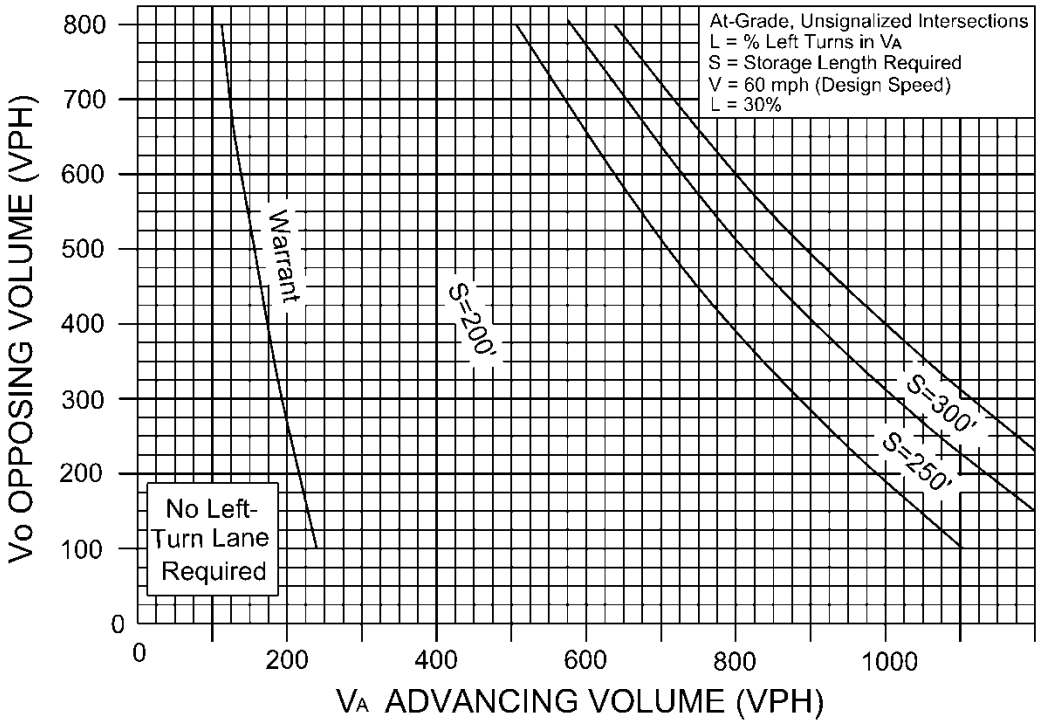


FIGURE 3-20 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

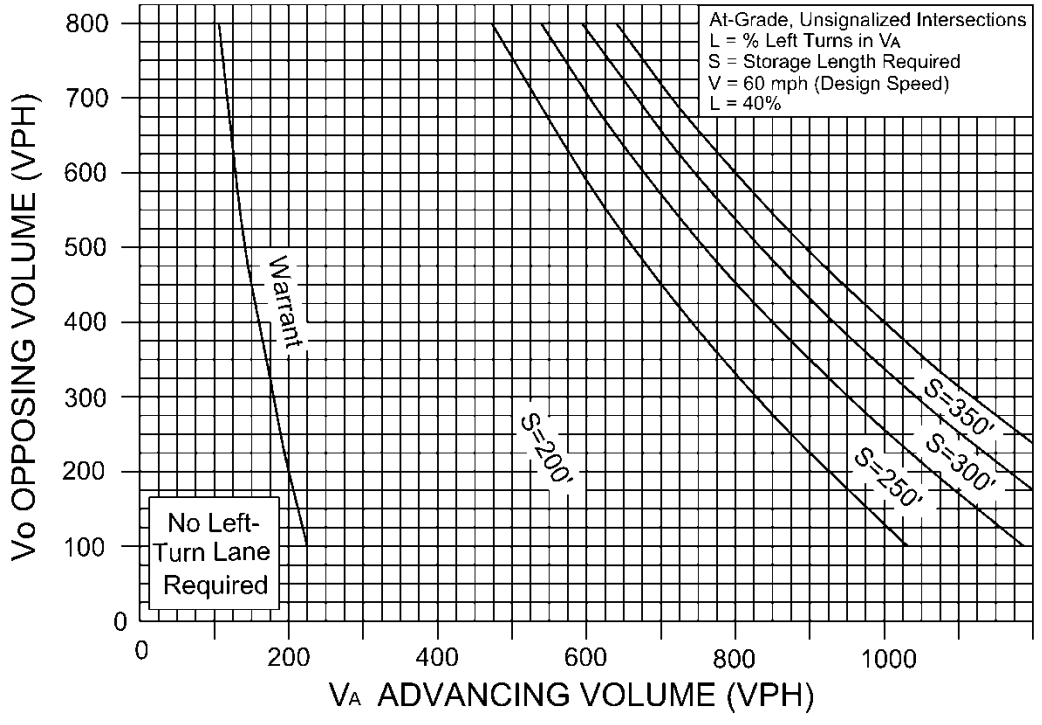


FIGURE 3-21 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY

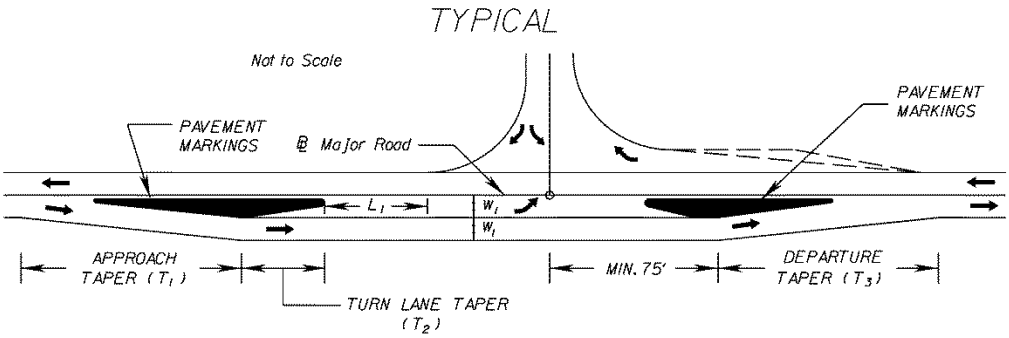
CHART VALUE OF STORAGE LANE REQUIRED	% TL=% TRUCKS IN VPH turning left					
	0%	10%	20%	30%	40%	50%
100’	0’	25’	25’	50’	50’	50’
125’	0’	25’	25’	50’	50’	75’
150’	0’	25’	50’	50’	75’	75’
175’	0’	25’	50’	75’	75’	100’
200’	0’	25’	50’	75’	100’	100’
250’	0’	25’	50’	75’	100’	125’
300’	0’	50’	75’	100’	125’	150’
350’	0’	50’	75’	125’	150’	175’
400’	0’	50’	100’	125’	175’	200’
450’	0’	50’	100’	150’	200’	225’
500’	0’	50’	100’	150’	200’	250’

TABLE 3-1 TRUCK ADJUSTMENTS

STORAGE LENGTH TO BE ADDED TO CHART VALUES OF LEFT-TURN LANE STORAGE LENGTHS (Length in Feet)

Source: *Highway Research Report Number 211*[*]

[*] Rev. 1/14



		$L = \frac{W_1 \times (S^2)}{60}$			$L = W_1 \times S$					
Lane Width (W_1)		Low Speed (mph)			High Speed (mph)					
		30	35	40	45	50	55	60	65	70
		Taper Length (ft)								
12 ft.	T_1	180	245	320	540	600	660	720	780	840
	T_2	100	200	200	200	200	200	200	200	200
	T_3	180	245	320	540	600	660	720	780	840
		Low Speed (mph)			High Speed (mph)					
		30	35	40	45	50	55	60	65	70
		Taper Length (ft)								
11 ft.	T_1	165	225	293	495	550	605	660	715	770
	T_2	100	200	200	200	200	200	200	200	200
	T_3	165	225	293	495	550	605	660	715	770
		Low Speed (mph)			High Speed (mph)					
		30	35	40	45	50	55	60	65	70
		Taper Length (ft)								
10 ft.	T_1	150	204	267	450	500	550	600	650	700
	T_2	100	200	200	200	200	200	200	200	200
	T_3	150	204	267	450	500	550	600	650	700

Notes:

1. Turn Lane Width is assumed to be same as Through Lane Width.
2. T_1 & T_3 = (For < 40 MPH) = Turn Lane Width X Design Speed^2 ÷ 60 (Rounded up).
   T_1 & T_3 = (For > 40 MPH) = Turn Lane Width X Design Speed (Rounded up).
3. T_2 = is computed as follows: ≤ 30 mph: 8:1 = 96' (Rounded to 100')
   >35 mph: 15:1 = 180' (Rounded to 200')
4. L_1 = Length of storage lane to be determined by Figures 3-5 through 3-22 or by capacity analysis for Left-Turn Storage, Minimum Length - 100'.

PASSING/LEFT TURN LANE (BYPASS LANE)

FIGURE 3-22 PASSING / LEFT TURN LANE

Sources: AASHTO Green Book, Chapter 3, Section 3.4.4
NCHRP Report 780, page 17* © 2014

* Rev. 7/17

NOTE: There are circumstances where a left turn lane may be needed even if the warrants are not met.

For example, intersections and entrances with poor visibility and/or a bad accident record may require the Engineer to use engineering judgment when volume conditions alone do not warrant a storage lane.

Additionally, the functional classification of the highway shall be considered so that the impact of turning movements on highways intended to serve through traffic is minimized.

Taper Lengths (L) - Lane/Pavement Transitions and Merging Tapers

Lane /pavement/shoulder transitions typically occur where new or reconstructed roadways tie-in to existing roadways. This also applies to where roadways tie-in to bridges. Permanent* lane/pavement/shoulder* transitions, merging tapers and speed change lengths shall meet the minimum length (L) provided by the following equations:

For 40 mph or less	For 45 mph or greater
$L = S^2W \div 60$	$L = W \times S$

L = length of transition
S = Design Speed
W = Width of offset on each side

Source: 2018* AASHTO Green Book, Equations 3-37 & 3-38

Pavement transition is separate from the length of need for guardrail. Length of need and shoulder prep for guardrail shall be in accordance with the VDOT *RDM Appendix J* and the *Road and Bridge Standards.*

* Rev 10/20

Double (Dual) Left-Turn Lanes

Double (dual) left-turn lanes (DLTL's) shall be considered where peak left-turn movements exceed 350 vph. DLTL's require a protected (exclusive) signal phase, a minimum 4' raised concrete median separating opposing traffic, and a width of at least 30' on the acceptance lanes (see Figure 3-23). The AutoTurn analysis shall consider, at a minimum, simultaneous side-by-side turning movements by the design vehicle in the outer left turn lane and a passenger car in the inner left lanes(s). *

The length of storage shall be sufficient to accommodate the projected queuing as per the TOSAM. For addition information on Dual Left Turn Lanes see AASHTO "Green Book" Chapter 9, Section 9.7.3.

Continuous Two-Way Left-Turn Lanes (TWLTL's)

Continuous two-way left-turn lanes (TWLTL's) should be considered on low-speed arterial highways (25 to 45 MPH) with no heavy concentrations of left-turn traffic. TWLTL's also may be used where an arterial or major route must pass through a developed area having numerous street intersections and entrances, and where it is impractical to limit left turns. The minimum width for this application shall be 13 feet, which is an 11 foot lane plus 2 feet for a solid yellow line and a dotted yellow line on each side of the 11 foot lane.

TWLTL's shall only be used with roadways having a maximum of 2 through lanes in each direction, and shall be shown in accordance with Figure 3-24.

Advantages are:

- Reduced travel time.
- Improved capacity.
- Flexibility of using as temporary detour during closure of through lane.
- Does not control or limit the number of left turns.
- Minimizes interference to through traffic lanes.
- Separates opposing traffic flows by one full lane.
- Public preference (both from drivers and owners of abutting properties.)
- Reduced accident frequency, particularly rear-end collisions.

Disadvantages:

- Poor visibility (corrected by using proper delineation)

* Rev. 1/19

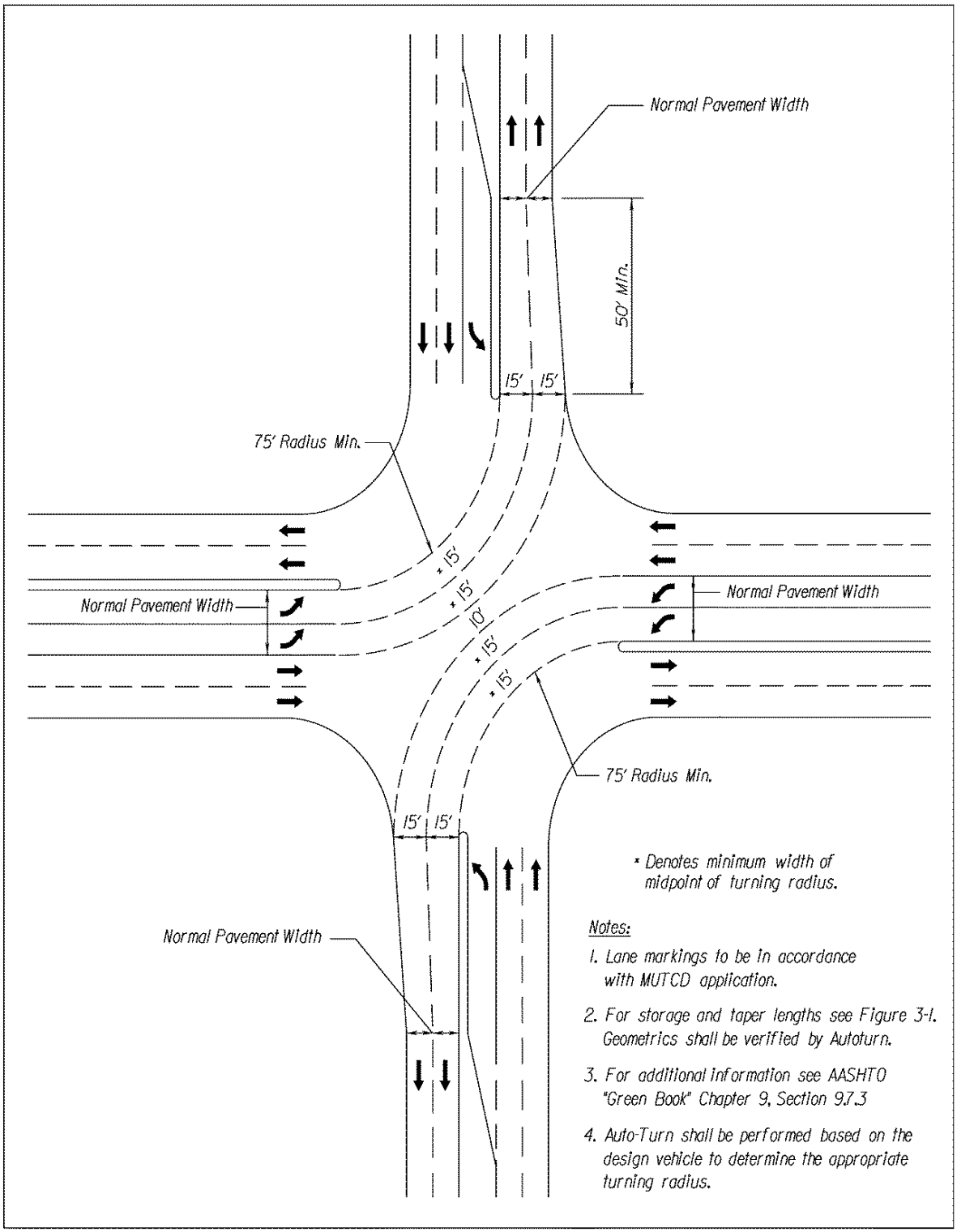
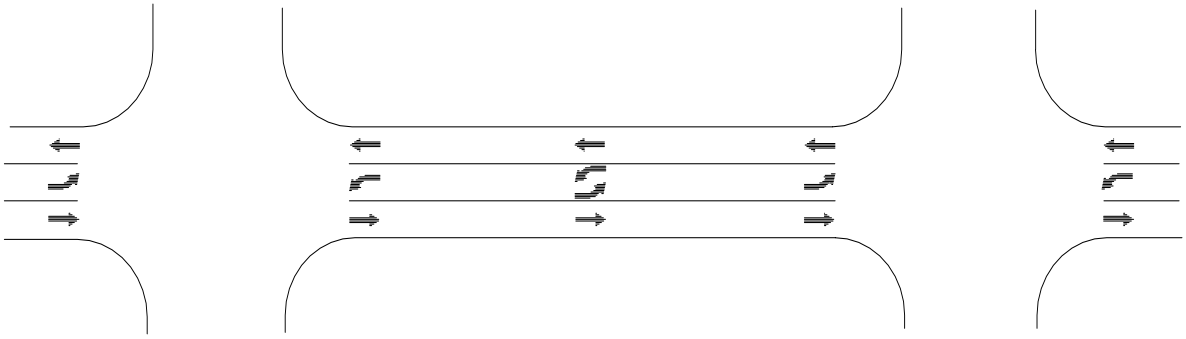
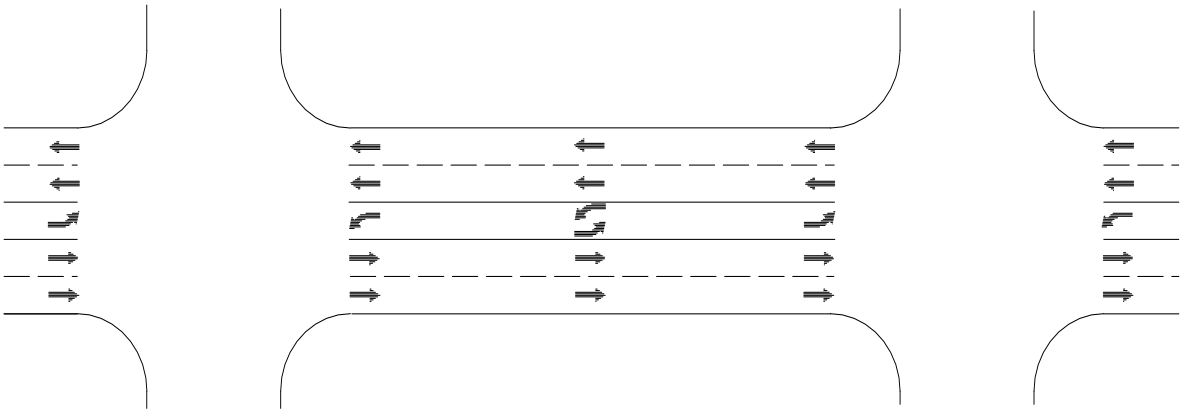


FIGURE 3-23 DOUBLE LEFT TURN LANES*

* Rev. 1/14



Typical 3-Lane Configuration
W/Left Turn Provisions for the Minor Street



Typical 5-Lane Configuration
W/Left Turn Provisions for the Minor Street

FIGURE 3-24 CONTINUOUS TWO-WAY MEDIAN LEFT TURN LANES

(Lane markings to be in accordance with MUTCD application)

Medians

Channelization: Positive channelization shall be provided for all median crossovers. Standard striping in accordance with the *Manual on Uniform Traffic Control Devices (MUTCD)* shall be used for all median crossovers and speed change lanes in medians without raised channelization. If new curbing is required it shall match the existing curb type of the median.

U-turns: Medians should* be designed to permit U-turn movements. If a median is too narrow to permit U-turns by the design vehicle, then a flare-out ("loon") as shown in Figure 2-5 should be provided, or else signs shall be erected prohibiting U-turns.

Pavement: Median paving shall be full depth and match the pavement section design of the existing roadway.

Drainage Function: Medians frequently provide a conveyance, detention or retention function for roadways. The installation of a median crossover shall not reduce the conveyance or storage capacity of the median.

Directional Median Crossovers for Left Turns and U-Turns

A directional median crossover for left turns and U-turns limits movements at median crossovers to specific turns only; the physical design actively discourages or prevents all other movements.

- The technique can be applied to unsignalized median crossovers on multilane divided urban and suburban streets.

Special Considerations

- The minimum width of a median nose has commonly been 4 feet. AASTHO recommends a minimum median width of not less than 4 feet and 6 to 8 feet wide is preferable where pedestrians may be present.

- Narrow median noses less than 4 feet wide are difficult to see especially at night and in inclement weather, even when yellow raised pavement markers are adhered to the median nose.

* Rev. 1/19

- Carefully selected landscaping is the most effective way to ensure high visibility of the median and median crossovers*.

- Landscaping of the median nose for visibility is especially important where long left-turn lanes are used. The choice of vegetation and the landscaping design must ensure that sight distance is not obstructed.

- Overlapping of the separators of a directional median crossover restricts movements to the intended left turn or U-turn.

- Directional median crossovers will accommodate U-turns by automobiles where the separation is at least 4 feet wide and there are three opposing lanes. Where there are two opposing lanes a triangular flare of 10 feet along the intersecting roadways and at least 20 feet along the major roadways will allow an automobile to execute a U-turn.

Advantages

- The directional median crossover for left turns and U-turns improves safety by limiting the number and location of conflict points and by prohibiting direct crossing.

- Right-angle crashes are avoided because vehicles are prevented from crossing where the median width is not sufficient for drivers to cross one-traffic stream at a time.

Disadvantages

- Cross-median movements are limited to specific locations and to specific turns.

- It is not practical to design for U-turns executed by large vehicles in all directions.

* Rev. 1/14

Illustration of Directional Median Crossover for Left Turns and U-Turns

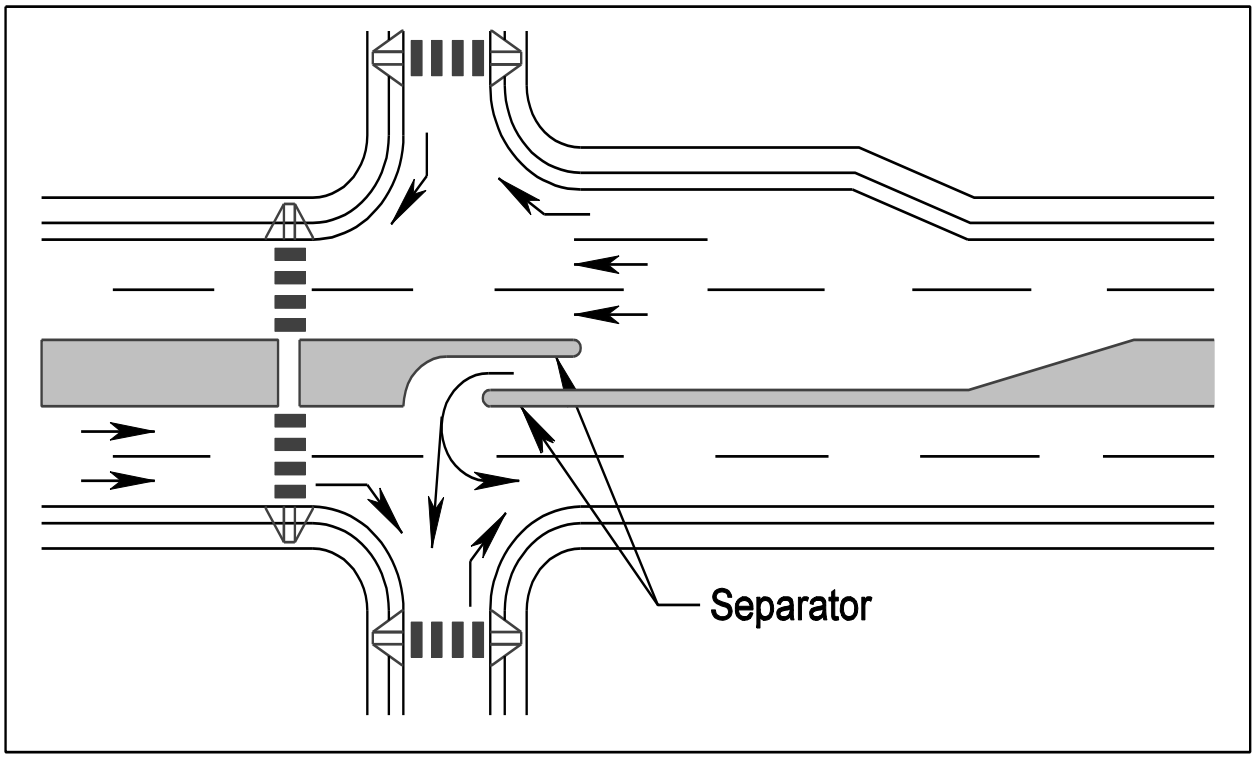


FIGURE 3-25 DIRECTIONAL MEDIAN CROSSOVER FOR LEFT TURNS AND U-TURNS

Source: TRB, *Access Management Manual*, Dated 2003

Examples

- Some states make extensive use of directional median crossovers*. Preference is given to left turns and U-turns from the major roadway. Existing full median crossovers are reconstructed as directional crossovers as part of resurfacing projects or reconstruction projects. The minimum width of 2 feet can be accommodated in the standard 16 foot raised median. Separators are overlapped by at least 2 feet.

- The Michigan DOT has pioneered a variation of the directional median crossover called the Michigan U-Turn. This design involves the installation of directional crossover near signalized intersections.

* Rev. 1/14

Right Turn Lanes

An exclusive right-turn lane shall* be considered when the warrants in Figures 3-26 and 3-27 are met. Double exclusive right-turn lanes may be provided when capacity analysis warrants. Safety implications associated with pedestrians and bicyclists should always be considered.

These warrants are to be used as an aid in selecting appropriate treatments for right turn movements. (Reference material attained from Virginia Transportation Research Council Report "*The Development of Criteria For the Treatment of Right Turn Movements on Rural Roads*" dated March 1981).

1. Number of Lanes – Warrants are differentiated on the basis of the number of lanes on the major roadway. Refer to Figure 3-26 for 2-lane roadways and Figure 3-27 for 4-lane roadways. The minor roadway is a 2-lane road. Discussion on both figures is provided. All volumes refer to the volumes on the approach under consideration for right turn treatments.

2. Radius Treatment – Refer to Warrants for right turn treatment on 2-lane roadways. The predominant treatment for 2-lane roadways is the radius. Arterial roadways tend to carry higher volumes of traffic traveling at higher speeds as compared to local roadways.

   The traffic on local roadways tends to include a higher number and percentage of right turning vehicles than that on arterials. An adjustment is needed to permit local roadways to handle more right turns (at lower speeds) compared to arterial roads. The following adjustment is made for posted speeds at or under 45 mph.

   Adjusted Number of Right Turns = Number of Right Turns - 20 for number right turns > 40 and total volume < 300

   For example, Total volume = 200 vph, Right turn volume = 70 vph and Posted speed = 40 mph. Then adjusted number of right turns - r = 70 - 20 = 50. Therefore, projecting a total volume 200 vph and r = 50 vph in the table, a radius is recommended for the right turn treatment.

3. Four lane Roadways – Four lane roadways tend to have a taper or full width lane to facilitate right turn movements. Many of these roads are divided highways with a speed limit of 55 mph.

4. Curb Channelized Island – Curb channelized island should be considered to separate right turn lanes from thru traffic based on capacity analysis.

* Rev. 1/15

5. Other factors – The selection of a treatment for right turn movements may be influenced by sight distance, availability of right-of-way, grade, and angle of turn. Although these factors are not incorporated in the guidelines, they should be given consideration. The guidelines should be used unless the Engineer at the District or Residency determines that special treatment is necessary due to other factors.

6. Data collection procedures – In order to employ these guidelines, peak hour volume data must be provided.

Right / Left Turn Lanes may be required beyond these guidelines at the discretion of the District * Engineer/Administrator's designee.

Conditions for providing an exclusive right turn lane when the right turn traffic volume projections don't exceed the guidelines:

- Facilities having a high volume of buses, trucks or trailers.
- Poor internal site design of an entrance facility causing potential backups in the through lanes.
- Heavier than normal peak flows on the main roadway.
- High operating speeds (such as 55 mph or above) and in rural locations where turns are not expected by through drivers.
- Highways with curves or hills where sight distance is impacted.
- Higher functionally classified highways shall be considered so that the impact of turning movements on highways intended to serve through traffic is minimized.

* Rev. 7/15

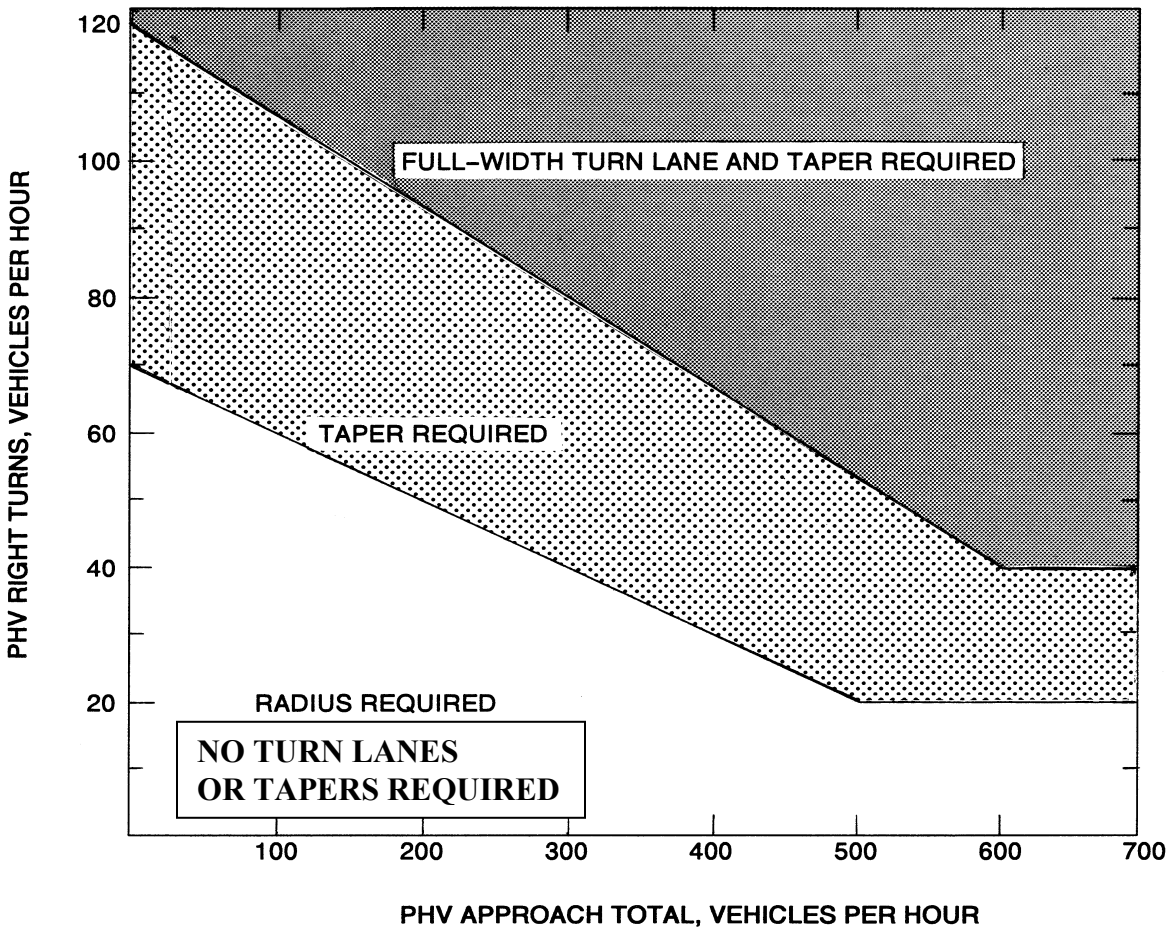


FIGURE 3-26 WARRANTS FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)

Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

For posted speeds at or under 45 mph, PHV right turns > 40, and
PHV total < 300.
Adjusted right turns = PHV Right Turns - 20
If PHV is not known use formula: PHV = ADT x K x D

K = the percent of AADT occurring in the peak hour
D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

When right turn facilities are warranted, see Figure 3-1 for design criteria.*

* Rev. 1/15

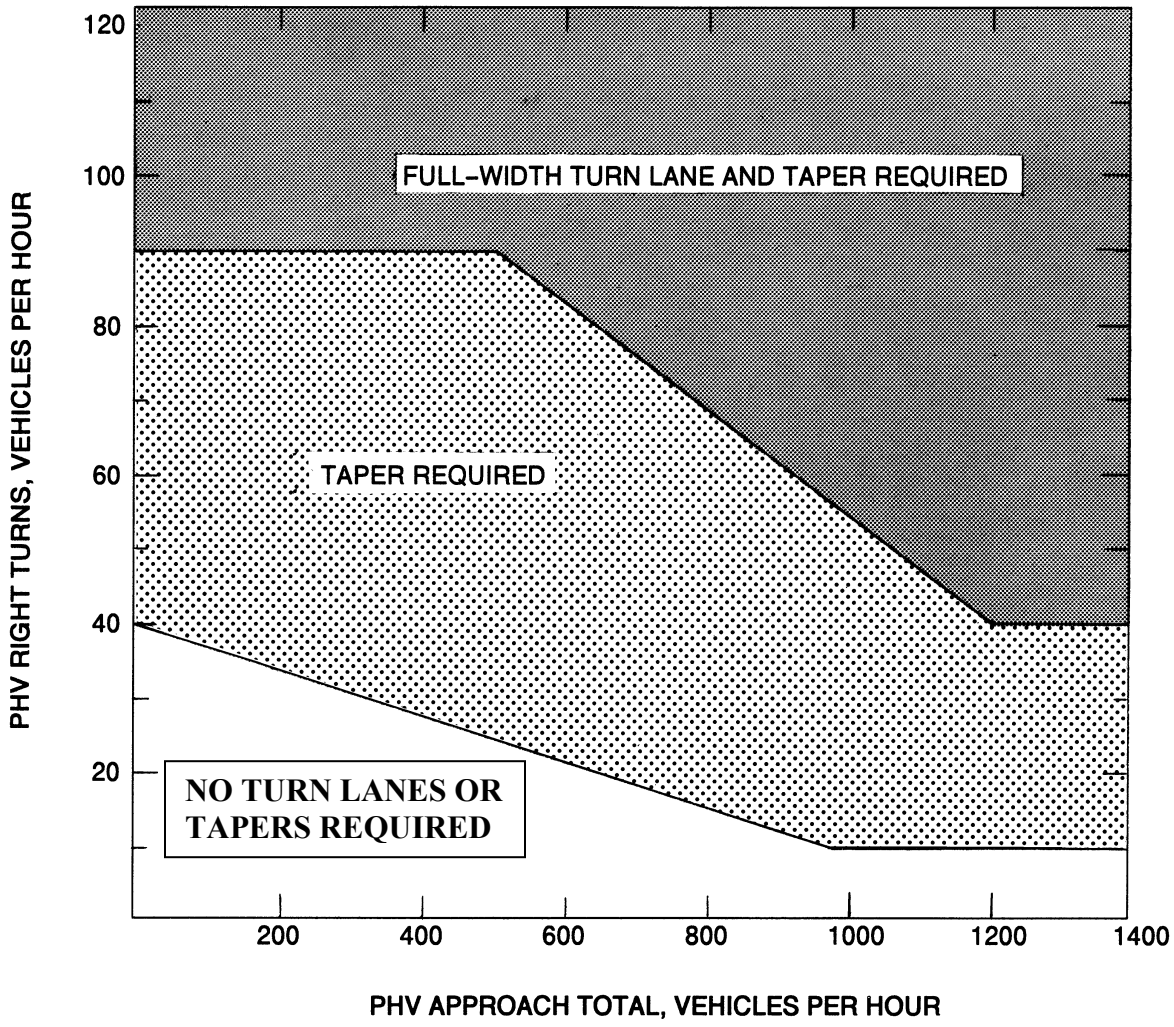


FIGURE 3-27 WARRANTS FOR RIGHT TURN TREATMENT (4-LANE HIGHWAY)

Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV- - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

If PHV is not known use formula: PHV = ADT x K x D

K = the percent of AADT occurring in the peak hour
D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

When right turn facilities are warranted, see Figure 3-1 for design criteria.*

* Rev. 1/15

Acceleration/Deceleration Lanes

Acceleration lanes shall be considered on high speed roadways (Design Speed 50 mph and greater) where WB 67vehicles will be entering the roadway. See Figure 3-32.

Acceleration/Deceleration lanes shall consist of a full-width lane and a transition taper. Acceleration lanes should be designed so that a turning vehicle will obtain the highway posted speed at the point where the full -width lane ends and transition taper begins.

- Acceleration Lane: See 2018* AASHTO Green Book, Chapter 10, Section 10.9.6, Table 10-4* Minimum Acceleration Lengths for Entrance Terminals with Flat Grades of 2% or Less.

- Deceleration Lanes: Storage and Transition Taper: See Section 3 – Turning Lanes, Figure 3-1 Left and Right Turn Lanes Criteria in this chapter. See Figure 3-28, and 3-30.

- Transition Taper: See Section 3 – Turning Lanes, Figure 3-1 Left and Right Turn Lanes Criteria in this chapter.

Bus Pullout

- See *RDM Appendix C*

Left Turn Deceleration Lane

- See Figure 3-31

* Rev 10/20

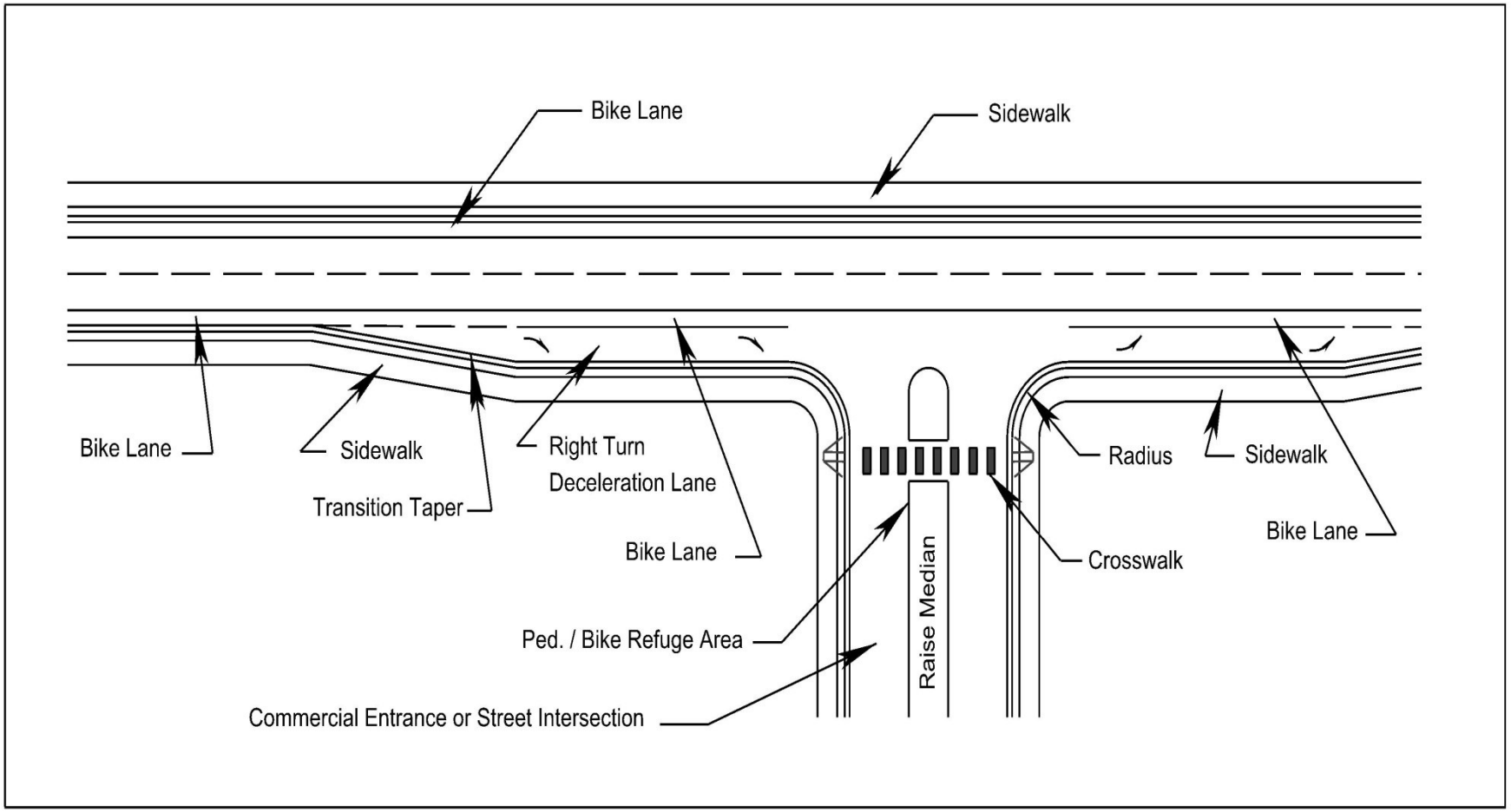


FIGURE 3-28 TYPICAL APPLICATION WITH SIDEWALKS AND BIKE LANES WITH RIGHT TURN DECELERATION LANES (CURB AND GUTTER SECTION)*

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

* Rev. 1/20

See BUS TURNOUT (BUS STOP) DESIGN: LOCATION, TYPE AND DIMENSIONS in *Appendix A(1)**

FIGURE 3-29 TYPICAL APPLICATION OF A BUS PULLOUT

* Rev. 7/18

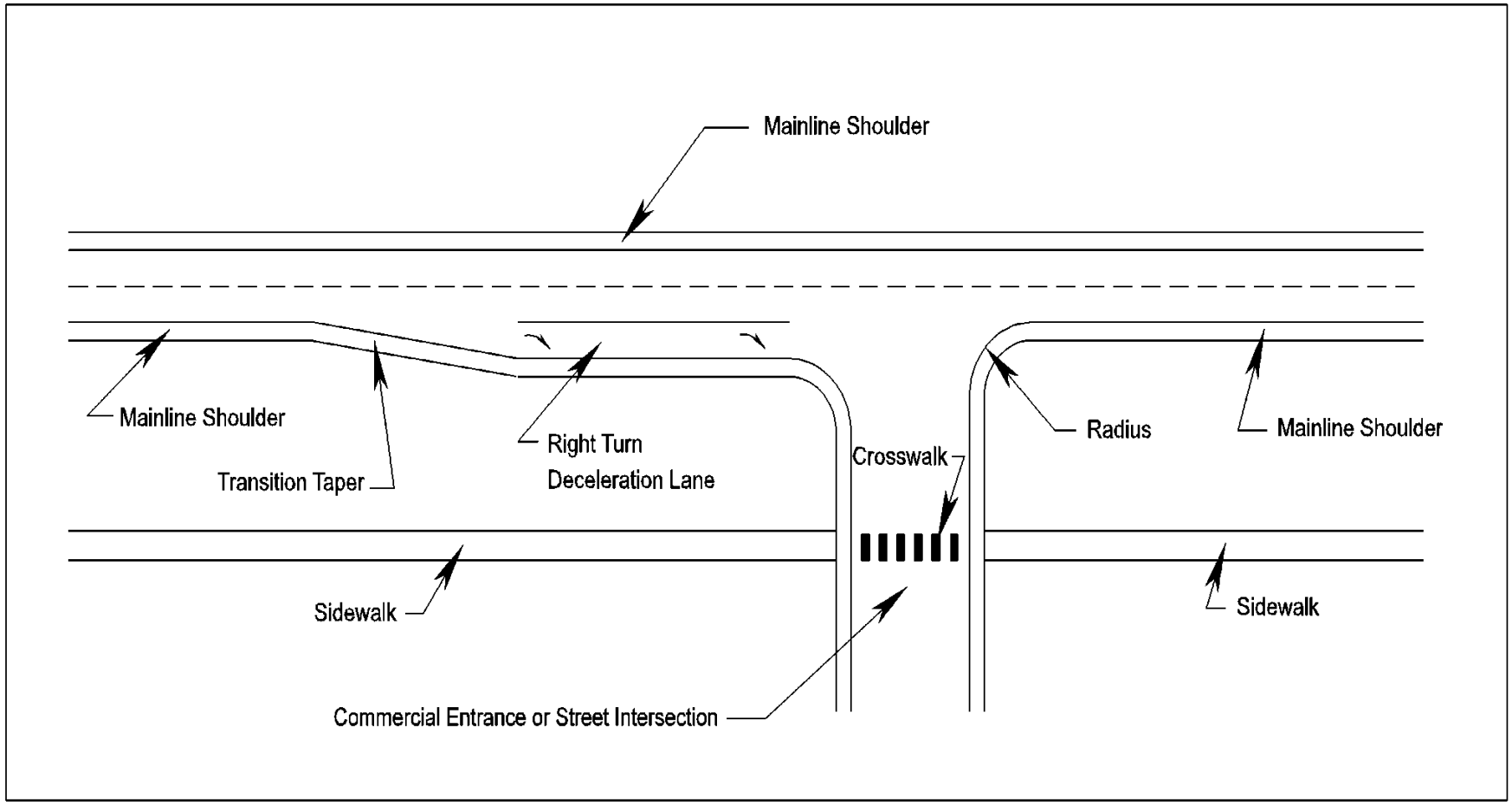


FIGURE 3-30 TYPICAL APPLICATION OF A RIGHT TURN DECELERATION LANE (SHOULDER SECTION)

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

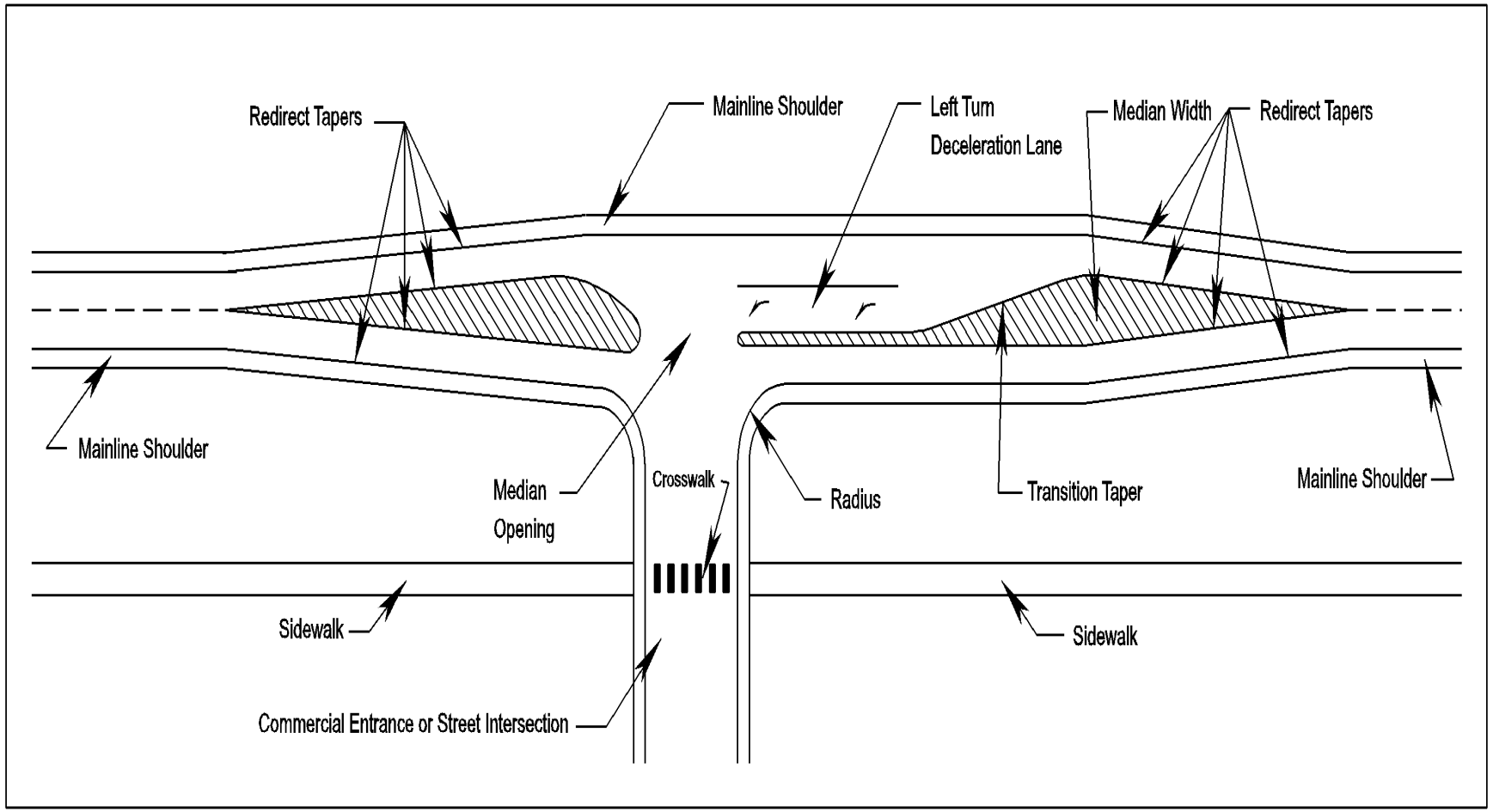


FIGURE 3-31 TYPICAL APPLICATION OF A LEFT TURN DECELERATION LANE (SHOULDER SECTION)

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

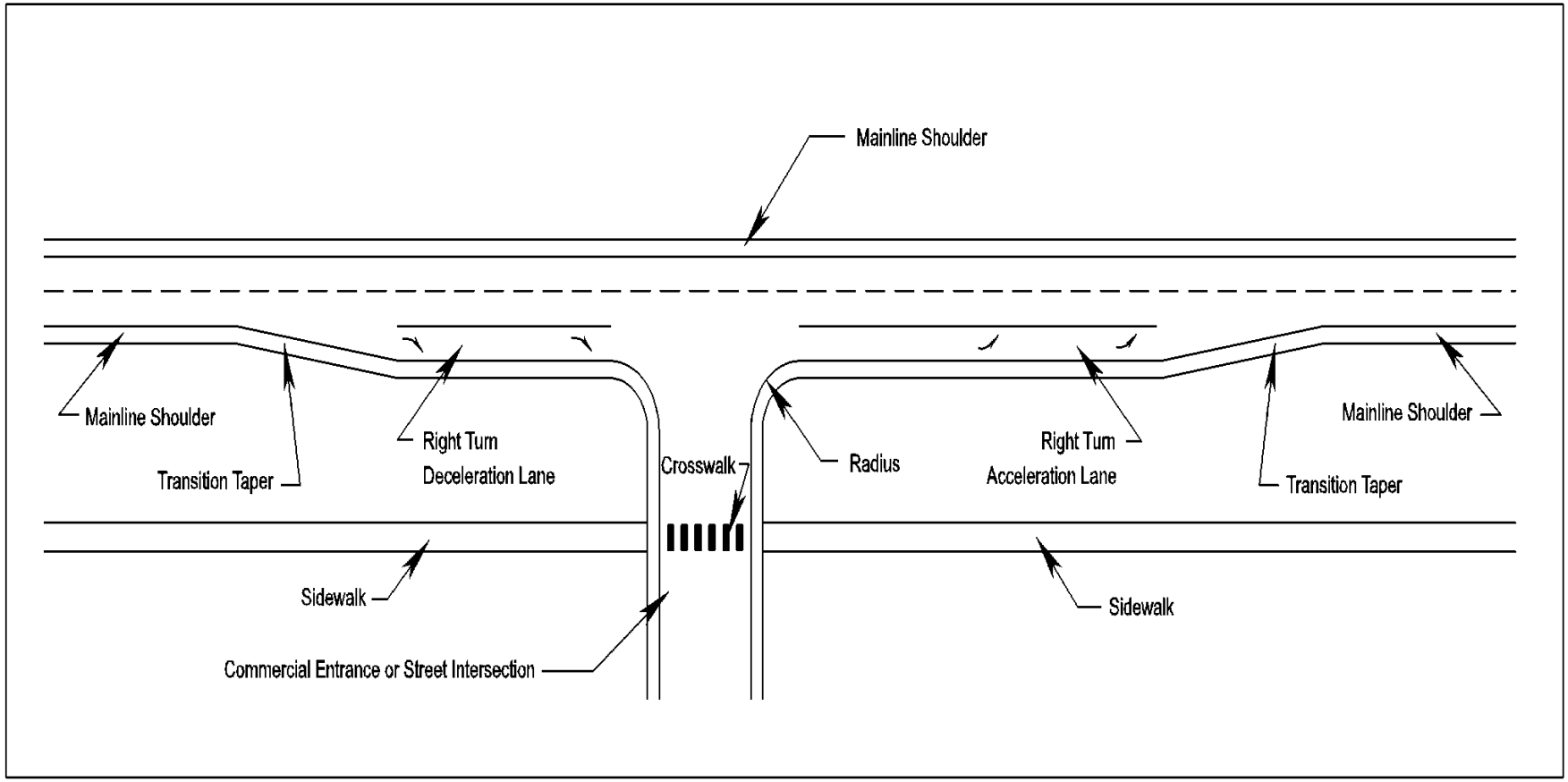


FIGURE 3-32 TYPICAL APPLICATION OF A RIGHT TURN ACCELERATION AND DECELERATION LANE (SHOULDER SECTION)

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

SECTION 4 – ENTRANCE DESIGN

Access Point* Design Principles

All entrances are, in effect, at-grade intersections and are designed consistent with the intended use. Access point design and location merit special considerations in order to reduce the number of crashes.

At Intersections: Access points shall not be situated within the functional area of an intersection or in the influence area of an adjacent entrance. The functional area extends both upstream and downstream from the physical intersection area and includes the longitudinal limits of auxiliary lanes, see Figure 4-2A.

Access Angle: The access centerline should be perpendicular to the state highway centerline and extend tangentially for a minimum distance of 40 feet beyond the near-side edge line. An acute angle between 60 degrees and 90 degrees may be permitted if significant physical constraints exist. Acute angles less than 60 degrees shall require special approval of the Department.

Type of Entrance	Design	Sight Distance	Access Management*	Permit
Commercial	Figures 4-1B, Figure 4-8 to 4-14	Intersection	Yes	Commercial
Commercial Moderate Volume	Figure 4-1B & 4-15	Intersection	Yes	Commercial
Low Volume Commercial	Figure 4-1 & Figure 4-1B	Stopping	No	Commercial
Private	Figure 4-1 & Figure 4-1B	Best Possible	No	Private

TABLE 4-1 ENTRANCE TYPES AND RULES

NOTE: See *Section 120, Access Management Regulations*

Entrance Definitions

Commercial Entrance: Any access point serving land uses that generate more than 50 vehicular trips per day or the trip generation equivalent of more than five individual private

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residences or lots for individual private residences using the methodology in the Institute of Transportation Engineers *Trip Generation*. See Figures 4-8 to 4-14.

Private Subdivision Road/Street Commercial Entrance: Any access point* for a road or street that serves more than five individual properties and is privately owned and maintained.

Low Volume Commercial Entrance: Any access point, other than a private entrance, serving five or fewer individual residences or lots for individual residences on a privately owned and maintained road or land uses that generate 50 or fewer vehicular trips per day using the methodology in the Institute of Transportation Engineers *Trip Generation*.

Moderate Volume Commercial Entrance**:** A commercial entrance along highways with shoulders with certain site and design criteria reduced. Site requirements are:

- Maximum highway vehicles per day: 5,000
- Maximum entering vehicles per day: 200
- Maximum percent truck trips of vehicles per day utilizing the access point: 10%

The reduced design criteria are (i) Minimum entrance throat depth is 25 feet; (ii) Minimum radii is 25 feet with curb/gutter or curbing not required; (iii) Entrance width is 18 feet minimum, 30 feet maximum; and (iv) Minimum angle of entrance is 60 degrees.

See Figure 4-15 for the moderate volume commercial entrance design illustration.

Private Entrance: An access point that serves up to two private residences and is used for the exclusive benefit of the occupants or an access point that allows agricultural operations to obtain access to fields or an access to civil and communication infrastructure facilities that generate 10 or fewer trips per day such as cell towers, pump stations, and stormwater management basins.

Private and Low Volume Commercial Entrances

All private and low volume commercial entrances shall be designed in accordance with the entrance design criteria below and Figure 4-1 to promote safe and efficient movement of vehicles in the entrance and on state highways.

Low Volume Commercial Entrance Stopping Sight Distance
Adequate stopping sight distance is required for low volume commercial entrances, as specified in the Stopping Sight Distance Tables A1-1 and A1-2 in *Appendix A1 Geometric Design Standards*.

Private Entrance Sight Distance
The installation of a private entrance cannot be denied on the basis of sight distance. VDOT will review the property owner's highway frontage and determine a useable location for the private entrance with the *best possible sight distance*.

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The property owner's preferred location can be denied by the Department if the location does not have the best possible sight distance and therefore is less safe for users of the entrance as well as for motorists on the intersecting highway.

The Department may require the property owner to grade slopes, clear brush, remove trees, and conduct other similar efforts necessary to provide the safest possible means of ingress and egress that can be reasonably achieved.

Private and Low Volume Commercial Entrance Curb and Gutter

Standard entrance gutter (Std. CG-9D; other options are CG-9A or CG-9B) shall be used with Std. CG-6 or CG-7 curb and gutter. A special design entrance gutter shall be submitted for approval when roll top curb is used.

Private and Low Volume Commercial Entrance Design Criteria

All private and low volume commercial entrances shall be designed and constructed as noted below and shown in Figure 4-1. Entrance radius shall be 20 feet minimum.

Entrance pipe culverts shall be sized to accommodate the run-off expected from a 10-year frequency storm. Alternate methods for placing pipe culverts under the entrance (cut/fill details) are presented in the PE-1 design standard illustration in the VDOT *Road and Bridge Standards*, Section 600, available on the VDOT web.

All private and low volume commercial entrance grades shall start back of the shoulder line. If drainage is necessary, the ditch line may be moved back to provide 9 inches minimum cover over pipe.

Entrances shall be at least 12 feet wide and tied smoothly into the roadway surface.

The entrance surface can be crusher run aggregate (gravel), asphalt, concrete, etc. and shall extend from the edge of the roadway to the right-of-way line.

Private and Low Volume Commercial Entrance Grades

In the interest of assuring an adequate, convenient, and safe access to public roads, VDOT recommends the grades along such entrances not exceed 10%. When grades do exceed 10%, consideration should be given to paving the entrance. *

Modification of an Existing Private or Low Volume Commercial Entrance

When an existing street is re-developed and modification of an existing entrance is required, the entrance surface shall be extended to the right-of-way line or the extent of disturbance to the existing entrance.

* Rev. 7/16

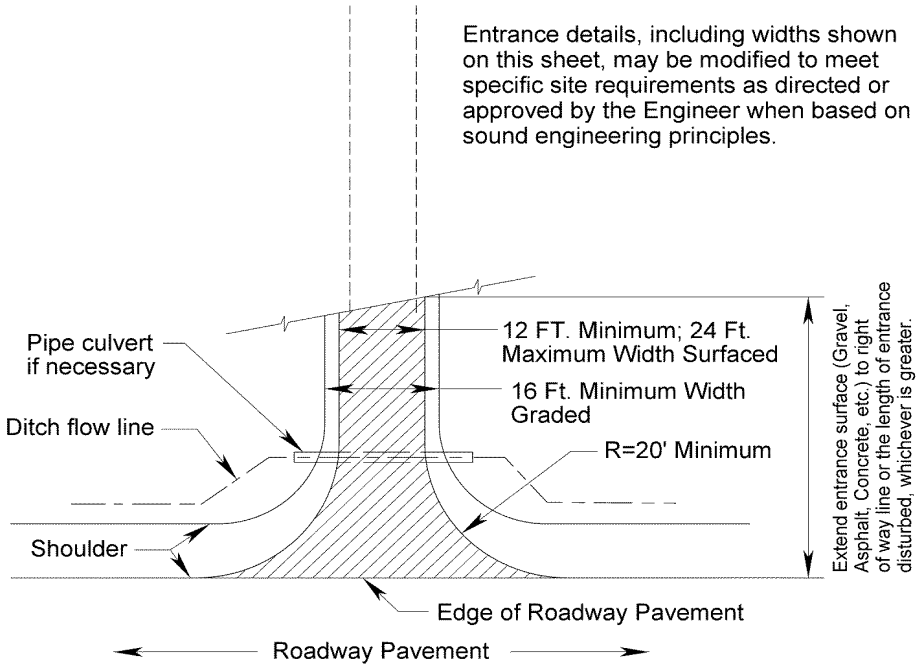

FIGURE 4-1 PRIVATE ENTRANCE AND LOW VOLUME COMMERCIAL ENTRANCE DETAIL

Commercial Entrances

Commercial entrances shall be designed according to the entrance design diagrams Figure 4-8 to Figure 4-15 to promote safe and efficient movement of vehicles in the entrance and on state highways.
To assure that commercial entrances are designed to provide for safe and efficient movements, it is necessary to pay attention to critical dimensions and design features listed below.

- Radius of curved approach/exit of entrance.
- Flare size of angled approach/exit of entrance.
- Entrance distance or spacing between entrances.
- Corner clearance measured from a major intersection.
- Angle of entrance.
- Sight distance length of roadway visible to the driver required for vehicles to make safe movements.
- Entrance location in relation to other traffic features such as intersections, neighboring entrances, and median crossovers.
- Entrance throat distance needed into site to transition vehicles to the internal circulation system of the site.
- Right turn lanes to separate through and turning traffic on roadways to facilitate right turns into the entrance.

Entrance Sight Distance: Commercial entrances shall be placed at locations that provide adequate intersection sight distance. In hilly areas, proper locations can be at a premium, and shared access may be necessary. For more information see the Commercial Entrance Intersection Sight Distance section below.

Entrance to Parking Areas: An access shall not be approved for parking areas that require backing maneuvers within state highway right-of-way. All off-street parking areas must include on-site maneuvering areas and aisles to permit vehicles to enter and exit the site in forward drive without hesitation. For Parking Space Guidelines See *Appendix *A(1).*

Entrance Throat: The entrance throat is designed to facilitate the movement of vehicles off the highway to prevent the queuing of vehicles on the traveled way. Entrance throats apply to commercial entrances, corner clearance establishes the “Throat” of a minor street intersecting a major street.

The throat length is based on the traffic a development will generate, not the characteristics of the abutting highway. The more traffic using the commercial entrance, the greater the number of ingress/egress lanes will be needed within the entrance, which determines the length of the entrance throat.

Both sides of the entrance throat need to be protected. The length of the entrance-side throat equals the exiting throat. When entering vehicles stop to turn left there must be sufficient queuing length to prevent other entering vehicles from backing up on to the highway. Minimum connection throats are provided in the table below.

Summary of Entrance Throats	
Number of **Egress** Lanes (left, thru and right)	Minimum Throat Length
	Feet
1	35 *
2	75
3	200
4	300

TABLE 4-2 SUMMARY OF ENTRANCE THROATS

Source: *Transportation & Land Development 2nd Edition 2003*, Koepke and Stover

* Inadequate entrance length can also produce hazards to entering traffic on site. Particularly where the on-site parking can back out of and block the entrance and prevent a vehicle from entering. To avoid this problem, a distance of at least 50 feet is used on entrance length where back out parking may interfere with entry movement.

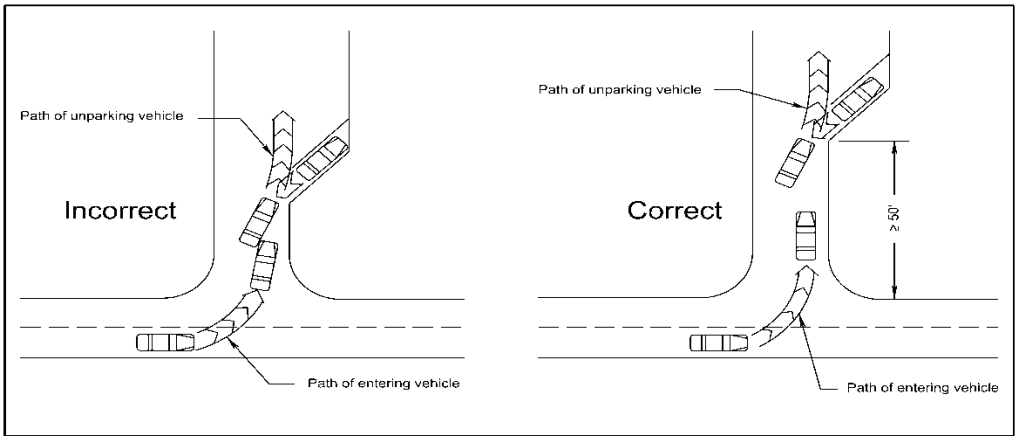

FIGURE 4-1A ENTRANCE THROAT DETAIL

Entrance Pavement: The type and depth of the pavement shall be clearly indicated on the plans and/or permit application. The pavement of commercial entrances, turn lanes and tapers shall be of asphalt, concrete, or pavers that is of a construction comparable to the pavement of the adjacent roadway.

Entrance Grade: The vertical alignment of all access locations is designed to minimize vehicle bounce and prevent high-centering of vehicles with a maximum clearance of 4 inches. The maximum grade change* for a commercial entrance is 8%.

Steeper access entrances require the District L&D Engineer approval. A landing area shall be provided at each access to ensure proper sight distance from the access. The level area

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is measured from the highway edge of pavement or from the back of sidewalk, whichever is appropriate based on site-specific conditions.

Entrance Cuts: The maximum vertical curve, crest or sag, shall have a maximum 4-inch vertical offset over a 10-foot chord length. A standard vertical curve is designed for all commercial entrance profiles that exceed 3.3%.

Entrance Drainage: Drainage shall be considered in the design of entrance grades. Roadways and curb-and-gutter sections that convey storm water runoff within the roadway prism are designed in accordance with department standards. Site runoff into state right-of-way shall be minimized.

Entrance Width: All commercial entrances shall have a width sufficient for the particular land use and anticipated traffic flow with a **minimum** width of 16 feet for a one-way drive and 30 feet for a two-way drive (a two-way commercial entrance on a *local street* shall have a minimum width of 24 feet). Note: The width of the entrance shall be wide enough so that the design vehicle does not encroach into the opposing lane when entering the entrance.* The **maximum** width is 20 feet for a one-way drive and 40 feet for a two-way drive. See "Entrance Width" in Definitions Section.

These widths are measured at right angles to the centerline of the entrance at the right-of-way line. Entrances with multiple lanes or median may require additional width. For subdivision streets, radii width and angle are established in the Subdivision Street Design Guide in the *Road Design Manual, Appendix B (1).*

Design Vehicle: The type of vehicle that makes frequent turns without encroaching into the adjacent lane when making turns. The tracking of the design vehicle is an important determinant of corner radii at intersections. When the design vehicle traverses an intersection, the design vehicle shall be able to turn from one street to another without deviating from the near travel lane and impeding other traffic flow. Therefore, the design vehicle determines the elements of design such as turning radius and lane width. The design vehicle is to be determined based on the *LD-104* Request for Traffic Data and discussed at the Project Scoping Meeting and recorded on the Scoping Worksheet - Roadway Design.

The WB-67 shall be the design vehicle used for intersections of freeway ramp terminals with other arterial crossroads and for other intersections on state highways and industrialized streets that carry high volumes of traffic or that provide local access for large trucks.

Entrance Radius: The entrance radius shall be designed to accommodate the design vehicle expected to use the commercial entrance on a daily basis and have radii large enough to accommodate the largest design vehicle that will use it without creating undue congestion or hazard on the through highway (See Table 4-3).

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Design Vehicle and Turning Radius by Land Use		
Land Use(s) Served by Access	**Design Vehicle**	**Radius (Minimum)**
Office with Separate Truck Access	Passenger Car/Pickup	25
Office without Truck Access	Single Unit Truck SU-30	45
Commercial / Retail with Separate Truck Access	Passenger Car/Pickup	25
Commercial / Retail without Separate Truck Access	WB-67 Truck	50
Industrial with Separate Truck Access	Passenger Car/Pickup	25
Industrial without Separate Truck Access	WB-67 Truck	50
Recreational without Watercraft Access or Camping	Passenger Car/Pickup	25
Recreational with Watercraft Access or Camping	Motor Home/Boat	50
Agricultural Field Access	Single Unit Truck SU-30	45
Municipal and County Roads	WB-67 Truck	50

TABLE 4-3 DESIGN VEHICLE AND TURNING RADIUS BY LAND USE

Note: “with Separate Truck Access” indicates truck prohibition from primary access.

The minimum entrance radius allowed is 25 feet and the minimum exit radius allowed is 25 feet. Access points* into mixed use developments are designed to accommodate the largest design vehicle expected to use that entrance.

Where on-street parking is allowed near the commercial entrance, the *effective* radius for the entrance shall be used. Typically the effective radius will be the actual radius of the entrance curbing plus the width of the parking lane).*

For subdivision streets, radii width and angle are specified in the Subdivision Street Design Guide in the *Road Design Manual, Appendix B (1)*See above web link.

Auxiliary Lanes and Tapers: When a land use will generate high traffic volumes, auxiliary lanes and tapers may be required. Auxiliary lanes and tapers shall be located within right-of-way. See Section 3 Turning Lanes for more information.

Angled Entrances: When the property owner desires to construct dual commercial entrances at other than 90 degrees to the centerline of the road, an entrance on the right side as approaching should not have less than a 60 degree angle with the centerline of the road.

Entrance Profile: All commercial entrances are built to a sidewalk elevation at the right-of-way line. Beyond the right-of-way line, the grade should not exceed 8 percent. Entrance configurations are shown starting at Figure 4-8.

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Entrance Medians: Commercial entrance medians are used when two or more lanes are required for both the entering and the exiting movements at the entrance.

- Entrance medians shall have a minimum width of 4 feet.
- The minimum size of an entrance median island is 100 square feet.
- All curbing within the highway clear zone shall be in accordance with VDOT's *Road and Bridge Standards*, or as approved by the District Engineer/Administrator or designee, and appropriate for the operational speeds of the facility.
- Non-regulatory signs shall not be placed in the portion of an entrance median located within the right-of-way, or within the highway clear zone, and shall not restrict intersection sight distances.
- An entrance median should not contain structures, signs, or landscaping which restrict sight distance.

Entrance Pedestrian Accommodation: Design criteria for sidewalks at commercial entrances (by providing pedestrian access routes across the entrance) are presented in diagram CG-11 in the *Road and Bridge Standards* at the following web link:

Commercial Entrance Sight Distance

Entrances shall be located to provide adequate intersection sight distance. Intersection sight distance criteria are illustrated below and the sight distance requirements are presented in Table 2-5. The line of sight establishes the boundary of a sight triangle within which there is no sight obstruction. At any location where the sight line leaves the right-of-way, a permanent easement must be maintained, and the area must be graded and landscaped such that sight distance is not compromised, for a commercial entrance to be approved. (For an Appeals Process, see Access Management Regulations: (*24VAC30-73-50 B*).

Offsets: Improvements on public or private property adjacent to the right-of-way shall be located so that parking, stopping, and maneuvering of vehicles within the highway right-of-way will not occur. The minimum distance from the right-of-way line for all structures and sight obstructions is the clear zone. At all commercial entrances and intersections, an adequate sight triangle shall be provided. The minimum setback point for the sight triangle is 14.5 feet from the near-side extended highway edge of pavement.

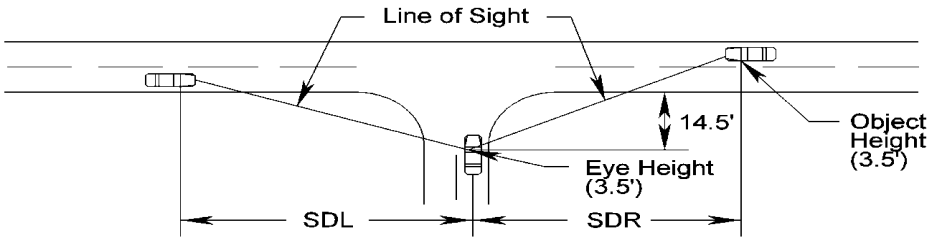


FIGURE 4-1B COMMERCIAL ENTRANCE SIGHT DISTANCE*

SDR = Sight Distance Right (For a vehicle making a left turn)
SDL = Sight Distance Left (For a vehicle making a right or left turn)

All site plans for proposed developments shall show the location of all proposed and existing entrances within the area of the proposed development. The location of all proposed commercial entrances shall be reviewed to determine if proper spacing will be maintained.

Limits of Maintenance Responsibility for Private and Commercial Entrances

See the Access Management Regulations Section 90 for details on private entrance maintenance responsibilities and Section 110 on maintenance responsibilities for commercial entrances.

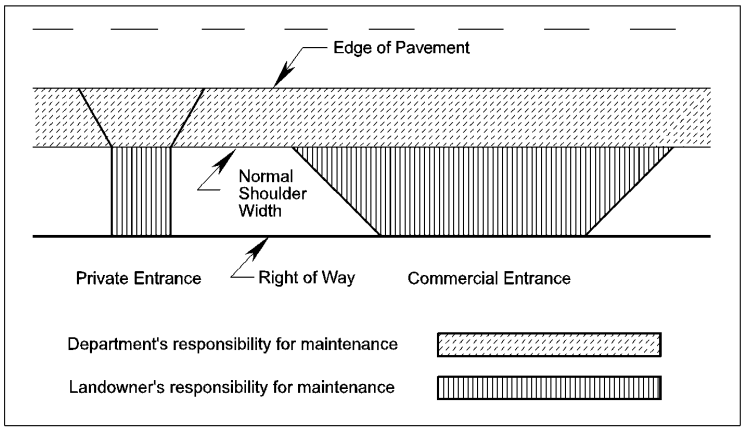


FIGURE 4-2 LIMITS OF RESPONSIBILITY FOR ENTRANCES

Commercial Entrance Separation from an Intersection

Entrances shall not be placed within the functional area of any intersection. If however, existing entrances are located within the functional area of the intersection Part A of the Waiver Form AM-W shall be completed and submitted to the District Location and Design Engineer for approval. Greater spacing may be required due to stacking requirements of the approaches to the intersection. This can be particularly evident around signalized

intersections. The Access Management Regulation 24VAC30-73-120 requires commercial entrances to be located out of the functional area of an intersection.

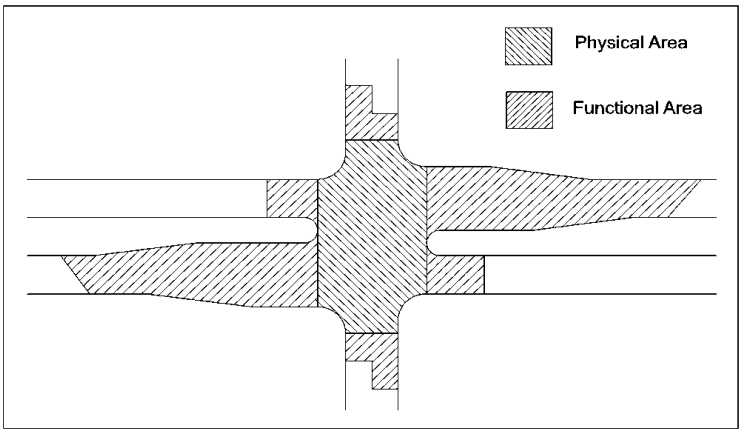
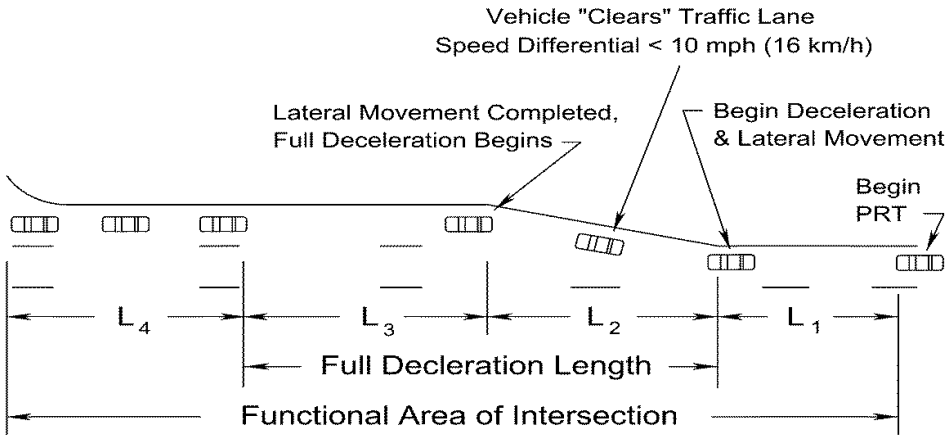


FIGURE 4-2A PHYSICAL AND FUNCTIONAL AREAS OF INTERSECTION

Source: FHWA, *National Highway Institute Course No. 15255*

AASHTO specifically states that “a driveway should not be located within the functional boundary of an intersection”. The functional area on the approach to an intersection consists of three basic elements: perception-reaction decision distance, maneuver distance, and queue-storage distance. These elements are identified in Figure 4-3 . The distance traveled during the perception-reaction time will depend on such factors as vehicle speed. Where there is a left or right turn lane, the maneuver distance includes the length needed for both braking and lane changing. In the absence of turn lanes, it involves braking to a comfortable stop. The storage length should be sufficient to accommodate the longest queue expected most of the time.



L_1 = Distance traveled during perception-reaction time (PRT) (2.5 sec. x Design Speed in ft/sec.)

L_2 = Taper distance to begin deceleration and complete lateral movement (Taper length see Figure 3-1)

L_3 = Distance traveled to complete deceleration to a stop

L_4 = Storage length (See Figure 3-1)

FIGURE 4-3 ELEMENTS OF THE FUNCTIONAL AREA OF INTERSECTION

SOURCE: 2018 AASHTO Green Book, Chapter 9, Section 9.7.2

Restricting Left Turn Movements at Commercial Entrances

The most effective way to prevent left turn movements at access points* is through the use of restrictive medians. Where space for a raised median is available within the road (AASHTO recommends a minimum median width of 4 feet), it can be installed along the front of the entrance for a sufficient distance to prevent left turns (see Medians in section 3 for additional information).

Another alternative when there is not enough space for a raised median is the use of flexible traffic posts with reflective striping to serve as a visual and physical barrier to left turn ingress and egress at an access point.

Finally, although less effective than restrictive medians, channelization islands can be installed within the commercial entrance throat to prevent left turn ingress and/or egress movements to create a right-in and/or right-out access point on an undivided highway. Figure 4-4 presents illustrations of commercial entrance channelization island options.

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Commercial Entrance Channelization Island Options

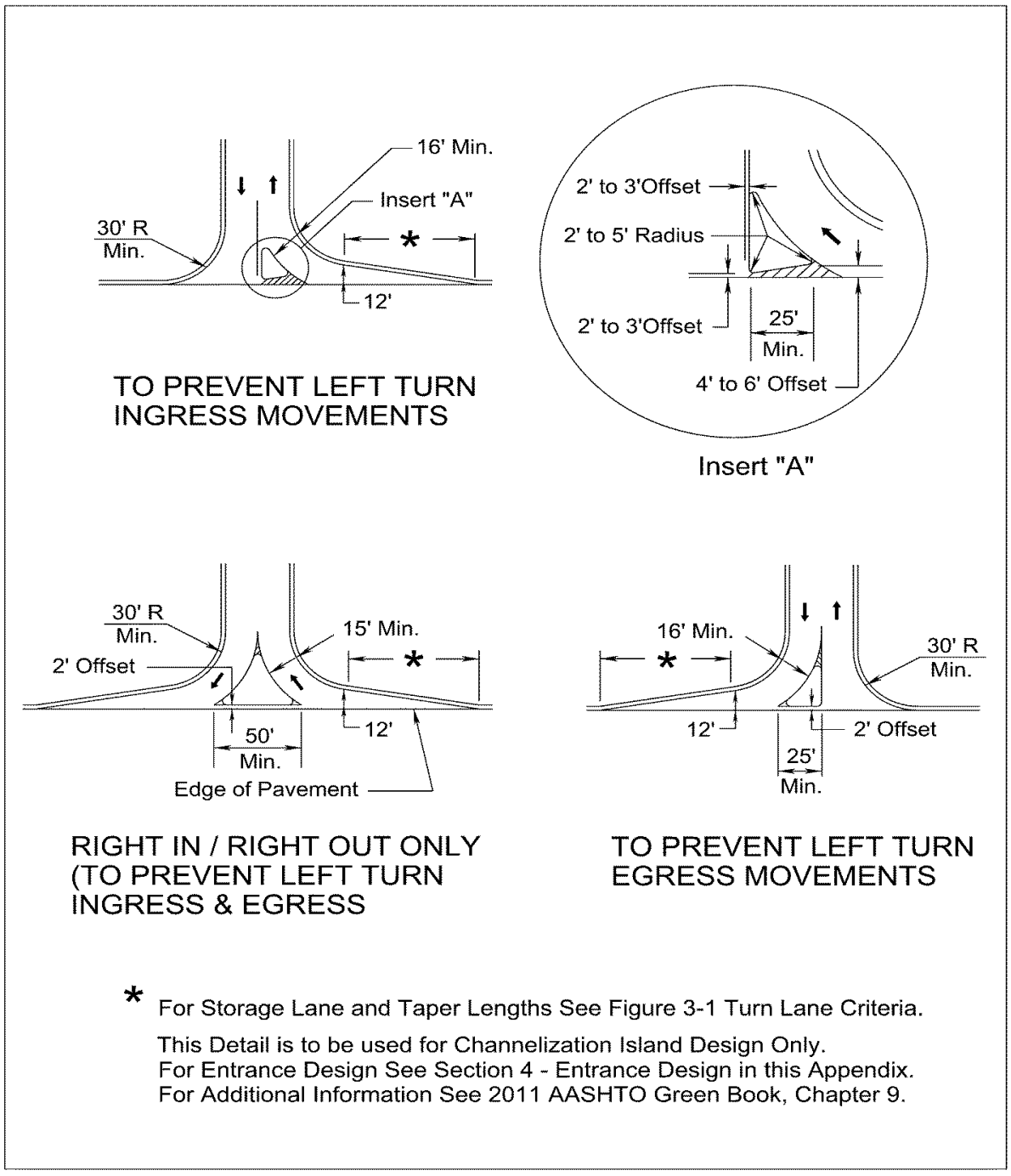

FIGURE 4-4 COMMERCIAL ENTRANCE CHANNELIZATION ISLAND OPTIONS

Commercial Entrance Spacing

Access management increases the spacing between entrances, thus reducing the number and variety of events to which drivers along the corridor must respond. Close spacing between unsignalized entrances forces the driver to watch for ingress and egress

traffic at several locations simultaneously. Increased spacing translates into fewer accidents, savings in travel time, and preservation of corridor capacity.

Entrances shall be located to limit interference with the free movement of roadway traffic, and to provide the most favorable sight distance and entrance grade. No direct access entrance shall be located in the operational area of a signalized intersection. Commercial entrance separation is required by the *Access Management Regulations 24VAC30-73-120* using the spacing standards in Table 2-2.

Corner Clearance on a Minor Side Street

It is important to think of the operational impacts of access point* placement on side streets where the side streets intersect with major roadways. The major roadway will have the higher functional classification or if the same classification will have the higher traffic volume. Corner clearance does not apply to the intersection of two functionally classified local streets. Corner clearance can, at the discretion of the VDOT reviewer or designer, apply to connections to entrances or private roads that intersect with a VDOT major roadway if: a) the access point or private road has the appearance of and operates like a street or if it's intersection with the VDOT roadway is signalized and b) the connection to the entrance or private road may impact the operation of the entrance or private road's intersection with the VDOT roadway. The operational character of the traffic turning from the main roadway onto the minor side street as well as the expected queues on the side street, help determine how far to place the closest side street access point from the intersection.

Moving the basic access point conflict area away from the vicinity of an intersection can be accomplished by regulating the distance between a crossroad intersection and the nearest access point location. The intent is to prevent queued vehicles from backing up into the highway or blocking entrances near the intersection. The major effect is that vehicles will be delayed less by standing queues at signalized intersections.

Corner clearance is defined as the distance, measured perpendicular to the major roadway, from the nearest edge of an access point on the minor side street to the nearest edge pavement of the major roadway intersection.

In most instances, the minimum corner clearance will be governed by the intersection sight distance. Minimum entrance setbacks should be considered at individual intersections, and should be based on typical queue lengths that still allow sufficient movement to and from an access point.

It is important to note that the Table 2-2 entrance and intersection spacing standards are measured from the centerlines of the intersection and the access point rather than edge of pavement. As a result, the Table 2-2 spacing measurement may result in a distance that

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is less than the corner clearance. The corner clearance distance will apply where it is greater than the Table 2-2 spacing standard to protect intersection operation.
Similar to the placement of an access point* on the main roadway, conflicts for the existing vehicles for the side street access point must be considered. Figure 4-5 illustrates the concept of corner clearance.

For the right turn out of the side street access point (flow A), the vehicle approaching from the left (flow C) must be considered. The greater the radius (R) for right turning vehicles from the main roadway, the faster they will be approaching the side street access point. For the driver exiting the side street access point to go left (flow B) or right (Flow F) or to enter the opposite entrance (Flow E), the length of the queue at the main intersection must be considered to assure there is enough room that the access point will not be blocked by queue D.

The downstream corner clearance is 225 feet minimum, which equals the intersection sight distance for 20 mph (see Table 2-5). Additional length will be required as directed by the Engineer at the Residency or District.

The minimum upstream corner clearance is the greater of 225 feet + W or the queue D.

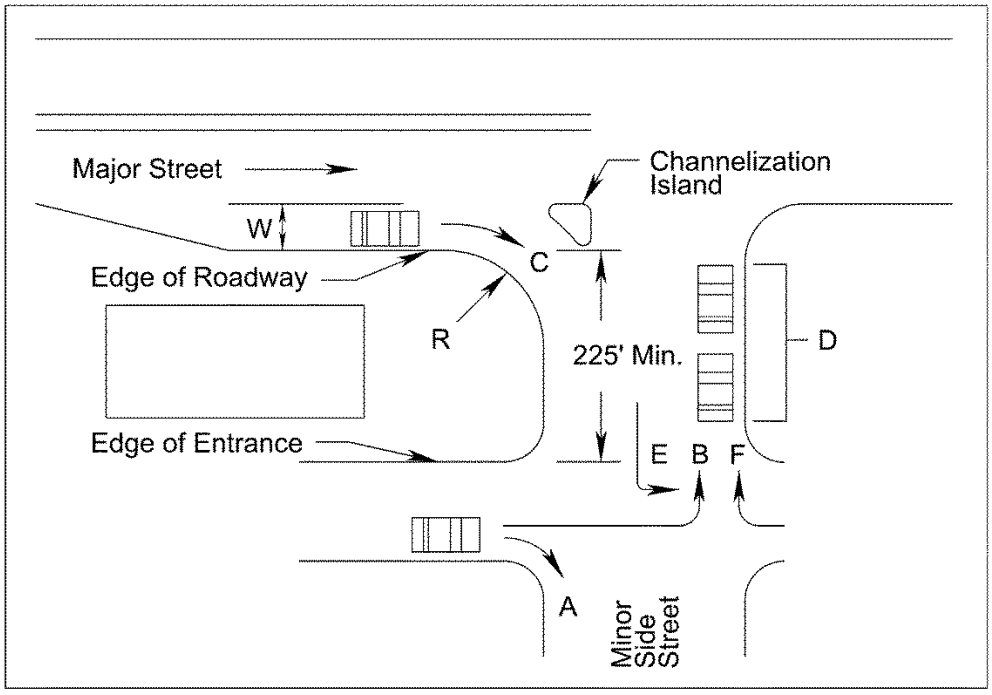

FIGURE 4-5 CORNER CLEARANCE

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Access Points* on Opposite Sides of a Roadway

Closely spaced access points on opposite sides of an undivided roadway or a roadway with two-way left-turn lanes (TWLTL) result in "jog" maneuvers, instead of separate and distinct left-turn and right-turn maneuvers (see below). They can also result in conflicting left-turns. Unless access points are directly across from each other creating a 4 way intersection that meets Table 2-2 intersection spacing, access points on opposite sides of a roadway shall be offset to ensure that entrance left turning movements do not conflict, see Figure 3-1 for turn lane and taper criteria. Separation of the access connections results in their functioning as separate T-intersections (3-way intersection) that have relatively low crash potential.

ACCESS POINTS ON OPPOSITE SIDES OF A ROADWAY

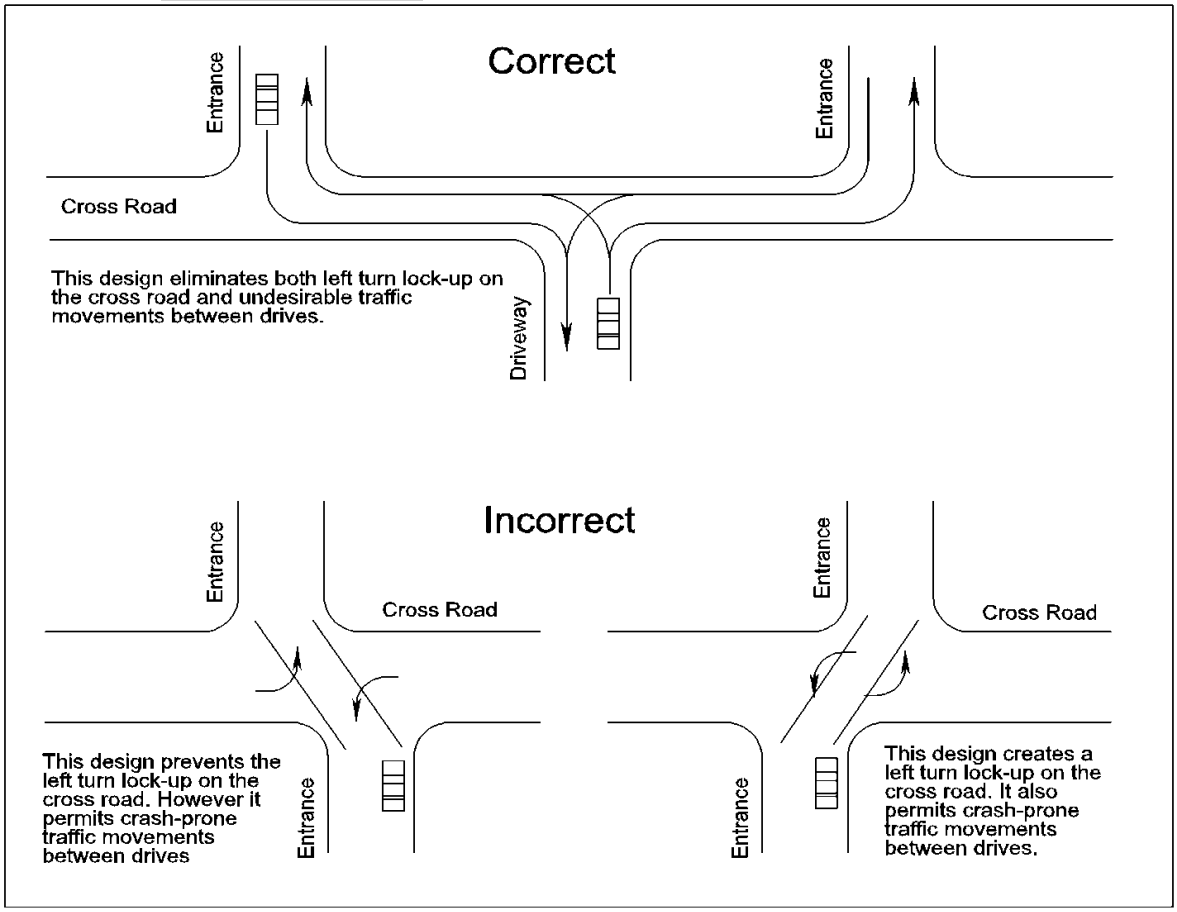

FIGURE 4-6 ACCESS POINTS ON OPPOSITE SIDES OF A ROADWAY

Source: Driveway Handbook, dated March 2005, Florida Dept. of Transportation.

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Access* Consolidation (Shared Use Entrances)

Shared use entrances are used to reduce the number of access points along a corridor while maintaining reasonable access to adjacent land uses. A shared use entrance generally serves only two parcels. The *Access Management Regulations 24VAC30-73-120* requires shared entrances where possible.

A shared use entrance may be constructed if both property owners abutting a common property line agree. This encourages adjacent property owners to construct shared entrances in lieu of separate ones. Strategies for implementing this access control measure include closing existing entrances or authorizing joint-use ones. The feasibility of this measure should be viewed at the preliminary, site plan review and the permit-authorization stages. A shared access will result in a reduction in the concentration of access points along a roadway, thus reducing the frequency and severity of conflicts.

The physical means by which access can be consolidated between two adjacent properties involves the construction of a joint-use access between the two properties. It is recommended that both property owners own the shared access drive. That is, the access point should straddle the property line dividing the two establishments. The resulting joint-use parking area should be accompanied by an efficient internal circulation plan.

Inter-Parcel Vehicular Connections

By establishing vehicular circulation connections between parcels (land uses), the driver needing to turn left across heavy volumes can usually find an access that is signalized, allowing safer left turns.

Having good cross parcel access also maximizes the number of well-designed unsignalized access points that have good visibility and are located in such a way to take advantage of sufficient gaps in traffic from a nearby signal.

Inter-parcel connections allow the driver to travel to an adjacent land use(s) without having to access the highway. Joint entrances and cross access especially help the small corner lots and out parcels. On small corner parcels left turn accessibility may be a problem and access to parcels may be limited to right in/right out or similarly restricted movements.

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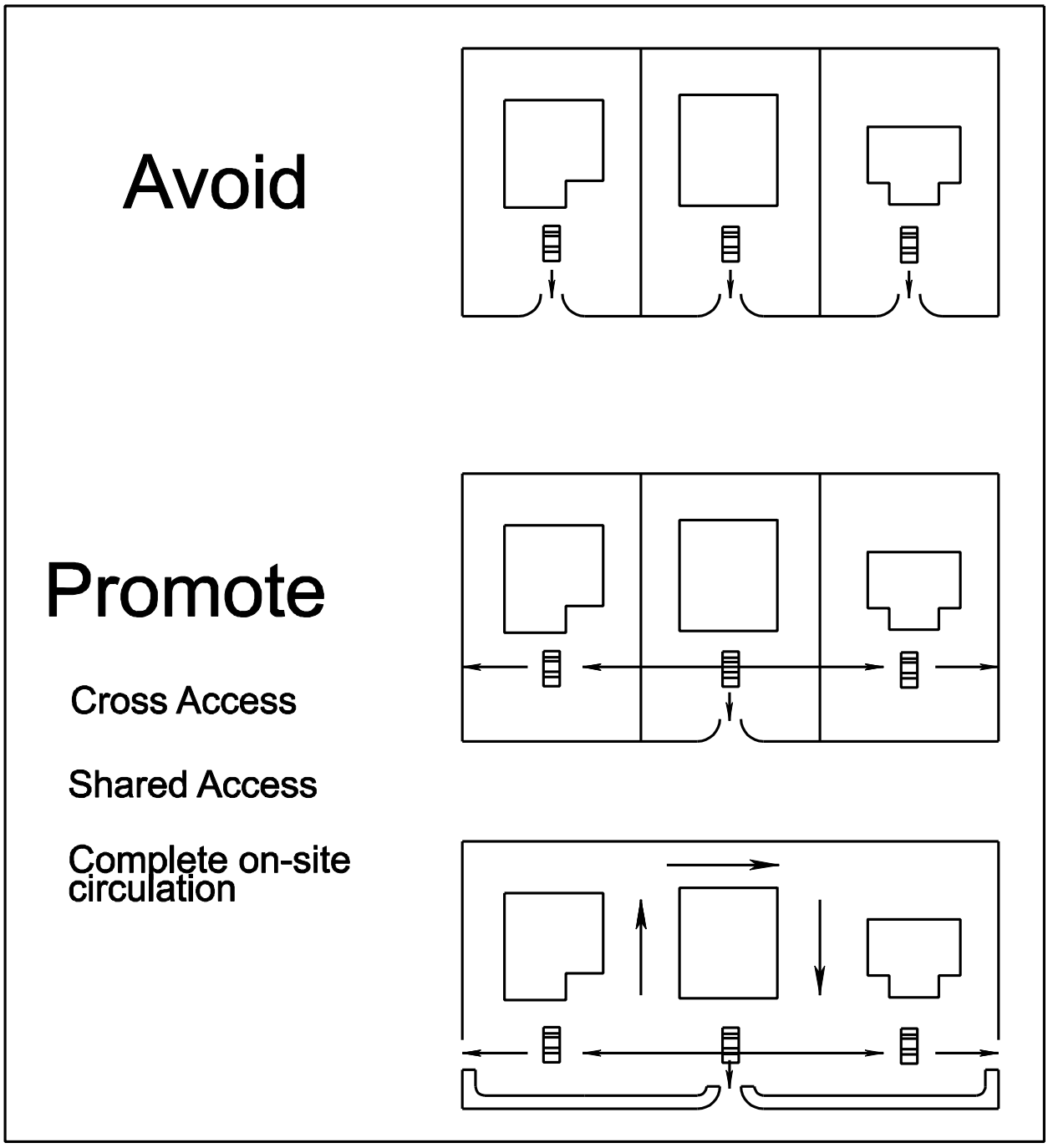


FIGURE 4-7 SHARED ENTRANCE AND INTERNAL SITE CONNECTION

Source: FDOT- Driveway Handbook, Dated March, 2005

Frontage Roads

Frontage or service roads may be constructed by VDOT where justified by existing or anticipated traffic needs, right-of-way requirements, etc. within funds available.

Where frontage or service roads have not been constructed by VDOT, the Department may cooperate with others in the construction of service roads to promote highway safety and provide suitable locations for public utility services.

VDOT may furnish assistance if the construction of a frontage road will provide significant public service and eliminate undesirable ingress and egress through the establishment of safe and properly spaced access points.

Frontage roads constructed in cities, municipalities, or towns of more than 3,500 or along Primary routes in those counties which maintain their Secondary roads shall meet all minimum VDOT standards or the standards of the city, town or county as provided by ordinance.

When frontage or service roads are constructed by someone other than VDOT, the following conditions shall apply:

If the road is Constructed on…	Then the construction Must…	And…
Existing State Right-of-Way	Conform to such rules regulations, standards, specifications, and plans as may be approved by VDOT and authorized by issue of a permit	The cost of the construction is fully borne by others.
Land Outside Existing State Right-of-Way	Conform to such rules, regulations, standards, specifications, and plans, as may be approved by VDOT	The land must be dedicated to public use if the road is to be accepted into the highway system and maintained by VDOT.
Then…	VDOT will accept as a part of the appropriate highway system, those service roads constructed by others in accordance with above criteria.	

VDOT will maintain the roads in accordance with maintenance standards established for such classes of roads.

The cost of maintaining frontage roads shall be charged to the route and section of mainline highway which it serves, if that mainline highway is limited access,* unless the frontage road forms an integral section of another route.
Source: *Code of Virginia, 15.2-2265* and *33.2-404*

* Added 1/21

Entrances Affected by Highway Construction Projects

Title *33.2-1001* of the Code of Virginia, as amended, requires that projects have the alignment, profile, and grade of commercial and private entrances shown on plans.

This information is to be shown as follows:

1. When the proposed entrance is to be placed in the same location as the existing entrance, no alignment will be shown. The proposed entrance will be shown graphically. A note is to be included on the general notes sheet as follows: "When no baseline alignment is shown for a proposed entrance, the entrance is to be constructed in the same location as the existing entrance."

2. Where a proposed entrance is to be on a location different from the existing, the proposed location will be shown graphically on the field inspection plans. After the field inspection party has reviewed the proposed location, the Right of Way and Utilities Division will contact* the property owner and determine that the proposed location is satisfactory or that the property owner desires some other location. The Engineer will then request the centerline and profile to be run by the survey party when this cannot be secured from existing notes. This alignment is to be shown on the plans.

3. A profile and proposed grade is to be shown for each entrance where it is necessary to re-grade on existing or new location. The survey party runs a profile along every existing entrance using a data collector and converting the information for placement into a graphics file. The profile is generally run along the center of the existing entrance, although usually no alignment is taken. The proposed grade can be a spline grade with an approximate percent of grade shown. The proposed grade will begin at the edge of shoulder; back of curb; or back of sidewalk, sidewalk space, or bikeway whichever is the outermost permanent construction. If it is necessary to use some other beginning point, it should be identified on the profile.

   It is desirable that projects with a large number of entrances contain a separate profile sheet or sheets devoted to entrances.

4. The above information does not apply to “No Plan” Projects.

Title *33.2-242* of the Code of Virginia, Replacing entrances destroyed by Commissioner. The Commonwealth Transportation Commissioner shall review the existing access to any parcel of land having an entrance destroyed in the repair or construction of the systems of state highways and shall provide access to the systems of state highways in a manner that will serve the parcel of land and ensure efficient and safe highway operation.

1. Whenever plans have been prepared for a proposed improvement and submitted to the district for field inspection, the plans will show the entrances in place as called for by the engineering information at the time the plans were prepared. The field inspection team shall make a close inspection of all entrances on the project and a determination will be made as to which entrances are to be replaced based on the entrance spacing standards in Table 2-2, Table 2-3, or Table 2-4 in order to protect the safety, integrity, and operational characteristics of the highway.

2. In reviewing the plans, there may be instances where a landowner now has access to his property by reason of the fact that he is able to drive from the highway surface to this adjoining property, particularly in farming operations, in order to obtain access to various fields within the farm. This must be carefully studied and, if the farm is so arranged that this is found to be true, the provisions are to be made to provide field entrances as conditions would require.

3. No additional entrances are to be called for or shown on the plans and certain entrances may need to be consolidated or relocated.

4. The right of way is to be appraised and acquired in accordance with the approved plans and the entrances that are shown thereon. (Should it be discovered at the appraising or negotiating stage that an existing entrance has been overlooked or added by the owner since the time of field inspection, then, of course, this entrance will be replaced.) There will, of course, be instances when the owner requests the construction of an entrance to a property where no access exists or for the construction of an additional entrance. When this occurs, the owner's request can be complied with if it is determined that construction of the entrance is economically justified and the District Engineer/Administrator and responsible District* Traffic Engineer give their approval for the construction thereof.

5. The type of entrance (Type I, II, III, IV) to be constructed will be determined by the existing conditions at the time of construction. The applicable details shown as CADD Cell “PCENTR” are to be placed on the typical section sheet, see http://www.virginiadot.org/business/locdes/vdot_cadd_manual.asp.

6. For exceptions or waivers to spacing standards or other entrance criteria on highway construction projects, please see pages F-30 and F-31 of this Appendix.

Commercial Entrance Design to Serve A Private Subdivision Road / Street

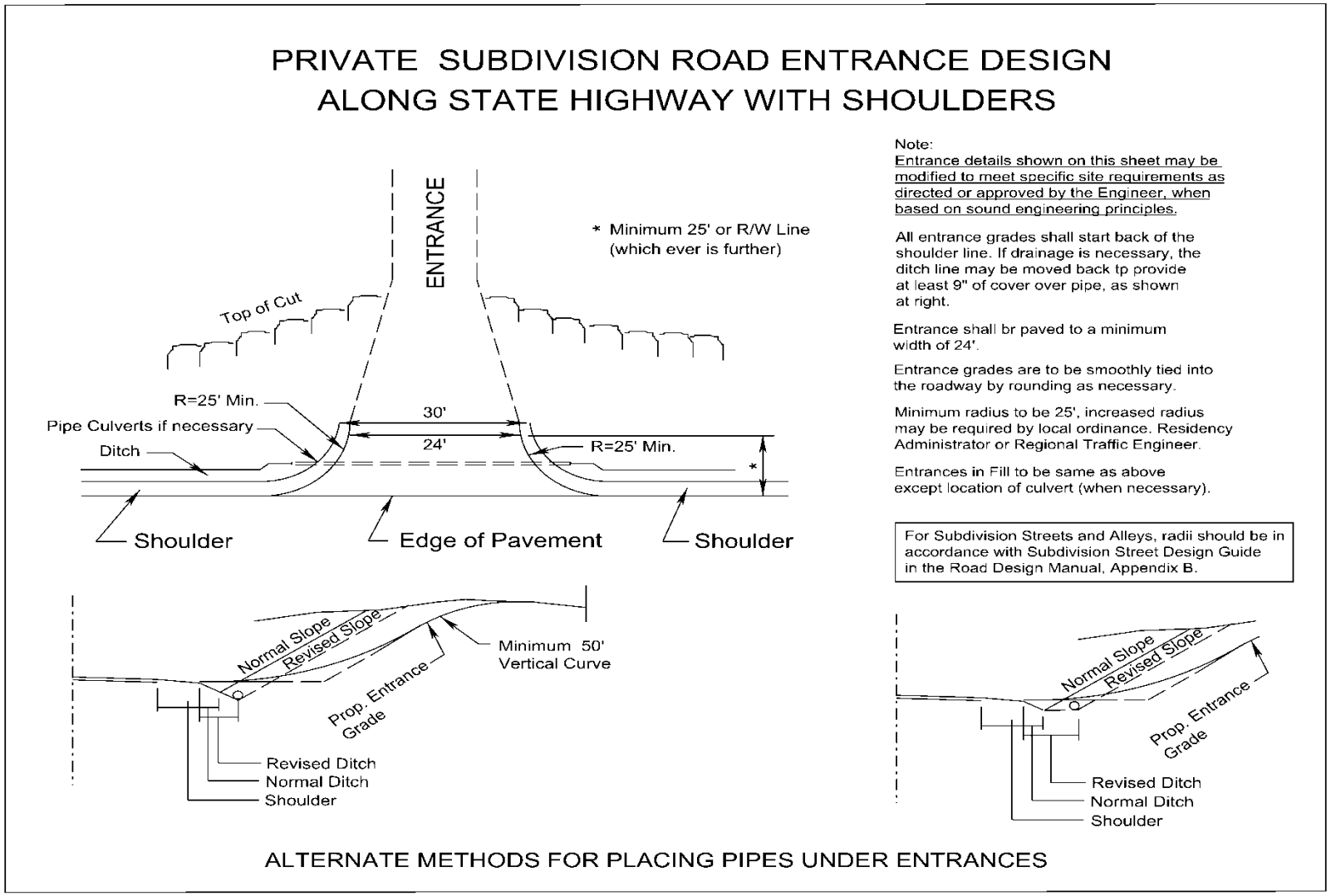
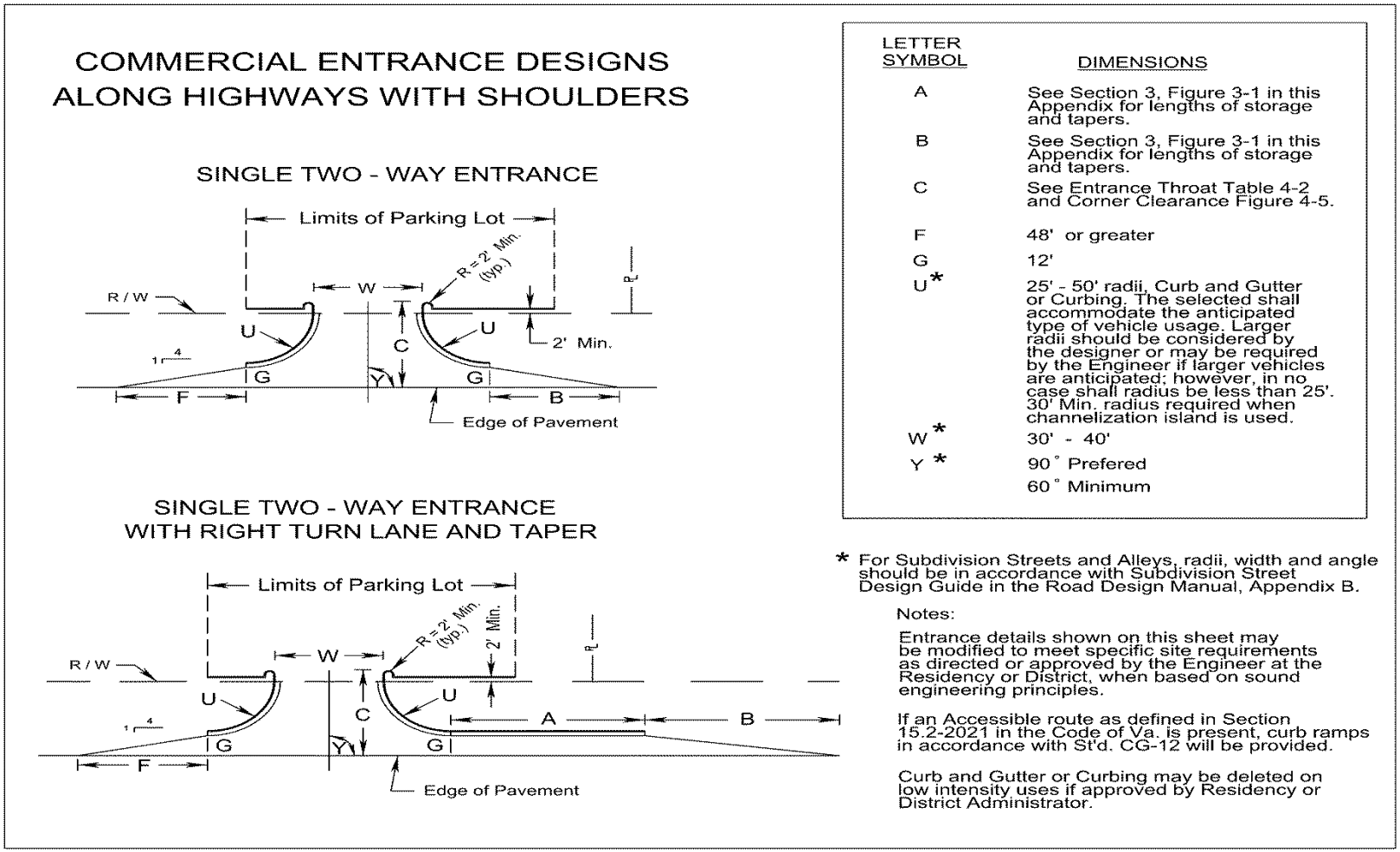


FIGURE 4-8 COMMERCIAL ENTRANCE DESIGN TO SERVE A PRIVATE SUBDIVISION ROAD / STREET

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

Commercial Entrance Designs along Highways with Shoulders



LETTER SYMBOL	DIMENSIONS
A	See Section 3, Figure 3-1 in this Appendix for lengths of storage and tapers.
B	See Section 3, Figure 3-1 in this Appendix for lengths of storage and tapers.
C	See Entrance Throat Table 4-2 and Corner Clearance Figure 4-5.
F	48' or greater
G	12'
U*	25' - 50' radii, Curb and Gutter or Curbing. The selected shall accommodate the anticipated type of vehicle usage. Larger radii should be considered by the designer or may be required by the Engineer if larger vehicles are anticipated; however, in no case shall radius be less than 25'. 30' Min. radius required when channelization island is used.
W*	30' - 40'
Y*	90° Prefered 60° Minimum

* For Subdivision Streets and Alleys, radii, width and angle should be in accordance with Subdivision Street Design Guide in the Road Design Manual, Appendix B.

Notes:

Entrance details shown on this sheet may be modified to meet specific site requirements as directed or approved by the Engineer at the Residency or District, when based on sound engineering principles.

If an Accessible route as defined in Section 15.2-2021 in the Code of Va. is present, curb ramps in accordance with St'd. CG-12 will be provided.

Curb and Gutter or Curbing may be deleted on low intensity uses if approved by Residency or District Administrator.

FIGURE 4-9 COMMERCIAL ENTRANCE DESIGNS ALONG HIGHWAYS WITH SHOULDERS

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

Commercial Entrance Designs along Highways with Curb and Gutter

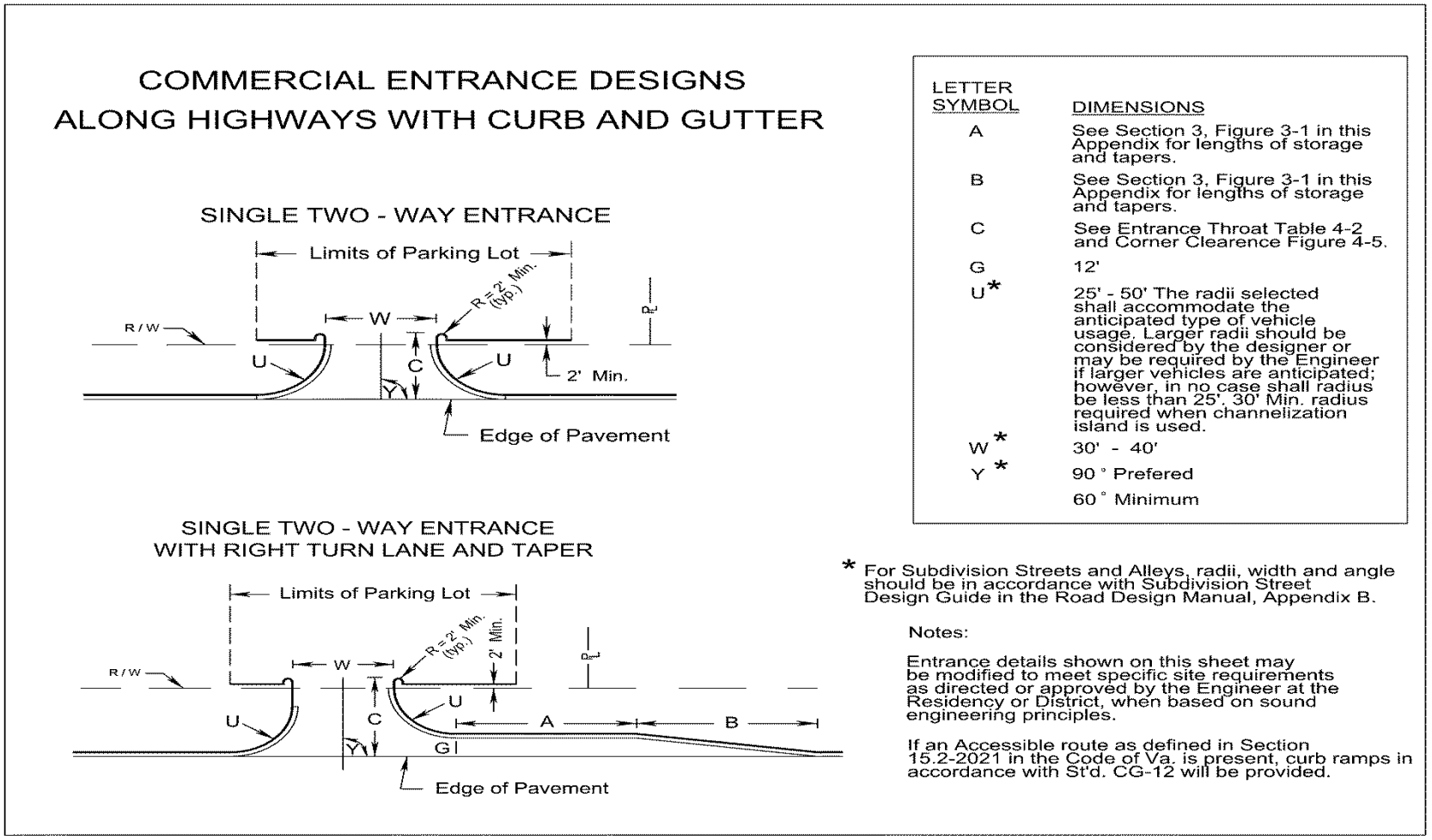


FIGURE 4-10 COMMERCIAL ENTRANCE DESIGNS ALONG HIGHWAYS WITH CURB AND GUTTER*

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

* Rev. 1/16

Commercial Entrance Design along Local Streets with Curb and Gutter or Shoulders

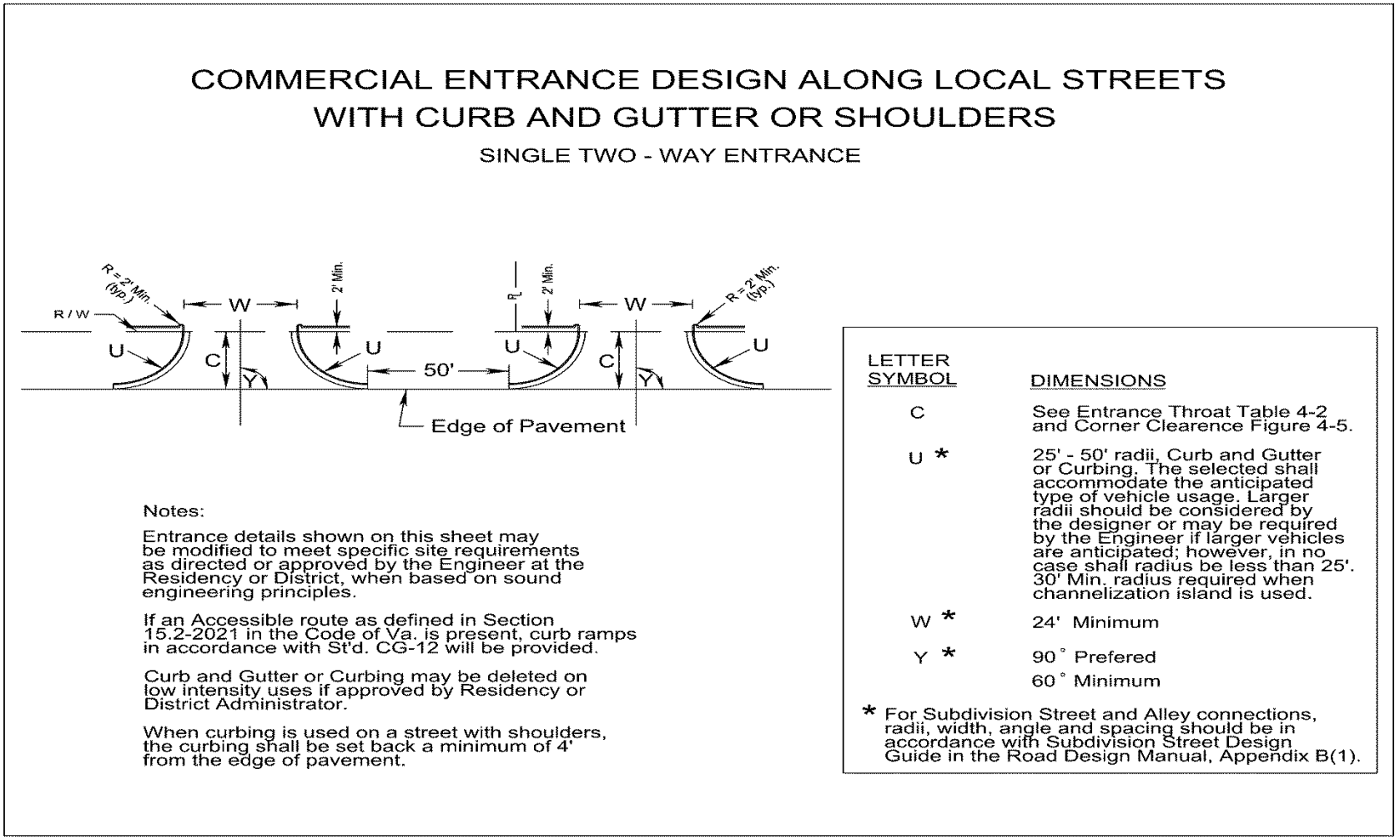


FIGURE 4-11 COMMERCIAL ENTRANCE DESIGNS ALONG LOCAL STREETS*

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

* Rev. 7/12

Commercial Entrance Designs along Highways with Shoulders at Intersection

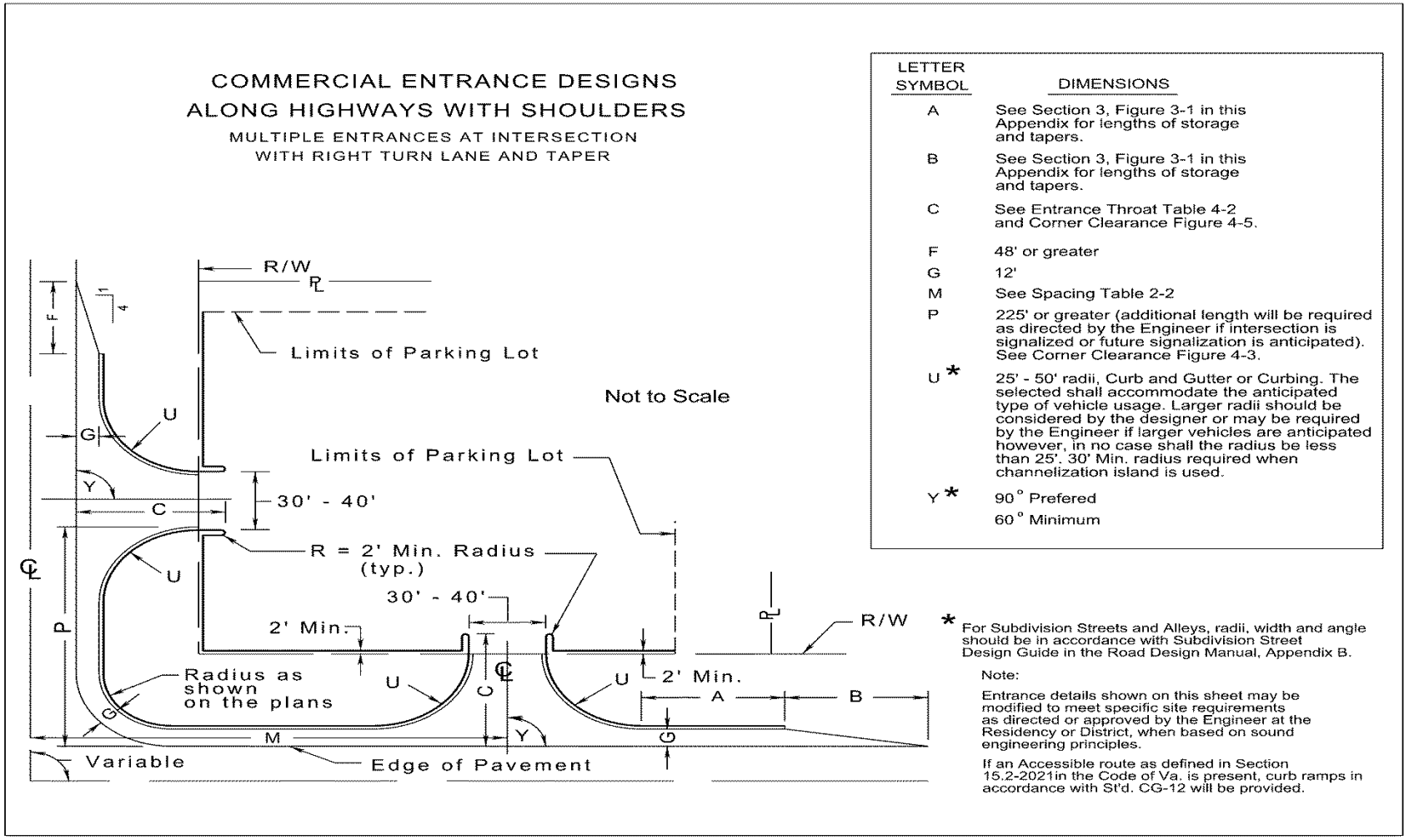
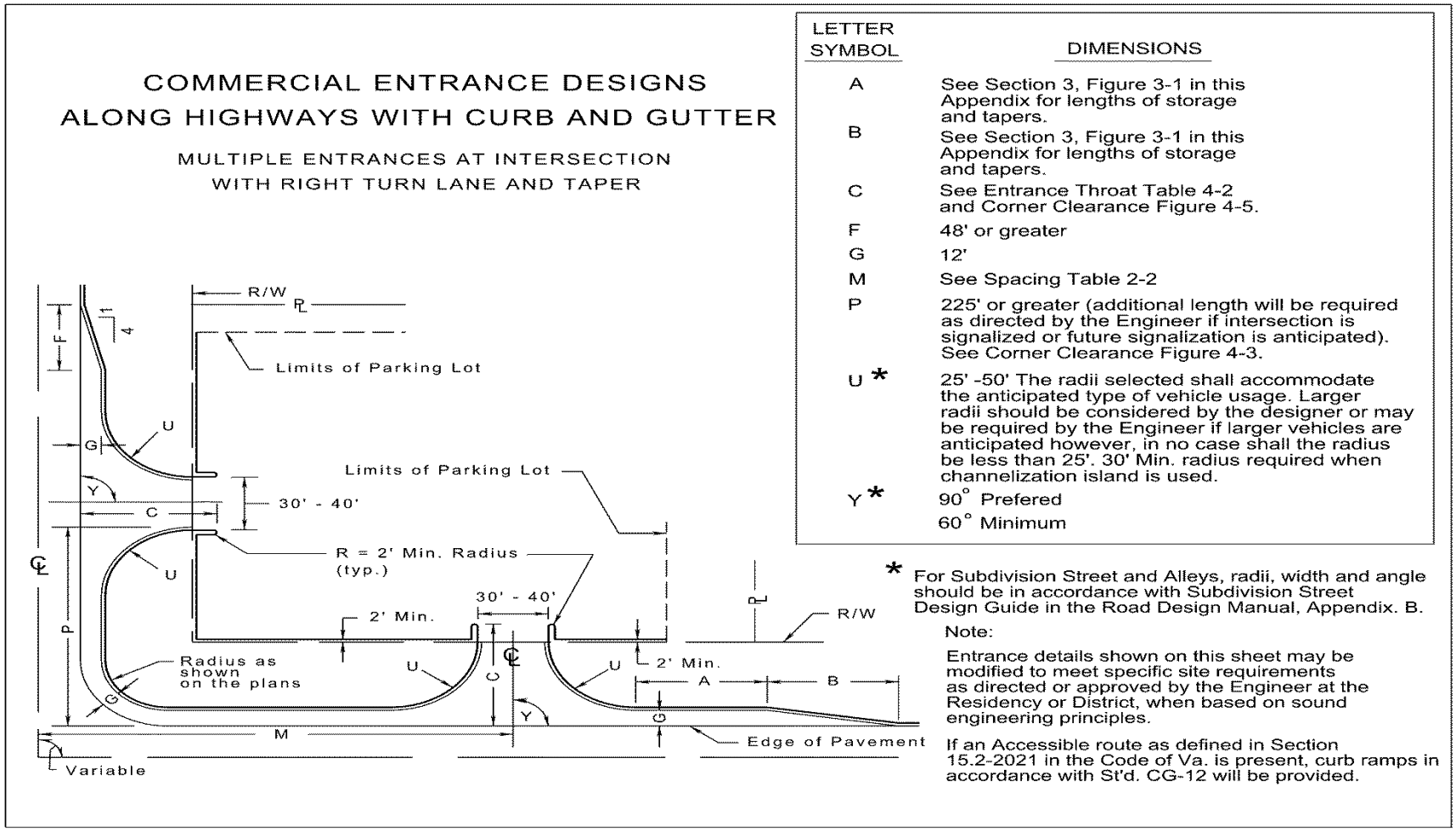


FIGURE 4-12 COMMERCIAL ENTRANCE DESIGNS ALONG HIGHWAYS WITH SHOULDERS AT INTERSECTION*

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

* Rev. 1/16

Commercial Entrance Designs along Highways with Curb and Gutter at Intersection



LETTER SYMBOL	DIMENSIONS
A	See Section 3, Figure 3-1 in this Appendix for lengths of storage and tapers.
B	See Section 3, Figure 3-1 in this Appendix for lengths of storage and tapers.
C	See Entrance Throat Table 4-2 and Corner Clearance Figure 4-5.
F	48' or greater
G	12'
M	See Spacing Table 2-2
P	225' or greater (additional length will be required as directed by the Engineer if intersection is signalized or future signalization is anticipated). See Corner Clearance Figure 4-3.
U *	25' -50' The radii selected shall accommodate the anticipated type of vehicle usage. Larger radii should be considered by the designer or may be required by the Engineer if larger vehicles are anticipated however, in no case shall the radius be less than 25'. 30' Min. radius required when channelization island is used.
Y *	90° Prefered 60° Minimum

* For Subdivision Street and Alleys, radii, width and angle should be in accordance with Subdivision Street Design Guide in the Road Design Manual, Appendix. B.

Note:

Entrance details shown on this sheet may be modified to meet specific site requirements as directed or approved by the Engineer at the Residency or District, when based on sound engineering principles.

If an Accessible route as defined in Section 15.2-2021 in the Code of Va. is present, curb ramps in accordance with St'd. CG-12 will be provided.

FIGURE 4-13 COMMERCIAL ENTRANCE DESIGNS ALONG HIGHWAYS WITH CURB & GUTTER AT INTERSECTION*

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations"

* Rev. 1/16

Commercial Entrance Designs to Serve Drive-In Type Businesses

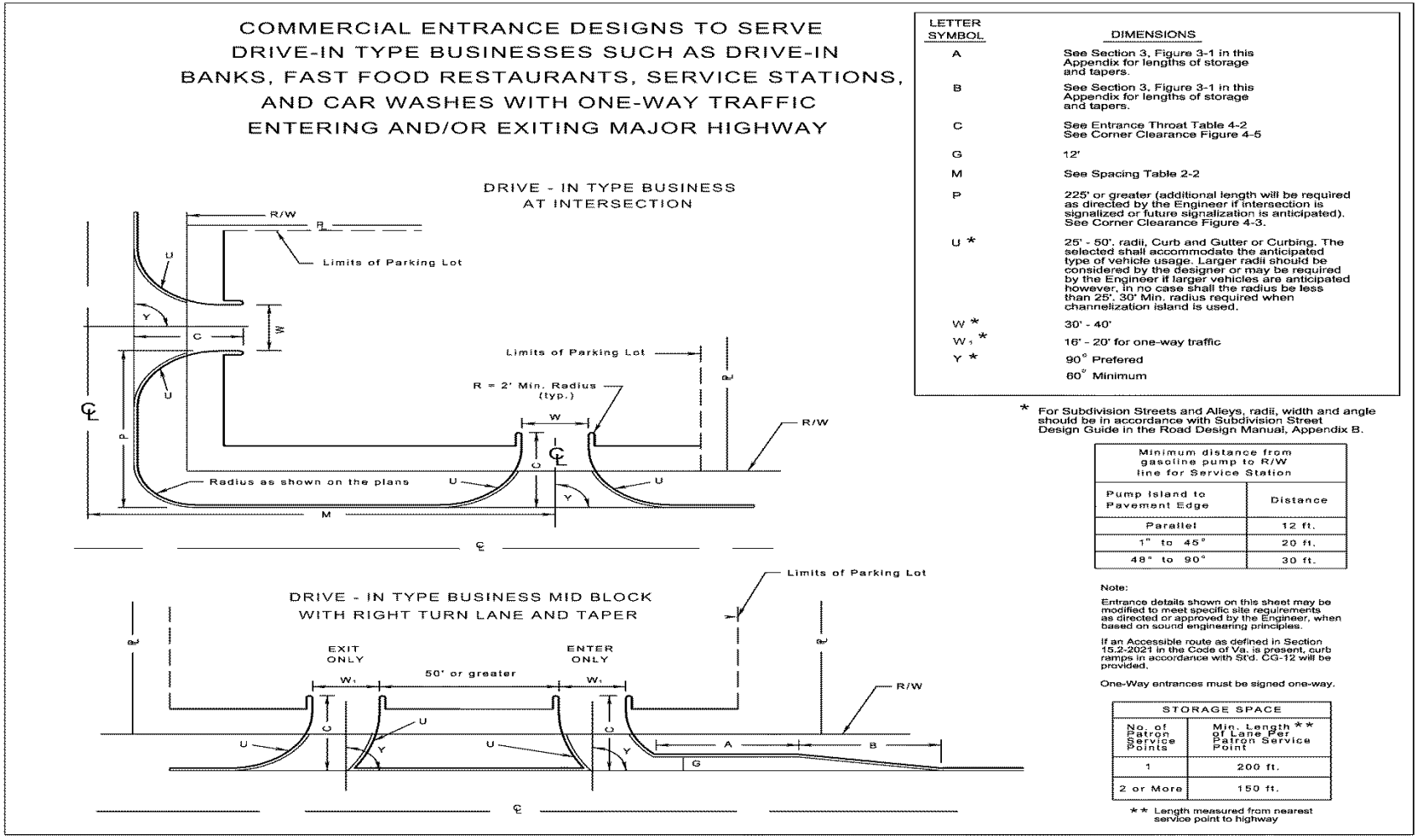


FIGURE 4-14 COMMERCIAL ENTRANCE DESIGNS TO SERVE DRIVE-IN TYPE BUSINESSES*

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

* Rev. 1/16

Moderate Volume Commercial Entrance Design along Highways with Shoulders

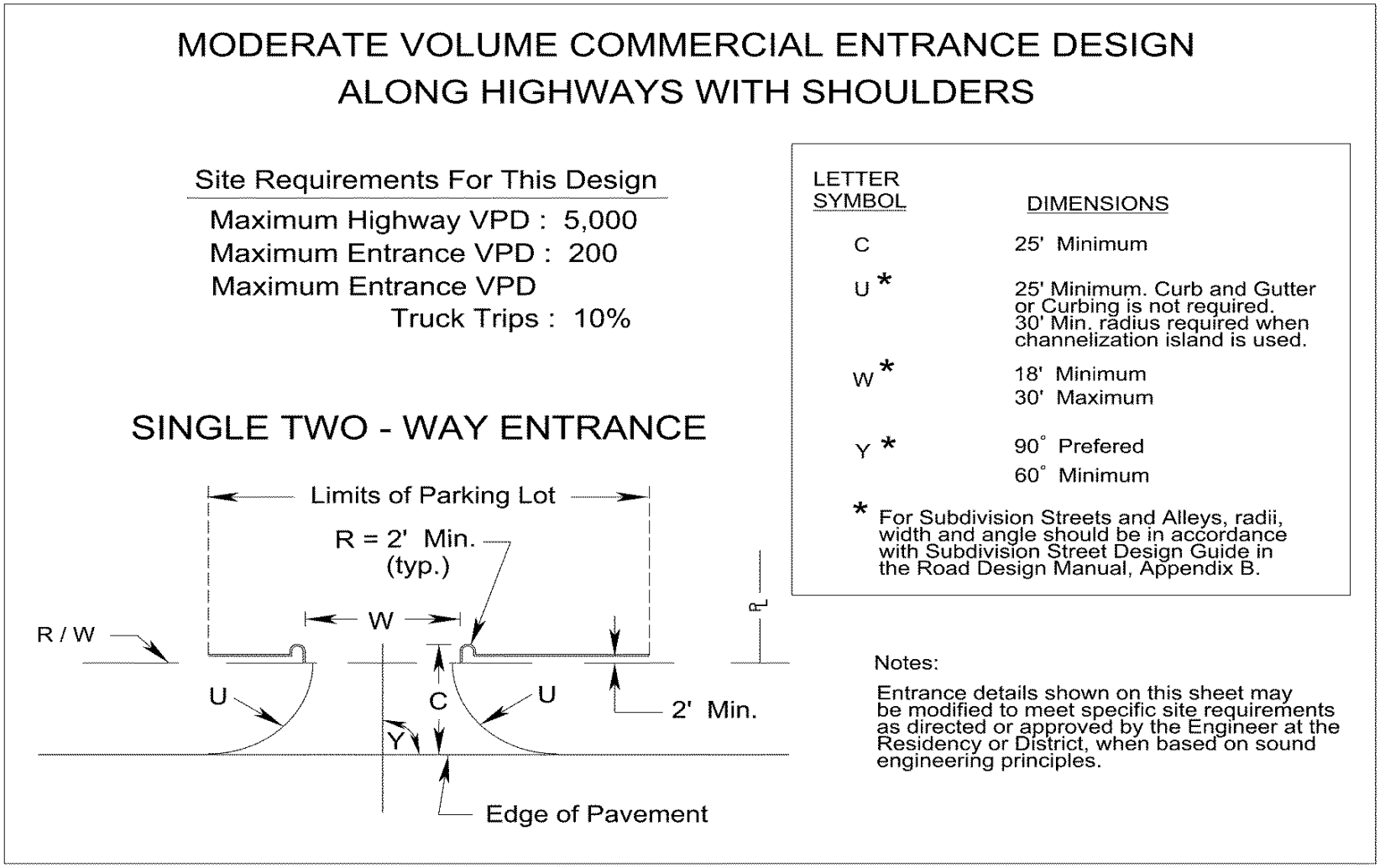


FIGURE 4-15 MODERATE VOLUME COMMERCIAL ENTRANCE DESIGN ALONG HIGHWAYS WITH SHOULDERS*

Note: All entrance design and construction shall accommodate pedestrian and bicycle users of the highway in accordance with the Commonwealth Transportation Board's "Policy for Integrating Bicycle and Pedestrian Accommodations".

* Rev. 7/12

Agritourism Entrance Standards

Moderate Volume Commercial Entrance may be permitted by the Engineer at the Residency or District if the proposed use includes agritourism activity as defined in Code of Virginia *§3.2-6400*. Entrance design shall include U of 50 feet minimum and W of 30 feet minimum to accommodate BUS-45 ingress and egress movements. Entrances shall be located to provide adequate intersection sight distance.

Code of Virginia. *§3.2-6400* defines an "agritourism activity" as "any activity carried out on a farm or ranch that allows members of the general public, for recreational, entertainment, or educational purposes, to view or enjoy rural activities, including farming, wineries, ranching, historical, cultural, harvest-your-own activities, or natural activities and attractions."*

* Added 7/17

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FLUVANNA COUNTY BOARD OF SUPERVISORS
AGENDA ITEM STAFF REPORT

TAB B

MEETING DATE:	February 15, 2023
AGENDA TITLE:	Kents Store Firehouse Remediation Contract
MOTION(s):	**Motion #1:** **I move the Board of Supervisors ratify and approve that Remediation Contract between Fluvanna County and Fischer Restoration, LLC, doing business as Rainbow Restoration, for remediation, but not restoration, of the damages at the Kents Store Fire Station as more specifically set forth in the Remediation Contract as a small emergency procurement under Virginia Code 2.2-4303(F) as damages caused to Kents Store Fire Station need to be corrected as soon as possible such that first-responders can return to normal operations and full use of the fire station as soon as possible, for a cost in an amount not to exceed $24,138.65, and further authorize the County Administrator to execute the agreements subject to approval as to form by the County Attorney, and ratify past actions taken by the County Administrator consistent therewith.** **Motion #2:** **I move that the Board of Supervisors approve a Capital Reserve Maintenance Fund Request in the amount $30,000.00 of for the purpose of paying the initial remediation costs for the Kents Store firehouse, with the County seeking full reimbursement for damages to the building and its contents from the remediation and restoration work.**

BOS 2 YEAR GOALS?	Yes	No	**If yes, which goal(s):**	
		X		

AGENDA CATEGORY:	Public Hearing	Action Matter	Presentation	Consent Agenda	Other
		X			

STAFF CONTACT(S):	Eric Dahl, County Administrator
PRESENTER(S):	Eric Dahl, County Administrator
RECOMMENDATION:	Approve
TIMING:	Immediate
DISCUSSION:	On Wednesday, January 25th Absolute Plumbing & Drain Cleaning Services Inc. ("Absolute") performed certain work and services at Kents Store Fire Station ("Fire Station") located at 51 Kents Store Way, Kents Store, VA 23084 and failed to do so up to industry standards, failed to take proper care in such work, and otherwise breached its obligations to the County and materially damaged the Fire Station and materials, furniture, and equipment. Absolute's acts and omissions caused significant damage to the Fire Station and its contents requiring remediation and

restoration work. Limited initial clean-up/remediation efforts were undertaken by Absolute, and then H2O Disaster Services, immediately after the incident.

The County desires to remediate the damages caused by Absolute as soon as possible to include all remediation work required by:

- Indoor Environmental Assessment performed by TJL Environmental Consultants, Inc. dated January 27, 2023, ("Report #1") is attached to the contract as **Exhibit 1; and**
- Assessment Report performed by Ecosystems Environmental Services, Inc., dated January 30, 2023 ("Report #2") is attached to the Contract as **Exhibit 2.**

To the extent they call for a different scope of work for a particular issue, that the report which requires more robust cleaning or more robust remediation controls (the "Work").

Following an initial quote on January 30, 2023, Rainbow Restoration submitted a revised quote February 3, 2023 (the "Quote") for the Work on the remediation project at the Fire Station (the "Remediation Project") to the County; it is attached to the contract as **Exhibit 3**.

Background: Due to the significance and nature of the damage, the County contacted an environmental consultant after the initial incident, to determine an appropriate scope for the remediation to make sure that remediation addressed all issues and concerns associated with the damage to the Fire Station – see Report 1 dated 1-27-2023. The volunteer fire agency also sought an environmental consultant to determine an appropriate scope for the remediation – see Report 2 dated 1-30-2023. During this same time the County had also been working with contractors such that work could as soon as practicable after the scope of the required remediation was clear. The County received initial quotes (dated 1-26-2022 from H2O Disaster Services, LLC; and dated 1-27-2023 from Rainbow Restoration) which did not incorporate all of the remediation recommended by Report 2 as it was not available when the County initially began speaking to contractors. In fact, one contractor pulled their initial quote indicating in an email the scope of work may not address all issues (such proposal dated 1-26-2022 was made prior to either Report 1 and Report 2 when the full extent of remediation required could not have been known). Thereafter the County spoke to Rainbow Restoration who agreed that often initial reports don't always show all issues and usually after a few days the scope of issues can become clearer. Thereafter on February 1, 2023, the County sent both environmental reports to each of the contractors and specifically requested they update their proposals to incorporate the full remediation recommended by Report 1 and Report 2. Only one contractor was able to quickly update their proposal for the full scope of work and also indicated an ability to begin ASAP on Monday February 6, 2023. The other contractor was out of the office and unable to respond as quickly. The County prepared a contract the same day the revised quote was received – on February 3, 2023. Work began on the full remediation under such Contract on Monday February 6, 2023.

Emergency: This contract is an emergency procurement pursuant to Virginia Code 2.2-4303(F) as the damages caused by Absolute occurred at the Fire Station and need to be corrected as soon as practicable such that the first-responders serving in

	such Fire Station can return to their normal operations and full use of the Fire Station as soon as possible. Additional Work: After the remediation is complete under the Contract, the post-remediation testing recommended by Report #1 will be performed to ensure that the remediation was successful. Then the County can contract with a contractor to restore the Fire House. The County will also work with the Fire Station to have tangible personal property, materials, furniture and equipment which was damaged or destroyed repaired/replaced.
FISCAL IMPACT:	Absolute has admitted liability and the County intends to hold Absolute (and its insurer) responsible for the costs of remediations/restoration caused by the damage.
POLICY IMPACT:	N/A
LEGISLATIVE HISTORY:	N/A
ENCLOSURES:	Kents Store Firehouse Remediation Contract

	Legal	Finance	Purchasing	HR	Other
REVIEWS COMPLETED:	**X**		**X**		**X**

Remediation Contract

This **Remediation Contract** (the **"Contract"**) dated the 3rd day of February, 2023 is between **Fischer Restoration, LLC, doing business as Rainbow Restoration ("Contractor")**, a Virginia limited liability company, and **Fluvanna County ("County")**, a political subdivision of the Commonwealth of Virginia, and sets forth the terms and conditions for Contractor's provision of those Products and/or Services to the County.

Whereas, Absolute Plumbing & Drain Cleaning Services Inc. ("Absolute") performed certain work and services at Kents Store Fire Station ("Fire Station") located at 51 Kents Store Way, Kents Store, VA 23084 and failed to do so up to industry standards, failed to take proper care in such work, and otherwise breached its obligations to the County and materially damaged the Fire Station and materials, furniture and equipment therein;

Whereas, Absolute's acts and omissions caused significant damage to the Fire Station and its contents requiring remediation and restoration work;

Whereas, Absolute has promised to take full responsibility for all damages to the Fire Station and its contents;

Whereas, that Indoor Environmental Assessment performed by TJL Environmental Consultants, Inc. dated January 27, 2023, ("Report #1") is attached hereto as **Exhibit 1** and incorporated herein as a material part hereof;

Whereas, that Assessment Report performed by Ecosystems Environmental Services, Inc., dated January 30, 2023 ("Report #2") is attached hereto as **Exhibit 2** and incorporated herein as a material part hereof;

Whereas, the County desires to remediate the damages caused by Absolute at the Fire Station to include all remediation work recommended under Report #1 and Report #2, and to the extent they conflict or call for a different scope for a particular issue, that the report which requires more robust cleaning or more robust remediation control (the "Work");

Whereas, the Contractor submitted its quote revised February 3, 2023 (the "Quote") for the Work on the remediation project at the Fire Station (the "Remediation Project") to the County attached hereto as **Exhibit 3** and incorporated herein as a material part of this Contract;

Whereas, the County wishes to purchase the services and associated delivery, equipment, products, services and warranties under the Quote for the Remediation Project and as set out in this Contract (collectively the "Products and Services");

Whereas, the Products and Services described in the Quote are being purchased by the County pursuant to its small procurement policy;

Whereas, the Contractor wishes to provide the Products and Services to County;

NOW THEREFORE, the parties hereby agree as follows:

1. **RECITATIONS AND WARRANTIES.** The foregoing recitations are incorporated herein by reference as material terms of the Contract between the County and Contractor. Contractor forms attached as **Exhibit 4** must be completed by Contractor and are incorporated herein by reference as material part hereof. All manufacturer's warranties shall be assigned and delivered to the County with the Products and Services. In addition, all warranties required or offered under this Contract for the Products and Services shall be provided and delivered to the County with the Products and Services.

Remediation Contract

2. **EMERGENCY PROCUREMENT:** This is an Emergency Procurement pursuant to 2.2-4303(F) of the Virginia Public Procurement Act. The Contractor is awarded this Contract for the Remediation Project and the Work as described by Report#1, Report #2 and the Quote subject to the requirements of this Contract. The damages caused by Absolute occurred at the Fire Station and need to be corrected as soon as practicable such that the first-responders serving in such Fire Station can return to their normal operations and full use of the Fire Station as soon as possible. The County will issue a written notice stating that this Contract is being awarded on an emergency basis, and identifying that which is being procured pursuant to the Authorization and this Contract, the Contractor 's name, and the date on which the Contract was awarded. This notice shall be posted on the Department of General Services' central electronic procurement website or other appropriate websites, and in addition, public bodies may publish in a newspaper of general circulation on the day the public body awards or announces its decision to award the Contract, whichever occurs first, or as soon thereafter as is practicable.

3. **PRODUCTS AND/OR SERVICES.** The Contractor agrees that the Products and Services shall meet or exceed: (i) all applicable industry standards; (ii) all requirements and provisions of this Contract, Report #1, Report #2 and the Quote; (iii) all requirements of the County's General Terms, Conditions and Instructions to Bidders and Contractors (the "County's General Terms") available at:

https://www.fluvannacounty.org/sites/default/files/fileattachments/finance_department/page/1481/general-terms-and-conditions.pdf, which are incorporated herein by reference as a material part of this Agreement; and (iv) all requirements of Applicable Law. "Applicable Law" as used herein means all applicable federal, Commonwealth of Virginia and local laws, ordinances, rules and regulations or similar standards in any way related to the Products and Services or performance under this Contract. The Products and Services include specifically, without limitation, evidence of ownership such as title or MSO as applicable and any related manuals, warranties, manufacturer warranties, customer support, etc. **The Contractor has reviewed and agrees to the County's General Terms:** AF **[Initial]. The parties hereto agree that the Work performed is remediation work, and not restoration work. The parties further agree that should the Contractor identify additional issues and damage requiring further remediation than contemplated while performing the Remediation Project, that the Contractor will immediately notify the County. Any change orders occasioned by additional issues and damage must be in a written amendment hereto signed by the parties. The Contractor shall remove all damaged items and materials as part of the Remediation Project and the costs for the same are included in the Quote. Retiling, repairing drywall, and other restoration work to bring the Fire Station back to its pre-damaged condition is not covered by the Quote. Such Restoration Work also occasioned by the damage caused by Absolute will be separately contracted for by the County after the remediation is complete. Tangible Property including without limitation furniture was also damaged as a result of Absolute's actions. The parties agree that the Contractor is not replacing tangible items such as furniture under this Contract.**

4. **OTHER REQUIREMENTS:** In performing any Services under this Contract the Contractor further agrees that: (i) Contractor shall furnish all labor, equipment, materials, and services necessary for installation of the Products and Services for the County's intended use; (ii) Contractor shall replace or repair any defective installation or

manufacturer's defect within one (1) year from County's acceptance of completed work at no additional cost (a "warranty repair"); and (iii) Contractor shall assure that all employees who will be performing the Services receive any required training necessary to perform the work and, if applicable, have any licensures, certifications or other prerequisite. The County reserves the right to review any Contractor training, licensure, or certification documentation upon request.

5. **LOCATION FOR SERVICES:** Delivery of the Products and Services shall be to the following address Kents Store Fire Station ("Fire Station") located at 51 Kents Store Way, Kents Store, VA 23084. The Contractor must coordinate with the County on convenient times for the performance of the Work and Products and Services. **The parties agree that the Contractor shall meet on-site at 8 a.m. Monday, February 6, 2023 to begin Work.**

6. **COUNTY CONTACT INFORMATION:**

Fluvanna County, Attn: Ms. Donna Allen, 132 Main Street Palmyra, VA 22963, telephone: (434) 591-1937 (billing and service and product inquiries) with copies to Calvin Hickman, Director of Public Works, 197 Main Street, Palmyra, VA 22963, (434) 591-1925;

Fluvanna County, Attn: Mr. Eric Dahl, County Administrator, 132 Main Street Palmyra, VA 22963, telephone: (434) 591-1910 (contract inquiries)

With a Copy to: Fluvanna County Attorney, 414 E. Jefferson Street, Charlottesville, VA 22902

Any notices under this Contract shall be sent to all three County contacts above. Any required or permitted notices hereunder must be given in writing at the address of each party set forth above, or to such other address as either party may substitute by written notice to the other in the manner contemplated herein, by one of the following methods: hand delivery; registered, express, or certified mail, return receipt requested, postage prepaid; or nationally-recognized private express courier.

7. **PERFORMANCE: The Products and Services related hereto shall be installed, provided, and delivered within five (5) business days of execution of this Contract by the County**; time being of the essence. Any warranties on the Products and Services shall begin on the later of the date of installation or when the County accepts all the Products and Services without reservation. All risk of loss on the Products and Services remains with the Contractor until delivery to the County at the delivery location and acceptance by the County of the installed Products and Services. All applicable warranties, promises and covenants relating to the Products and Services provided for hereunder and any manufacturer's warranties benefiting the County shall continue according to the terms thereof and shall survive any earlier termination of this Contract. **The County intends to file claims with Absolute's insurance for the damages occasioned because of Absolute's actions and also to hold Absolute accountable for all damages; and may file claims with the County's insurer as well if applicable. The Contractor agrees to assist the County reasonably with such claims and to provide such documentation as will be necessary to document the full extent of the loss occasioned by the damage.**

8. **COMPENSATION:** The County is a tax-exempt entity. Consistent with the Quote (excluding taxes), the Contractor shall be paid a fee of no more than Twenty-Four Thousand One-Hundred Thirty-Eight and 65/100 DOLLARS ($24,138.65) ("Not-To-

Exceed-Amount") for the Products and Services, being more specifically described in the Quote and this Contract; notwithstanding the forgoing the Contractor agrees should less time, equipment or services/materials be provided than as contemplated or set forth in the Quote, that the County will only be billed for the actual time, equipment, or services/materials used up to no more than the Not-To-Exceed Amount. Any increase over the Not-To-Exceed Amount requires a written modification of this Contract signed by both parties. Payment and Invoice terms are governed by the County's General Terms, but in no event will the Contractor be paid before the Completion Date (as defined below). Any additional products or services must be purchased only under a written amendment of this Contract signed by authorized representatives of both parties. Invoices should be directed to Fluvanna County. The date that all Products and Services delivered and installed and functional for the County's intended use in compliance with this Contract to the satisfaction of the County is the "**Completion Date**".

9. **EXHIBITS AND RESOLVING CONFLICTS**. The rights and duties of the County and Contractor under this Contract are set out herein and in Exhibit 1 through 4 (the "Exhibits") attached hereto. Whenever possible, the terms of the above Contract and the Exhibits shall be read together and where there are similar provisions both shall apply, however in the event of a direct conflict, the order of control shall be this Contract, the County's General Terms, then Exhibit 1 and 2 (see recitations as to Report #1 and Report #2), 3, and finally Exhibit 4. To clarify, the Contract shall control over the Exhibits in the event of a direct conflict, the General terms shall control over the attached Exhibits, and Exhibit 1 and 2 shall control over Exhibit 3, and so forth.

10. **MISCELLANEOUS.** The headings of the sections of this Contract are inserted for convenience only and do not alter or amend the provisions hereof. A word importing the masculine or neuter gender only may extend and be applied to females and to corporations as well as males, and vice versa. A word importing the singular number only may extend and be applied to several persons or things as well as to one person or thing; and a word importing the plural number only may extend and be applied to one person or thing, as well as to several persons or things. This contract may be executed in multiple counterparts each of which shall be deemed an original and together which shall constitute the Contract. This Contract may be executed in duplicate originals, any of which shall be equally authentic. Applicable law and venue provisions of the County's General Terms apply.

Fischer Restoration, LLC, doing business as Rainbow Restoration		**Fluvanna County**	
By:		**By:**	
Printed:	Aaron Fischer	**Printed:**	Eric Dahl
Title:	Owner	**Title:**	County Administrator
Date:	02/06/2023	**Date:**	2/13/23

Approved as to Form: _____
Fluvanna County Attorney

By Kristina M. Hofmann, Deputy Fluvanna County attorney

TJL Environmental Health Consultants, Inc.
2304 Jefferson Park Avenue
Charlottesville, VA 22903
434-977-1409
tjloving@comcast.net

INDOOR ENVIRONMENTAL ASSESSMENT

Kents Store Fire Department
Fire House

First Level Kitchen, Dining/Meeting Area and Lounge

January 27, 2023

Performed by T. Joel Loving, M.S., C.E.I.
Environmental Assessment Association Certified Molds Specialist
Past Virginia Licensed Mold Inspector Number 3387-000068

TJL Environmental Health Consultants, Inc.
2304 Jefferson Park Avenue
Charlottesville, VA 22903
434-977-1409
tjloving@comcast.net

DATE: January 27, 2023

TO: Mr. Calvin Hickman
Director of Public Works
Fluvanna County
197 Main Street
Palmyra, VA 22963

Date of Inspection: January 27, 2023

Address: 51 Kents Store Way, Kents Store, VA 23084

Owner: Fluvanna County

Inspector: T. Joel Loving, M.S., C.E.I.

Inspection Firm: TJL Environmental Health Consultants, Inc. (TJL)
2304 Jefferson Park Avenue
Charlottesville, VA 22903

Background: Client requested an indoor environmental assessment due to a recent sewage exposure event in the main level finished spaces of the Fire House. While pumping the grease pit in the kitchen, a septic pump truck accidently back flowed into the building causing sewage sludge to seep onto the floors of these three rooms and the intermediary hallway to a depth of around ½" to 1". At the time of our assessment, the sewage had been removed, most of the vinyl base cove removed, and the floors had been mopped with an antibacterial cleaning solution several times.

Area(s) Inspected: Main level kitchen, dining/meeting room, hallway and lounge.

Inaccessible or Other Area(s) Not Inspected: Inside wall cavities, ceiling cavities, behind/beneath insulation, inside HVAC ducts/equipment, etc. (Note disclaimer below).

Location(s) and Condition(s) of Suspect Molds or Sewage: There were no visible suspect molds or sewage sludge on any accessible surfaces at this time. Sheetrock walls in the affected areas all tested dry by electronic moisture meter measurements.

TJL Environmental Health Consultants, Inc.
2304 Jefferson Park Avenue
Charlottesville, VA 22903
434-977-1409
tjloving@comcast.net

Remediation Recommendation(s): Remediation work shall be done by properly trained professionals in a manner that protects workers and the indoor environment from exposure to possible molds or harmful bacteria.

1. The affected spaces should be sealed off from the rest of the building by a HEPA filtered negative pressure containment.
2. All vinyl cove base that remains in the affected areas should be removed and discarded.
3. Any permeable floor coverings or furniture that were exposed to the sewage sludge should be removed and discarded. This includes at a minimum, the composite wood TV stand and carpet in the lounge. All walls where the sludge seeped up to, should have the sheetrock removed to a minimum height of 1". All loose vinyl composition floor tiles, where sewage may have seeped under, should be removed and discarded.
4. All remaining floors, crevice's where sheetrock was removed, drywall, fixtures, appliances, and furniture in these areas should be thoroughly wet-wiped with an EPA Approved anti-microbial anti-bacterial cleaning solution, allowed to dry, and wet-wiped in the same manner a second time.
5. Once this work is done, TJL will perform C5 Bacterial Culture testing of representative surfaces throughout the cleaned spaces. If such testing shows that identifiable levels of potentially harmful bacteria remain, then the remediation company shall repeat the double cleaning procedure again, and so on, until the test results are acceptable.

Disclaimer

Please note that this indoor environmental assessment performed by T. Joel Loving of TJL Environmental Health Consultants, Inc. (TJL) reflected the environment and structure only at the time and locations these activities were undertaken. Only the areas identified in this report were examined. It is important for those reading this report to understand that other areas could have microbial and/or bacterial contaminants that may not have been identified since they were not inspected. Molds, bacteria and moisture problems may be hidden behind walls, under carpets, inside furniture, between other building materials, etc. which were not visible or accessible for examination or testing. TJL accepts no liabilities or responsibilities, either expressed or implied, with regard to this structure, health effects or any financial damages that the client may incur. By acceptance of this report, the client agrees that TJL's total liability to the client for any and all injuries, claims, losses, expenses or damages whatsoever, arising out of or in any way related to the work performed by TJL or to this report, from any causes, including but not limited to, TJL negligence, errors, omissions, strict liability, or breach of contract, shall not exceed the total compensation received by TJL.

TJL Environmental Health Consultants, Inc.
2304 Jefferson Park Avenue
Charlottesville, VA 22903
434-977-1409
tjloving@comcast.net

Should you have questions regarding the results of this indoor environmental assessment, or if I can provide further assistance in this or future environmental health matters, please feel free to contact me. If you are interested in gaining more information on indoor air quality or mold spores, bacteria and their effects on the indoor environment, please visit http://www.epa.gov/iaq/, which is an excellent resource developed by the EPA.

Sincerely,

T. Joel Loving, M.S., C.E.I.
President

Assessment Report

Ecosystems Environmental Services, Inc. (EESI)
8052 Elm Drive, Suite G2, Mechanicsville, Virginia 23111
Office 804-883-6762 *www.ecosystemsenvironmentalservices.com*

...Improving the Quality of Life

Report Name
Microbial Assessment

Date
Jan 30, 2023

Total # of Observations 10

Project Name
Kents Store Fire Co. 3
51 Kent's Store Way
Kent's Store, Virginia

Company
EESI

Consultant Name
Linda McKoy

Sign Off:
By: Linda McKoy 1/30/23

Observation #
1

Floor
Exterior

Room
Front

Location
Entrance

Assign To
Mold Remediator

Observation
Areas impacted by sewage

Comments
Discard floor mat. Clean/ decontaminate wood box.

Observation #
2

Floor
First

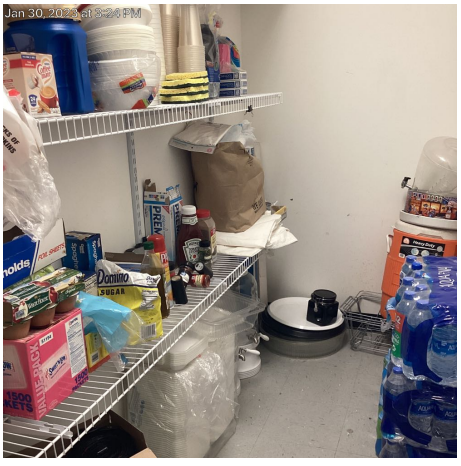
Room
Electrical/Pantry

Location
Broad view

Assign To
Microbial Remediator

Observation
Rooms reported not to be impacted by sewage, except from tracking.

Comments
Clean floors and baseboard areas with EPA registered biocide.



Observation #
3

Floor
First

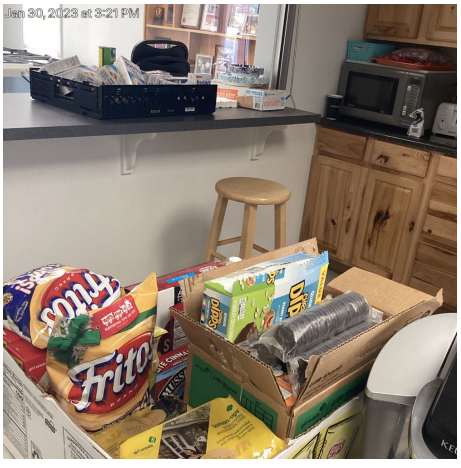
Room
Kitchen

Location
Broad view

Assign To
Microbial Remediator

Observation
Food items

Comments
Discard food items.



Observation #
4

Floor
First

Room
Stairwell

Location
Broad view

Assign To
Microbial Remediator

Observation
Sewage reported to have entered stairwell.

Comments
Remove lower 1 foot of drywall and vinyl floor tile. Remove right and left side of door frames.

Observation #
5

Floor
First

Room
Bathrooms

Location
Broad views

Assign To
Mold Remediator

Observation
Sewage reported to have entered these rooms.

Comments
Remove the lower 1 foot of the drywall and the vinyl floor tile. Remove right and left side of door frames.

Observation #
6

Floor
First

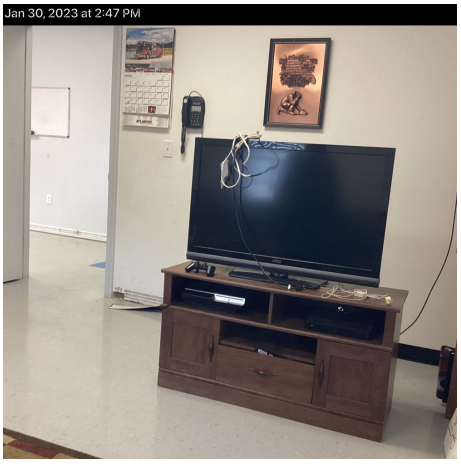
Room
TV room

Location
Broad views

Assign To
Microbial Remediator

Observation
Some moisture staining at baseboard level and floor by baseboard.

Comments
Discard wooden items, sofa and carpet that were in contact with the sewage. Remove right, and left side of door frame.



Observation #
7

Floor
First

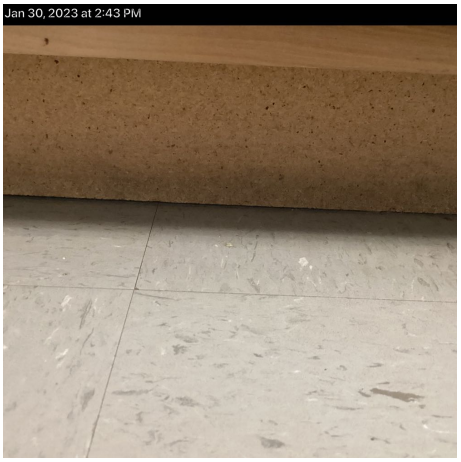
Room
Kitchen

Location
Side B

Assign To
Microbial Remediator

Observation
Moisture staining on the lower 2 inches of cabinet kick.

Comments
Remove lower cabinet. Removed right and left side of door frames in kitchen.



Observation #
8

Floor
First

Room
Kitchen

Location
Broad views

Assign To
Microbial Remediator

Observation
Some moisture standing on the lower a few inches of building components.

Comments
Remove all items that were in contact with the floor for professional cleaning/ decontamination. Remove lower 1 foot of drywall & vinyl floor tile. Discard wooden stools.

Observation #
9

Floor
First

Room
Education

Location
Side A

Assign To
Microbial Remediator

Observation
Sewage residue on chairs, on concrete floor, and backside of vinyl floor tile. Temperature 67.9 degrees Fahrenheit. Relative humidity 40.5%.

Comments
Remove door threshold. Remove right and left side of door frames. Discard chairs.

Observation #
10

Floor
First

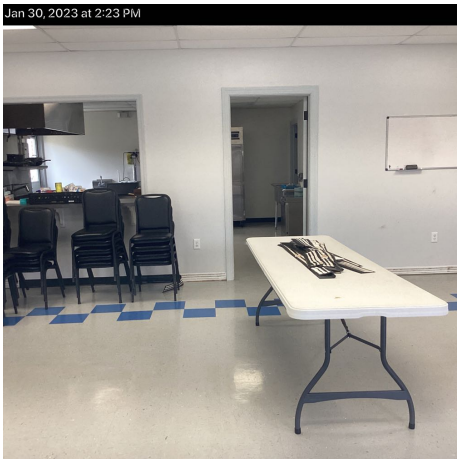
Room
Education

Location
Broad views

Assign To
Microbial Remediator

Observation
One negative air machine on. Some baseboards have been removed. Some moisture staining and discoloration on baseboards and floor below baseboard.

Comments
Remove vinyl floor tile and lower 1 foot of drywall. Remove all items that were in contact with the floor for professional cleaning/decontamination.



It was reported that approximately 3000 gallons of sewage contaminated water impacted the first floor areas noted in the assessment. The water/sewage was extracted. Brooms and squeegees were used to remove the remaining sludge. Some of the sewage waste was moved through the front door threshold area onto the concrete porch.

The IICRC classifies a sewage loss as Category 3 water which they define as “Category 3 water is grossly contaminated and can contain pathogenic, toxigenic, or other harmful agents and can cause significant adverse reactions to humans if contacted or consumed. Examples of Category 3 water can include, but are not limited to: sewage….”. The IICRC states, “Bacterial pathogens in sewage can include virulent strains of gram-negative organisms such as Salmonella, Shigella, and Escherichia coli (Berry et al, 1994). Over 120 different viruses can be excreted in human feces and urine and can be found in municipal sewage (Straub et al, 1993), in addition to a wide variety of fungi and animal and human parasites.

There are potential health hazards associated with sewage. Sewage can contain bacteria, viruses, and parasites. Exposure to the microorganisms present from the sewage can be from inhalation, direct skin contact by touching surfaces, and tracking to other areas where they become aerosolized, have direct skin contact, or are ingested through touching surfaces and then eating, smoking, or other hand to mouth activity. Bacteria are considered bioaerosols and can become airborne on dust particles. “..bacteria in the samples of stages with particles larger than 1.1 µm were considered particle-attached, and bacteria in the samples of stages with particles ranging from 0.43 to 1.1 µm were considered free-floating” (Hu, W. (2020, September 10). *Abundance and viability of particle-attached and free-floating bacteria in dusty and nondusty air*. 1. https://bg.copernicus.org/articles/17/4477/2020/

The following table is taken from an Environmental Protection Agency (EPA) publication titled, *Public Health Concerns About Infectious Disease* Agents (extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www3.epa.gov/npdes/pubs/mstr-ch5.pdf) which explains that any of these potential pathogens may be present in sewage.

TABLE 5.1 Examples of Pathogens Associated With Raw Domestic Sewage and Sewage Solids

Pathogen Class	**Examples**	**Diseases**
Bacteria	Shigella sp.	Bacillary dysentery
	Salmonella sp.	Salmonellosis (gastroenteritis)
	Salmonella typhi	Typhoid fever
	Vibrio cholerae	Cholera
	Enterop**athogenic-**	
	Escherichia coli	A variety of gastroenteric diseases
	Yersinia sp.	Yersiniosis (gastroenteritis)
	Campylobacter jejuni	Campylobacteriosis (gastroenteritis)
Viruses	Hepatitis virus	Infectious hepatitis "flu-like" symptoms
Pathogen Class	**Examples**	**Diseases**
Viruses	Echoviruses	Acute gastroenteritis
	Norwalk viruses	Acute gastroenteritis
	Rotaviruses	Poliomyelitis
	Polioviruses	"flu-like" symptoms
	Coxsackie viruses	"flu-like" symptoms
Protozoa	Entamoeba histolytica	Amebiasis (amoebic dysentery)
	Giardia lamblia	Giardiasis (gastroenteritis)
	Cryptosporidium sp.	Cryptosporidiosis (gastroenteritis)
	Balantidium coli	Balantidiasis (gastroenteritis)
Helminths	Ascaris sp.	Ascariasis (roundworm infection)
	Taenia sp	Taeniasis (tapeworm infection)
	Necator americanus	Ancylostomiasis (hookworm infection)
	Trichuris trichuria	Trichuriasis (whipworm infection)

In a journal article published by the American Society of Microbiology, "pathogenic viruses (norovirus, astrovirus, rotavirus, adenovirus, Aichi virus, parechovirus, hepatitis A virus [HAV], and hepatitis E virus" (Appl Environ Microbiol. 2014 Nov; 80(21): 6771–6781.doi: 10.1128/AEM.01981-140)

Another health concern is the presence of endotoxins. Endotoxins are chemical remnants of the outer cell wall of dead Gram-negative bacteria. They are molecules that adhere to dust particles. Gram-negative bacteria are present in sewage. When a Gram-negative bacterium dies, lipopolysaccharide (LPS) molecules from the outer cell wall structure are released. These LPS compounds are endotoxins, and the terms LPS and endotoxin can be used interchangeably. Endotoxins are pyrogens, that is, endotoxins often cause a pyrogenic reaction (fever). Dyspnea (shortness of breath), skin irritations (eczema, psoriasis), cough, nausea and aches also occur with inhalation of endotoxin levels. Endotoxins are "adjuvant", meaning that they can amplify the effects of other harmful substances. For asthmatics, small concentrations of endotoxins can increase their sensitivity to asthma triggers. Inhalation can occur when these microorganisms are dispersed due to air flow, movement of contaminated items or building components, and cleaning processes. According to the IICRC in their document ANSI/IICRC S500-2021 STANDARD FOR PROFESSIONAL WATER DAMAGE RESTORATION ANSI/IICRC S500 Fifth Edition. "In addition to the infectious disease risk, gram-negative bacteria contain endotoxins that are released at the time of cell death and destruction. These cell fragments with endotoxins can be aerosolized". "This poses a risk for susceptible populations such as the elderly, infants, convalescents, and those who are immunocompromised through disease or therapy."

Microbial remediation will be required to remove porous structural surfaces impacted by the sewage and to decontaminate items as directed in the protocols below.

During the assessment, areas that were inaccessible, covered with items/belongings, or unsafe to access were not inspected. No destructive means were used during the inspection; therefore, areas of moisture and sewage not identifiable by use of non-invasive equipment or visual means were not included in this scope of work.

Recommendations concerning microbial remediation were developed based upon research and documents inclusive of, but not limited to, the following: The American National Standards Institute (ANSI)/Institute of Inspection, Cleaning and Restoration Certification's (IICRC) *Standard and Reference Guide for Professional Water Damage Restoration* S500 (2015) &*Standard for Professional Mold Remediation*S520 (2015); American Conference of Governmental Industrial Hygienists' (ACGIS) *Bioaerosols: Assessment and Control* (1999); US Center for Disease Control (CDC).

Microbial Remediation Protocols and Other Recommendations are as Follows:

1. Contact appliance specialists as needed to assist in moving the ice machine, grease trap, refrigerator, stove, and other heavy stationary equipment in the kitchen as needed. In addition, the bottom of these pieces of equipment needs to be cleaned and inspected for potential portals of entry into the items. Consult the professionals as needed to identify any areas of concern and repairs/replacements of parts needed.
2. During remediation and until post remediation testing is complete; the structure, excluding the bays, should be unoccupied and not accessed by persons not directly involved with the remediation of the structure.
3. Microbial remediation should be conducted by a professional, certified remediation contractor.

CONTAINMENTS/AIR FILTRATION:

A. Seal off the first floor from the second floor at the base of the stairwell using 6 ml. polyethylene sheeting with vertical supports or a rigid containment barrier. Tape all edges of the barrier. Install a zipper seal for access.

B. Seal off the pantry and electrical room in the same manner as noted above.

- Seal off all areas to contain the following: kitchen, two bathrooms, first floor stair landing, education room, and TV room. (This is the containment).

C. Place 6 ml. polyethylene sheeting over the air vents and air vent returns. Seal all edges.

D. Place the containment under negative pressure (negative air machines equipped with HEPA filters) with exhaust venting to the exterior. It may be necessary to seal penetrations in order to obtain negative pressure. This can be done by placing a minimum of 6 ml. polyethylene (poly) sheeting over penetrations, sealed around all edges with tape. The amount of negative air should be checked with a calibrated monometer to ensure that levels are at least - 0.02 in. w.g. There should be at least six air exchanges per hour.

E. Note that the use of spray adhesives and tape may damage surfaces.

F. Turn off the ventilation system servicing the contained areas. NOTE: Portable heaters may be necessary should temperatures drop to or below freezing in order to prevent water in pipes from freezing.

G. Place negative air machines in the education room (2), kitchen (1), and TV room (1). Place an air scrubber in the hall by the bathrooms, first floor stair landing, and pantry/electrical room contained area.

H. The filters on the machines should be changed frequently as they become dirty to maximize the efficiency of the machines.

FURNISHINGS/ITEMS

A. Dispose of the following:

   a. TV room: wood furniture, rug, sofa

   b. Education room: chairs

   c. Kitchen: Food and wood bar stools

B. Remove all items that were in direct contact with the sewage for off-site cleaning. Include the wooden box on the front exterior porch by the entrance door. Clean all items with an EPA registered biocide intended for this use.

C. Remove and relocate all other items outside of the containment.

BUILDING COMPONENT REMOVAL

A. The list below contains the quantity of the specific building components to be removed and their respective locations. Polyethylene sheeting should be placed below the areas of drywall being demolished to catch the debris. This will make the removal of waste debris from the structure more efficient and will prevent excessive time used in re-cleaning of other surfaces that would be further contaminated with the waste debris.

B. Dust/debris from demolition activities should be cleaned off surfaces using a HEPA vacuum.

C. The debris should be placed in polyethylene (poly) bags or wrapped with poly and sealed with duct tape. All bags and wraps should be wet wiped with a detergent prior to removal from the containment to minimize the potential for cross contamination and exposure of individuals to microbes.

D. It should be noted that the list below contains the areas that require removal as of the date of the site assessment. Remove additional drywall if sewage impacted above 1'.

E. The building components listed in Table 1 should be removed:

TABLE 1: BUILIDNG COMPONENT REMOVAL

Room	Location	Building Component	Amount
First floor stair landing	Lower walls	Drywall	Lower 1'
	Floor	Floor covering	All
		Door frame	Right & left sides of door frames
Bathrooms	Lower walls	Drywall	Lower 1'
	Floor	Floor covering	All

Room	Location	Building Component	Amount
		Door frame	Right & left sides of door frames
TV room		Door frame	Right & left sides of door frame
Kitchen		Lower cabinet	All
		Door frame	Right & left sides of door frames
	Lower walls	Drywall	Lower 1’
	Floor	Floor covering	All
Education room	Doorway	Threshold	All
		Door frame	Right & left sides of door frames
	Lower walls	Drywall	Lower 1’
	Floor	Floor covering	All

NOTE: Where walls are removed, any associated trim and insulation should also be removed.

CONTROL OF HUMIDITY

A. Place dehumidifiers in the containment as needed to maintain relative humidity levels below 50%, and preferably, closer to 40%. It is important not to over dry building components, causing damage to them.

CLEANING SEWAGE FROM STRUCTURAL COMPONENTS/CLEANING COMPONENTS

A. All structural components in the containment as well as the floor surfaces and baseboard areas in the pantry & electrical room should be cleaned by HEPA vacuuming and wet wiping with an EPA registered biocide intended for this use. HEPA sanding (with equipment that has a shroud and HEPA vacuum attachment) may be used on wood surfaces as deemed necessary.

B. It is important to follow all manufacturers’ recommendations regarding the use of chemicals.

FINAL TREATMENT/CLEANING

A. Once building component have been dried after cleaning as demonstrated by moisture measurement instrumentation, apply a viscous anti-fungal encapsulant such as Fosters 40/20, IAQ 6000 series, or other comparable brand, to the sole plates and bottom 4” of wood framing at the doorways.

B. After this has been completed, lightly mist/fog the containment with an EPA registered green biocide agent intended for this use, using a fogger or other comparable method. Air filtration equipment should be turned off during this process (approximately one hour). The horizontal surfaces should then be HEPA vacuumed again to remove settled dust/microbes. The equipment should be turned back on following these procedures and appropriate contact time of the chemical agent to surfaces.

PERSONAL PROTECTION

A. All persons conducting remediation should be donned in personal protective gear inclusive of Tyvek (or other brand) disposable suits, gloves, and NIOSH approved half face, full face or positive air purifying respirators (PAPR) with NIOSH approved cartridges for particulate and chemical protection. If the contractor chooses a half face respirator, the contractor should provide eye protection to the workers. All persons donned in personal protective gear should have had proper respiratory training and current respiratory fit tests in accordance with OSHA regulations. A decontamination unit or wash station should be made available for the workers on site.

B. All other applicable OSHA regulations must be adhered to.

POST REMEDIATION TESTING

A. When this process is complete, post remediation testing will be conducted by Ecosystems at the client's request for an additional fee. The following steps will be taken by the hygienist:

- Conduct a visual inspection to ensure all visible microbial growth has been removed from surfaces in the areas remediated and that all materials scheduled for demolition have been removed.
- Conduct air sampling for bacteria in representative areas of the remediated section of the building.

If you have any questions related to this project, please do not hesitate to contact us.

Respectfully,

Linda McKoy, RN, CIEC, CMC, CEICC
Occupational Safety and Health Professional
Senior Industrial Hygienist
President/CEO

Rainbow Restoration

2305 Commerce Center Dr.
Suite D
Rockville VA 23146

Insured:	Hickman, Calvin	Home:	(434) 591-1925
Property:	51 Kents Store Way Kents Store, VA 23084	E-mail:	calvin.hickman@fluvannacounty.org
Billing:	197 Main St. (P.O.Box 540) Palmyra, VA 22963		

Estimator:	Tony Faust	Business:	(804) 801-9784
Company:	Rainbow International Restoration	E-mail:	tony.faust@rainbowva.com

Claim Number: **Policy Number:** **Type of Loss:**

Date Contacted:	1/27/2023 10:29 AM		
Date of Loss:	1/27/2023 12:00 AM	Date Received:	1/27/2023 10:20 AM
Date Inspected:	1/30/2023 12:00 AM	Date Entered:	1/30/2023 11:39 AM

Price List:	VACH8X_JAN23 Restoration/Service/Remodel
Estimate:	FLUVCOPW_REVISED

This is a preliminary estimate based off of our initial inspection and could very well require a revision once work is under way. This is a mitigation/remediation estimate and does not include repairs.

Rainbow Restoration

2305 Commerce Center Dr.
Suite D
Rockville VA 23146

FLUVCOPW_REVISED

Services

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
1. Respirator cartridge - HEPA & vapor & gas (per pair)	4.00 EA	0.00	34.29	7.27	144.43
2. Respirator - Full face - multi-purpose resp. (per day)	12.00 DA	0.00	7.61	0.00	91.32
3. Personal protective gloves - Disposable (per pair)	20.00 EA	0.00	0.28	0.30	5.90
4. Add for HEPA filter (for canister/backpack vacuums)	2.00 EA	0.00	73.41	6.33	153.15
5. Add for HEPA filter (for negative air exhaust fan)	2.00 EA	0.00	196.23	19.35	411.81
6. Ducting - lay-flat	30.00 LF	0.00	0.35	0.56	11.06
7. Equipment decontamination charge - per piece of equipment	5.00 EA	0.00	35.80	1.33	180.33
Decontamination of 2 hepa-vac back packs and 1 Large Air scrubber					
8. Dumpster load - Approx. 12 yards, 1-3 tons of debris	2.00 EA	400.00	0.00	0.00	800.00
9. Add for personal protective equipment (hazardous cleanup)	16.00 EA	0.00	14.31	11.39	240.35
2 Suites per tech per day. Before and after lunch.					
10. Equipment setup, take down, and monitoring (hourly charge)	6.25 HR	0.00	61.54	0.00	384.63
Set up of Negative Air Machines and Dehumidifiers. Air movement will be placed after all cleaning and sanitization has been completed per IICRC Standards					
11. Floor Scrapper Rental	**1.00 EA**	**0.00**	**2,400.00**	**0.00**	**2,400.00**
Rental of floor scrapper.					
12. Contamination - on-site ATP testing	**30.00 EA**	**0.00**	**28.96**	**4.90**	**873.70**
ATP Testing done before/after the cleaning and sanitization.					
13. Plumber - per hour	**6.00 HR**	**0.00**	**112.95**	**0.00**	**677.70**
Detach of appliances.					
***Per Ecosystmes report it is recommended that ERS perform cleaning and testing of the appliances. As this would be subcontractor price is not determined.**					
Totals: Services				51.43	6,374.38

Contents

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL

Rainbow Restoration

2305 Commerce Center Dr.
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CONTINUED - Contents

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
14. Content Manipulation charge - per hour	**18.75 HR**	**0.00**	**61.54**	**0.00**	**1,153.88**
Inventory and packing of salvageable items, inventory of unsalvageable items to provide list to insurance for reimbursement.					
15. Contents Track Inventory Fee	**1.00 EA**	**0.00**	**35.00**	**0.00**	**35.00**
16. Provide box, packing paper & tape - small size	**20.00 EA**	**0.00**	**2.83**	**3.00**	**59.60**
17. Job-site cargo/storage container - 20' long (per month)	**1.00 MO**	**0.00**	**109.06**	**5.78**	**114.84**
Storage of all non contaminated contents in an on site trailer * Tentative for 1 month of storage.**					
Totals: Contents				8.78	1,363.32

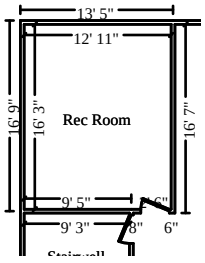
Duct Cleaning

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
18. Duct Cleaning	**1.00 EA**	**0.00**	**1,900.00**	**0.00**	**1,900.00**
Precautionary cleaning of HVAC, just to remove any dust or odor present.					
Totals: Duct Cleaning				0.00	1,900.00

Main Level

Main Level

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
19. Neg. air fan/Air scrub.-XLrg (per 24 hr period)-No monit.	6.00 DA	0.00	140.00	0.00	840.00
20. Protect - Cover with plastic	1,000.00 SF	0.00	0.32	5.83	325.83
Use of 6 mil poly sheeting to cover areas to prevent overspray of paint during encapsulation.					
Total: Main Level				5.83	1,165.83



Rec Room **Height: 8'**

450.00	SF Walls	209.90	SF Ceiling
659.90	SF Walls & Ceiling	209.90	SF Floor
23.32	SY Flooring	55.83	LF Floor Perimeter
58.33	LF Ceil. Perimeter		

Door **2' 6" X 6' 8"** **Opens into DINING_AREA2**

Rainbow Restoration

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CONTINUED - Rec Room

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
21. Tear out baseboard and bag for disposal	26.67 LF	1.04	0.00	0.27	28.01
22. Tear out wet drywall, cleanup, bag, per LF - to 2' - Cat 3	14.67 LF	5.03	0.00	0.26	74.05
23. HEPA Vacuuming - Detailed - (PER SF)	29.34 SF	0.00	0.79	0.00	23.18
24. Clean stud wall	29.34 SF	0.00	1.14	0.03	33.48
25. Apply plant-based anti-microbial agent to the surface area	240.00 SF	0.00	0.31	0.64	75.04
Sanitization of flooring (Two times)					
26. Apply plant-based anti-microbial agent to the surface area	29.34 SF	0.00	0.31	0.08	9.18
Sanitization of Framing (Two Times)					
27. Tear out non-salv. vinyl tile, cut & bag for disp. Cat 3	209.90 SF	2.70	0.00	0.78	567.51
28. Clean with pressure/chemical spray	14.67 SF	0.00	0.46	0.01	6.76
Pressure washing of sill plate in order to remove contaminates around the bottom plates.					
29. Water extraction from hard surface floor	209.90 SF	0.00	0.25	0.00	52.48
Extraction performed when pressure washing is done to ensure no secondary damage.					
30. Air mover axial fan (per 24 hour period) - No monitoring	6.00 EA	0.00	28.75	0.00	172.50
2 Air movers for 3 days each. placement after demo and sanitization.					
31. Seal stud wall for odor control (anti-microbial coating)	29.34 SF	0.00	2.27	2.38	68.98
Encapsulation with an antimicrobial paint, applied only to exposed framing.					
Totals: Rec Room				4.45	1,111.17

Rainbow Restoration

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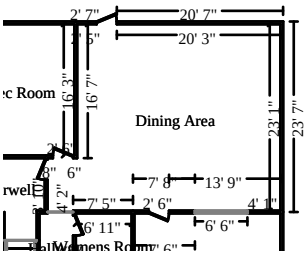

Dining Area **Height: 8'**

711.23	SF Walls	605.29	SF Ceiling
1,316.53	SF Walls & Ceiling	605.29	SF Floor
67.25	SY Flooring	91.00	LF Floor Perimeter
101.00	LF Ceil. Perimeter		

Door	**2' 6" X 6' 8"**	**Opens into Exterior**
Missing Wall - Goes to neither Floor/Ceiling	**6' 6" X 4' 7 9/16"**	**Opens into KITCHEN2**
Door	**2' 6" X 6' 8"**	**Opens into KITCHEN2**
Missing Wall	**3' 2" X 8'**	**Opens into HALLWAY2**
Door	**2' 6" X 6' 8"**	**Opens into STAIRWELL2**
Door	**2' 6" X 6' 8"**	**Opens into REC_ROOM2**

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
32. Containment Barrier/Airlock/Decon. Chamber	21.00 SF	0.00	0.97	0.17	20.54
Containment on stairwell door					
33. Tear out baseboard and bag for disposal	57.25 LF	1.04	0.00	0.58	60.12
34. Tear out wet drywall, cleanup, bag, per LF - to 2' - Cat 3	91.00 LF	5.03	0.00	1.64	459.37
35. HEPA Vacuuming - Detailed - (PER SF)	182.00 SF	0.00	0.79	0.00	143.78
36. Clean stud wall	182.00 SF	0.00	0.85	0.19	154.89
37. Clean concrete the floor	605.29 SF	0.00	0.51	0.32	309.02
38. Apply plant-based anti-microbial agent to more than the floor	1,210.58 SF	0.00	0.31	3.21	378.49
Sanitization of flooring (Two times)					
39. Apply plant-based anti-microbial agent to more than the floor perimeter	182.00 SF	0.00	0.31	0.48	56.90
Sanitization of Framing (Two Times)					
40. Hazardous Waste/Mold Cleaning Technician - per hour	2.00 HR	0.00	61.54	0.00	123.08
Sanitization of all the feet and lower sections of nonporous contents (Two Times)					
41. Dehumidifier (per 24 hr period)- 110-159 ppd - No monitor.	4.00 EA	0.00	105.58	0.00	422.32
1 Dehumidifier for 4 days.					
42. Tear out non-salv. vinyl tile, cut & bag for disp. Cat 3	605.29 SF	2.70	0.00	2.25	1,636.53
43. Clean with pressure/chemical spray	91.00 SF	0.00	0.46	0.05	41.91
Pressure washing of sill plate in order to remove contaminates around the bottom plates.					

Rainbow Restoration

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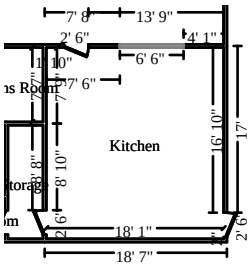
CONTINUED - Dining Area

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
44. Water extraction from hard surface floor	605.29 SF	0.00	0.25	0.00	151.32
Extraction performed when pressure washing is done to ensure no secondary damage.					
45. Air mover axial fan (per 24 hour period) - No monitoring	18.00 EA	0.00	28.75	0.00	517.50
4 Air movers for 3 days each. placement after demo and sanitization.					
46. Seal stud wall for odor control (anti-microbial coating)	182.00 SF	0.00	2.27	14.76	427.90
Encapsulation with an antimicrobial paint, applied only to exposed framing.					
Totals: Dining Area				23.65	4,903.67



Kitchen **Height: 8'**

521.23 SF Walls	352.63 SF Ceiling
873.86 SF Walls & Ceiling	352.63 SF Floor
39.18 SY Flooring	67.67 LF Floor Perimeter
75.17 LF Ceil. Perimeter	

Door	**2' 6" X 6' 8"**	**Opens into STORAGE2**
Door	**2' 6" X 6' 8"**	**Opens into Exterior**
Missing Wall - Goes to neither Floor/Ceiling	**6' 6" X 4' 7 9/16"**	**Opens into DINING_AREA2**
Door	**2' 6" X 6' 8"**	**Opens into DINING_AREA2**

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
47. Tear out baseboard and bag for disposal	67.67 LF	1.04	0.00	0.68	71.06
48. Tear out wet drywall, cleanup, bag, per LF - to 2' - Cat 3	67.67 LF	5.03	0.00	1.22	341.60
49. HEPA Vacuuming - Detailed - (PER SF)	135.33 SF	0.00	0.79	0.00	106.91
50. Clean stud wall	135.33 SF	0.00	1.14	0.14	154.42
51. Hazardous Waste/Mold Cleaning Technician - per hour	2.00 HR	0.00	61.54	0.00	123.08
Sanitization of all the feet and lower sections of nonporous contents (Two Times)					
Allowing dry time for the furniture prior to moving into on site storage container.					
52. Apply plant-based anti-microbial agent to more than the floor	705.25 SF	0.00	0.31	1.87	220.50
Sanitization of flooring (Two times)					
53. Apply plant-based anti-microbial agent to more than the floor perimeter	135.33 SF	0.00	0.31	0.36	42.31

Rainbow Restoration

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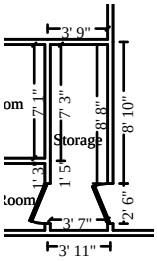
CONTINUED - Kitchen

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
Sanitization of Framing (Two Times)					
54. Air mover axial fan (per 24 hour period) - No monitoring	18.00 EA	0.00	28.75	0.00	517.50
6 Air movers for 3 days each. placement after demo and sanitization.					
55. Tear out cabinetry - lower (base) units	6.00 LF	8.66	0.00	0.00	51.96
56. Dehumidifier (per 24 hr period)- 110-159 ppd - No monitor.	4.00 EA	0.00	105.58	0.00	422.32
1 Dehumidifier for 4 days.					
57. Tear out non-salv. vinyl tile, cut & bag for disp. Cat 3	352.63 SF	2.70	0.00	1.31	953.41
58. Clean with pressure/chemical spray	67.67 SF	0.00	0.46	0.04	31.17
Pressure washing of sill plate in order to remove contaminates around the bottom plates.					
59. Water extraction from hard surface floor	352.63 SF	0.00	0.25	0.00	88.16
Extraction performed when pressure washing is done to ensure no secondary damage.					
60. Seal stud wall for odor control (anti-microbial coating)	135.33 SF	0.00	2.27	10.97	318.17
Encapsulation with an antimicrobial paint, applied only to exposed framing.					
Totals: Kitchen				16.59	3,442.57



Storage **Height: 8'**

209.33 SF Walls	41.51 SF Ceiling
250.84 SF Walls & Ceiling	41.51 SF Floor
4.61 SY Flooring	25.33 LF Floor Perimeter
30.33 LF Ceil. Perimeter	

Door	**2' 6" X 6' 8"**	**Opens into ELECTRICAL_2**
Door	**2' 6" X 6' 8"**	**Opens into KITCHEN2**

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
61. Containment Barrier/Airlock/Decon. Chamber	21.00 SF	0.00	0.97	0.17	20.54
62. Tear out baseboard and bag for disposal	25.00 LF	1.04	0.00	0.25	26.25
63. Tear out wet drywall, cleanup, bag, per LF - to 2' - Cat 3	8.00 LF	5.03	0.00	0.14	40.38
64. HEPA Vacuuming - Detailed - (PER SF)	16.00 SF	0.00	0.79	0.00	12.64

Rainbow Restoration

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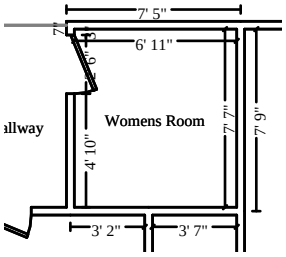
CONTINUED - Storage

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
65. Clean stud wall	16.00 SF	0.00	1.14	0.02	18.26
66. Apply plant-based anti-microbial agent to the surface area	16.00 SF	0.00	0.31	0.04	5.00
Sanitization of flooring (Two times)					
67. Apply plant-based anti-microbial agent to the surface area	16.00 SF	0.00	0.31	0.04	5.00
Sanitization of Framing (Two Times)					
68. Tear out non-salv. vinyl tile, cut & bag for disp. Cat 3	41.51 SF	2.70	0.00	0.15	112.23
69. Clean with pressure/chemical spray	25.33 SF	0.00	0.48	0.01	12.17
Pressure washing of sill plate in order to remove contaminates around the bottom plates.					
70. Water extraction from hard surface floor	41.51 SF	0.00	0.25	0.00	10.38
Extraction performed when pressure washing is done to ensure no secondary damage.					
71. Interior door slab only - Detach	1.00 EA	0.00	7.31	0.00	7.31
72. Seal stud wall for odor control (anti-microbial coating)	16.00 SF	0.00	2.27	1.30	37.62
Encapsulation with an antimicrobial paint, applied only to exposed framing.					
Totals: Storage				2.12	307.78



Womens Room **Height: 8'**

215.33	SF Walls	52.45	SF Ceiling
267.78	SF Walls & Ceiling	52.45	SF Floor
5.83	SY Flooring	26.50	LF Floor Perimeter
29.00	LF Ceil. Perimeter		

Door **2' 6" X 6' 8"** **Opens into HALLWAY2**

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
73. Tear out baseboard and bag for disposal	26.50 LF	1.04	0.00	0.27	27.83
74. Tear out wet drywall, cleanup, bag, per LF - to 2' - Cat 3	26.50 LF	5.03	0.00	0.48	133.78
75. HEPA Vacuuming - Detailed - (PER SF)	53.00 SF	0.00	0.79	0.00	41.87
76. Clean stud wall	53.00 SF	0.00	1.14	0.06	60.48
77. Tear out non-salv. vinyl tile, cut & bag for disp. Cat 3	52.45 SF	2.70	0.00	0.19	141.81

Rainbow Restoration

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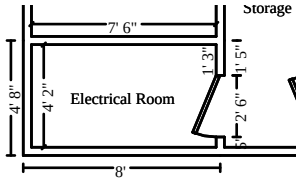
CONTINUED - Womens Room

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
78. Clean concrete the floor	52.45 SF	0.00	0.45	0.03	23.63
79. Apply plant-based anti-microbial agent to more than the floor	104.90 SF	0.00	0.31	0.28	32.80
Sanitization of flooring (Two times)					
80. Apply plant-based anti-microbial agent to more than the floor perimeter	53.00 SF	0.00	0.31	0.14	16.57
Sanitization of Framing (Two Times)					
81. Toilet - Detach	1.00 EA	0.00	47.01	0.04	47.05
82. Sink - single basin - Detach	1.00 EA	0.00	27.86	0.00	27.86
83. Remove Plumbing fixture supply line	2.00 EA	5.07	0.00	0.00	10.14
84. P-trap assembly - Detach only	0.50 EA	0.00	60.26	0.00	30.13
85. Clean with pressure/chemical spray	26.50 SF	0.00	0.46	0.01	12.20
Pressure washing of sill plate in order to remove contaminates around the bottom plates.					
86. Water extraction from hard surface floor	52.45 SF	0.00	0.25	0.00	13.11
Extraction performed when pressure washing is done to ensure no secondary damage.					
87. Air mover axial fan (per 24 hour period) - No monitoring	9.00 EA	0.00	28.75	0.00	258.75
3 Air Movers for 3 days each. Placed after all demo and sanitization has been performed.					
88. Clean toilet	1.00 EA	0.00	24.05	0.00	24.05
89. Seal stud wall for odor control (anti-microbial coating)	53.00 SF	0.00	2.27	4.30	124.61
Encapsulation with an antimicrobial paint, applied only to exposed framing.					
Totals: Womens Room				5.80	1,026.67



Electrical Room **Height: 8'**

170.00	SF Walls	31.25	SF Ceiling
201.25	SF Walls & Ceiling	31.25	SF Floor
3.47	SY Flooring	20.83	LF Floor Perimeter
23.33	LF Ceil. Perimeter		

Door **2' 6" X 6' 8"** **Opens into STORAGE2**

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
90. Clean floor - tile	1.00 SF	0.00	0.81	0.00	0.81
Only from foot traffic.					

Rainbow Restoration

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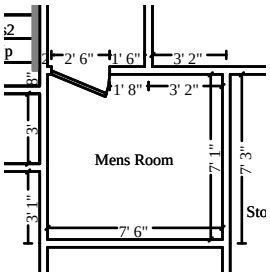
CONTINUED - Electrical Room

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
91. Apply plant-based anti-microbial agent to more than the floor	62.50 SF	0.00	0.31	0.17	19.55
Totals: Electrical Room				0.17	20.36



Mens Room **Height: 8'**

216.67	SF Walls	53.13	SF Ceiling
269.79	SF Walls & Ceiling	53.13	SF Floor
5.90	SY Flooring	26.67	LF Floor Perimeter
29.17	LF Ceil. Perimeter		

Door **2' 6" X 6' 8"** **Opens into HALLWAY2**

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
92. Tear out baseboard and bag for disposal	26.67 LF	1.04	0.00	0.27	28.01
93. Tear out wet drywall, cleanup, bag, per LF - to 2' - Cat 3	26.67 LF	5.03	0.00	0.48	134.63
94. HEPA Vacuuming - Detailed - (PER SF)	53.33 SF	0.00	0.79	0.00	42.13
95. Clean stud wall	53.33 SF	0.00	1.14	0.06	60.86
96. Tear out non-salv. vinyl tile, cut & bag for disp. Cat 3	53.13 SF	2.70	0.00	0.20	143.65
97. Clean concrete the floor	53.13 SF	0.00	0.45	0.03	23.94
98. Apply plant-based anti-microbial agent to more than the floor	106.25 SF	0.00	0.31	0.28	33.22
Sanitization of flooring (Two times)					
99. Apply plant-based anti-microbial agent to more than the floor perimeter	53.33 SF	0.00	0.31	0.14	16.67
Sanitization of Framing (Two Times)					
100. Toilet - Detach	1.00 EA	0.00	47.01	0.04	47.05
101. Sink - single basin - Detach	1.00 EA	0.00	27.86	0.00	27.86
102. Remove Plumbing fixture supply line	2.00 EA	5.07	0.00	0.00	10.14
103. P-trap assembly - Detach only	0.50 EA	0.00	60.26	0.00	30.13
104. Clean with pressure/chemical spray	26.67 SF	0.00	0.48	0.01	12.81
Pressure washing of sill plate in order to remove contaminates around the bottom plates.					
105. Water extraction from hard surface floor	53.13 SF	0.00	0.25	0.00	13.28

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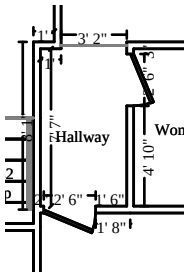
CONTINUED - Mens Room

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
Extraction performed when pressure washing is done to ensure no secondary damage.					
106. Clean toilet	1.00 EA	0.00	24.05	0.00	24.05
107. Air mover axial fan (per 24 hour period) - No monitoring	9.00 EA	0.00	28.75	0.00	258.75
3 Air Movers for 3 days each. Placed after all demo and sanitization has been performed.					
108. Tear out trim and bag for disposal	17.00 LF	1.04	0.00	0.17	17.85
Removal of door trim.					
109. Interior door slab only - Detach	1.00 EA	0.00	7.31	0.00	7.31
110. Seal stud wall for odor control (anti-microbial coating)	53.33 SF	0.00	2.27	4.32	125.38
Encapsulation with an antimicrobial paint, applied only to exposed framing.					
Totals: Mens Room				6.00	1,057.72



Hallway **Height: 8'**

132.00 SF Walls	32.13 SF Ceiling
164.13 SF Walls & Ceiling	32.13 SF Floor
3.57 SY Flooring	15.67 LF Floor Perimeter
20.67 LF Ceil. Perimeter	

Door	**2' 6" X 6' 8"**	**Opens into MENS_ROOM2**
Door	**2' 6" X 6' 8"**	**Opens into WOMENS_ROOM**
Missing Wall	**3' 2" X 8'**	**Opens into DINING_AREA2**

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
111. Tear out baseboard and bag for disposal	15.67 LF	1.04	0.00	0.16	16.46
112. Tear out wet drywall, cleanup, bag, per LF - to 2' - Cat 3	15.67 LF	5.87	0.00	0.28	92.26
113. HEPA Vacuuming - Detailed - (PER SF)	31.33 SF	0.00	0.79	0.00	24.75
114. Clean stud wall	31.33 SF	0.00	1.14	0.03	35.75
115. Apply plant-based anti-microbial agent to more than the floor	64.25 SF	0.00	0.31	0.17	20.09
Sanitization of flooring (Two times)					
116. Apply plant-based anti-microbial agent to more than the floor perimeter	31.33 SF	0.00	0.31	0.08	9.79
Sanitization of Framing (Two Times)					

Rainbow Restoration

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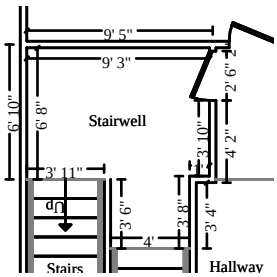
CONTINUED - Hallway

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
117. Dehumidifier (per 24 hr period)- 110-159 ppd - No monitor.	4.00 EA	0.00	105.58	0.00	422.32
1 Dehumidifier for 4 days.					
118. Air mover axial fan (per 24 hour period) - No monitoring	6.00 EA	0.00	28.75	0.00	172.50
2 Air Movers for 3 days each. Placed after all demo and sanitization has been performed.					
119. Tear out non-salv. vinyl tile, cut & bag for disp. Cat 3	32.13 SF	2.70	0.00	0.12	86.87
120. Clean with pressure/chemical spray	15.67 SF	0.00	0.48	0.01	7.53
Pressure washing of sill plate in order to remove contaminates around the bottom plates.					
121. Water extraction from hard surface floor	32.13 SF	0.00	0.25	0.00	8.03
Extraction performed when pressure washing is done to ensure no secondary damage.					
122. Seal stud wall for odor control (anti-microbial coating)	31.33 SF	0.00	2.27	2.54	73.66
Encapsulation with an antimicrobial paint, applied only to exposed framing.					
Totals: Hallway				3.39	970.01



Stairwell **Height: 8'**

229.75 SF Walls	75.50 SF Ceiling
305.25 SF Walls & Ceiling	75.50 SF Floor
8.39 SY Flooring	28.08 LF Floor Perimeter
34.58 LF Ceil. Perimeter	

Missing Wall	**3' 11" X 8'**	**Opens into STAIRS2**
Missing Wall	**4' X 8'**	**Opens into STAIRS3**
Door	**2' 6" X 6' 8"**	**Opens into DINING_AREA2**

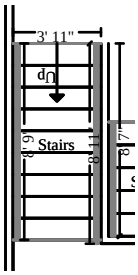
DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
123. Tear out baseboard and bag for disposal	28.08 LF	1.04	0.00	0.28	29.48
124. Clean stud wall	56.17 SF	0.00	0.85	0.06	47.80
125. Apply plant-based anti-microbial agent to more than the floor perimeter	131.67 SF	0.00	0.31	0.35	41.17
126. Clean concrete the floor	75.50 SF	0.00	0.45	0.04	34.02
127. Tear out non-salv. vinyl tile, cut & bag for disp. Cat 3	75.50 SF	2.70	0.00	0.28	204.13

Rainbow Restoration

2305 Commerce Center Dr.
Suite D
Rockville VA 23146

CONTINUED - Stairwell

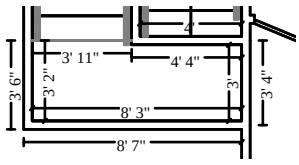
DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
128. Clean with pressure/chemical spray	28.08 SF	0.00	0.48	0.01	13.49
Pressure washing of sill plate in order to remove contaminates around the bottom plates.					
129. Water extraction from hard surface floor	75.50 SF	0.00	0.25	0.00	18.88
Extraction performed when pressure washing is done to ensure no secondary damage.					
130. Seal stud wall for odor control (anti-microbial coating)	56.17 SF	0.00	2.27	4.55	132.06
Encapsulation with an antimicrobial paint, applied only to exposed framing.					
Totals: Stairwell				5.57	521.03



Stairs **Height: 14' 3"**

196.15	SF Walls	34.27	SF Ceiling
230.42	SF Walls & Ceiling	60.23	SF Floor
6.69	SY Flooring	21.01	LF Floor Perimeter
17.67	LF Ceil. Perimeter		

Missing Wall **3' 11" X 14' 3 1/16"** **Opens into STAIRWELL2**



Subroom: Stairs1 (1) **Height: 8'**

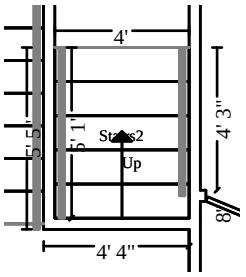
150.00	SF Walls	25.40	SF Ceiling
175.40	SF Walls & Ceiling	25.40	SF Floor
2.82	SY Flooring	18.75	LF Floor Perimeter
18.75	LF Ceil. Perimeter		

Missing Wall **3' 11" X 8'** **Opens into STAIRS2**

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
131. Containment Barrier/Airlock/Decon. Chamber	80.00 SF	0.00	0.97	0.64	78.24
132. Peel & seal zipper - heavy duty	1.00 EA	0.00	16.55	0.66	17.21
Totals: Stairs				1.30	95.45

Rainbow Restoration

2305 Commerce Center Dr.
Suite D
Rockville VA 23146



Stairs2 **Height: 11' 2"**

136.05	SF Walls	20.33	SF Ceiling
156.39	SF Walls & Ceiling	36.17	SF Floor
4.02	SY Flooring	15.94	LF Floor Perimeter
14.17	LF Ceil. Perimeter		

Missing Wall **4' X 11' 1 1/2"** **Opens into STAIRWELL2**

DESCRIPTION	QTY	REMOVE	REPLACE	TAX	TOTAL
133. Clean stair riser - per side - per LF	12.00 LF	0.00	0.60	0.01	7.21
134. Clean stair tread - per side - per LF	9.00 LF	0.00	0.73	0.00	6.57
Totals: Stairs2				0.01	13.78
Total: Main Level				**74.88**	**14,636.04**
Line Item Totals: FLUVCOPW_REVISED				**135.09**	**24,273.74**

Grand Total Areas:

3,337.75	SF Walls	1,533.78	SF Ceiling	4,871.53	SF Walls and Ceiling
1,575.58	SF Floor	175.06	SY Flooring	413.27	LF Floor Perimeter
0.00	SF Long Wall	0.00	SF Short Wall	452.17	LF Ceil. Perimeter
1,575.58	Floor Area	1,636.86	Total Area	2,759.80	Interior Wall Area
1,267.17	Exterior Wall Area	144.50	Exterior Perimeter of Walls		
0.00	Surface Area	0.00	Number of Squares	0.00	Total Perimeter Length
0.00	Total Ridge Length	0.00	Total Hip Length		

Coverage	Item Total	%	ACV Total	%
Dwelling	23,025.26	94.86%	23,025.26	94.86%
Other Structures	0.00	0.00%	0.00	0.00%
Contents	1,248.48	5.14%	1,248.48	5.14%
Total	24,273.74	100.00%	24,273.74	100.00%

Rainbow Restoration

2305 Commerce Center Dr.
Suite D
Rockville VA 23146

Summary for Dwelling

Line Item Total	22,893.17
Material Sales Tax	126.31
Storage Rental Tax	5.78
Replacement Cost Value	**$23,025.26**
Net Claim	**$23,025.26**

Tony Faust

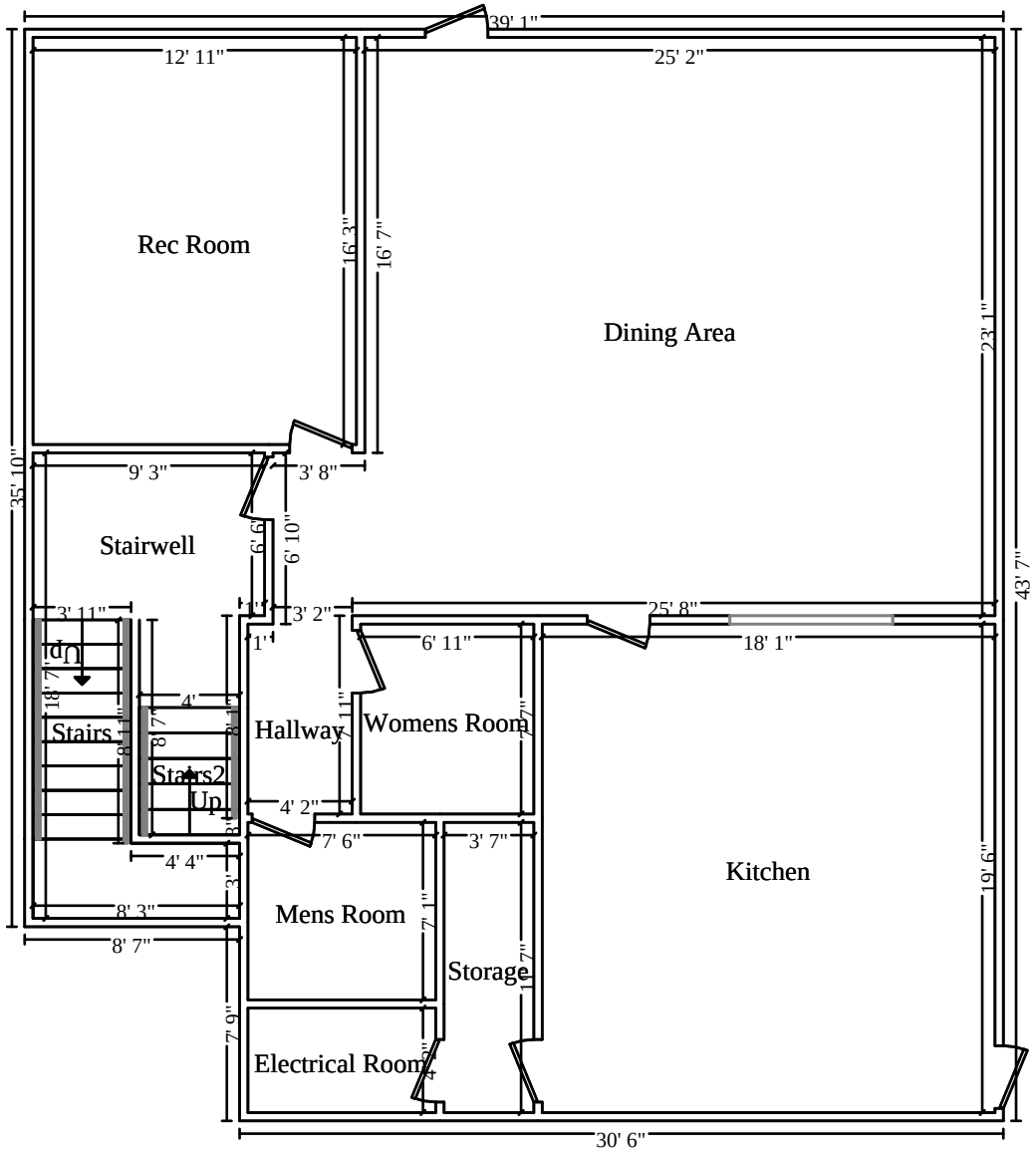
Rainbow Restoration

2305 Commerce Center Dr.
Suite D
Rockville VA 23146

Summary for Contents

Line Item Total	1,245.48
Material Sales Tax	3.00
Replacement Cost Value	**$1,248.48**
Net Claim	**$1,248.48**

Tony Faust


39' 1"
12' 11"
25' 2"
Rec Room
16' 3"
16' 7"
Dining Area
23' 1"
35' 10"
9' 3"
3' 8"
Stairwell
6' 9"
6' 10"
43' 7"
3' 11"
1"
3' 2"
25' 8"
1"
6' 11"
18' 1"
Up
18' 7"
4"
Stairs
8' 11"
8' 7"
Hallway
11"
Womens Room
7"
Stairs2
Up
4' 2"
8' 1"
7' 6"
3' 7"
4' 4"
Kitchen
19' 6"
3' 1"
8' 3"
Mens Room
7' 1"
8' 7"
Storage
7"
7' 6"
Electrical Room
4' 3"
30' 6"

Main Level

Exhibit 4
VENDOR DATA SHEET

Note: The following information is required as part of your response to this solicitation. Failure to complete and provide this sheet may result in finding your bid nonresponsive.

1. Qualification: The vendor must have the capability and capacity in all respects to satisfy fully all of the contractual requirements.

2. Vendor's Primary Contact:
Name: Aaron Fischer Phone: 804-639-0230

3. Years in Business: Indicate the length of time you have been in business providing this type of good or service:
6 Years 9 Months

4. Vendor Information:

FIN or FEI Number: 81-1268546 If Company, Corporation, or Partnership

5. Indicate below a listing of at least four (4) current or recent accounts, either commercial or governmental, that your company is servicing, has serviced, or has provided similar goods. Include the length of service and the name, address, and telephone number of the point of contact.

Company: Real Property Management	Contact: Brian Gallagher
Phone: 540-784-8642	Email: wallersquaremanager@gmail.com
Dates of Service: 07/2021 - current	$$ Value: $300,000

Company: University of Virginia	Contact: Val Knapp / Derrick Wilson
Phone: 434-981-7322	Email: ddw4m@virginia.edu
Dates of Service: 06/2021 - current	$$ Value: $50,000

Company: Virginia Commonwealth U.	Contact: Mary Hendricks
Phone: 804-828-1751	Email: mahendrick@vcu.edu
Dates of Service: 12/2021 - current	$$ Value:

Company: Mondelez	Contact: Kevin Babcock
Phone: 757-812-3644	Email: kevin.babcock@mdlz.com
Dates of Service: 09/2021 - current	$$ Value: 1,170,455.71

I certify the accuracy of this information.

Signed: [signature] Title: Bookkeeper

Date: 02/06/2023

PLEASE RETURN THIS PAGE

PROOF OF AUTHORITY TO TRANSACT BUSINESS IN VIRGINIA

THIS FORM MUST BE SUBMITTED WITH YOUR PROPOSAL/BID. FAILURE TO INCLUDE THIS FORM MAY RESULT IN REJECTION OF YOUR PROPOSAL/BID

Pursuant to Virginia Code §2.2-4311.2, an Offeror/Bidder organized or authorized to transact business in The Commonwealth pursuant to Title 13.1 or Title 50 of the Code of Virginia shall include in its proposal/bid the identification number issued to it by the State Corporation Commission ("SCC"). Any Offeror/Bidder that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 of the Code of Virginia or as otherwise required by law shall include in its proposal/bid a statement describing why the Offeror/Bidder is not required to be so authorized. Any Offeror/Bidder described herein that fails to provide the required information shall not receive an award unless a waiver of this requirement and the administrative policies and procedures established to implement this section is granted by the County Administrator, as applicable. If this quote for goods or services is accepted by the County of Fluvanna, Virginia, the undersigned agrees that the requirements of the Code of Virginia Section 2.2-4311.2 have been met.

Please complete the following by checking the appropriate line that applies and providing the requested information. ***PLEASE NOTE: The SCC number is NOT your federal ID number or business license number.***

A. ✓ Offeror/Bidder is a Virginia business entity organized and authorized to transact business in Virginia by the SCC and such vendor's Identification Number issued to it by the SCC is S5985793.

B. _____ Offeror/Bidder is an out-of-state (foreign) business entity that is authorized to transact business in Virginia by the SCC and such vendor's Identification Number issued to it by the SCC is _____.

C. _____ Offeror/Bidder does not have an Identification Number issued to it by the SCC and such vendor is not required to be authorized to transact business in Virginia by the SCC for the following reason(s):

Please attach additional sheets if you need to explain why such Offeror/Bidder is not required to be authorized to transact business in Virginia.

Legal Name of Company (as listed on W-9) Fischer Restoration, LLC DBA Rainbow Restoration of Richmond, Fredericksburg, Charlottesville, and Harrisonburg

Legal Name of Offeror/Bidder Aaron Fischer

Date 02/06/2023

Authorized Signature _____

Print or Type Name and Title Aaron Fischer, Owner

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CERTIFICATION OF NO COLLUSION

The undersigned, acting on behalf of Rainbow Restoration, does hereby certify in connection with the procurement and proposal to which this Certificate of No Collusion is attached that:

This bid is not the result of, or affected by, any act of collusion with another person engaged in the same line of business or commerce; nor is this bid the result of, or affected by, any act of fraud punishable under Article 1.1 of Chapter 12 of Title 18.1 of the Code of Virginia, 1950, as amended (18.2-498.1 et seq.).

Respectfully submitted this 6th day of February, 2023.

Complete if Bidder is an Entity:

WITNESS the following duly authorized signature and seal:

Name of Entity: Rainbow Restoration
By: Dena Tremain (SEAL)
Signature
Print Name: Dena Tremain
Print Title: Bookkeeper

STATE OF Virginia
COUNTY/CITY OF Goochland, to-wit:

The foregoing instrument was acknowledged before me this 6th day of February (month), 2023 (year) by Tillie M. Graham (Print Name), Fischer Restoration (Print Title) on behalf of Dena Tremain (Name of Entity). LLC

Tillie M Graham
Notary Public

My commission expires: 31st August 2023
Notary registration number: 333789

TILLIE M GRAHAM
NOTARY PUBLIC
REG # 333789
MY COMMISSION EXPIRES
8/31/2023
COMMONWEALTH OF VIRGINIA

FLUVANNA COUNTY BOARD OF SUPERVISORS
AGENDA ITEM STAFF REPORT

TAB C

MEETING DATE:	February 15, 2023					
AGENDA TITLE:	Pleasant Grove Park Projects Update					
MOTION(s):	**N/A**					
BOS GOALS?	Yes	No	**If yes, which goal(s):**			
		X				
AGENDA CATEGORY:	Public Hearing	Action Matter	Presentation	Consent Agenda	Other	
			X			
STAFF CONTACT(S):	Aaron Spitzer, Director of Parks and Recreation					
PRESENTER(S):	Aaron Spitzer, Director of Parks and Recreation					
RECOMMENDATION:	N/A					
TIMING:	Routine					
DISCUSSION:	**Fence and Gate Project:** This presentation is to inform the BOS of a fence and gate installation near the front of Pleasant Grove Park. The fence and gate will be able to block the gravel portions of Pleasant Grove Drive and Lippard Lane in the park. Sheriff Hess supports this project as it will help with patrolling the park after it closes at dusk. Sheriff Hess also said that the Sheriff's Office will close the gates at dusk and open them at dawn. **Eagle Scouts Projects:** Parks and Recreation is working with multiple Boy Scouts to become Eagle Scouts through various other projects currently happening at the park. We are partnering to complete a 20' x 20' stage in front of the house, replacing a broken fence between the house and the pole barn, and replacing a kiosk near the soccer parking area where we had to move a trail entrance due to constant wet ground. **PG Park Additional Bathroom Facilities:** There have been citizen suggestions to have a working bathroom near the soccer field area. Public Utilities with Parks and Recreation has started the process to investigate what it will take to get such facilities in that area. We believe that an Engineer Study needs to be done first before moving forward.					
FISCAL IMPACT:	• FY23 budgeted funds for Fence and Gate Project and Eagle Scout Projects • No Funds budgeted for restroom facilities study or completion					
POLICY IMPACT:	N/A					

LEGISLATIVE HISTORY:	N/A				
ENCLOSURES:	None.				
REVIEWS COMPLETED:	Legal	Finance	Purchasing	HR	Other
					COAD

FLUVANNA COUNTY BOARD OF SUPERVISORS
AGENDA ITEM STAFF REPORT

TAB D

MEETING DATE:	February 15, 2023					
AGENDA TITLE:	Adoption of the Fluvanna County Board of Supervisors February 1, 2023 Meeting Minutes.					
MOTION(s):	**I move the meeting minutes of the Fluvanna County Board of Supervisors Regular Meeting on Wednesday February 1, 2023, be adopted.**					
BOS 2 YEAR GOALS?	Yes	No	**If yes, list goals(s):**			
		X				
AGENDA CATEGORY:	Public Hearing	Action Matter	Presentation	Consent Agenda	Other	
				XX		
STAFF CONTACT(S):	Caitlin Solis, Clerk to the Board					
PRESENTER(S):	Eric Dahl, County Administrator					
RECOMMENDATION:	Approve					
TIMING:	Routine					
DISCUSSION:	None.					
FISCAL IMPACT:	N/A					
POLICY IMPACT:	N/A					
LEGISLATIVE HISTORY:	N/A					
ENCLOSURES:	Draft Minutes for February 1, 2023.					
REVIEWS COMPLETED:	Legal	Finance	Purchasing	HR	Other	
					X	

FLUVANNA COUNTY BOARD OF SUPERVISORS
REGULAR MEETING MINUTES
Carysbrook Performing Arts Center
8880 James Madison Hwy, Fork Union, VA 23055
February 1, 2023
Regular Meeting 5:00pm
Budget Work Session 7:00pm

MEMBERS PRESENT: Mozell Booker, Fork Union District, Chair
Patricia Eager, Palmyra District, Vice Chair
Chris Fairchild, Cunningham District

ABSENT: John M. (Mike) Sheridan, Columbia District
Tony O'Brien, Rivanna District

ALSO PRESENT: Eric M. Dahl, County Administrator
Kelly Harris, Assistant County Administrator
Fred Payne, County Attorney
Caitlin Solis, Clerk for the Board of Supervisors

1 - CALL TO ORDER, PLEDGE OF ALLEGIANCE, & MOMENT OF SILENCE

At 5:01pm, Chair Booker called to order the Regular Meeting of February 1, 2023. After the recitation of the Pledge of Allegiance, a moment of silence was observed.

3 - ADOPTION OF AGENDA

Mr. Dahl requested the addition of an Eagle Scout Resolution to New Business.

MOTION:	Accept the Agenda, for the February 1, 2023 Regular Meeting of the Board of Supervisors, as amended.				
MEMBER:	Mrs. Booker	Mrs. Eager	Mr. Fairchild	Mr. O'Brien	Mr. Sheridan
ACTION:		Motion	Second		
VOTE:	Yes	Yes	Yes	Absent	Absent
RESULT:	**3-0**				

4 - COUNTY ADMINISTRATOR'S REPORT

Mr. Dahl reported on the following topics:

Fluvanna County Parks and Recreation Presents the Winter Ball for All

- Held at the Fluvanna Middle School Gymnasium
- February 11, 2023, from 2 - 4pm or 7- 9pm
- Ages 5 - 12 / $20 per couple / $5 for additional siblings
- Join FCPR for Dancing and Door Prizes!
- Each youth escorted to the dance by a special adult in their life. Only one escort per couple please!
- Register online: https://fluvanna.recdesk.com - Questions, call Fluvanna County Parks and Recreation at (434) 589-2016

Parks and Recreation Youth Nights

- Girls Varsity – Monday, February 6 and
- Boys Varsity – Wednesday, February 8
- All Fluvanna Parks and Recreation basketball players are invited to BOTH the Girls Varsity & the Boys Varsity basketball games next week for Youth Nights! Come to one. Come to both.
- FCPR players should wear their jersey & will receive free admission to both games. Family, friends & non-players can purchase their tickets online.

Fluvanna County Tire Drop Off and Hazardous Waste Collection

- Saturday, March 25, 2023 at Pleasant Grove Park
- Safe Disposal of Tires, Gasoline, Paints, Thinners, Solvents and Light Bulbs
- Questions, call Fluvanna County Parks and Recreation at (434) 589-2016
- Waste collection 10am - 2pm and Tire collection 10am - 12pm
- *Proof of Fluvanna County Residency is Required*
- *When the trucks are full, event will close.*
  - No commercial vehicles, business disposals, moving trucks, trailers, electronics, asbestos, tractor tires or big rig tires.
  - 15 tires per resident - all tires must be off rims

Fluvanna Tax-Aide at the Fluvanna County Library

- Is expected to be open for preparation of income tax returns this tax season beginning the 5th of February.

- There are two ways to make an appointment:
  You are encouraged you to go online to make your own appointment. On your browser, go to https://taxaidecville.wordpress.com/. Or you can call the volunteers and ask them to help you set up an appointment (or to change your appointment). There is a new phone number this year: call this number and leave a message: 434-373-0984

Next BOS Meetings:

Day	Date	Time	Purpose	Location
Wed	**Feb 8**	**7:00 PM**	**Budget Work Session – Constitutional Officer Briefs**	**Performing Arts Center**
Wed	**Feb 15**	**5:00 PM**	**Budget Work Session – FCPS FY24 Adopted Budget Presentation**	**Performing Arts Center**
Wed	**Feb 15**	**7:00 PM**	**Regular Meeting**	**Performing Arts Center**

5 - PUBLIC COMMENTS #1

At 5:11pm, Chair Booker opened the first round of Public Comments.

- Chris Potter, 474 Covered Bridge Rd, commented on the sewage incident at the Kents Store Fire Station.

With no one else wishing to speak, Chair Booker closed the first round of Public Comments at 5:14pm.

6 - PUBLIC HEARING

None.

7 - ACTION MATTERS

TJPDC Hazard Mitigation Plan Adoption – Ian S. Baxter, MPP, Planner II, TJPDC

The Thomas Jefferson Planning District Commission has been working on the regional Hazard Mitigation Plan update with staff from all localities in the planning district, including Fluvanna. After approval from FEMA, the Hazard Mitigation Plan needs to be adopted by each governing board in the region.

MOTION:	Adopt the resolution entitled "Fluvanna County Adoption of the Regional Natural Hazard Mitigation Plan."				
MEMBER:	Mrs. Booker	Mrs. Eager	Mr. Fairchild	Mr. O'Brien	Mr. Sheridan
ACTION:		Motion	Second		
VOTE:	Yes	Yes	Yes	Absent	Absent
RESULT:	**3-0**				

JAUNT Annual Shareholders Meeting Proxy Designation – Eric Dahl, County Administrator

Jaunt, Inc. held its annual shareholders' meeting on Wednesday, October 12, 2022. Jaunt needed the governing body to appoint a proxy to vote its shares at that meeting. Proxies elect executive officers to the Jaunt Board of Directors, may be called upon to appoint the executive director position, and cast votes on any other matters that may come before them at shareholders' meetings.

Jaunt may have recurring needs to convene its shareholders such as for the appointment of new directors which require shareholder action. This proxy will allow more open ended participation for a 12 month or longer period. The designated proxy may be a Board of Supervisors member, appointed Jaunt Board Members, or the County Administrator.

MOTION:	Approve the designation of Hal Morgan to act as proxy at the annual meeting and any special meetings of the shareholders of Jaunt upon all such matters as may come before the shareholders, including without limitation the election of directors; this appointment shall be valid for the following term: For twelve months from the date of this appointment.				
MEMBER:	Mrs. Booker	Mrs. Eager	Mr. Fairchild	Mr. O'Brien	Mr. Sheridan
ACTION:		Second	Motion		
VOTE:	Yes	Yes	Yes	Absent	Absent
RESULT:	**3-0**				

FY23 American Rescue Plan Act Tourism Recovery Program Grant – Jennifer Schmack, Director of Economic Development and Tori Melton, Director of Finance

The American Rescue Plan Act Tourism Recovery Program Grant application was submitted on December 20, 2022. Award notification was received on January 17, 2023. Funds will be used to create a full branding and marketing campaign focusing tourism outreach efforts on visitors looking for a relaxing daytrip featuring agribusinesses, art, history, outdoor recreation, and rural scenes.

MOTION #1:	Ratify the submission of the application for the FY23 ARPA Tourism Recovery Grant in the amount of $60,000 for supporting tourism marketing.				
MEMBER:	Mrs. Booker	Mrs. Eager	Mr. Fairchild	Mr. O'Brien	Mr. Sheridan
ACTION:		Second	Motion		
VOTE:	Yes	Yes	Yes	Absent	Absent
RESULT:	**3-0**				

MOTION #2:	Authorize the County Administrator to execute contracts and agreements associated with this grant, subject as to form by the County Attorney; and authorize a supplemental appropriation in the amount of $60,000 to the Economic Development Budget in FY23 for the ARPA Tourism Recovery Grant, with funding to come from this state grant award.				
MEMBER:	Mrs. Booker	Mrs. Eager	Mr. Fairchild	Mr. O'Brien	Mr. Sheridan
ACTION:		Second	Motion		
VOTE:	Yes	Yes	Yes	Absent	Absent
RESULT:	**3-0**				

7A – BOARDS AND COMMISSIONS

None.

8 – PRESENTATIONS

None.

9 - CONSENT AGENDA

The following items were approved under the Consent Agenda for February 1, 2023:

- *Minutes of January 18, 2023* – Caitlin Solis, Clerk to the Board
- *VDOT Secondary Road Acceptance – Charney Way* – Eric Dahl, County Administrator
- *Job Description update Information Technology Technician to Information Technology Specialist* – Director of Human Resources, Donna Snow
- *Draper Aden Project Agreement # 12 - Fork Union Business Park Subdivision Plat* – Donna Allen, Purchasing Officer and Jennifer Schmack, Director of Economic Development
- *FY23 School Resource Officer Grant Supplemental Appropriation* – Tori Melton, Director of Finance

MOTION:	Approve the consent agenda, for the February 1, 2023 Board of Supervisors meeting.				
MEMBER:	Mrs. Booker	Mrs. Eager	Mr. Fairchild	Mr. O'Brien	Mr. Sheridan
ACTION:		Motion	Second		
VOTE:	Yes	Yes	Yes	Absent	Absent
RESULT:	**3-0**				

10 - UNFINISHED BUSINESS

None.

11 - NEW BUSINESS

Resolution Recognizing Caleb Kimble – Eagle Scout

MOTION:	Adopt the resolution entitled "Recognizing Caleb Kimble for Award of Eagle Scout Status."				
MEMBER:	Mrs. Booker	Mrs. Eager	Mr. Fairchild	Mr. O'Brien	Mr. Sheridan
ACTION:		Motion	Second		
VOTE:	Yes	Yes	Yes	Absent	Absent
RESULT:	**3-0**				

12 - PUBLIC COMMENTS #2

At 5:39pm, Chair Booker opened the second round of Public Comments. With no one wishing to speak, Chair Booker closed the second round of Public Comments at 5:39pm.

13 - CLOSED MEETING

MOTION:	At 5:40pm, move the Fluvanna County Board of Supervisors enter into a closed meeting, pursuant to the provisions of Section 2.2-3711 A.6, A.7, A.8 & A.19 of the Code of Virginia, 1950, as amended, for the purpose of discussing Investment of Funds – Promotional Materials for Economic Development, Litigation – Flint Condemnation, Legal Matters – Former Bremo Power Station, Public Safety – Structure of Emergency Services, and Condition of Kents Store Fire House.

MEMBER:	Mrs. Booker	Mrs. Eager	Mr. Fairchild	Mr. O'Brien	Mr. Sheridan
ACTION:		Second	Motion		
VOTE:	Yes	Yes	Yes	Absent	Absent
RESULT:	**3-0**				

MOTION:	At 7:02pm, move Closed Meeting be adjourned and the Fluvanna County Board of Supervisors convene again in open session and "BE IT RESOLVED, the Board of Supervisors does hereby certify to the best of each member's knowledge (i) only public business matters lawfully exempted from open meeting requirements under Section 2.2-3711-A of the Code of Virginia, 1950, as amended, and (ii) only such public business matters as were identified in the motion by which the closed meeting was convened were heard, discussed, or considered in the meeting."				
MEMBER:	Mrs. Booker	Mrs. Eager	Mr. Fairchild	Mr. O'Brien	Mr. Sheridan
ACTION:		Second	Motion		
VOTE:	Yes	Yes	Yes	Absent	Absent
RESULT:	**3-0**				

BUDGET WORK SESSION

County Administrator's FY24 Budget Proposal and FY25-28 Projected Budgets (The Five-Year Financial Plan) – Eric Dahl, County Administrator

Budget Development

- Carefully review revenue projections from all existing revenue sources to minimize the need for tax rate increases.
- Perform a detailed review of all expenditure budgets requested.
- Incorporate essential personnel requests to best support Fluvanna's service, expansion and technical needs.
- Support staff with an adequate compensation and benefits plan.
- Identify any potential funding shortfalls for further discussion during the budget process.
- Determine any service gaps or new services needed.
- Refine and update the future years planning budget projections.

Budget Pressures

- New and expanding water and sewer infrastructure needs in our designated growth areas to support economic development.
- Increased costs for providing public safety:
  - A newly created Department of Emergency Services to provide paid County staff EMS providers
  - Aging Sheriff's Office patrol vehicles and Fire & Rescue apparatus.
- Aging facilities, fleet and equipment that require significant maintenance.
  - The County and Schools combined have over 33 buildings with HVAC and ~300 vehicles.
- The increasing cost of goods and services.
  - Over the last 12 months, the Consumer Price Index (CPI) increased 6.5%.
- Maintaining competitive salaries and benefits for our County and School System staff.
- Our high existing debt load**.**

FY23 Budget Proposal Highlights

- Budget totals $99,799,941
  - Real Estate tax rate of $0.81 (Equalized Tax Rate $0.775)(FY23 - $0.87)
    - Results in a tax increase of 4.52% for the average homeowner.
  - Increase to the Personal Property tax rate, from $3.70 per $100 of assessed value to $4.15 per $100 of assessed value).
  - No change to the Business and Public Utility Personal Property tax rates (Remains at $2.90 per $100 of assessed value)
  - No change to the Machinery & Tools tax rate (Remains at $1.90)
- Overall increase in total County expenditures by $677,157, a 0.7% increase from the FY23 amended budget

Revenues

- Projected total revenues will decrease by $16.7 million above the FY22 amended budget amount. The most significant contributing factors are:
  - Net Increase of $2.5m for in tax and local operating revenue, mainly in part to increased real estate revenue, increase in sales tax revenue and ARPA funds.

- Decrease of $3.4m in Schools state/federal/other local revenue, not including the County contribution.
- Net increase of $647K in Debt Service revenue, due to the increased use of fund balance and realizing the full Virginia Public School Authority debt service rebate.
- Net increase of $910K for CIP project funding, utilizing additional use of fund balance, grants and other sources to fund CIP projects.
- Decrease of $21K in Enterprise Funds.
  - Net increase of $16K in Social Services state/federal revenue.

Revenue Category	FY23 Budget (Amended)	FY24 COAD Proposed	Percent Change
GENERAL FUND OPERATING REVENUE	$55,910,813	$58,430,278	4.5%
SCHOOLS	$33,413,864	$30,018,454	-10.2%
SOCIAL SERVICES	$2,226,640	$2,243,039	0.7%
DEBT SERVICE	$1,417,279	$2,065,084	45.7%
CAPTIAL IMPROVEMENT PLAN (CIP)	$3,890,700	$4,800,985	23.4%
ENTERPRISE	$2,263,488	$2,242,101	-0.9%
REVENUES TOTAL	$99,122,784	$99,799,941	0.7%

Expenditures

- Departments, Constitutional Officers and Agency budgets have been reviewed in detail and funded at reasonably levels to cover day-to-day operational requirements
  - The County has not received Fluvanna County Public School's formal funding request, since the FY2024 Budget Request has not yet been adopted by the School Board.
    - The School System's full budget request will be presented to the Board of Supervisors on February 15, 2023.

Expenditure Category	FY23 Budget (Amended)	FY24 COAD Proposed	Percent Change
GENERAL GOVERNMENT	$3,427,370	$3,779,776	10.3%
JUDICIAL ADMINISTRATION	$1,496,092	$1,579,365	5.6%
PUBLIC SAFETY	$10,911,854	$12,491,233	14.5%
PUBLIC WORKS	$3,101,667	$3,152,878	1.7%
HEALTH AND WELFARE	$6,678,472	$6,816,020	2.1%
PARKS, RECREATION & CULTURAL	$1,183,997	$1,253,332	5.9%
COMMUNITY DEVELOPMENT	$1,394,365	$1,453,403	4.2%
NON-DEPARTMENTAL	$201,113	$961,718	378.2%
SCHOOLS	$53,141,625	$49,746,215	-6.4%
DEBT SERVICE	$10,064,899	$10,050,599	-0.1%
CAPITAL IMPROVEMENT PLAN (CIP)	$4,340,700	$5,250,985	21.0%
ENTERPRISE	$3,180,630	$3,264,417	2.6%
EXPENDITURES TOTAL	$99,122,784	$99,799,941	0.7%

- General Government
  - County Attorney - $121,722 total: The County is transitioning from a contractual County Attorney's office to a County Attorney department with County staff.
  - Information Technology- $139,548 total: $80,340 for (1) new IT System Engineer position, $25,000 for a new software subscription for the Vision 8 CAMA software and additional equipment costs for outfitting new positions and network infrastructure replacements.
- **Public Safety**
  - Sheriff's Office - $197,504 total: $79,629 for (1) new Court Deputy position, including needed equipment/supplies, $103,083 for operational increases for fuel, supplies and vehicle maintenance and $14,792 for a new policy and compliance solution for LEO's.
  - E-911 - $126,305 total: Subscriber replacements.
  - Emergency Services- $1,626,206 total: The County has created a new department of Emergency Services in FY23, which includes hiring an EMS Supervisor, 16 EMT ALS/BLS providers, part-time EMT ALS/BLS providers and the associated personal and operational costs with the new department. FY24 is the first year that this new department is expected to be fully operational. This budget also includes a new position for a Chief of Fire and EMS, to further the planning efforts of expanded Emergency Services for the County.
- **Health and Welfare**
  - CSA Purchase of Services - $99,500 total**:** Increases for community based services for clients of the Children's Service Act.
- **Non Departmental**
  - Staff Pay Plan and Health Insurance - $656,718 total cost
- **Employee Compensation**
  - Maintain competitive compensation to attract and retain high quality employees.
  - 5% COLA for all County staff $557K (1% = $111K).
  - $155K state/fed funding offset for a 5%.
- **Health Insurance**
  - Health insurance cost increases have been significant fiscal influences every year.
  - The budget includes $99,556 to cover a portion (5.0%) of a potential 10% increase, and lessen any adverse impact on employees.

Year	Effective Date	Employee Pay Raises	
FY14	1-Jul-13	2.00%	Targeted up to 20%
FY15	1-Jul-14	1.50%	Targeted up to 13%
FY16	1-Sep-15	1.50%	
FY17	1-Dec-16	2.00%	Targeted up to 10%
FY18	1-Jan-18	2.00%	
FY19	1-Jul-18	2.00%	Targeted up to 10%
FY20	1-Jul-19	3.00%	Targeted up to 10%
FY21	1-Jul-20	1.00%	$500/$250 Bonuses Mid-Year
FY22	1-Jul-21	5.00%	$3,000/$1,500/$750/ $375 Hazard Pay Bonuses Mid-Year & Mid-Year Targeted Raises for Sheriff's Office and E911
FY23	1-Jul-22	5.00%	COLA and Compensation Study implemention to bring pay up to the new pay band minimum, plus 3-6%

- Each 1% premium increase represents approximately $19,911

- **New Positions**

Position	Department	Notes
Included in FY2024 Budget Proposal (planned for July 2023)		
County Attorney	County Attorney	New FT Position
Assistant County Attorney	County Attorney	New FT Position
Paralegal/Legal Secretary	County Attorney	New FT Position
IT System Engineer	IT	New FT Position
Court Deputy	Sheriff's Office	New FT Position
Carpenter	Facilities	New FT Position
Small Business and Tourism Specialist	Economic Development	New FT Position
Chief of Fire and EMS	Emergency Services	New FT Position
EMS Supervisor	Emergency Services	New FT Position
(16) EMT ALS/BLS Providers	Emergency Services	New FT Position's
Part-Time EMT ALS/BLS Providers	Emergency Services	New FT Position's
Asst. County Administrator (incl. Supervision for 4-5 Departments)	County Administration	Position Upgrade
Director of Public Utilities (convert from Asst. Director of Public Works – Utilities)	Public Utilities	Position Upgrade
Park Maintenance Worker (convert PT to FT)	Parks and Recreation	Position Upgrade
Not Included in FY2024 Budget Proposal (planned for July 2023)		
HVAC Apprentice	Facilities	New FT Position

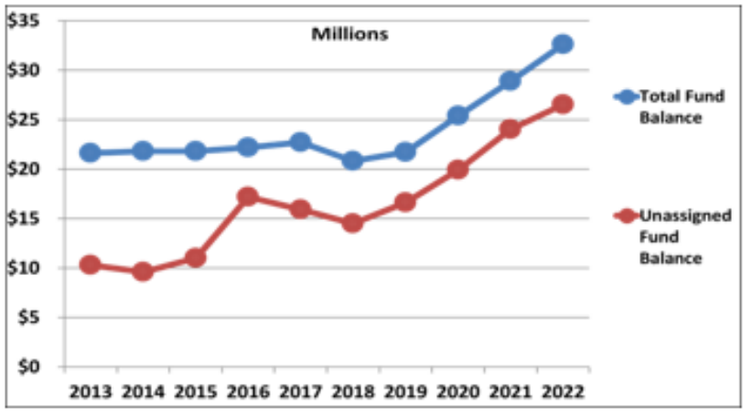
Capital Projects

- The County has made a practice of using unassigned fund balance to fund one-time expenditures.
- Many requested projects of less urgency were delayed until later fiscal years to avoid affecting the tax rates, fund balance or debt service funding requirements.
- Cannot continue to defer essential maintenance, facilities, equipment, and vehicles; before long they will be beyond effective life, potentially compromise safety, or fail at a critical time of use.
  - Debt service financing may be required to maintain adequate and safe service levels for the community.

Project	Department/ Agency	$ Included	$ NOT Included
Vision 8 CAMA Software	Commissioner of the Revenue	$75,000	
	Subtotal	**$75,000**	**$0**
PG Concrete Slabs (2 structures)	P&R		$75,500
PG Park Playground Expansion (Inclusive Structure)	P&R	$53,500	
PG Park Stage Cover	P&R		$70,000
Carysbrook Gym Flooring	P&R	$50,000	
	Subtotal	**$103,500**	**$145,500**
Capital Reserve Maintenance Fund	Public Works	$250,000	
Public Works Major Equipment	Public Works	$120,000	$125,000
PW Equipment Storage Shed	Public Works	$100,000	
Fluvanna Community Center	Public Works	$150,000	$500,000
Fluvanna County Convenience Center	Public Works		$390,000
Library Interior Painting and Carpet	Public Works	$200,000	
Public safety Interior Painting and Carpet	Public Works	$175,000	
Social Services Vehicle	Public Works	$50,000	$20,000
Fluvanna County Buildings – Major Paving Project	Public Works		$900,000
Historic Courthouse Restoration	Public Works	$307,985	$452,673
County Vehicles	Public Works	$200,000	$50,000
Public Utilities Carysbrook Waterline Upgrade	Public Works	$75,000	
	Subtotal	**$1,627,985**	**$2,437,673**
Sheriff Vehicles	Sheriff's Office	$573,250	
	Subtotal	**$573,250**	**$0**
Ambulance 553 - LMVRS	Fire & Rescue	$388,170	
Brush 30 – Kents Store	Fire & Rescue		$221,150
Tanker 31 - Kents Store	Fire & Rescue	$769,300	
Fire and Rescue Computer Replacement	Fire & Rescue	$233,780	
Engine 20 Equipment – Fork Union	Fire & Rescue		$150,000
Fire Company UTV – Fork Union	Fire & Rescue		$65,000
	Subtotal	**$1,391,250**	**$436,150**
Capital Reserve Maintenance Fund	Schools	$200,000	
Carysbrook Elementary Generator	Schools		$500,000
Central Elementary Bathroom Remodel and Renovation	Schools		$1,500,000
FCPS Division Wireless Upgrades	Schools	$600,000	
FCPS Paving and Resurfacing	Schools		$250,000
FMS Annex Floor & Bleachers	Schools		$175,000
Schools Buses	Schools	$580,000	
Student Transport/Facility Vehicles	Schools	$100,000	
	Subtotal	**$1,480,000**	**$2,425,000**

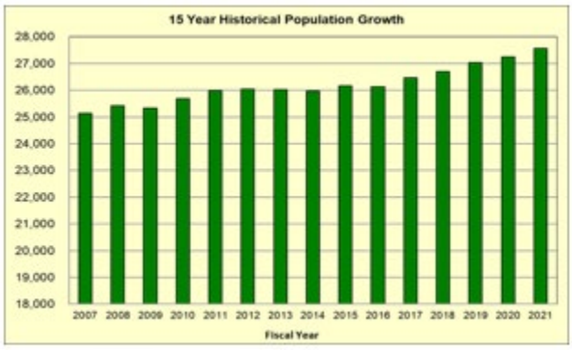
Fund Balance

- Fluvanna continues to adhere to a conservative fund balance policy that maintains unassigned restricted fund balance at a minimum of 12% of General Fund revenues and the School Fund revenues, less the County's funding portion from the General Fund.
- As of June 30, 2022:
  - Unassigned restricted fund balance is $10,215,566.
  - Unassigned unrestricted fund balance is currently $15,986,048 (use toward capital projects).



Economic Factors

- Annual Unemployment Rate
  - US 5.3%, VA 3.9% & Fluvanna 3.3%
  - Fluvanna Monthly Unemployment Rate
    - Nov. 2022: 2.6%
- Sales Tax
  - 2020 to 2021 increased 8.3%
    - Changes implemented for online retailers making more than $100,000 in annual gross sales to collect and pay sales tax starting July 1, 2019.
    - Another reason for the County seeing the Local Option Sales Tax increase is due to residents shopping locally during the coronavirus pandemic.
- Population Growth
  - 2000 to 2010 increased 28.2%
    - 25,691
  - 2010 to 2020 increased 6.1%
    - 27,249
- Total Building Permits
  - 2018: 408
  - 2019: 609 (49%)
  - 2020: 624 (3%)
  - 2021: 631 (1%)
  - 2022: 840 (33%)
- Permits for new home construction
  - 2018: 123
  - 2019: 120 (-2%)
  - 2020: 212 (77%)
  - 2021: 184 (-13%)
  - 2022: 164 (-11%)



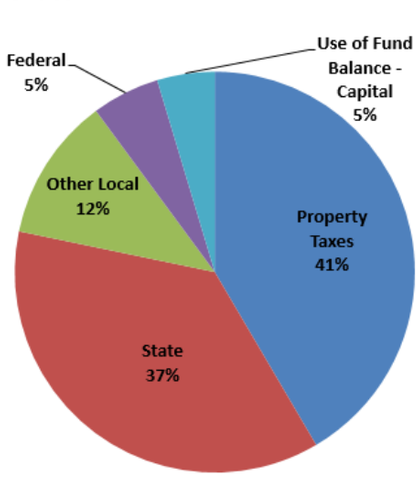
New Revenue Sources

- Staff continues to review and investigate other potential new and existing revenue sources. New sources would include:
  - Meals Tax: A new local taxing authority was passed by the General Assembly that allows Counties to now implement a meals tax without a referendum, effective July 1, 2020. The Board considered the option of implementing a meals tax in our County (as in most surrounding counties) and put the referendum question to the voters in November 2018, but it failed to pass. The new legislation includes that a County may not impose a meals tax until six years after a referendum failed. With this language, Fluvanna is prohibited from adopting a meals tax ordinance until 2024. A very conservative estimate shows that a meal tax could generate *$300K-$600K annually*, which equates to 1-2 cents of real estate tax. *The board could consider implementing this tax in this FY24 budget.*

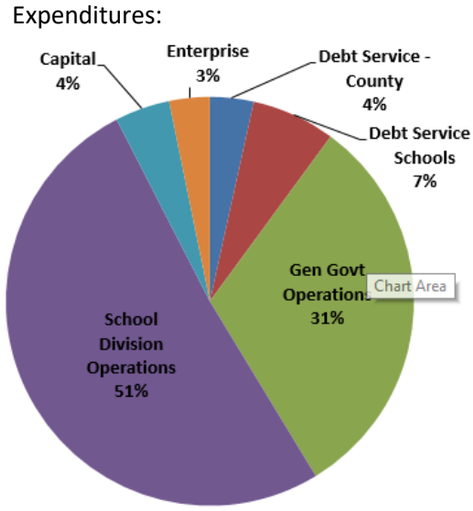
FY24 Revenues and Expenditures – Tori Melon, Director of Finance

FY24 COAD Proposed Budget - $99,799,941

Revenues:



Expenditures:



General Fund Revenue Summary – FY22-24

Revenue Source	FY22 ACTUAL	FY23 Amended Budget	FY24 COAD	FY24 to FY23 Budget (Inc/Dec)
General Property Taxe	$38,898,133	$40,394,191	$41,454,763	$1,060,572
Other local taxes	4,811,256	7,566,180	5,566,748	($1,999,432)
Permits and fees	421,308	411,050	434,925	$23,875
Fines and forfeitures	40,495	50,800	40,800	($10,000)
Use of money	-36,902	140,000	190,000	$50,000
Charges for services	1,177,712	968,620	1,059,920	$91,300
Miscellaneous	108,672	52,500	67,000	$14,500
Recovered Cost	86,412	181,712	237,924	$56,212
Commonwealth	9,406,886	8,474,173	8,586,214	$112,041
Federal	2,808,168	1,765,128	3,960,155	$2,195,027
Total	$57,722,140	$60,004,354	$61,598,449	$1,594,095

Top 4 Local Revenue Sources

Revenue Source	FY22 Actual	FY23 Amended	FY24 COAD	FY24 to FY23 Inc/Dec
Real Estate Taxes	$25,330,021	$25,149,183	$26,618,952	$ 1,469,769
Personal Property Taxes	8,599,090	11,031,546	11,201,201	169,655
Public Service Corporatior	4,518,233	4,128,305	3,550,334	(577,971)
Local Sales Taxes	2,572,975	2,400,000	2,800,000	400,000

Commonwealth of VA Revenue

PPTRA	$2,996,570
Compensation Board	$2,317,989
CSA	$1,962,277
Social Services	$784,397
Miscellaneous	$492,938
TOTAL	$8,554,171

Real Estate Tax

#	Category	FY24 Residential	FY24 Commercial	Final Date
1	Total Assessed Real Estate Value	$3,863,632,100	$122,227,400	Supplements thru Oct.
2	Non-Taxable Real Estate Value	-$321,347,000	$0	
3	Total Taxable Real Estate Value	$3,542,285,100	$122,227,400	Supplements thru Oct.
4	Land Use, Conservation Easements, and Open Space Agreements (Est.)	-$303,925,700	N/A	April
5	Tax Relief for Elderly/Veterans (Est.)	-$83,100,000	N/A	April 1
6	Revised Taxable Real Estate Value	$3,155,259,400	$122,227,400	
7	Divided By	100	100	
8	Times Tax Rate	$0.810	$0.810	
9	Taxable Real Estate Revenue	$24,918,661	$990,042	
10	Collection Rate	97.5%	97.5%	
11	FY23 Budget Real Estate Tax	$24,918,661	$965,291	6

Real Estate Tax Rate Comparison

COUNTY/CITY	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Albemarle	0.766	0.799	0.819	0.839	0.839	0.839	0.854	0.854	0.854	0.854
Buckingham	0.44	0.50	0.50	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Charlottesville	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.96
Cumberland	0.68	0.74	0.74	0.78	0.78	0.78	0.78	0.77	0.75	0.75
Fluvanna	0.795	0.88	0.899	0.917	0.907	0.939	0.925	0.925	0.884	.0870
Goochland	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Greene	0.69	0.72	0.75	0.775	0.775	0.775	0.82	0.82	0.82	0.82
Louisa	0.65	0.68	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Nelson	0.60	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.65
Average	**0.678**	**0.724**	**0.736**	**0.753**	**0.752**	**0.756**	**0.761**	**0.761**	**0.753**	**0.657**

Real Estate Penny Calculation

Real Estate (Residential) Value/100	$31,552,594
Real Estate (Commercial) Value/100	$1,222,274
Public Utilities Value/100	$4,383,128
Mobile Homes Value/100	$21,277
Total Value/100	**$37,179,273**
Times $0.01	$0.01
Revenue generated by each $0.01 increase in tax rate (100% Collection Rate)	**$371,792**
Per Penny Amount (Collection Rates: 97.5% Real Estate, 100% Public Utilities, and 97.5% Mobile Homes)	**$363,594**

General Fund Expenditure Summary – FY22-24

Expenditure	FY22 Actual	FY23 Amended Budget	FY24 COAD	FY24 to FY23 Budget (Inc/Dec)
General Govt	$2,954,950	$3,427,370	$3,779,776	$352,406
Judicial Admin	1,371,150	1,496,092	1,579,635	$83,543
Public Safety	9,551,712	10,911,854	12,491,233	$1,579,379
Public Works	2,449,103	3,101,667	3,152,878	$51,211
Health & Welfare	7,128,419	6,678,472	6,816,020	$137,548
Education	17,348,937	19,727,761	19,727,761	$0
Parks, Rec. & Library	1,002,001	1,183,997	1,253,332	$69,335
Comm. Development	1,312,087	1,394,365	1,453,403	$59,038
Non-departmental	43,963	201,113	961,718	$760,605
Debt Service	8,931,437	10,064,899	10,050,599	($14,300)
Total	**$52,093,759**	**$58,187,590**	**$61,266,355**	**$3,078,765**

14 - ADJOURN

MOTION:	Adjourn the regular meeting of Wednesday, February 1, 2023 at 8:06pm.				
MEMBER:	Mrs. Booker	Mrs. Eager	Mr. Fairchild	Mr. O'Brien	Mr. Sheridan
ACTION:		Second	Motion		
VOTE:	Yes	Yes	Yes	Absent	Absent
RESULT:	**3-0**				

ATTEST: FLUVANNA COUNTY BOARD OF SUPERVISORS

_____ _____

Caitlin Solis
Clerk to the Board

Mozell H. Booker
Chair

BOARD OF SUPERVISORS
County of Fluvanna
Palmyra, Virginia

RESOLUTION No. 02-2023

FLUVANNA COUNTY ADOPTION OF THE REGIONAL NATURAL HAZARD MITIGATION PLAN

WHEREAS, the Disaster Mitigation Act of 2000, as amended, requires that local governments develop, adopt and update natural hazard mitigation plans in order to receive certain federal assistance; and,

WHEREAS, the Thomas Jefferson Planning District's Regional Natural Hazard Mitigation Plan has been prepared in accordance with FEMA requirements at 44C.F.R. 201.6; and,

WHEREAS, The County of Fluvanna has been involved in the preparation of the Regional Natural Hazard Mitigation Plan, with Debbie Smith representing the County on the Working Group and holding a work session with TJPDC staff to identify mitigation actions for inclusion in the plan, and,

WHEREAS, the Virginia Department of Emergency Management (VDEM) and the Federal Emergency Management Agency (FEMA) have approved the plan with no changes recommended; and,

WHEREAS, hazard mitigation is essential to protect life and property by reducing the potential for future damages and economic losses resulting from natural disasters;

NOW THEREFORE BE IT RESOLVED, the Fluvanna County Board of Supervisors does hereby adopt the Regional Natural Hazard Mitigation Plan

THE FOREGOING RESOLUTION WAS DULY AND REGULARLY ADOPTED by the Fluvanna County Board of Supervisors of Fluvanna County on this 1st day of February 2023.

	AYE	NAY	ABSTAIN	ABSENT	MOTION	SECOND
Mozell H. Booker, Fork Union District	X					
Patricia B. Eager, Palmyra District	X				X	
Chris Fairchild, Cunningham District	X					X
Anthony P. O'Brien, Rivanna District				X		
John M. Sheridan, Columbia District				X		

Attest:

_____

Mozell H. Booker, Chair
Fluvanna County Board of Supervisors

BOARD OF SUPERVISORS
County of Fluvanna
Palmyra, Virginia

RESOLUTION No. 03-2023

RESOLUTION APPOINTING PROXY TO ACT AT MEETINGS OF THE SHAREHOLDERS OF JAUNT, INC.

WHEREAS, the County of Fluvanna (the "County") is a shareholder of Jaunt, Inc. ("Jaunt"), which provides certain transit services to citizens within the County; and

WHEREAS, the County is entitled to participate in meetings of Jaunt's shareholders through the designation of a proxy who is authorized to vote on behalf of the County on matters including, but not limited to, the election of persons to Jaunt's Board of Directors; and

NOW, THEREFORE**,** the Fluvanna County Board of Supervisors resolves as follows:

1. Harold Morgan is hereby appointed to act as the County's proxy at the annual meeting and any special meetings of the shareholders of Jaunt upon all such matters as may come before the shareholders, including without limitation the election of directors.

2. The duration of this appointment shall be (select one):

   ☐ For twelve months from the date of this appointment; or

   ☐ Until the end of their term in office, including any renewals thereof.

3. The County Administrator is authorized and directed to fill out the Appointment of Proxy form attached hereto and to provide a copy of the same to Jaunt.

THE FOREGOING RESOLUTION WAS DULY AND REGULARLY ADOPTED by the Fluvanna County Board of Supervisors of Fluvanna County on this 1st day of February 2023.

	AYE	NAY	ABSTAIN	ABSENT	MOTION	SECOND
Mozell H. Booker, Fork Union District	X					
Patricia B. Eager, Palmyra District	X					X
Chris Fairchild, Cunningham District	X				X	
Anthony P. O'Brien, Rivanna District				X		
John M. Sheridan, Columbia District				X		

Attest:

_____

Mozell H. Booker, Chair
Fluvanna County Board of Supervisors

BOARD OF SUPERVISORS
County of Fluvanna
Palmyra, Virginia

RESOLUTION No. 04-2022

A Resolution to Take Streets in the Houchens Place Subdivision into the Secondary System of Highways in Fluvanna County, Virginia

At a regular meeting of the Board of Supervisors of Fluvanna County held at the Carysbrook Performing Arts Center at
5:00 PM on Wednesday, February 1, 2023, at which the following members were present, the following resolution was adopted by a majority of all members of the Board of Supervisors, the vote being recorded in the minutes of the meeting as shown below:

WHEREAS, the eligible streets described on the attached VDOT AM-4.3 from, fully incorporated herein by reference, are shown on plats recorded in the clerk's office of the Circuit Court of Fluvanna County; and

WHEREAS, the streets described in the Houchens Place Subdivision have been developed in Fluvanna County and the developer has constructed the streets in accordance with the plans submitted to and approved by the Virginia Department of Transportation and the streets have been inspected by the Office of the Land Development Engineer and found to be acceptable in the State Highway System; and

NOW, THEREFORE BE IT RESOLVED, on this 1st day of February, 2023, that the Fluvanna County Board of Supervisors hereby requests that the Virginia Department of Transportation add the described roads listed on the attached VDOT AM-4.3 form to the Secondary System of State Highways of Fluvanna County pursuant to Section 33.2-705 of the Code of Virginia, as amended, and the Subdivision Street Requirements; and

BE IT FURTHER RESOLVED, that the Fluvanna County Board of Supervisors guarantees a clear and unrestricted right-of-way, and any necessary easements for cuts, fills, and drainage; and

BE IT YET FURTHER RESOLVED that a certified copy of this resolution be forwarded to the Land Development Engineer for the Virginia Department of Transportation.

THE FOREGOING RESOLUTION WAS DULY AND REGULARLY ADOPTED by the Fluvanna County Board of Supervisors at a regular meeting of the Board held on the 1st day of February, 2023:

SUPERVISORS	AYE	NAY	ABSTAIN	ABSENT	MOTION	SECOND
Mozell H. Booker, Fork Union District	X					
Patricia B. Eager, Palmyra District	X				X	
Chris Fairchild, Cunningham District	X					X
Anthony P. O'Brien, Rivanna District				X		
John M. Sheridan, Columbia District				X		

Attest:

_____

Mozell H. Booker, Chair
Board of Supervisors
Fluvanna County, Virginia

BOARD OF SUPERVISORS
County of Fluvanna
Palmyra, Virginia

RESOLUTION No. 05-2023

A RESOLUTION RECOGNIZING CALEB KIMBLE AWARD OF EAGLE SCOUT STATUS

The Fluvanna County Board of Supervisors adopted the following resolution on Wednesday, February 1, 2023:

WHEREAS, the Boy Scouts of America was incorporated by Mr. William D. Boyce on February 8, 1910; and

WHEREAS, the Boy Scouts of America was founded to promote citizenship, training, personal development and fitness of individuals; and

WHEREAS, Caleb Kimble has completed all the requirements for becoming an Eagle Scout; and

WHEREAS, Caleb has been examined by an Eagle Scout Board of Review and deemed worthy of the Eagle Scout award; and

WHEREAS, Boy Scout Troop 154 will be convening an Eagle Scout Court of Honor on February 11, 2023 at 1:00 p.m. at Lake Christian Church, Palmyra, Virginia; and

WHEREAS, the Fluvanna County Board of Supervisors fully supports the programs of the Boy Scouts of America and recognizes the important services they provide to the youth of our Country.

NOW, THEREFORE BE IT RESOLVED that the Fluvanna County Board of Supervisors joins Caleb's family and friends in congratulating him on his achievements, the award of Eagle Scout status and acknowledges the good fortune of the County to have such an outstanding young man as one of its citizens.

THE FOREGOING RESOLUTION WAS DULY AND REGULARLY ADOPTED *by the Fluvanna County Board of Supervisors at a regular meeting of the Board held on the 1st day of February 2023, by the following vote:*

	AYE	NAY	ABSTAIN	ABSENT	MOTION	SECOND
Mozell H. Booker, Fork Union District	X					
Patricia B. Eager, Palmyra District	X				X	
Chris Fairchild, Cunningham District	X					X
Anthony P. O'Brien, Rivanna District				X		
John M. Sheridan, Columbia District				X		

Attest:

_____
Mozell H. Booker, Chair
Fluvanna County Board of Supervisors

FLUVANNA COUNTY BOARD OF SUPERVISORS
AGENDA ITEM STAFF REPORT

TAB E

MEETING DATE:	February 15, 2023					
AGENDA TITLE:	Adoption of the Fluvanna County Board of Supervisors February 8, 2023 Meeting Minutes.					
MOTION(s):	**I move the meeting minutes of the Fluvanna County Board of Supervisors Regular Meeting on Wednesday February 8, 2023, be adopted.**					
BOS 2 YEAR GOALS?	Yes	No	**If yes, list goals(s):**			
		X				
AGENDA CATEGORY:	Public Hearing	Action Matter	Presentation	Consent Agenda	Other	
				XX		
STAFF CONTACT(S):	Caitlin Solis, Clerk to the Board					
PRESENTER(S):	Eric Dahl, County Administrator					
RECOMMENDATION:	Approve					
TIMING:	Routine					
DISCUSSION:	None.					
FISCAL IMPACT:	N/A					
POLICY IMPACT:	N/A					
LEGISLATIVE HISTORY:	N/A					
ENCLOSURES:	Draft Minutes for February 8, 2023.					
REVIEWS COMPLETED:	Legal	Finance	Purchasing	HR	Other	
					X	

FLUVANNA COUNTY BOARD OF SUPERVISORS
REGULAR MEETING MINUTES
Carysbrook Performing Arts Center
8880 James Madison Hwy, Fork Union, VA 23055
February 8, 2023
Budget Work Session 7:00pm

MEMBERS PRESENT: Mozell Booker, Fork Union District, Chair
Patricia Eager, Palmyra District, Vice Chair

ABSENT: John M. (Mike) Sheridan, Columbia District
Tony O'Brien, Rivanna District
Chris Fairchild, Cunningham District

ALSO PRESENT: Eric M. Dahl, County Administrator
Kelly Belanger Harris, Assistant County Administrator
Fred Payne, County Attorney
Caitlin Solis, Clerk for the Board of Supervisors

1 - CALL TO ORDER, PLEDGE OF ALLEGIANCE, & MOMENT OF SILENCE

At 7:00pm, Chair Booker called to order the Budget Work Session of February 8, 2023. After the recitation of the Pledge of Allegiance, a moment of silence was observed.

- Mr. Payne commented on the lack of a quorum, only presentations are on the agenda, and no actions will be taken at this meeting.

BUDGET PRESENTATIONS

Treasurer – Linda Lenherr, Treasurer provided brief remarks in support of the FY24 Budget Request.

Commissioner of the Revenue – Andrew (Mel) Sheridan, Commissioner of the Revenue
FY24 Budget Request.
Mr. Sheridan focused on the following:

- Outstanding Staff –
  - 1 Chief Deputy
  - 3 Program Managers
- Deputies in Career Development Program
  - 4 Master Deputy Commissioners
- Recognized by State Compensation Board as fully accredited Commissioner of the Revenue Office
- Required Funding for Operations:

FY 2023	FY 2024
$44,470	$48,470

Anticipated Trends for FY24

- Increase in number of single family dwellings
- 2023 Reassessment completed (+13% average)
- Tax Relief Valuation (Real Estate) – No Significant Change
- Elderly Relief holds steady
  - Veterans Relief increase (Real Estate & Personal Property)
- Sales/Assessment Ratio: = > 98%

Mr. Sheridan thanked the Board for:

- Consistent funding
  - Both operational and personnel
- Excellent Support from all County staff
- Solid team environment!

Sheriff – Sheriff Eric Hess
Sheriff's Office Growth
Personnel

- Sworn Staff
  - Two new Sargent positions
    - Courts
    - Schools
  - Deputy Sheriff
- Non-Sworn Staff

Equipment

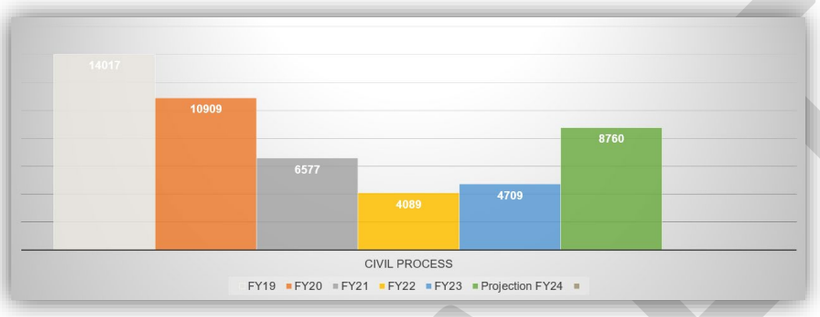
- Tasers
  - Old Taser contracts not supported

- New Taser contracts more funding
- Lexipol
  - Less than half the cost of a position
  - Legally vetted and defensible

FY22 ACFR - Annual Comprehensive Financial Report Numbers

Categories	FY21	FY22
Arrests	283	289
Traffic violations	681	1,081
Civil papers	4,089	4,709
E911:		
Total calls	N/A	31,505
Emergency calls	7,530	8,083

Civil Process and Enforcement



Court Days
- Circuit Court – 96 days of court coverage
- General District Court – 44 Days of court coverage
- Juvenile and Domestic Court – 108 days of court coverage

One New Court Sergeant
- During this budget cycle we will working on adding a court Sergeant to this division.
- LT Rensch retires… When he leaves the LT position will move from the court.

Other Areas of Focus
- LEXIPOL
- Develop winning strategies to keep ahead of the crime trends:
  - Policies that reflect up-to-date industry standards and best practices.
  - Daily scenario-based training that reinforces our agency's policies.
  - Timely updates in response to new legislation and case law.

Tasers
- De-escalate with confidence using an industry standard less lethal weapon.
- This year half of our current Tasers will no longer backed by the Axon Company. We cannot use the old weapons beyond June of this year.
- The second half of our Tasers will be inactivated in January of FY24.

Commonwealth's Attorney – Jeff Haislip, Commonwealth's Attorney
Mr. Haislip reported on the following:
- The Commonwealth's Attorney's Office budget remained the same for the most part.
  - Mileage needs to be increased, due to in-person meetings, and trainings
  - Part time position has increased to accommodate a new part time position or intern if needed.

Clerk of the Circuit Court– Tristana Pace Treadway, Clerk to the Circuit Court
- Circuit Court Clerk's FY24 Budget Overview
  - $4,700 increase for budget items that have increased in price
  - Postage, copier lease, contracts, etc.
  - Mileage increase due to in person meetings
- Court dockets have increased, jury trials have increased

Circuit Court Operations – Tristana Pace Treadway, Clerk to the Circuit Court
- Jury payment budget item has increased by $4,500
- Postal service increased to request more jurors

BUDGET DISCUSSION

None.

13 - CLOSED MEETING

None.

14 - ADJOURN

The work session ended at 8:07.

ATTEST: FLUVANNA COUNTY BOARD OF SUPERVISORS

_____ _____

Caitlin Solis
Clerk to the Board

Mozell H. Booker
Chair

FLUVANNA COUNTY BOARD OF SUPERVISORS
AGENDA ITEM STAFF REPORT

TAB F

MEETING DATE:	February 15, 2023					
AGENDA TITLE:	Virginia Department of Environmental Quality Local Government Guarantee					
MOTION(s):	**I move the Board of Supervisors approve "Appendix G - Local Government Guarantee Without Standby Trust Made by a Local Government" to demonstrate financial assurance for regulated underground storage tanks for the Virginia Department of Environmental Quality.**					
BOS GOALS?	Yes	No	**If yes, list goal(s):**			
		X				
AGENDA CATEGORY:	Public Hearing	Action Matter	Presentation	Consent Agenda	Other	
				X		
STAFF CONTACT(S):	Tori Melton, Director of Finance					
PRESENTER(S):	Tori Melton, Director of Finance					
RECOMMENDATION:	Approve					
TIMING:	Routine					
DISCUSSION:	The Virginia Department of Environmental Quality (DEQ) staff conducted a review of the petroleum underground storage tank financial assurance documentation on file for the tanks owned by the Fluvanna County Public Schools at the Fluvanna Public Schools Fuel Site. Per the Virginia Petroleum Underground Storage Tank Financial Responsibility Requirements, 9 VAC 25-590 (the Regulation), a tank owner must annually maintain a current mechanism to demonstrate financial assurance for regulated underground storage tanks and must submit evidence of compliance with the Regulation whenever requested to do so. DEQ has requested documentation demonstrating financial assurance and this will occur on an annual basis. The County is the primary entity responsible for financials on behalf of the Fluvanna County School Board, therefore the guarantee is required from the local government.					
FISCAL IMPACT:	The County could be responsible for a $20,000 per occurrence/$20,000 annual aggregate payment if DEQ determines corrective actions have not been performed arising out of releases from the schools underground storage tanks.					
POLICY IMPACT:	N/A					
LEGISLATIVE HISTORY:	N/A					
ENCLOSURES:	• Appendix G - Local Government Guarantee Without Standby Trust Made by a Local Government -					

	• Appendix C – Letter from Chief Financial Officer				
REVIEWS COMPLETED:	Legal	Finance	Purchasing	HR	Other
	X	**X**			**X**

APPENDIX G

Local Government Guarantee Without Standby Trust
Made by a Local Government

Guarantee made this____ ***day of _____, 2023*** by ***Fluvanna County,*** a local government organized under the laws of ***the Commonwealth of Virginia***, herein referred to as guarantor, to Virginia Department of Environmental Quality and to any and all third parties, and obliges, on behalf of ***the Fluvanna County School Board, a political subdivision of the Commonwealth of Virginia ("FCSB").***

Recitals

(1) Guarantor meets or exceeds the local government financial test requirements of 40 CFR Part 280.105.

(2) ***FCSB*** owns or operates the following underground storage tank(s) covered by this guarantee: (1) 10,000 gallon diesel tank located at the Fluvanna Public Schools Fuel Site (6026035) 131 Carysbrook Rd, Fork Union, VA 23055 and (1) 10,000 gallon gasoline tank located at the Fluvanna Public Schools Fuel Site (6026035) 131 Carysbrook Rd, Fork Union, VA 23055 This guarantee satisfies 40 CFR Part 280, Subpart H requirements for assuring funding for "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases" arising from operating the above-identified underground storage tank(s) in the amount of ***$20,000.00*** per occurrence and ***$20,000.00*** annual aggregate.

(3) Incident to our substantial governmental relationship with ***FCSB***, guarantor guarantees to ***the Virginia Department of Environmental Quality*** and to any and all third parties and obliges that:

In the event that ***FCSB*** fails to provide alternative coverage within 60 days after receipt of a notice of cancellation of this guarantee and the Director of the Virginia Department of Environmental Quality (the Director) has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon written instructions from the Director shall make funds available to pay for corrective actions and compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

In the event that the Director determines that ***FCSB*** has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with 40 CFR part 280, subpart F, the guarantor upon written instructions from the Director shall make funds available to pay for corrective actions in an amount not to exceed the coverage limits specified above.

If ***FCSB*** fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by "sudden" and/or "nonsudden" accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the Director, shall make funds available to compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

(4) Guarantor agrees that, if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within 120 days of such failure, by certified mail, notice to ***FCSB***, as evidence by the return receipt.

(5) Guarantor agrees to notify ***FCSB*** by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within 10 days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of ***FCSB*** pursuant to 40 CFR part 280.

(7) Guarantor agrees to remain bound under this guarantee for so long as ***FCSB*** must comply with the applicable financial responsibility requirements of 40 CFR part 280, Subpart H for the above identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to ***FCSB***, such cancellation to become effective no earlier than 120 days after receipt of such notice by ***FCSB***, as evidenced by the return receipt. If notified of a probable release, the guarantor agrees to remain bound to the terms of this guarantee for all charges arising from the release, up to the coverage limits specified above, notwithstanding the cancellation of the guarantee with respect to future releases.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of ***FCSB*** under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of ***FCSB*** arising from, and in the course of employment by ***FCSB***;

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by ***FCSB*** that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which ***FCSB*** is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a

contract or agreement entered into to meet the requirements of 40 CFR part 280.93.

(9) Guarantor expressly waives notice of acceptance of this guarantee by ***Virginia Department of Environmental Quality***, by any or all third parties, or by ***FCSB.***

I hereby certify that the wording of this guarantee is identical to the wording specified in 40 CFR part 280.106(d) as such regulations were constituted on the effective date shown immediately below.

Effective date:_____

Fluvanna County

By:_____
Eric M. Dahl, County Administrator

APPENDIX C

Letter from Chief Financial Officer

I am the chief financial officer of Fluvanna County. This letter is in support of the use of the financial test of self-insurance to demonstrate financial responsibility for taking corrective action and/or compensating third parties for bodily injury and property damage caused by sudden accidental releases and/or nonsudden accidental releases in the amount of at least $20,000 corrective action and $20,000 third party liability per occurrence and $20,000 annual aggregate rising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this municipal financial test: (1) 10,000 gallon diesel tank located at the Fluvanna Public Schools Fuel Site (6026035) 131 Carysbrook Rd, Fork Union, VA 23055 and (1) 10,000 gallon gasoline tank located at the Fluvanna Public Schools Fuel Site (6026035) 131 Carysbrook Rd, Fork Union, VA 23055.

This owner or operator has not received an adverse opinion, or a disclaimer of opinion from an independent auditor on its financial statements for the latest completed fiscal year. Any outstanding issues of general obligation or revenue bonds, if rated, have a Moody's rating of Aaa, Aa, A, or Baa or a Standard and Poor's rating of AAA, AA, A, or BBB; if rated by both firms, the bonds have a Moody's rating of Aaa, Aa, A, or Baa and a Standard and Poor's rating of AAA, AA, A, or BBB.

Worksheet for Municipal Financial Test

Part I: Basic Information

1. Total Revenues

a. Revenues (dollars) 105,876,040

Value of revenues excludes liquidation of investments and issuance of debt. Value includes all general fund operating and non-operating revenues, as well as all revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity.

b. Subtract interfund transfers (dollars) 17,341,758

c. Total Revenues (dollars) 88,534,282

2.Total Expenditures

a. Expenditures (dollars) 101,519,829

Value consists of the sum of general fund operating and non operating expenditures including interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues.

b. Subtract interfund transfers (dollars) 17,341,758
c. Total expenditures (dollars) 84,178,071

3. Local Revenues

a. Total Revenues (from 1c) (dollars) 88,534,282
b. Subtract total intergovernmental transfers (dollars) 41,585,191
c. Local Revenues (dollars) 46,949,091

4. Debt Service

a. Interest and fiscal charges (dollars) 2,963,056
b. Add debt retirement (dollars) 6,810,930
c. Total Debt Service (dollars) 9,773,986

5. Total Funds (Dollars) 45,852,377.00

(Sum of amounts held as cash and investment securities from all funds, excluding amounts held for employee retirement funds, agency funds, and trust funds).

6. Population (Persons) 27,517

Part II: Application of Test

7. Total Revenues to Population

a. Total Revenues (from 1c) 88,534,282
b. Population (from 6) 27,517
c. Divide 7a by 7b 3,217.4395
d. Subtract 417 2,800.4395
e. Divide by 5,212 0.5373
f. Multiply by 4.095 2.2003

8. Total Expenses to Population

a. Total Expenses (from 2c) 84,178,071
b. Population (from 6) 27,517
c. Divide 8a by 8b 3,059.1297
d. Subtract 524 2,535.1297
e. Divide by 5,401 0.4694
f. Multiply by 4.095 1.9221

9. Local Revenues to Total Revenues

a. Local Revenues (from 3c) 46,949,091
b. Total Revenues (from 1c) 88,534,282

c. Divide 9a by 9b	0.5303
d. Subtract .695	-0.1647
e. Divide by .205	-0.8034
f. Multiply by 2.840	-2.2818

10. Debt Service to Population

a. Debt Service (from 4c)	9,773,986
b. Population (from 6)	27,517
c. Divide 10a by 10b	351.1981
d. Subtract 51	304.1981
e. Divide by 1,038	0.2931
f. Multiply by -1.866	-0.5469

11. Debt Service to Total Revenues

a. Debt Service (from 4c)	9,773,986
b. Total Revenues(from 1c)	88,534,282
c. Divide 11a by 11b	0.1104
d. Subtract .068	0.0424
e. Divide by .259	0.1637
f. Multiply by -3.533	-0.5783

12. Total Revenues to Total Expenses

a. Total Revenues (from 1c)	88,534,282
b. Total Expenses (from 2c)	84,178,071
c. Divide 12a by 12b	1.0517
d. Subtract .910	0.1417
e. Divide by .899	0.1577
f. Multiply by 3.458	0.5452

13. Funds Balance to Total Revenues

a. Total Funds (from 5)	45,852,377
b. Total Revenues (from 1c)	88,534,282
c. Divide 13a by 13b	0.5179
d. Subtract .891	-0.3731
e. Divide by 9.156	-0.0407
f. Multiply by 3.270	-0.1332

14. Funds Balance to Total Expenses

a. Total Funds (from 5) 45,852,377
b. Total Expenses (from 2c) 84,178,071
c. Divide 14a by 14b 0.5447
d. Subtract .866 -0.3213
e. Divide by 6.409 -0.0501
f. Multiply by 3.270 -0.1639

15. Total Funds to Population

a. Total Funds (from 5) 45,852,377
b. Population (from 6) 27,517
c. Divide 15a by 15b 1,666.3291
d. Subtract 270 1,396.3291
e. Divide by 4,548 0.3070
f. Multiply by 1.866 0.5729

16. Add 7f + 8f + 9f + 10f + 11f + 12f + 13f + 14f + 15f + 4.937 = 6.4734

I hereby certify that the financial index shown on line 16 of the worksheet is greater than zero and that the wording of this letter is identical to the wording specified in 40 CFR Part 280.105(c)as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

COUNTY OF FLUVANNA

"Responsive & Responsible Government"

P.O. Box 540
Palmyra, VA 22963
(434) 591-1910
Fax (434) 591-1911
www.fluvannacounty.org

TAB G

MEMORANDUM

Date: February 7, 2023
From: Finance Department
To: Board of Supervisors
Subject: **Accounts Payable Report for January 2023**

1. Staff recommends that the Board of Supervisors ratify the expenditures in the attached report and summarized below.

CATEGORY	AMOUNT
General	$1,513,170.51
Capital Improvements	$191,305.76
Debt Service	$1,207,732.67
Sewer	$1,878.01
Fork Union Sanitary District	$9,407.80
Zion Crossroads Water & Sewer	$16,057.07
TOTAL AP EXPENDITURES	**$2,939,551.82**
Payroll	$1,146,144.43
TOTAL	**$4,085,696.25**

MOTION

I move the Accounts Payable and Payroll be ratified for January 2023 in the amount of $4,085,696.25.

Encl:
AP Report

	A	B	C	D	F	G	H	I	J
1	**County of Fluvanna**			**From Date: 1/1/2023**					
2	**Accounts Payable List**			**To Date: 1/31/2023**					
4	**Vendor Name**	**Charge To**		**Description**	**Invoice Number**	**Invoice Date**	**Check Date**		**Check Amount**
5	**Fund # - 100 GENERAL FUND**								
6	**GENERAL FUND**								
7	MINNESOTA LIFE INS. CO	CLEARING ACCOUNT-		Payroll Run 1 - Warrant 012023	101519	1/20/2023	1/30/2023		798.71
8	VACORP	CLEARING ACCOUNT-		Payroll Run 1 - Warrant 010623	101173	1/6/2023	1/30/2023		1,646.54
9							**Total:**		**$2,445.25**
10									
11	**REAL ESTATE TAXES**								
12	BISKUP, JONI	R E 2022 - 1ST		RE 2022 47-8-24	101583	1/24/2023	1/24/2023		1,255.11
13	BOURNE, MARK A & STEPHANIE D	R E 2022 - 1ST		RE 2022 29-4-2	101175	1/5/2023	1/6/2023		596.82
14	CHAMBERS, JONATHAN A & CYNTHIA	R E 2022 - 1ST		RE 2022 50-A-77	101176	1/5/2023	1/6/2023		193.14
15	FRIAS, AMBER	R E 2022 - 1ST		RE 2022 18A-8-273	101182	1/5/2023	1/6/2023		72.55
16	HAMLETT, DAKOTA	R E 2022 - 1ST		RE 2022 18A-1-328	101178	1/5/2023	1/6/2023		865.73
17	HOLMES, ADRIAN V	R E 2022 - 1ST		RE 2022 18A-3-167	101179	1/5/2023	1/6/2023		702.52
18	LERETA	R E 2022 - 1ST		RE 2022 49-A-19D	101174	1/5/2023	1/6/2023		1,264.98
19	LUNIEWSKI, STEVEN JR & CARI L	R E 2022 - 1ST		RE 2022 18A-6-150	101183	1/5/2023	1/6/2023		755.15
20	MAYHEW, JOHN M & STEPHANIE	R E 2022 - 1ST		RE 2022 31-A-66B1	101184	1/5/2023	1/6/2023		1,631.68
21	NELSON, HOLLY M	R E 2022 - 1ST		RE 2022 18A-10-28	101186	1/5/2023	1/6/2023		709.05
22	REES, FRANCES S	R E 2022 - 1ST		RE 2022 11-2-2B	101187	1/5/2023	1/6/2023		19.57
23	SENSABAUGH, LAURA	R E 2022 - 1ST		RE 2022 50-16-2	101177	1/5/2023	1/6/2023		30.44
24	STOVER REVOCABLE TRUST	R E 2022 - 1ST		RE 2022 18A-11-40	101188	1/5/2023	1/6/2023		638.16
25	TURNER, CHRISTOPHER A & MARY A	R E 2022 - 1ST		RE 2022 38-3-3	101189	1/5/2023	1/6/2023		813.01
26	WASHINGTON, RYANT L & CAMILLA D	R E 2022 - 1ST		RE 2022 31-2-1	101181	1/5/2023	1/6/2023		273.61
27	WILLIAMS, DAVID C JR & TAMARA L	R E 2022 - 1ST		RE 2022 26-15-3	101190	1/5/2023	1/6/2023		639.99
28							**Total:**		**$10,461.51**
29									
30	**PERSONAL PROPERTY TAXES**								
31	GINA, DELUNA	P P 2022 - 1ST		PP 2022 31365	101202	1/5/2023	1/6/2023		116.78
32							**Total:**		**$116.78**
33									
34	**OTHER LOCAL TAXES**								
35	BARTH, BRIAN KEITH	ADMIN FEE TRAILER LICENSE		PP 2022 12691	101192	1/5/2023	1/6/2023		45.00
36	BARTH, MARY DENISE	ADMIN FEE VEHICLE LICENSE		PP 2022 30644	101193	1/5/2023	1/6/2023		45.00
37	BROWN, KEITH ALLEN	ADMIN FEE VEHICLE LICENSE		PP 2022 3691	101194	1/5/2023	1/6/2023		335.00
38	CHARLES, GARREN CHRISTIAN	ADMIN FEE VEHICLE LICENSE		PP 2022 12968	101196	1/5/2023	1/6/2023		82.15
39	DUDZIK, RACHEL LYNN	ADMIN FEE VEHICLE LICENSE		PP 2022 11980	101198	1/5/2023	1/6/2023		15.22
40	FERGUSON, LISA ANN	ADMIN FEE VEHICLE LICENSE		PP 2022 25234	101199	1/5/2023	1/6/2023		123.57
41	FIELDS, JAMES MICHAEL	ADMIN FEE VEHICLE LICENSE		PP 2022 4028	101200	1/5/2023	1/6/2023		25.43
42	FITCHETT, TYLER JAMES	ADMIN FEE VEHICLE LICENSE		PP 2022 31246	101201	1/5/2023	1/6/2023		48.34

	A	B	C	D	F	G	H	I	J
1	**County of Fluvanna**			**From Date: 1/1/2023**					
2	**Accounts Payable List**			**To Date: 1/31/2023**					
4	**Vendor Name**	**Charge To**		**Description**	**Invoice Number**	**Invoice Date**	**Check Date**		**Check Amount**
43	GARCIA RODRIGUEZ, ERIC GIOVANNI	ADMIN FEE VEHICLE LICENSE		PP 2019 18173	101584	1/24/2023	1/24/2023		2.91
44	GINA, DELUNA	ADMIN FEE VEHICLE LICENSE		PP 2022 31365	101202	1/5/2023	1/6/2023		183.89
45	GRAHAM, MORGAN TYLER	ADMIN FEE VEHICLE LICENSE		PP 2022 28507	101203	1/5/2023	1/6/2023		33.00
46	GUTIERREZ URQUILLA, MANUEL	ADMIN FEE VEHICLE LICENSE		PP 2022 33384	101204	1/5/2023	1/6/2023		87.22
47	HISTAND, PAUL DAVID	ADMIN FEE VEHICLE LICENSE		PP 2022 5517	101205	1/5/2023	1/6/2023		325.40
48	HOLLAND, JEFFREY ROBERT	ADMIN FEE VEHICLE LICENSE		PP 2022 204553	101206	1/5/2023	1/6/2023		569.13
49	MCCUTCHEON, JEFFREY ANDREW	ADMIN FEE VEHICLE LICENSE		PP 2022 29019	101207	1/5/2023	1/6/2023		118.48
50	MINGLEDORFF, JASON DANIEL	ADMIN FEE VEHICLE LICENSE		PP 2022 7305	101208	1/5/2023	1/6/2023		74.12
51	MOSER, BRADLEY R	ADMIN FEE VEHICLE LICENSE		PP 2022 26182	101209	1/5/2023	1/6/2023		19.01
52	MULLER, RAYMOND KEVIN	ADMIN FEE VEHICLE LICENSE		PP 2022 32080	101210	1/5/2023	1/6/2023		34.19
53	NEWTON, JUDITH DALE	ADMIN FEE VEHICLE LICENSE		PP 2022 14149	101211	1/5/2023	1/6/2023		76.80
54	PALMER, LINDSAY ELIZABETH	ADMIN FEE VEHICLE LICENSE		PP 2022 10705	101212	1/5/2023	1/6/2023		47.24
55	PETTY, JENNIFER LYNN	ADMIN FEE VEHICLE LICENSE		PP 2022 29264	101213	1/5/2023	1/6/2023		124.78
56	PICKRAL, DIANA PUSEY	ADMIN FEE VEHICLE LICENSE		PP 2022 228528	101214	1/5/2023	1/6/2023		39.02
57	SHELTON, DANIESHA QUANDRESE	ADMIN FEE VEHICLE LICENSE		PP 2022 7794	101215	1/5/2023	1/6/2023		34.07
58	VOGT, DAVID GREGORY	ADMIN FEE VEHICLE LICENSE		PP 2021 2820	101191	1/5/2023	1/6/2023		45.00
59	WITMER, RACHEL ELIZABETH	ADMIN FEE VEHICLE LICENSE		PP 2022 29851	101216	1/5/2023	1/6/2023		12.06
60							**Total:**		**$2,546.03**
61									
62	**PERMITS/FEES/LICENSES**								
63	JES CONSTRUCTION LLC	BUILDING PERMITS		PERMIT VOIDED BY CONTRACTOR-	010423	1/4/2023	1/6/2023		45.90
64	EMPWR SOLAR, LLP	BUILDING PERMITS		PV22-54 REFUND- OVERPAYMENT	012323-2	1/23/2023	1/27/2023		95.40
65							**Total:**		**$141.30**
66									
67	**BOARD OF SUPERVISORS**								
68	AMAZON CAPITAL SERVICES	OTHER OPERATING		ADMIN- GRADUATIONMALL 11X14	1ND3-GVDF-M73T	1/22/2023	1/27/2023		25.99
69	BANK OF AMERICA	CONVENTION AND		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		100.00
70	BANK OF AMERICA	OTHER OPERATING		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		78.91
71	FLUVANNA REVIEW	ADVERTISING		BOS- FR 3/8-13X, PG AD: PUBLIC	2023F1-9	1/5/2023	1/20/2023		375.00
72	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		161.26
73							**Total:**		**$741.16**
74									
75	**COUNTY ADMINISTRATOR**								
76	BANK OF AMERICA	DUES OR ASSOCIATION		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		20.00
77	BANK OF AMERICA	OTHER OPERATING		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		238.11
78	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		234.40
79	CIVICPLUS, LLC	CONTRACT SERVICES		ADMIN-ONLINE CODE HOSTING	247151	1/1/2023	1/20/2023		1,395.00
80	STAPLES CONTRACT & COMMERCIAL,	OFFICE SUPPLIES		MONTHLY STATEMENT FOR	8068771168	12/31/2022	1/6/2023		234.39

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81	VA INFORMATION TECHNOLOGIES	TELECOMMUNICATIONS		MONTHLY STATEMENT FOR	T453419	1/5/2023	1/12/2023		51.63
82	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		80.64
83							**Total:**		**$2,254.17**
84									
85	**COUNTY ATTORNEY**								
86	PAYNE & HODOUS, LLC.	COUNTY ATTY LEGAL-		MATTER: 13-7046,17-7997,17-	010423	1/4/2023	1/12/2023		10,000.00
87	PAYNE & HODOUS, LLC.	COUNTY ATTY LEGAL-		MATTER: 13-7046,17-7997,17-	010423	1/4/2023	1/12/2023		5,689.00
88	PAYNE & HODOUS, LLC.	COUNTY ATTY LEGAL- REAL		MATTER: 13-7046,17-7997,17-	010423	1/4/2023	1/12/2023		2,076.00
89	PAYNE & HODOUS, LLC.	COUNTY ATTY LEGAL-		MATTER: 13-7046,17-7997,17-	010423	1/4/2023	1/12/2023		2,237.00
90							**Total:**		**$20,002.00**
91									
92	**COMMISSIONER OF THE REVENUE**								
93	BANK OF AMERICA	SUBSISTENCE & LODGING		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		45.86
94	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULTIPLE COPIERS BLK AND	29668163	12/12/2022	1/12/2023		200.00
95	COMMISSIONERS OF THE REVENUE	CONVENTION AND		COR- PP II- OMNI (FOR PERSONAL	CODE 6441-169-1-90A1	1/4/2023	1/6/2023		300.00
96	JAMES RIVER SOLUTIONS	VEHICLE FUEL		COST OF FUEL FOR VARIOUS	010223	1/2/2023	1/6/2023		35.13
97	STAPLES CONTRACT & COMMERCIAL,	OFFICE SUPPLIES		MONTHLY STATEMENT FOR	8068771168	12/31/2022	1/6/2023		113.27
98	STONEWALL TECHNOLOGIES	PROFESSIONAL SERVICES		COR-PROJ-0001-CONSULTING	10000	12/31/2022	1/12/2023		300.00
99	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		40.32
100	VIRGINIA DEPT. OF MOTOR VEHICLES	PROFESSIONAL SERVICES		COR: OKTA RENEWAL USE	202232100098	11/17/2022	1/6/2023		195.00
101							**Total:**		**$1,229.58**
102									
103	**REASSESSMENT**								
104	PEARSON'S APPRAISAL SERVICE INC	PROFESSIONAL SERVICES		BILLING FOR APPRAISAL SRVCS-	INVOICE#9: 1/16/23	1/16/2023	1/27/2023		13,632.50
105							**Total:**		**$13,632.50**
106									
107	**TREASURER**								
108	AMAZON CAPITAL SERVICES	OFFICE SUPPLIES		TREASURER-SMEAD COLORED	1X4J-MLPT-JHK7	1/8/2023	1/12/2023		250.69
109	AMERICAN BUSINESS FORMS INC	POSTAL SERVICES		TREASURER-PRINT, PROCESS &	INV06426814	1/17/2023	1/27/2023		432.36
110	AMERICAN BUSINESS FORMS INC	PRINTING AND BINDING		TREASURER-PRINT, PROCESS &	INV06426814	1/17/2023	1/27/2023		405.00
111	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		132.96
112	MECHUMS RIVER SECURITY	LEASE/RENT		TREAS-QUARTERLY MONITORING	38362	1/1/2023	1/12/2023		75.00
113	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		40.32
114	VIRGINIA DEPT. OF MOTOR VEHICLES	DMV-ONLINE		TREASURER-ACCT# 546001282025	010523	1/5/2023	1/12/2023		4,125.00
115							**Total:**		**$5,461.33**
116									
117	**INFORMATION TECHNOLOGY**								
118	AMAZON CAPITAL SERVICES	ADP SUPPLIES		IT- SHOKZ WIRELESS ADAPTER	1K9W-N3L1-VFQC	12/21/2022	1/6/2023		1,246.21

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119	BANK OF AMERICA	ADP SERVICES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		1,128.22
120	BANK OF AMERICA	ADP SUPPLIES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		388.50
121	BANK OF AMERICA	BOOKS/PUBLICATIONS		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		749.00
122	BANK OF AMERICA	CONVENTION AND		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		753.16
123	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		50.95
124	FIREFLY	TELECOMMUNICATIONS		INTERNET MONTHLY STATEMENT	11068 JAN23	1/1/2023	1/6/2023		1,520.59
125	QUANTUM CORPORATION	ADP SERVICES		IT-QUANTUM SUPERLOADER 3,	60164235	1/10/2023	1/12/2023		2,089.92
126	VA INFORMATION TECHNOLOGIES	TELECOMMUNICATIONS		MONTHLY STATEMENT FOR	T453419	1/5/2023	1/12/2023		76.52
127	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		127.87
128							**Total:**		**$8,130.94**
129									
130	**FINANCE**								
131	BANK OF AMERICA	DUES OR ASSOCIATION		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		530.00
132	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		180.49
133	ROBINSON, FARMER, COX	PROFESSIONAL SERVICES		FY21 COST ALLOCATION PLAN	011323	1/13/2023	1/27/2023		51,820.00
134	THE ARTINA GROUP, INC.	OFFICE SUPPLIES		FINANCE-1099-MISC COPY A 2-UP	79953	1/3/2023	1/12/2023		464.26
135	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		40.32
136							**Total:**		**$53,035.07**
137									
138	**REGISTRAR/ELECTORAL BOARD**								
139	BANK OF AMERICA	OFFICE SUPPLIES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		152.50
140	DEMTECH VOTING SOLUTIONS INC	MACHINERY AND EQUIPMENT		REGISTRAR- HARDWARE: MERLIN	1496	4/19/2022	1/20/2023		234.00
141	ELECTION CENTER	DUES OR ASSOCIATION		BLUE MEMBERSHIP: JOYCE	234876001	1/1/2023	1/6/2023		200.00
142	JEFFERSON CENTRE PROPERTIES	LEASE/RENT		JAN. FLU CO RENT & JAN	010123/ 010123-56	1/1/2023	1/6/2023		150.00
143	PITNEY BOWES	POSTAL SERVICES		REGISTRAR-CONT#0040923484	3316892574	1/8/2023	1/20/2023		498.45
144	VA INFORMATION TECHNOLOGIES	TELECOMMUNICATIONS		MONTHLY STATEMENT FOR	T453419	1/5/2023	1/12/2023		206.70
145	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		45.32
146							**Total:**		**$1,486.97**
147									
148	**HUMAN RESOURCES**								
149	ANTHEM EAP	OTHER OPERATING		HR: EAP FEES 1/1/23- 1/31/23	205387299078	12/26/2022	1/6/2023		25.80
150	BANK OF AMERICA	EMPLOYEE RECOGNITION		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		2,348.58
151	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		70.31
152	VIRGINIA DEPARTMENT OF STATE	OTHER OPERATING		HR: CCRE SOR NAME SEARCH FOR	CJIS-18714	1/1/2023	1/6/2023		560.00
153							**Total:**		**$3,004.69**
154									
155	**GENERAL DISTRICT COURT**								
156	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		138.19

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157							**Total:**		**$138.19**
158									
159	**COURT SERVICE UNIT**								
160	DENNIS CRONIN	CONVENTION AND		REIMBURSE SILK MILL GRILL	010923	12/21/2022	1/12/2023		25.60
161	DENNIS CRONIN	MILEAGE ALLOWANCES		DECEMBER MILEAGE 372 MILES	DEC 2022	1/9/2023	1/12/2023		232.50
162	QUILL	OFFICE SUPPLIES		COURT SRVCS- OFFICE SUPPLIES-	30100366	1/11/2023	1/27/2023		93.97
163							**Total:**		**$352.07**
164									
165	**CLERK OF THE CIRCUIT COURT**								
166	AMAZON CAPITAL SERVICES	OFFICE SUPPLIES		CIRCUIT CT- TOPS THE LEGAL PAD	1RLV-L7Q4-3LJX	1/4/2023	1/6/2023		377.64
167	BANK OF AMERICA	BLDGS EQUIP REP & MAINT		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		273.53
168	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULTIPLE COPIERS BLK AND	29668163	12/12/2022	1/12/2023		385.33
169	CANON SOLUTIONS AMERICA, INC.	OFFICE SUPPLIES		CIRCUIT CT- COPIER SUPPLY QTY:	148196101	1/5/2023	1/27/2023		190.00
170	LOGAN SYSTEMS, INC.	PROFESSIONAL SERVICES		CIRCUIT CT-PROF SRVCS PER	57240	12/15/2022	1/6/2023		5,083.34
171	PITNEY BOWES	LEASE/RENT		COMM ATTY METER LEASE	3316873337	1/3/2023	1/6/2023		155.79
172	VERIZON WIRELESS	EDP EQUIPMENT		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		40.01
173							**Total:**		**$6,505.64**
174									
175	**CIRCUIT COURT JUDGE**								
176	AMAZON CAPITAL SERVICES	OFFICE SUPPLIES		CIRCUIT CT-KEURIG CARIBOU	1L9L-WCVX-4LVH	1/24/2023	1/27/2023		27.99
177	BANK OF AMERICA	OFFICE SUPPLIES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		8.51
178	CITY OF CHARLOTTESVILLE	PROFESSIONAL SERVICES		CIRCUIT CT-REIMBURSEMENT FOR	FY2023	1/6/2023	1/12/2023		9,507.13
179	ALLISON E MARCUM	COMPENSATION-		JURY DUTY 1/20/23	012023-13	1/20/2023	1/27/2023		690.00
180							**Total:**		**$10,233.63**
181									
182	**COMMONWEALTH ATTY**								
183	BANK OF AMERICA	DUES OR ASSOCIATION		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		57.00
184	BANK OF AMERICA	SUBSISTENCE & LODGING		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		487.87
185	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		203.54
186	JEFF HAISLIP	MILEAGE ALLOWANCES		CASC EXECUTVE PROGRAM	012123	1/21/2023	1/27/2023		83.58
187	MATTHEW BENDER & CO INC	BOOKS/PUBLICATIONS		COMM ATTY- VA CRIM LAW &	3532659X	1/3/2023	1/20/2023		204.10
188	MATTHEW BENDER & CO INC	MAINTENANCE CONTRACTS		COMM ATTY- LEXIS NEXIS	3094262449	12/31/2022	1/6/2023		151.00
189	NWS COMPANY LLC	BOOKS/PUBLICATIONS		COMM ATTY- 13 MONTH	6642226-B2	1/9/2023	1/20/2023		449.00
190	PITNEY BOWES PURCHASE PWR	POSTAL SERVICES		COMM ATTY- PITNEY BOWES	8000090009948667JAN	1/16/2023	1/27/2023		63.90
191	STAPLES CONTRACT & COMMERCIAL,	OFFICE SUPPLIES		MONTHLY STATEMENT FOR	8068771168	12/31/2022	1/6/2023		736.19
192	TREASURER OF VIRGINIA	MAINTENANCE CONTRACTS		COMM. ATTY-VPN-ANNUAL	23-C5866-VPN	1/11/2023	1/20/2023		72.00
193	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		40.32
194							**Total:**		**$2,548.50**

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195									
196	**SHERIFF**								
197	AARON HOLMAN	SUBSISTENCE & LODGING		PRE-AUTH- CSCJTA TRAINING	011323	1/13/2023	1/20/2023		216.50
198	ADVANCE AUTO PARTS	VEHICLE/POWER EQUIP		FCSO- SYLVANIA 9005BP-	7306236525665	12/31/2022	1/6/2023		97.14
199	AMAZON CAPITAL SERVICES	INVESTIGATIVE SERVICES		FCSO-IFIXMATE LCD SCREEN	1GML-HQQY-KFR1	1/8/2023	1/12/2023		28.99
200	AMAZON CAPITAL SERVICES	POLICE SUPPLIES		FCSO- OFFICIAL FBI-Q SHOOTING	1LNR-C7JQ-JCVC	12/31/2022	1/6/2023		524.94
201	AMAZON CAPITAL SERVICES	VEHICLE/POWER EQUIP		FCSO-AUTOGEN HEAVY DUTY	1NNN-197R-9JCT	12/24/2022	1/6/2023		308.13
202	AMERICAN UNIFORM SALES, INC	UNIFORM/WEARING APPAREL		FCSO- ARMORSKINS	00061368	1/17/2023	1/20/2023		479.41
203	AT&T MOBILITY	TELECOMMUNICATIONS		FCSO-MONTHLY BUSINESS LONG	7305055828001 J23	1/6/2023	1/20/2023		48.32
204	BANK OF AMERICA	AGRICULTURAL SUPPLIES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		25.26
205	BANK OF AMERICA	CONVENTION AND		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		($170.00)
206	BANK OF AMERICA	FOOD SUPPLIES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		443.36
207	BANK OF AMERICA	OFFICE SUPPLIES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		181.97
208	BANK OF AMERICA	POLICE SUPPLIES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		1,665.50
209	BANK OF AMERICA	PROFESSIONAL SERVICES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		100.00
210	BANK OF AMERICA	SUBSISTENCE & LODGING		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		903.56
211	BANK OF AMERICA	VEHICLE FUEL		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		1,269.34
212	CAMPBELL EQUIPMENT, INC.	VEHICLES REP & MAINT		FCSO-INSTALL SPARE	FCSD100	12/22/2022	1/6/2023		115.00
213	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		76.41
214	CANON FINANCIAL SERVICES, INC.	MAINTENANCE CONTRACTS		MULTIPLE COPIERS BLK AND	29668163	12/12/2022	1/12/2023		441.00
215	CELLEBRITE INC	INVESTIGATIVE SERVICES		FCSO- PHYSCIAL EXTRACTION	INVUS251438	1/9/2023	1/20/2023		6,100.00
216	CONNECT PARENT CORPORATION	TELECOMMUNICATIONS		FCSO-MONTHLY STATEMENT FOR	309797542DEC	12/16/2022	1/6/2023		2,823.74
217	ERIC HESS	SUBSISTENCE & LODGING		REIMBURSE-LEGISLATIVE	012023	1/20/2023	1/27/2023		228.90
218	FIREFLY	TELECOMMUNICATIONS		INTERNET MONTHLY STATEMENT	11068 JAN23	1/1/2023	1/6/2023		525.00
219	GALLS, LLC.	UNIFORM/WEARING APPAREL		FCSO-ROCKY ALPHA FORCE ZIP	022947123	12/12/2022	1/6/2023		4,530.01
220	ID NETWORKS INC	MAINTENANCE CONTRACTS		FCSO-ANNUAL SOFTWARE MAINT.	280179	1/1/2023	1/20/2023		2,746.00
221	JAMES RIVER SOLUTIONS	VEHICLE FUEL		COST OF FUEL FOR VARIOUS	010223	1/2/2023	1/6/2023		13,579.54
222	LARRY CRICKENBERGER	FOOD SUPPLIES		REIMBURESEMENT FOR TWO	LC01	1/4/2023	1/6/2023		6.24
223	LARRY K GOODSON JR & ANNETTE R	VEHICLES REP & MAINT		FCSO-UNIT#24: OIL CHANGE, 21 PT	RO#1400	9/28/2022	1/6/2023		2,408.60
224	LOUISA VETERINARY SERVICE, INC.	AGRICULTURAL SUPPLIES		FCSO- INV 28910: HATCHECHUBEE	01022023 CLIENT 2470	1/2/2023	1/12/2023		417.63
225	MANSFIELD OIL COMPANY OF	VEHICLE FUEL		MANSFIELD FUEL INOVICE 12/16-	SQLCD-809115	1/1/2023	1/12/2023		277.37
226	MICHAEL CAREY	SUBSISTENCE & LODGING		REIMBURSE-TRAINING AT CSCJTA	012023-R	1/20/2023	1/27/2023		221.25
227	MICHAEL CAREY	VEHICLE FUEL		FCSO- GAS AND FUEL ON 1/8/23 &	MC01 / MC02	1/17/2023	1/20/2023		47.24
228	NATIONAL SHERIFF'S ASSOCIATION	DUES OR ASSOCIATION		FCSO-M. ID 279586: NSA	010423	1/4/2023	1/12/2023		142.00
229	PAINT PERFECTIONS UNLIMITED LLC	VEHICLES REP & MAINT		FCSO-20 DODGE CHRGR POLICE	8546	12/23/2022	1/6/2023		7,290.96
230	PITNEY BOWES PURCHASE PWR	POSTAL SERVICES		FCSO-METER REFILL 12/15/22	8000909000300215	12/20/2022	1/6/2023		520.99
231	PITNEY BOWES	LEASE/RENT		FCSO- LEASE FOR 10/30/22-	3316823760	12/26/2022	1/6/2023		220.59
232	REGION TEN	CONTRACT SERVICES		FCSO-FY2023 Q1-Q2 (JUL 01-DEC	122222	12/22/2022	1/12/2023		1,662.50

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233	STAPLES CONTRACT & COMMERCIAL,	OFFICE SUPPLIES		MONTHLY STATEMENT FOR	8068771168	12/31/2022	1/6/2023		219.65
234	TOWN GUN SHOP, INC.	UNIFORM/WEARING APPAREL		FCSO-PB HI LITE BII BALLISTICS,	R84758	8/23/2022	1/27/2023		1,491.79
235	VA INFORMATION TECHNOLOGIES	TELECOMMUNICATIONS		MONTHLY STATEMENT FOR	T453419	1/5/2023	1/12/2023		207.37
236	VERIZON WIRELESS	TELECOMMUNICATIONS		MONTHLY WIRELESS STATEMENT	9924846764	1/8/2023	1/20/2023		3,008.72
237	VIRGINIA DEPT. OF MOTOR VEHICLES	POLICE SUPPLIES		FCSO- RENEWAL EXCEPTION	202300600053	1/6/2023	1/20/2023		25.00
238	WAGNER'S MOBILE GLASS & MIRROR	VEHICLES REP & MAINT		FCSO- WINDSHIELD-(ACOUSTIC	I007354	11/22/2022	1/6/2023		495.00
239							**Total:**		**$55,950.92**
240									
241	**E911**								
242	AMAZON CAPITAL SERVICES	BLDGS EQUIP REP & MAINT		E911- VICTOR ALLEN'S COFFEE	14V9-V6VG-V7XF	1/3/2023	1/6/2023		62.99
243	AMAZON CAPITAL SERVICES	EDP EQUIPMENT		E911-ANKER USB C DOCKING	14TP-737K-L4GJ	1/8/2023	1/12/2023		239.96
244	AMAZON CAPITAL SERVICES	OFFICE SUPPLIES		E911- VICTOR ALLEN'S COFFEE	14V9-V6VG-V7XF	1/3/2023	1/6/2023		116.75
245	AT&T MOBILITY	TELECOMMUNICATIONS		E911- WIRELESS MONTHLY	287284406274X122622	12/18/2022	1/6/2023		4.38
246	BANK OF AMERICA	BLDGS EQUIP REP & MAINT		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		129.84
247	BANK OF AMERICA	CONVENTION AND		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		100.00
248	BANK OF AMERICA	DUES OR ASSOCIATION		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		187.00
249	BANK OF AMERICA	IT SERVICES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		24.00
250	BANK OF AMERICA	MAINTENANCE CONTRACTS		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		914.62
251	BANK OF AMERICA	OFFICE SUPPLIES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		33.17
252	BANK OF AMERICA	PROFESSIONAL SERVICES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		132.65
253	BANK OF AMERICA	TELECOMMUNICATIONS		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		153.36
254	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		76.42
255	CLEAR COMMUNICATIONS AND	PROFESSIONAL SERVICES		FCSO- PART SALE FOR RADIO	126755	1/18/2023	1/27/2023		33.40
256	COMCAST CORPORATION	TELECOMMUNICATIONS		E911- MONTHLY STATEMENT FOR	8299600930046933JAN	1/3/2023	1/12/2023		111.69
257	CONNECT PARENT CORPORATION	TELECOMMUNICATIONS		E911-MONTHLY STATEMENT FOR	310214091DEC	12/19/2022	1/6/2023		2,570.24
258	ESRI INC	MAINTENANCE CONTRACTS		E911- ARCGIS DESKTOP STD	94401302	12/31/2022	1/12/2023		3,348.00
259	NWG SOLUTIONS, LLC.	IT SERVICES		E911-MANGED SRVCS: VITALSIGNS	61553	12/30/2022	1/6/2023		1,487.00
260	NWG SOLUTIONS, LLC.	MAINTENANCE CONTRACTS		E911- DATTO CLOUD	61552	12/30/2022	1/6/2023		1,168.70
261	VA INFORMATION TECHNOLOGIES	TELECOMMUNICATIONS		MONTHLY STATEMENT FOR	T453419	1/5/2023	1/12/2023		207.37
262	VERIZON WIRELESS	PROFESSIONAL SERVICES		MONTHLY WIRELESS STATEMENT	9924846764	1/8/2023	1/20/2023		240.32
263	VERIZON WIRELESS	TELECOMMUNICATIONS		MONTHLY WIRELESS STATEMENT	9924846764	1/8/2023	1/20/2023		610.19
264							**Total:**		**$11,952.05**
265									
266	**FIRE AND RESCUE SQUAD**								
267	FIRE & SAFETY EQUIPMENT COMPANY	CONTRACT SERVICES		KENT STORE FIRE DEPT- SCBA-	117904	12/14/2022	1/12/2023		1,657.80
268	FLUVANNA CO PUBLIC SCHOOLS	CONVENTION AND		SITE MANAGER/ CUSTODIAN	121322	12/13/2022	1/12/2023		240.00
269	FLUVANNA COUNTY RESCUE SQUAD	FIRE & RESCUE ASSN		RESCUE SQUAD QUARTERLY	FR3-23	1/1/2023	1/6/2023		29,150.00
270	FLUVANNA COUNTY VOLUNTEER FIRE	FIRE & RESCUE ASSN		FCFD (QUARTERLY)	FF3-23	1/1/2023	1/6/2023		50,429.50

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271	INDACO RISK ADVISORS	GENERAL LIABILITY		LM VOL FIRE DEPT AND RESCUE	111522	11/15/2022	1/12/2023		26,810.00
272	INDACO RISK ADVISORS	VEHICLE INSURANCE		LM VOL FIRE DEPT AND RESCUE	120822	12/8/2022	1/12/2023		33,178.00
273	LAKE MONTICELLO FIRE & RESCUE	FIRE & RESCUE ASSN		LM FIRE (QUARTERLY)	LM3-23	1/1/2023	1/6/2023		87,885.00
274	LAKE MONTICELLO FIRE & RESCUE	FIRE & RESCUE CAPITAL		LM FIRE & RESCUE EXPANSION	LMEXP-23	1/1/2023	1/6/2023		65,000.00
275	VERIZON WIRELESS	TELECOMMUNICATIONS		EMERG MAN- MONTHLY M2M	9923985061	12/27/2022	1/6/2023		588.32
276							**Total:**		**$294,938.62**
277									
278	**CORRECTION AND DETENTION**								
279	CENTRAL VIRGINIA REGIONAL JAIL	CVRJ COST OF PRISONERS		OPERATIONAL COSTS, FY23, 3RD	010123F	1/1/2023	1/6/2023		280,172.25
280	COUNTY OF ALBEMARLE, VIRGINIA	CONFINEMENT - BRJDC		JUV DET FAC BILLING FOR JUV	FY2023-00000389	1/1/2023	1/6/2023		12,873.92
281							**Total:**		**$293,046.17**
282									
283	**BUILDING INSPECTIONS**								
284	BANK OF AMERICA	BOOKS/PUBLICATIONS		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		720.00
285	BANK OF AMERICA	DUES OR ASSOCIATION		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		90.00
286	JAMES RIVER SOLUTIONS	VEHICLE FUEL		COST OF FUEL FOR VARIOUS	010223	1/2/2023	1/6/2023		428.68
287	JMBCOA	DUES OR ASSOCIATION		APPLICATION FOR MEMBERSHIP	012323	1/23/2023	1/27/2023		50.00
288	TREASURER OF VIRGINIA	SURCHARGE		FLUVANNA CO. SECOND QTR (OCT-	LV202302	1/3/2023	1/12/2023		894.60
289	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		240.99
290							**Total:**		**$2,424.27**
291									
292	**EMERGENCY MANAGEMENT**								
293	BANK OF AMERICA	CONTRACT SERVICES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		631.00
294	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		35.86
295	DELTA RESPONSE TEAM LLC	CONTRACT SERVICES		DECEMBER 2022 EMS STAFFING,	202201230	12/30/2022	1/6/2023		52,315.83
296	JAMES RIVER SOLUTIONS	VEHICLE FUEL		COST OF FUEL FOR VARIOUS	010223	1/2/2023	1/6/2023		200.32
297	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		45.32
298							**Total:**		**$53,228.33**
299									
300	**PUBLIC ANIMAL SHELTER**								
301	FLUVANNA SPCA	CONTRACT SERVICES		ANIMAL SHELTERING SERVICES:	10123	1/1/2023	1/6/2023		85,541.00
302							**Total:**		**$85,541.00**
303									
304	**FACILITIES**								
305	ALLIED PORTABLE TOILET	CONTRACT SERVICES		FCPW-CARYSBROOK BASEBALL	A-205701	12/27/2022	1/12/2023		528.00
306	AMAZON CAPITAL SERVICES	BLDGS EQUIP REP & MAINT		FCPW- LITHONIA LIGHTING 2GTL2	146R-4WNW-9FG9	1/6/2023	1/12/2023		134.00
307	AMAZON CAPITAL SERVICES	GENERAL MATERIALS AND		FCPW- GRABBER BUDDY,	1GJV-NTCD-Q3P6	1/9/2023	1/12/2023		319.26
308	AMAZON CAPITAL SERVICES	JANITORIAL SUPPLIES		FCPW-PROTEAM HOUSE, UPRIGHT	1Q6L-3M3R-31PL	1/23/2023	1/27/2023		126.00

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309	AMAZON CAPITAL SERVICES	VEHICLE/POWER EQUIP		FCPW-SCAG PAD, DECK WEAR-	1Y7K-W6LG-QKG4	12/21/2022	1/12/2023		206.96
310	BANK OF AMERICA	GENERAL MATERIALS AND		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		3,322.23
311	BANK OF AMERICA	UNIFORM/WEARING APPAREL		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		98.44
312	BANK OF AMERICA	VEHICLE/POWER EQUIP		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		56.91
313	E.W. THOMAS	GENERAL MATERIALS AND		FCPW-INV 2053959, 3695008,	011723	1/17/2023	1/20/2023		50.00
314	E.W. THOMAS	JANITORIAL SUPPLIES		FCPW-INV 2053959, 3695008,	011723	1/17/2023	1/20/2023		6.00
315	FLUVANNA ACE HARDWARE	GENERAL MATERIALS AND		FCPW- INV 94918,95004,95174,	123122 ACCT 127	12/31/2022	1/12/2023		113.20
316	GENSERV LLC	BLDGS EQUIP REP & MAINT		FCPW-12/8/22 SITE OMOHUNDRO	4756	12/31/2022	1/12/2023		1,843.00
317	JAMES RIVER SOLUTIONS	VEHICLE FUEL		COST OF FUEL FOR VARIOUS	010223	1/2/2023	1/6/2023		2,472.91
318	JONES AUTOMOTIVE/ALL STAR AUTO	GENERAL MATERIALS AND		FCPW-CUST#8: PARTS AND TOOLS	123122	12/31/2022	1/20/2023		131.50
319	JONES AUTOMOTIVE/ALL STAR AUTO	VEHICLE/POWER EQUIP		FCPW-CUST#8: PARTS AND TOOLS	123122	12/31/2022	1/20/2023		3.10
320	JONES AUTOMOTIVE/ALL STAR AUTO	VEHICLES REP & MAINT		FCPW-CUST#8: PARTS AND TOOLS	123122	12/31/2022	1/20/2023		843.95
321	LOWE'S	BLDGS EQUIP REP & MAINT		MONTHLY STATMENT FOR	STATEMENT 12/25/22	12/25/2022	1/12/2023		815.87
322	LOWE'S	GENERAL MATERIALS AND		MONTHLY STATMENT FOR	STATEMENT 12/25/22	12/25/2022	1/12/2023		1,559.56
323	MULTI SERVICE TECHNOLOGY	UNIFORM/WEARING APPAREL		FCPW- 12/30/22 : SKU 02440E2130,	20230110079792	1/10/2023	1/20/2023		150.00
324	NOLAND	BLDGS EQUIP REP & MAINT		FCPW- RPZ/ MISC/ CLIFF, 3/4 975	122622	12/26/2022	1/12/2023		2,644.49
325	QUALITY WELDING, INC	GENERAL MATERIALS AND		FCPW-2 PCS. 1 1/2" X 10' SCH.40	46697	1/13/2023	1/27/2023		263.38
326	RAFALY ELECTRICAL CONTRACTORS,	CONTRACT SERVICES		FCPW-KENT'S STORE FIRE DEPT,	9940	12/26/2022	1/12/2023		770.00
327	RICH MASONRY, INC.	CONTRACT SERVICES		FCPW-FLUV. CO.ADMIN BLDG -	1306	1/7/2023	1/12/2023		6,770.00
328	RWH MECHANICAL SALES, INC	BLDGS EQUIP REP & MAINT		FCPW- COURTS BLD BOILER 2:	32086	1/3/2023	1/12/2023		2,249.00
329	SHULL'S AUTOMOTIVE, INC.	VEHICLES REP & MAINT		FCPW-STATE INSPECTION	002613	1/10/2023	1/27/2023		20.00
330	TIRE SOLUTIONS LLC	VEHICLES REP & MAINT		FCPW- LIC: 186-513L: 235/55/17 (2)M	6398	1/13/2023	1/20/2023		226.00
331	TRANE U.S., INC.	BLDGS EQUIP REP & MAINT		FCPW-MOTOR; 1/2 HP, 200-230V, 48	13709817	1/11/2023	1/27/2023		485.01
332	TRANE U.S., INC.	GENERAL MATERIALS AND		FCPW- METER; TEMPERATURE &	13660001	1/3/2023	1/20/2023		159.26
333	UNIFIRST CORP	LAUNDRY AND DRY		FCPW-MONTHLY STATEMENT FOR	123122 STATEMENT	12/31/2022	1/27/2023		701.11
334	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		483.84
335	W.W. GRAINGER INC	GENERAL MATERIALS AND		FCPW-HOSE CONNECTION	9552253321	12/21/2022	1/12/2023		460.50
336	W.W. GRAINGER INC	UNIFORM/WEARING APPAREL		FCPW- ARC FLASH PROTECTION	9561890709	1/4/2023	1/12/2023		1,596.20
337	WAYNE OXYGEN & WELDING SUPPLY	GENERAL MATERIALS AND		FCPW-ACETYLENE-SM,156CF	873052	12/31/2022	1/20/2023		59.52
338							**Total:**		**$29,669.20**
339									
340	**GENERAL SERVICES**								
341	AMERICAN PEST MANAGEMENT, INC.	MAINTENANCE CONTRACTS		FCPW-PEST CONTROL MONTHLY	7591738	1/9/2023	1/27/2023		604.90
342	AQUA VIRGINIA, INC.	WATER SERVICES		REGISTRARS OFFICE-213 MAIN ST	0007970740556855 J23	1/10/2023	1/20/2023		208.13
343	BANK OF AMERICA	MAINTENANCE CONTRACTS		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		60.75
344	BFPE INTERNATIONAL	MAINTENANCE CONTRACTS		FCPW-FORK UNION VOL FIRE CO-	285421	1/17/2023	1/27/2023		1,511.68
345	CENTRAL VA ELECTRIC COOP	ELECTRICAL SERVICES		FLUVANNA COUNTY FIRE DEPT 51	275907-002DEC	1/5/2023	1/12/2023		8,686.66
346	CENTRAL VA ELECTRIC COOP	STREET LIGHTS		PUBLIC SAFET- STREET LIGHTS	085473-001JAN	1/17/2023	1/27/2023		98.49

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347	CINTAS	MAINTENANCE CONTRACTS		FCPW-LANDFILL-ALCOHOL SPRAY	5141483719	1/19/2023	1/27/2023		623.71
348	COMPUTER CABLING & TECHNOLOGY	MAINTENANCE CONTRACTS		FCPW-DECEMBER 2022 VUPS	123122	12/31/2022	1/12/2023		250.00
349	CONNECT PARENT CORPORATION	TELECOMMUNICATIONS		REGISTRAR OFFICE MONTHLY	309762613DEC	12/16/2022	1/6/2023		2,731.56
350	DOMINION VIRGINIA POWER	ELECTRICAL SERVICES		LARGE BALLFIELD-LIGHTS	3023889169JAN	12/21/2022	1/12/2023		15,127.36
351	DOMINION VIRGINIA POWER	STREET LIGHTS		FORK UNION STREET LIGHTS-	7080078962JAN	12/28/2022	1/12/2023		1,035.97
352	GENSERV LLC	MAINTENANCE CONTRACTS		FCPW- 12/1-12/28/22 PERFOM PREV	4755	12/31/2022	1/12/2023		4,850.00
353	GFL ENVIRONMENTAL HOLDINGS (US),	MAINTENANCE CONTRACTS		FCPW- F.C. RESCUE SQUAD	KC0000231592	1/15/2023	1/20/2023		26.60
354	JEFFERSON CENTRE PROPERTIES	LEASE/RENT		JAN. FLU CO RENT & JAN	010123/ 010123-56	1/1/2023	1/6/2023		3,704.31
355	MECHUMS RIVER SECURITY	MAINTENANCE CONTRACTS		QUARTERLY CELLULAR	38521	1/1/2023	1/12/2023		265.00
356	MSDSONLINE, INC.	MAINTENANCE CONTRACTS		FCPW- CHEMICAL MANAGEMENT	CONT #Q-162102	11/15/2022	1/12/2023		3,463.85
357	REPUBLIC SERVICES #410	MAINTENANCE CONTRACTS		FCPW- WASTE CONT P/U: PUBLIC	0410-000758803	12/31/2022	1/20/2023		590.95
358	SHRED-IT USA LLC	LEASE/RENT		REGULAR SRVC FOR	8003110850	1/3/2023	1/12/2023		182.17
359	THE BLOSSMAN COMPANIES, INC.	HEATING SERVICES		FCPW-CARYSBROOK GYM- 251.7	22600458	12/30/2022	1/12/2023		7,154.14
360	THE BLOSSMAN COMPANIES, INC.	MAINTENANCE CONTRACTS		FCPW-51 KENTS STORE WAY	22880285	1/19/2023	1/27/2023		3,382.07
361	THE SUPPLY ROOM	LEASE/RENT		FCPW- WATER, BOTTLE SPR , EQ	123122	12/31/2022	1/12/2023		229.77
362	THE SUPPLY ROOM	WATER SERVICES		FCPW- WATER, BOTTLE SPR , EQ	123122	12/31/2022	1/12/2023		576.45
363	TIGER FUEL COMPANY	HEATING SERVICES		CARYS BROOK MT SHED SH	335823	1/5/2023	1/12/2023		6,105.28
364	VERTIV CORPORATION	MAINTENANCE CONTRACTS		FCPW- 37BP050XPJCBNL-ESTLSVC	13168819	12/19/2022	1/12/2023		11,797.52
365	VIRGINIA UTILITY PROTECTION	MAINTENANCE CONTRACTS		FCPW- TRANSMISSIONS 5- FLU591	122206161	12/31/2022	1/12/2023		5.25
366	W & H RESOURCES, INC	MAINTENANCE CONTRACTS		FCPW- ACCT#271 MAINT JAN '23,	43933	1/1/2023	1/20/2023		1,725.00
367							**Total:**		**$74,997.57**
368									
369	**PUBLIC WORKS**								
370	BANK OF AMERICA	VEHICLE		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		5.00
371	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		507.40
372	JAMES RIVER SOLUTIONS	VEHICLE FUEL		COST OF FUEL FOR VARIOUS	010223	1/2/2023	1/6/2023		116.54
373	STAPLES CONTRACT & COMMERCIAL,	OFFICE SUPPLIES		MONTHLY STATEMENT FOR	8068771168	12/31/2022	1/6/2023		122.05
374	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		130.96
375							**Total:**		**$881.95**
376									
377	**CONVENIENCE CENTER**								
378	BFI - FLUVANNA TRANSFER STATION	BLDGS EQUIP REP & MAINT		FCPW-MONTHLY ST FOR MSW AND	4347-000006816	12/31/2022	1/27/2023		5,615.96
379	CAROLINA SOFTWARE	BLDGS EQUIP REP & MAINT		FCPW-WASTEWORKS SOFTWARE	85506	1/1/2023	1/12/2023		250.00
380	JAMES RIVER SOLUTIONS	VEHICLE FUEL		COST OF FUEL FOR VARIOUS	010223	1/2/2023	1/6/2023		73.97
381	REPUBLIC SERVICES #410	CONTRACT SERVICES		FCPW- WASTE P/U ON CALL	0410-000758329	12/31/2022	1/27/2023		5,440.00
382	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		40.32
383							**Total:**		**$11,420.25**
384									

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4	**Vendor Name**	**Charge To**		**Description**	**Invoice Number**	**Invoice Date**	**Check Date**		**Check Amount**
385	**PUBLIC UTILITIES**								
386	BANK OF AMERICA	GENERAL MATERIALS AND		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		120.37
387	BANK OF AMERICA	POSTAL SERVICES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		60.60
388	CENTRAL VA ELECTRIC COOP	ELECTRICAL SERVICES		PLEASANT GROVE- DOG PARK	203061-001JAN	1/17/2023	1/27/2023		118.48
389	CONNECT PARENT CORPORATION	TELECOMMUNICATIONS		PALMYRA- PUMP STATION ALARM	310089744DEC	12/19/2022	1/12/2023		353.97
390	CONSOLIDATED PIPE & SUPPLY	GENERAL MATERIALS AND		FCPW- 5/8 X 3/4 MSTR MTR PLBOT,	6221585-000-000	12/20/2022	1/12/2023		1,169.28
391	DOMINION VIRGINIA POWER	ELECTRICAL SERVICES		PUMP HOUSE-COURTS BUILDING	4501632147JAN	12/21/2022	1/12/2023		281.05
392	E.W. THOMAS	CHEMICAL SUPPLIES		FCPW-INV 2053959, 3695008,	011723	1/17/2023	1/20/2023		11.10
393	JAMES RIVER SOLUTIONS	VEHICLE FUEL		COST OF FUEL FOR VARIOUS	010223	1/2/2023	1/6/2023		1,439.13
394	LOWE'S	GENERAL MATERIALS AND		MONTHLY STATMENT FOR	STATEMENT 12/25/22	12/25/2022	1/12/2023		139.56
395	MCI A VERIZON COMPANY	TELECOMMUNICATIONS		FCPW- 434-589-1384 TO 804-643-	409091056	12/30/2022	1/12/2023		4.34
396	STAPLES CONTRACT & COMMERCIAL,	OFFICE SUPPLIES		MONTHLY STATEMENT FOR	8068771168	12/31/2022	1/6/2023		47.30
397	THE ARTINA GROUP, INC.	OFFICE SUPPLIES		FCPW- P/S C FOLD BLANK D/D	INVOICE-79225	12/16/2022	1/20/2023		1,186.50
398	TIRE SOLUTIONS LLC	VEHICLES REP & MAINT		FCPW- 225/60/16, MT & BALANCE,	6319	12/9/2022	1/12/2023		114.00
399	UNIFIRST CORP	LAUNDRY AND DRY		FCPW-MONTHLY STATEMENT FOR	123122 STATEMENT	12/31/2022	1/27/2023		231.40
400	USABLUEBOOK	CHEMICAL SUPPLIES		FCPW-ULTRAFORM POWDER FREE	205908	12/14/2022	1/12/2023		2,364.83
401	VERIZON WIRELESS	TELECOMMUNICATIONS		FCPW- MONTHLY STATEMENT FOR	9923985060	12/27/2022	1/12/2023		440.34
402	VIRGINIA UTILITY PROTECTION	DUES OR ASSOCIATION		FCPW- TRANSMISSIONS 22,	12220215	12/31/2022	1/12/2023		23.10
403							**Total:**		**$8,105.35**
404									
405	**AMERICAN RESCUE PLAN ACT**								
406	THOMAS JEFFERSON PLANNING	INFRASTRUCTURE		PROJ: '22 VATI 1/23/22-11/9/22	761-1222-FLU-01	12/27/2022	1/6/2023		67,922.26
407							**Total:**		**$67,922.26**
408									
409	**HEALTH**								
410	BLUE RIDGE HEALTH DISTRICT	CONTRACT SERVICES		FY23 3RD QUARTER ALLOCATION-	010123	1/1/2023	1/6/2023		71,555.25
411							**Total:**		**$71,555.25**
412									
413	**VJCCCA**								
414	SATELLITE TRACKING OF PEOPLE LLC	PROFESSIONAL SERVICES		PYMT FOR FLUV YOUTH #1066134	STPINV00112565	12/31/2022	1/12/2023		71.30
415							**Total:**		**$71.30**
416									
417	**CSA**								
418	BANK OF AMERICA	OFFICE SUPPLIES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		105.29
419	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		50.94
420	CARAHSOFFT TECHNOLOGY	PROFESSIONAL SERVICES		CSA-DOCUSIGN BUSINESS	IN1308828	1/5/2023	1/20/2023		1,828.50
421	STAPLES CONTRACT & COMMERCIAL,	OFFICE SUPPLIES		MONTHLY STATEMENT FOR	8068771168	12/31/2022	1/6/2023		156.00
422	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		40.32

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423							**Total:**		**$2,181.05**
424									
425	**CSA PURCHASE OF SERVICES**								
426	AK	COMM SVCS			P09925243447	9/30/2022	1/6/2023		1,045.00
427	C.M. MENTORING SERVICES LLC	POS MANDATED WSS			P12925254462	12/31/2022	1/6/2023		2,700.00
428	CR	POS MANDATED FFOP			P10925261276	10/24/2022	1/12/2023		858.40
429	ELK HILL	POS MANDATED SPED-			P12925247098	12/31/2022	1/27/2023		11,025.00
430	HEALTH CONNECT AMERICA, INC.	POS MANDATED SPED-			P12925247533	12/31/2022	1/6/2023		14,540.00
431	HEALTH CONNECT AMERICA	POS MANDATED WSS			P07925240464	7/31/2022	1/6/2023		1,827.00
432	LIVE OAK MENTORING LLC	COMM SVCS			P12925259437	12/31/2022	1/6/2023		4,200.00
433	LIVE OAK MENTORING LLC	POS MANDATED WSS			P01925259195	1/31/2023	1/20/2023		2,460.00
434	PARACLETE THERAPEUTICS LLC	POS MANDATED WSS			P11925260765	11/30/2022	1/6/2023		3,960.00
435	PEOPLE PLACES, INC.	POS MAND THER FC 4E			P12925260594	12/31/2022	1/20/2023		3,720.00
436	PEOPLE PLACES, INC.	TFC LIC. RES CONG CARE			P12925245093	12/31/2022	1/20/2023		4,241.00
437	THE FAISON CENTER, INC	POS MANDATED SPED-			P12925251981	12/31/2022	1/20/2023		28,097.00
438	TH	POS MANDATED FFOP			P12925237449	12/31/2022	1/6/2023		11,780.00
439	VM	POS MANDATED FFOP			P12925237657	12/31/2022	1/6/2023		4,680.00
440	VIRGINIA INSTITUTE OF AUTISM	POS MANDATED SPED-			P12925256583	12/31/2022	1/20/2023		12,707.62
441	XTRA MILE, LLC	COMM SVCS			P12925255638	12/31/2022	1/6/2023		26,070.00
442	XTRA MILE, LLC	FF4E-COMM SVCS			P12925258648	12/31/2022	1/6/2023		1,375.00
443	XTRA MILE, LLC	NON-MAND COMM BASED			P12925258060	12/31/2022	1/6/2023		935.00
444	XTRA MILE, LLC	POS MANDATED WSS			P12925257863	12/31/2022	1/6/2023		2,475.00
445							**Total:**		**$138,696.02**
446									
447	**PARKS & RECREATION**								
448	AARON SPITZER	MILEAGE ALLOWANCES		REIMBURSE-ANNUAL VA ASSOC	011123	1/11/2023	1/20/2023		127.53
449	ALLIED CONCRETE COMPANY	SITE IMPROVEMENTS		FCPR- 18" DIA SONOTUBE 12 FT	00359790	11/9/2022	1/12/2023		207.83
450	AMAZON CAPITAL SERVICES	RECREATIONAL SUPPLIES		FCPR-39 PCS CAR WASH KIT- CAR	1WD4-GKJL-NPRC	1/9/2023	1/20/2023		431.62
451	AUTOMATED OFFICE SYSTEMS	LEASE/RENT		FCPR- CONT ID 4538 FOR 11/30/22-	103285	12/28/2022	1/6/2023		158.33
452	BANK OF AMERICA	RECREATIONAL SUPPLIES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		994.94
453	BANK OF AMERICA	SITE IMPROVEMENTS		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		1,768.76
454	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULTIPLE COPIERS BLK AND	29668163	12/12/2022	1/12/2023		287.22
455	CINTAS	CONTRACT SERVICES		FCPR- HYDROGEN PEROXIDE 2OZ.,	5141483793	1/19/2023	1/27/2023		71.98
456	CONNECT PARENT CORPORATION	TELECOMMUNICATIONS		FCPR- MONTHLY STATEMENT FOR	309373828DEC	12/16/2022	1/6/2023		55.12
457	E.W. THOMAS	RECREATIONAL SUPPLIES		FCPR-11/4/22,12/14/22,12/30/22-ICE	011123	1/11/2023	1/20/2023		632.81
458	FLUVANNA ACE HARDWARE	RECREATIONAL SUPPLIES		FCPR- INV 94932, INV 94986- ACE	123122 ACCT341	12/31/2022	1/12/2023		664.89
459	FLUVANNA REVIEW	ADVERTISING		FCPR-FR 1/4-13X, COLOR	2022F43-13	10/27/2022	1/6/2023		145.00
460	IMAGE DESIGNERS, INC.	RECREATIONAL SUPPLIES		FCPR- STYLE: ST350-PROMO MENS	085540	12/15/2022	1/6/2023		6,045.55

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461	JAMES RIVER SOLUTIONS	VEHICLE FUEL		COST OF FUEL FOR VARIOUS	010223	1/2/2023	1/6/2023		682.62
462	MOJOHNS, INC.	CONTRACT SERVICES		FCPR- EQUESTRIAN FIELD	21108	1/3/2023	1/12/2023		185.00
463	SAM'S CLUB	RECREATIONAL SUPPLIES		FCPR-BLANK CARDS, KIT KAT	010923	1/9/2023	1/12/2023		96.58
464	SAM'S CLUB	SITE IMPROVEMENTS		FCPR- SUPPLIES FOR	122722	12/27/2022	1/6/2023		28.21
465	STAPLES CONTRACT & COMMERCIAL,	OFFICE SUPPLIES		MONTHLY STATEMENT FOR	8068771168	12/31/2022	1/6/2023		153.74
466	U.S. POSTAL SERVICE	POSTAL SERVICES		FCPR- TO PURCHASE STAMPS	11723	1/17/2023	1/20/2023		300.00
467	UPS	POSTAL SERVICES		FCPR- SENDER: MALINDA PAYNE	0000Y7646Y522	12/24/2022	1/6/2023		8.73
468	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		201.60
469							**Total:**		**$13,248.06**
470									
471	**LIBRARY**								
472	AMAZON CAPITAL SERVICES	BOOKS/PUBLICATIONS		LIBRARY-PAST DUE INVOICES FOR	ACCT	1/11/2023	1/20/2023		9,844.24
473	BANK OF AMERICA	BOOKS/PUBLICATIONS		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		208.96
474	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		128.34
475	DEMCO INC	OFFICE SUPPLIES		LIBRARY- 2 BOX PS BOOK POCKET	72335842	12/21/2022	1/6/2023		313.86
476	FIREFLY	TELECOMMUNICATIONS		LIBRARY- MONTHLY STATEMENT	15623	1/1/2023	1/12/2023		550.00
477	LIBRARY IDEAS,LLC	BOOKS/PUBLICATIONS		LIBRARY- VOX PINE & BOOF: THE	96007	1/18/2023	1/27/2023		39.98
478							**Total:**		**$11,085.38**
479									
480	**COUNTY PLANNER**								
481	BANK OF AMERICA	BOOKS/PUBLICATIONS		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		88.20
482	BANK OF AMERICA	DUES OR ASSOCIATION		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		100.00
483	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		486.85
484	JAMES RIVER SOLUTIONS	VEHICLE FUEL		COST OF FUEL FOR VARIOUS	010223	1/2/2023	1/6/2023		216.19
485	STAPLES CONTRACT & COMMERCIAL,	OFFICE SUPPLIES		MONTHLY STATEMENT FOR	8068771168	12/31/2022	1/6/2023		74.97
486	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		80.64
487							**Total:**		**$1,046.85**
488									
489	**PLANNING COMMISSION**								
490	FLUVANNA REVIEW	ADVERTISING		PLAN COM- FR 1/4- 13X PG AD: NOV	2022F43-14	10/27/2022	1/6/2023		431.25
491							**Total:**		**$431.25**
492									
493	**ECONOMIC DEVELOPMENT**								
494	BANK OF AMERICA	DUES OR ASSOCIATION		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		250.00
495	BANK OF AMERICA	OFFICE SUPPLIES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		109.23
496	BANK OF AMERICA	POSTAL SERVICES		MULITPLE DEPT PC CARDS	120122STATEMENT	12/31/2022	1/24/2023		60.00
497	CANON FINANCIAL SERVICES, INC.	LEASE/RENT		MULITPLE COPIERS USAGE OF BLK	29668187	12/12/2022	1/12/2023		50.94
498	VERIZON WIRELESS	TELECOMMUNICATIONS		WIRELESS MONTHLY STATEMENT	9925729980	1/19/2023	1/27/2023		40.32

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499							**Total:**		**$510.49**
500									
501	**VA COOPERATIVE EXTENSION**								
502	AMAZON CAPITAL SERVICES	OFFICE SUPPLIES		EXT OFFICE- NEENAH	144N-333X-9QH3	1/18/2023	1/27/2023		75.92
503	AMAZON CAPITAL SERVICES	OTHER OPERATING		COOP EXT-MOLDS FOR PROG-TO	17DL-6JQG-3JLK	1/4/2023	1/20/2023		27.98
504	TREASURER OF VA TECH	CONTRACT SERVICES		BILLING SALARY FY 2023 2ND	011823-R	1/18/2023	1/27/2023		20,027.96
505							**Total:**		**$20,131.86**
506									
507	**NON PROFITS**								
508	CHILD HEALTH PARTNERSHIP, INC.	CHILD HEALTH PARTNERSHIP		FY23 3RD QTR ALLOCATION	10123	1/1/2023	1/6/2023		13,530.25
509	FLUVANNA ARTS COUNCIL	ARTS COUNCIL		FY23 ANNUAL ALLOCATION	80122	8/1/2022	1/12/2023		10,000.00
510	JAUNT, INC.	JAUNT		FY23 3RD QTR ALLOCATION	10123	1/1/2023	1/6/2023		18,123.50
511	JEFFERSON AREA BOARD FOR AGING	JEFFERSON AREA		FY23 3RD QTR ALLOCATION	10123	1/1/2023	1/6/2023		21,250.00
512	MONTICELLO AREA COMMUNITY	MACAA		FY23 3RD QTR ALLOCATION	10123	1/1/2023	1/6/2023		13,750.00
513	REGION TEN	REGION TEN COMMUNITY		FY23 3RD QTR ALLOCATION	10123	1/1/2023	1/6/2023		32,948.50
514	THOMAS JEFFERSON PLANNING	T J PLANNING DIST. COMM.		FY23 3RD QTR ALLOCATION	10123	1/1/2023	1/6/2023		10,065.50
515							**Total:**		**$119,667.75**
516									
517						**100 GENERAL FUND**	**Fund Total:**		**$1,513,170.51**
518	**Fund # - 302 CAPITAL IMPROVEMENT**								
519	**PUBLIC SAFETY CAPITAL PROJ**								
520	EAST COAST EMERGENCY VEHICLES	VEHICLE		FCSO-SHERIFF'S 22 CHEVY TAHOE	31364	9/27/2022	1/6/2023		23,164.10
521	HALL AUTOMOTIVE - FLEET TEAM	VEHICLE		FCSO-2022 DODGE CHRGER PPV	F259811	12/19/2022	1/20/2023		71,582.22
522							**Total:**		**$94,746.32**
523									
524	**FIRE & RESCUE CAP PROJ**								
525	MOTOROLA SOLUTIONS, INC.	VEHICLE		Tower Ladder	8281504697	11/8/2022	1/12/2023		10,990.58
526							**Total:**		**$10,990.58**
527									
528	**FACILITIES CAP PROJ**								
529	FOSTER FUELS INC	CONTRACT SERVICES		FCPS FUEL TANK- PROPANE/ LP	1229369	12/20/2022	1/20/2023		1,177.66
530	GENSERV LLC	CONTRACT SERVICES		1/4/23 CARRYBROOKS FUEL	4780	1/8/2023	1/12/2023		16,000.00
531							**Total:**		**$17,177.66**
532									
533	**PUBLIC WORKS CAPITAL PROJECT**								
534	R.K. CHEVROLET, INC.	VEHICLE		2023 Cheverolet Silverado 1500	255732	11/21/2022	1/20/2023		42,566.20
535							**Total:**		**$42,566.20**
536									

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537	**SCHOOL OPS & MAINT CAP PROJ**								
538	GARY OSTEEN PLUMBING	CONTRACT SERVICES		PROJ- CRM SR065 CENTRAL	122722	12/27/2022	1/12/2023		15,500.00
539	HAVTECH SERVICE DIVISION, LLC	CONTRACT SERVICES		PROJ: CRM SR066- FCHS	S-228038	12/15/2022	1/12/2023		7,773.00
540	TRANE U.S., INC.	CONTRACT SERVICES		PROJ: CRM SR058- FMS CHILLER	313227091	12/20/2022	1/12/2023		2,552.00
541							**Total:**		**$25,825.00**
542									
543						**302 CAPITAL IMPROVEMENT**	**Fund Total:**		**$191,305.76**
544	**Fund # - 401 DEBT SERVICE**								
545	**DEBT SERVICE - COUNTY**								
546	U.S. BANK OPERATIONS CENTER	2017 ENERGY PERFORMANCE		DEBT SERVICE INT- BOND SERIES	010523	12/9/2022	1/5/2023		96,960.27
547	U.S. BANK OPERATIONS CENTER	ADMINISTRATIVE FEES		DEBT SERVICE INT- BOND SERIES	010523	12/9/2022	1/5/2023		6,247.44
548	US BANK, NA	ADMINISTRATIVE FEES		ADMINISTRATION FEES - IN	6775244	12/23/2022	1/12/2023		700.00
549							**Total:**		**$103,907.71**
550									
551	**DEBT SERVICE - SCHOOLS**								
552	REGIONS BANK	VPSA SERIES 2012A INT		INTEREST DUE	011223	11/9/2022	1/12/2023		22,600.00
553	REGIONS BANK	VPSA SERIES 2012B INT		INTEREST DUE	011223	11/9/2022	1/12/2023		935,293.75
554	U.S. BANK OPERATIONS CENTER	G O SCH BOND 2005A INT		INTEREST DUE	2149730	12/5/2022	1/12/2023		25,709.96
555	U.S. BANK OPERATIONS CENTER	VPSA SERIES 2014C INT		INTEREST DUE	2133018	11/25/2022	1/17/2023		56,910.00
556	U.S. BANK OPERATIONS CENTER	VPSA SERIES 2021 INT		INTEREST DUE	2153485	12/7/2022	1/12/2023		63,311.25
557							**Total:**		**$1,103,824.96**
558									
559						**401 DEBT SERVICE**	**Fund Total:**		**$1,207,732.67**
560	**Fund # - 502 SEWER**								
561	**PALMYRA SEWER OPER EXPENSES**								
562	DOMINION VIRGINIA POWER	ELECTRICAL SERVICES		PALMYRA SEWAGE PUMP STATION	7712348080JAN	12/28/2022	1/12/2023		1,878.01
563							**Total:**		**$1,878.01**
564									
565						**502 SEWER**	**Fund Total:**		**$1,878.01**
566	**Fund # - 505 FORK UNION SANITARY DISTRICT**								
567	**FORK UNION SANITARY DISTRICT**								
568	USDA RURAL DEVELOPMENT	RDA BOND PAYABLE		FUSD DEBT SERVICE	012523	1/25/2023	1/25/2023		4,163.16
569							**Total:**		**$4,163.16**
570									
571	**FUSD OPERATIONAL EXPENSES**								
572	DOMINION VIRGINIA POWER	ELECTRICAL SERVICES		OWENS WELL- 4308 JAMES	9004200003JAN	12/22/2022	1/12/2023		4,011.69
573	E.W. OWEN	LEASE/RENT		FCPW- WELL RENT JANUARY	01012023	1/1/2023	1/20/2023		150.00
574	MOJOHNS, INC.	PURCHASE OF SERVICES		FCPW-F.C. WASTEWATER	21099	1/3/2023	1/20/2023		85.00

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2	**Accounts Payable List**			**To Date: 1/31/2023**					
4	**Vendor Name**	**Charge To**		**Description**	**Invoice Number**	**Invoice Date**	**Check Date**		**Check Amount**
575	USDA RURAL DEVELOPMENT	REDEMPTION OF INTEREST		FUSD DEBT SERVICE	012523	1/25/2023	1/25/2023		796.84
576	VA INFORMATION TECHNOLOGIES	TELECOMMUNICATIONS		MONTHLY STATEMENT FOR	T453419	1/5/2023	1/12/2023		201.11
577							**Total:**		**$5,244.64**
578									
579					**505 FORK UNION SANITARY DISTRICT**		**Fund Total:**		**$9,407.80**
580	**Fund # - 510 ZION XR WATER & SEWER**								
581	**ZION XR W&S EXPENSES**								
582	BOWMAN CONSULTING	COUNTY ATTY LEGAL-		PROJ: 100148-01-001 FLUV ZION	361672	12/31/2022	1/20/2023		75.00
583	CENTRAL VA ELECTRIC COOP	ELECTRICAL SERVICES		WWPS- JAMES MADISON HWY	275904-015DEC	12/29/2022	1/12/2023		2,124.52
584	DEWBERRY ENGINEERS INC.	PROFESSIONAL SERVICES		PROJ 50110553 FLUV A/E SRVS	2226519	1/27/2023	1/27/2023		13,055.00
585	HOOVER PENROD PLC	COUNTY ATTY LEGAL- REAL		CREDITOR REPRESENATION: A.G.	STATEMENT NO:10	1/6/2023	1/12/2023		276.00
586	PAYNE & HODOUS, LLC.	COUNTY ATTY LEGAL- REAL		MATTER: 13-7046,17-7997,17-	010423	1/4/2023	1/12/2023		69.00
587	PAYNE & HODOUS, LLC.	PROFESSIONAL SERVICES		MATTER: 13-7046,17-7997,17-	010423	1/4/2023	1/12/2023		92.00
588	VIRGINIA DEPT OF CORRECTIONS	CONSTRUCTION		FCPW-WATER & WASTEWATER	50WR2374307	1/12/2023	1/20/2023		365.55
589							**Total:**		**$16,057.07**
590									
591					**510 ZION XR WATER & SEWER**		**Fund Total:**		**$16,057.07**
592							**Total Expenditures by Fund:**		**$2,939,551.82**

FLUVANNA COUNTY BOARD OF SUPERVISORS
AGENDA ITEM STAFF REPORT

TAB H

MEETING DATE:	February 15, 2023					
AGENDA TITLE:	Approval of Open Space Agreement for Sarah and Seth Radcliff					
MOTION(s):	**I move to approve the open space agreement for Sarah and Seth Radcliff for tax map parcel 33-A-34C; agreement shall remain in effect for a term of five (5) consecutive years.**					
BOS 2 YEAR GOALS?	Yes	No	**If yes, which goal(s):**			
		X				
AGENDA CATEGORY:	Public Hearing	Action Matter	Presentation	Consent Agenda	Other	
				X		
STAFF CONTACT(S):	Andrew M. Sheridan, Jr., Commissioner of the Revenue					
PRESENTER(S):	Andrew M. Sheridan, Jr., Commissioner of the Revenue					
RECOMMENDATION:	Approval					
TIMING:	Immediate					
DISCUSSION:	This property qualifies for an open space agreement with Fluvanna County in accordance with Code Section 58.1-3229 et. seq. of the Virginia State Code.					
FISCAL IMPACT:	N/A					
POLICY IMPACT:	In accordance with Section 58.1-3229 et. seq. of Virginia State Code.					
LEGISLATIVE HISTORY:	N/A					
ENCLOSURES:	- Sarah and Seth Radcliff's executed open space agreement - Map of tax map parcel 33-A-34C					
REVIEWS COMPLETED:	Legal	Finance	Purchasing	HR	Other	

Prepared by (Landowner's name and address):

Radcliff, Sarah & Seth

2846 Covered Bridge Rd.

Kents Store, VA 23084

Tax Map Parcel: 33-A-34C

Return to: County of Fluvanna
132 Main Street
Palmyra, VA 22963

This instrument is exempt from Clerk's fees pursuant to Virginia Code Sections 17.1-266 and 17.1-279(E)

OPEN SPACE USE AGREEMENT

THIS AGREEMENT, made this 30th day of January, 2023, by and between Sarah & Seth Radcliff, party(ies) of the first part, hereinafter called the Grantor (whether one or more), and the COUNTY OF FLUVANNA, a political subdivision of the Commonwealth of Virginia, party of the second part, hereinafter called the County:

WITNESSETH

WHEREAS, the Grantor owns certain real estate, described below, hereinafter called the Property; and

WHEREAS, the County is the local governing body having real estate tax jurisdiction over the Property; and

WHEREAS, the County has determined:

A. That it is in the public interest that the Property should be provided or preserved for conservation of agricultural and forestal land and of wildlife; and

B. That the Property meets the applicable criteria for real estate devoted to open-space use as prescribed in Article 4 (Section 58.1-3229 et. seq.) of Chapter 32 of Title 58.1 of the

Code of Virginia, and the standards for classifying such real estate prescribed by the Director of the Virginia Department of Conservation and Recreation; and

C. That the provisions of this agreement meet the requirements and standards prescribed under section 58.1-3233 of the Code of Virginia for recorded commitments by landowners not to change an open-space use to a non-qualifying use; and

WHEREAS, the Grantor is willing to make a written recorded commitment to preserve and protect the open-space uses of the Property during the term of this agreement in order for the Property to be taxed on the basis of a use assessment, and the Grantor has submitted an application for such taxation to the Commissioner of the Revenue of the County pursuant to Section 58.1-3234 of the Code of Virginia and Section 20-4-2(d) of the Fluvanna County Code; and

WHEREAS, the County is willing to extend the tax for the Property on the basis of a use assessment commencing with the next succeeding tax year and continuing for the term of this agreement, in consideration of the Grantor's commitment to preserve and protect the open-space uses of the property, and on the condition that the Grantor's application is satisfactory and that all other requirements of Article 4, Chapter 32, Title 58.1 of the Code of Virginia and Section 20-4-2(d) of the Fluvanna County Code are complied with.

NOW, THEREFORE, in consideration of the foregoing recitals and the mutual benefits, covenants and terms herein contained, the parties hereby **COVENANT** and **AGREE** as follows:

1. This agreement shall apply to all the following described real estate:

   Tax Map Parcel: 33-A-34C (10 acres)

2. The Grantor agrees that during the term of this agreement:

   A. There shall be no change in the use or uses of the Property that exist as of the date of this agreement to any use that would not qualify as open-space use. The qualifying use for the Property is conservation of agricultural and forestal land and of wildlife.
   B. There shall be no display of billboards, signs or other advertisements on the property except to (i) state solely the name of the Grantor and the address of the Property, (ii) advertise the sale or lease of the Property, (iii) advertise the sale of goods or services produced pursuant to the permitted use of the Property, or (iv) provide warnings. No sign shall exceed four feet by four feet.
   C. There shall be no construction, placement or maintenance of any structure on the Property unless such structure is either:
      1) on the Property as of the date of this agreement; or

2) related to and compatible with the open-space uses of the Property which this agreement is intended to protect or provide for.

D. There shall be no dumping, storage, or accumulations of trash, garbage, ashes, waste, junk, abandoned property or other unsightly or offensive material on the Property.

E. There shall be no filling, excavating, mining, drilling, removal of topsoil, sand, gravel, rock, minerals, or other materials which alters the topography of the Property, except as required in the construction of permissible building structures and features under this agreement.

F. There shall be no construction or placement of fences, screens, hedges, walls or other similar barriers which materially obstruct the public's view of scenic areas of the Property.

G. There shall be no removal or destruction of trees, shrubs, plants and other vegetation, except that the Grantor may: (1) engage in agricultural, horticultural or silvicultural activities, provided that there shall be no cutting of trees, other than selective cutting and salvage of dead or dying trees, within 100 feet of a scenic river, a scenic highway, a Virginia Byway or public property listed in the approved State Comprehensive Outdoor Recreation Plan (Virginia Outdoors Plan); and (2) remove vegetation which constitutes a safety, a health or an ecological hazard, e.g., vegetation classified as a noxious weed pursuant to the Code of Virginia (1950), as amended.

H. There shall be no alteration or manipulation of natural water courses, shores, marshes, swamps, wetlands or other water bodies, nor any activities or uses which adversely affect water quality, level or flow.

I. On areas of the Property that are being provided or preserved for conservation of land, floodways or other natural resources, or that are to be left in a relatively natural or undeveloped state, there shall be no operation of dune buggies, all-terrain vehicles, motorcycles, motorbikes, snowmobiles or other motor vehicles, except to the extent necessary to inspect, protect or preserve the area.

J. There shall be no industrial or commercial activities, conducted on the Property, except for the continuation of agricultural, horticultural or silvicultural activities; or activities that are conducted in a residence or an associated outbuilding such as a garage, smokehouse, small shop or similar structure which is permitted on the property.

K. There shall be no separation or split-off of lots, pieces or parcels from the Property. The Property may be sold or transferred during the term of this agreement only as the same entire parcel that is the subject of this agreement, provided, however, that the Grantor may grant to a public body or bodies open-space, conservation or historic preservation easements which apply to all or part of the Property.

3. This agreement shall be effective upon acceptance by the County, provided, however, that the real estate tax for the Property shall not be extended on the basis of its use value until the next succeeding tax year following timely application by the Grantor for the use assessment and taxation in accordance with Section 20-4-2(d) of the Fluvanna County Code. Thereafter, this agreement shall remain in effect for a term of _____ (5) consecutive tax years.

4. Nothing contained herein shall be construed as giving to the public a right to enter upon or to use the Property or any portion thereof, except as the Grantor may otherwise allow, consistent with the provisions of this agreement.

5. The County shall have the right at all reasonable times to enter the Property to determine whether the Grantor is complying with the provisions of this agreement.

6. Nothing in this agreement shall be construed to create in the public or member thereof a right to maintain a suit for any damages against the Grantor for any violation of this agreement.

7. Nothing in this agreement shall be construed to permit Grantor to conduct any activity or to build or maintain any improvement which is otherwise prohibited by law.

8. If any provision of this agreement is determined to be invalid by a court of competent jurisdiction, the remainder of the agreement shall not be affected thereby.

9. The provisions of this agreement shall run with the land and be binding upon the parties, their successors, assigns, personal representatives, and heirs.

10. Words of one gender used herein shall include the other gender, and words in the singular shall include words in the plural, whenever the sense requires.

11. This agreement may be terminated in the manner provided in Section 15.2-4314 of the Code of Virginia for withdrawal of land from an agricultural, a forestal or an agricultural and forestal district.

12. Upon termination of this agreement, the Property shall thereafter be assessed and taxed at its fair market value, regardless of its actual use, unless the County determines otherwise in accordance with applicable law.

13. Upon execution of this agreement, it shall be recorded with the record of land titles in the Clerk's Office of the Circuit Court of Fluvanna County, Virginia, at the Grantor's expense. The Grantor, as evidenced by the Grantor's signature below, hereby authorizes the County to deliver this agreement to the Clerk's Office for recordation.

14. NOTICE: WHEN THE OPEN SPACE USE OR USES BY WHICH THE PROPERTY QUALIFIED FOR ASSESSMENT AND TAXATION ON THE BASIS OF USE CHANGES TO A NONQUALIFYING USE OR USES, OR WHEN THE ZONING FOR THE PROPERTY CHANGES TO A MORE INTENSIVE USE AT THE REQUEST OF THE GRANTOR, THE PROPERTY, OR SUCH PORTION OF THE PROPERTY WHICH NO LONGER QUALIFIES SHALL BE SUBJECT TO ROLLBACK TAXES IN ACCORDANCE WITH SECTION 58.1-3237 OF THE CODE OF VIRGINIA. THE GRANTOR SHALL BE SUBJECT TO ALL OF THE OBLIGATIONS AND LIABILITIES OF SAID CODE SECTION.

Witness the following duly authorized signatures and seals.

_____ (SEAL)
Landowner

JANE K LIGHTFOOT
NOTARY PUBLIC
REG. #7093874
MY COMMISSION EXPIRES
09/30/2023
COMMONWEALTH OF VIRGINIA

STATE OF Virginia

CITY/COUNTY OF ~~Fluvanna~~ Albemarle, to-wit:

The foregoing instrument was acknowledged before me this 30 day of January, 2023, by Sarah Radcliff.

_____
Notary Public

[SEAL]

My commission expires: 9/30/2023
Notary registration number: 7093874

_____ (SEAL)
Landowner

JANE K LIGHTFOOT
NOTARY PUBLIC
REG. #7093874
MY COMMISSION EXPIRES
09/30/2023
COMMONWEALTH OF VIRGINIA

STATE OF Virginia

CITY/COUNTY OF Albemarle, to-wit:

The foregoing instrument was acknowledged before me this 30th day of January, 2023, by Seth Radcliff.

_____
Notary Public

[SEAL]

My commission expires: 9/30/2023
Notary registration number: 7093874

COUNTY OF FLUVANNA, VIRGINIA

By: _____(SEAL)
County Administrator

STATE OF VIRGINIA

COUNTY OF FLUVANNA, to-wit:

The foregoing instrument was acknowledged before me this ____ day of _____, _____, by Eric M. Dahl, County Administrator, on behalf of the County of Fluvanna, Virginia.

_____
Notary Public

[SEAL]

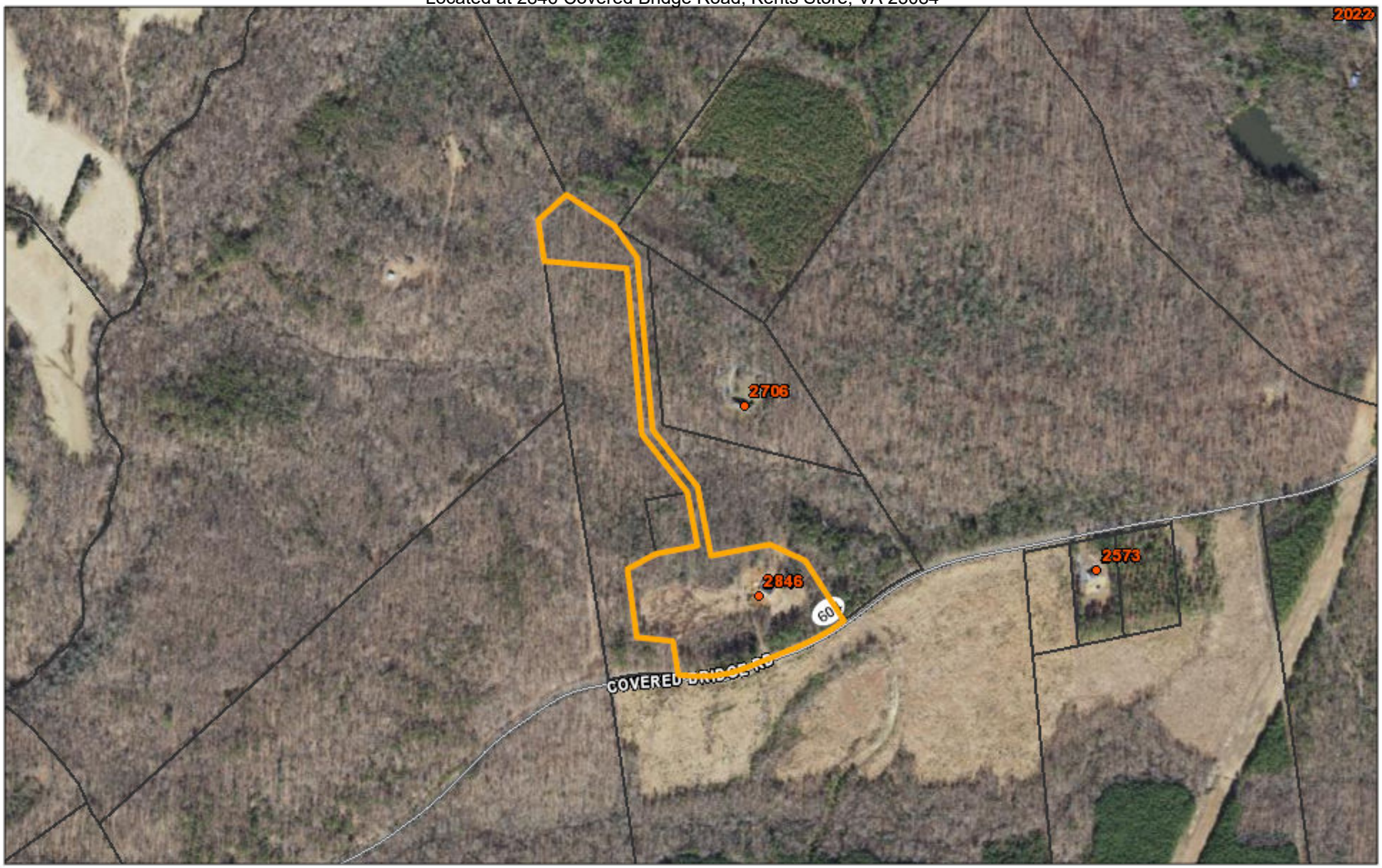
My commission expires:
Notary registration number:

Approved as to form:

_____
Fluvanna County Attorney

Fluvanna County, VA WebGIS Parcels - PIN: 33 A 34C

Located at 2846 Covered Bridge Road, Kents Store, VA 23084



February 6, 2023

Parcels
Town Boundary (From Survey)
Surrounding Counties
County Boundary
Roads
Interstate
Roads Labels
Primary
Secondary

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, Virginia Geographic Information Network (VGIN)

FLUVANNA COUNTY BOARD OF SUPERVISORS
AGENDA ITEM STAFF REPORT

TAB I

MEETING DATE:	February 15, 2023					
AGENDA TITLE:	Fluvanna Community Center Renovation Update					
MOTION(s):	**N/A**					
BOS 2 YEAR GOALS?	Yes	No	**If yes, which goal(s):**			
		X				
AGENDA CATEGORY:	Public Hearing	Action Matter	Presentation	Consent Agenda	Other	
			X			
STAFF CONTACT(S):	Eric Dahl, County Administrator					
PRESENTER(S):	Eric Dahl, County Administrator					
RECOMMENDATION:	N/A					
TIMING:	Routine					

DISCUSSION:

The board requested staff to bring forward a list of renovations for the Fluvanna Community Center. The list of requested renovation items can be seen in the FY24 Capital Improvement Plan (CIP) request for the Fluvanna Community Center. Of the $650,000 CIP request, I have proposed a portion of the items as part of the recommended FY24 CIP. Below shows what items have been recommended in FY24 (or sooner if the board chooses) and what items were recommend to be deferred until FY25.

1. **FY24 - Patch and paint interior walls, doors, hard ceilings, exterior doors, windows, etc. $50K.**
2. **FY24 - Install carpet in the auditorium and entrance area $30K.**
3. **FY25 - Renovate bathrooms with new fixtures, stalls and vanities $80K.**
4. **FY25 - Install new roof $250K.**
5. **FY24 - Install sound system for auditorium $20K.**
6. **FY25 - Replace end of life span HVAC heat pumps $90k.**
7. **FY25 - Install concrete sidewalk to connect all the way around building $80k.**
8. **FY24 - Have HVAC engineer evaluate noise reduction options for auditorium area $10K.**
9. **FY24 - Install new flooring in building hallway $30K.**
10. **FY24 - Have contractor/engineer investigate and provide solution to leaking basement $10K.**

TOTAL:$650,000

- FY24 (or sooner) Project Costs: $150,000
- FY25 (or sooner) Project Costs: $500,000

FISCAL IMPACT:	None				
POLICY IMPACT:	N/A				
LEGISLATIVE HISTORY:	N/A				
ENCLOSURES:	FY24 CIP - Fluvanna County Community Center Renovation				
REVIEWS COMPLETED:	Legal	Finance	Purchasing	HR	Other
		X			

FY2024-2028 CAPITAL IMPROVEMENT PLAN REQUEST

Fluvanna County

Section 1 - PROJECT INFORMATION							
Project Title:	**Fluvanna County Community Center Renovation**				**Department/Agency Ranking:**		**2**
Department/Agency:	**Public Works**		**Contact Person:**	**Dale Critzer, Assistant Director of Public Works**			
Funding Category:	☒ New Project (FY24-28)	☐ Existing Project (FY24-27)	☐ FY23 Project (Add'l Funding)				
Applicable Comprehensive Plan Chapter(s):	☐ 1. Natural Environment	☐ 4. Transportation	☐ 7. Parks and Recreation	☐ 10. Education			
	☐ 2. Land Use & Community Design	☐ 5. Economic Development	☐ 8. Housing	☐ 11. Public Safety			
	☒ 3. Infrastructure	☐ 6. Historic Preservation	☐ 9. Human Services	☐ 12. Financial Sustainability			

Section 2 - PROJECT COSTS							
Expenditure Category	**Prospective Vendor (if known)**	**FY2024**	**FY2025**	**FY2026**	**FY2027**	**FY2028**	**FY24-28 Total**
Engineering & Planning		$ 20,000					**$ 20,000**
Construction		$ 630,000					**$ 630,000**
Vehicle/Apparatus							**$ 0**
Equipment							**$ 0**
Other (specify)							**$ 0**
Other (specify)							**$ 0**
TOTALS		**$ 650,000**	**$ 0**	**$ 0**	**$ 0**	**$ 0**	**$ 650,000**

Section 3 - PROJECTED OPERATIONAL COSTS & REVENUES							
Additional Anticipated Operational Expenses		**FY2024**	**FY2025**	**FY2026**	**FY2027**	**FY2028**	**FY24-28 Total**
Additional Staff Salary							**$ 0**
Benefits	Calculated at 25% of Staff Salary	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
Vehicle							**$ 0**
Vehicle Insurance							**$ 0**
Utilities							**$ 0**
Furniture and Fixtures							**$ 0**
Equipment							**$ 0**
Contractual costs							**$ 0**
Other (specify)							**$ 0**
Total Operational Costs		**$ 0**	**$ 0**	**$ 0**	**$ 0**	**$ 0**	**$ 0**
Total Anticipated Operational Revenues							**$ 0**

Project Title:	**Fluvanna County Community Center Renovation**

Section 4 - PROJECT DESCRIPTIONS OR SPECIAL EXPLANATIONS

FY 2024:

Patch and paint interior walls, doors, hard ceilings, exterior doors, windows, etc $50K. Install carpet in the auditorium and entrance area $30K. Renovate bathrooms with new fixtures, stalls and vanities $80K. Install new roof $250K. Install sound system for auditorium $20K. Replace end of life span HVAC heat pumps $90k. Install concrete sidewalk to connect all the way around building $80k. Have HVAC engineer evaluate noise reduction options for auditorium area $10K. Install new flooring in building hallway $30K. Have contractor/engineer investigate and provide solution to leaking basement $10K.

FY 2025:

FY 2026:

FY 2027:

FY 2028:

FLUVANNA COUNTY BOARD OF SUPERVISORS
MEETING PACKAGE ATTACHMENTS

Incl?	Item
☒	BOS Contingency Balance Report
☐	Building Inspections Report
☒	Capital Reserve Balances Memo
☐	Fluvanna County Bank Balance and Investment Report
☒	Unassigned Fund Balance Report
☒	VDOT Monthly Report & 2020 Resurfacing List
☒	ARPA Fund Balance Memo
☒	The Board of Supervisors Two Year Plan

COUNTY OF FLUVANNA

"Responsive & Responsible Government"

P.O. Box 540
Palmyra, VA 22963
(434) 591-1910
Fax (434) 591-1911
www.fluvannacounty.org

MEMORANDUM

Date: February 15, 2023
From: Tori Melton – Director of Finance
To: Board of Supervisors
Subject: FY23 BOS Contingency Balance

The FY23 BOS Contingency line balance is as follows:

Beginning Original Budget:	**$162,000**
Less: Career Development Circuit Court Clear & Commissioner of Revenue	-15,393
Less: Comprehensive Safety Action Plan Grant – Safe Streets - TJPDC	-30,000
Less: Comprehensive Economic Development Strategy (CEDS) - TJPDC	-2,097.04
Less: 2022 Board of Supervisors Planning Retreat	-5,000
Less: Social Services Salary Range Revision	-17,503
Available:	**$92,006.96**

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MEMORANDUM

Date: February 15, 2023
From: Tori Melton – Director of Finance
To: Board of Supervisors
Subject: FY23 Capital Reserve Balances

The FY23 Capital Reserve account balances are as follows:

County Capital Reserve:

FY22 Carryover	$512,518
FY23 Budget Allocation:	**$250,000**
Less: Fluvanna County District Court Microphone System Replacement	-5,963
Less: Ground Water Well Monitoring at Convenience Center	-27,050
Less: Public Safety Building 5 ton heat pump	-6,408
Less: Generator at Carysbrook Fuel Pumps	-30,000
Less: 4 ton heat pump at Fluvanna County Community Center	-8,522.36
Less: HVAC leaking evaporator coil at the Fluvanna County Library	-6,301.01
Less: Commonwealth's Attorney Office Mold Remediation	-9,800
FY23 Available:	**$668,473.63**

Schools Capital Reserve:

FY22 Carryover	$387,600
FY23 Budget Allocation:	**$200,000**
Less: FCHS Tennis Court Repair	-63,100
Less: Emergency Radios for FCPS School and Departments	-23,910
Add: Closed CRM Project – 08/27/2022	4,884
Less: Central Elementary purchase of 3 HVAC chiller fans	-10,560
Less: Central Elementary HVAC Chiller replacing failed parts	-11,090
Less: FCHS main chiller	-6,740
Less: Fluvanna Middles School HVAC Chiller	-9,178
Add: Insurance recovery from VACORP for vandalism at FMS	38,498.27
Less: Repair and updating equipment at FMS due to vandalism	-38,498.27
Less: Central Fire Control System	-4,460
Less: FCHS Hot Water Heater	-4,435
Less: FCHS Track Surface	-16,850
Less: FMS Fire Control Main Board	-4,990
Less: FMS Fire Control System	-5,275
Less: FCPS Sewer line repairs and installing clean out	-15,500
Less: FCHS auditorium air handler and installing a new one	-7,800
Less: FCHS Centrifungal Pump	-8,524
Less: FCHS Chiller #1	-36,380
FY23 Available:	**$363,692**

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MEMORANDUM

Date: February 15, 2023
From: Tori Melton – Director of Finance
To: Board of Supervisors
Subject: Unassigned Fund Balance

FY22 Year End Audited Total Unassigned Fund Balance:	**$26,519,445**
Unassigned Fund Balance – 12% Target Per Policy:	**$10,215,566**
Unassigned Fund Balance – Excess Above Policy Target:	**$16,303,879**
Less: Palmyra Village Streetscape Project 10.19.22	-317,831
Current Unassigned Fund Balance – Excess Above Policy Target:	**$15,986,048**

Virginia Department of Transportation

Louisa Residency

VDOT Call Center – 1-800-367-ROAD

FLUVANNA COUNTY
February 2023

MAINTENANCE	

The Palmyra and Zions Crossroads Area Headquarters for the month of January 2023.

- Mowing Rt6, Rt656, Rt600. Prune Rt15
- Callouts:Car fire, Slick Roads, Downed Stop Sign
- Pothole patching Rt629, Rt659, Rt670
- Asphalt patching Rt 53,Rt625,Rt649,Rt653
- Grade & place stone on Secondary Rt604, Rt759
- Tree debris removal-Rt250, Rt632

LAND DEVELOPMENT & PERMITS	**AAron LeBeau, P.E.**

Plans with outstanding comments or under review (Activity within last 90 days)

- McDonald Family Subdivision, **Review Underway**
- Bond Family Subdivision, **Review Underway**
- Carter Family Subdivision**, Review Underway**
- Harvest Acres Final Plat, **Review Underway**
- Musselman Family Final Plat, **Review Underway**

Plans found acceptable

- Zion CrossRoads Industrial Park, Lot 6 Construction Entrance

Other

-

LUP Permits Issued and Completed:

- VDOT issued permits in January 2023.
- VDOT closed 8 permits in January 2023.

CONSTRUCTION

Bridge Projects:

- **On-Call Bridge Maintenance Contract** **BRDG-967-457,N501 (UPC 115014)** –
  Scope: Bridge Maintenance (Various locations)
  Estimated Contract Completion Date: June 30, 2022 (Term 3)
  (Currently Inactive in the area)

Road Projects:

- **ADA Compliance** **9999-967-317, N01 (UPC 119781)** various locations. Contract executed 02-07-2022
  NTP: Specific to task orders
  Scope: On call ADA compliance
  Estimated Contract Completion Date: January 01, 2023 (T1)

- **On-Call District Signal Contract** **9999-967-527, C501 (119130)**– Various Locations
  Scope: Specific to each Task order
  Estimated Contract Completion Date: December 22, 2023 (T1)
  (Currently Inactive in the Area)

Schedules:

TRAFFIC STUDIES/ SPECIAL REQUESTS

- Marking requested on Route 659; passing zone.
  Status: In Progress; passing zone removed, full installation pending completion by Contractor

- Safety Study Request on Rt 600; S.Boston Road near Lake Monticello; intersection of Rt600 & Riverside Ridge Drive.
  Request received on 9/27/2022
  Status: In Progress. Pending Installation, locations have been marked, awaiting clearance

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MEMORANDUM

Date: February 15, 2023
From: Tori Melton – Director of Finance
To: Board of Supervisors
Subject: ARPA Fund Balance

ARPA Fund Total Appropriation: $5,296,878 – 100% received	**$5,296,878**
Less: FUMA Wastewater Treatment Plant Evaluation 08.04.21	-$39,870
Less: FUSD Morris and Omohundro Well Rehabilitation 09.01.21	-290,250
Less: Sheriff's Office Hazard Pay One-Time Bonus 10.06.21	-41,983.50
Less: E911 – Hazard Pay One-Time Bonus 10.06.21	-16,954.88
Less: Premium Pay – Staff One-Time Bonus 12.15.21	-173,585.63
Less: FireFly Broadband VATI Grant 04.20.22	-601,500
Less: CIP Funding FY23	-1,801,160
Less: Fork Union Tanker 20 Additional Funding	-38,319
Less: Fork Union Tanker 20 Additional Funding	-5,321
Less: PA 17 ZXR Route 250 & Route 15 Corridor Wastewater System Expansion	-50,760
Current ARPA Fund Balance	**$2,237,173.99**

The Board of Supervisors Two Year Plan – *Draft, August 2022*

#	Complete	2022 Two Year Goals	Year 1	Year 2	Notes
A		**SERVICE DELIVERY**			
A1		Work with FRA to identify support options for Fire and Rescue volunteers.		X	
A2		Perform comprehensive review of existing partnerships with local area support and non-profit groups providing services to Fluvanna residents; review service gaps and identify needed partnerships.	X	X	Begin in Year 1; complete in Year 2
A3		Initiate comprehensive review of traffic throughout the county with a particular focus on high-traffic areas around the Lake Monticello community.		X	
A4		Community transportation options and alternatives.		X	Shared school buses/drivers providing transportation for county residents; TJPDC Rural Transportation work group; JAUNT
A5		Implement annual county volunteer recognition ceremony.		X	
A6		Design implementation plan for professional Fire Chief position.		X	
B		**COMMUNICATION**			
B1		Develop communication plan to inform residents of County projects, accomplishments, and where tax dollars are spent.		X	
C		**PROJECT MANAGEMENT**			
C1		Continue Columbia area renewal efforts.	X	X	

#	Complete	2022 Two Year Goals	Year 1	Year 2	Notes
C2		Complete a Master Water and Sewer (Plan Phase I) to identify sources for the county's long-term water needs; particularly for each of its community planning areas.	X		
C3		Continue Palmyra Village Streetscape	X	X	Phase I: project begins in 2025, street flow, sidewalks, and street parking on Stone Jail Street side of Civil War Park. Phase II: Crosswalks, sidewalks and parking on Main Street.
		C3.1 Review and pursue opportunities and options for a Palmyra Village Streetscape project to improve safety, parking, walkability, and overall appearance.	X		2022 Smart Scale Grant Awarded.
		C3.2 Research options for civic displays (flags, banners, Notable Residents, etc.)		X	
C4		Successfully oversee and manage Fluvanna County aspects of the James River Water Project.	X	X	
C5		Successfully oversee and manage the design and construction of the Zion Crossroads water and sewer system.	X	X	
C6		Pursue Fork Union revitalization.		X	
		C6.1 Research options for civic displays (flags, banners, Notable Residents, etc.)		X	
C7		Oversee New Administration Building project.	X	X	Multi-year project.
		C7.1 Create and Issue Request for Proposal for Design	X		
		C7.2 Select Design Firm for design of New Admin Building		X	
D		**COMMUNITY DEVELOPMENT & ENRICHMENT**			
D1		Draft and a formal County-wide economic development and tourism strategy inclusive of an implementation schedule.	X	X	

#	Complete	2022 Two Year Goals	Year 1	Year 2	Notes
		D1.1 Adopt Economic Development Strategic Plan.	X		
		D1.2 Implement five-year Economic Development Strategic Plan.		X	
D2		Seek opportunities to coordinate development activity at Fluvanna's northern border with Louisa County.	X	X	
D3		Hold an Economic Development Discussion Forum for local businesses with planning, zoning, building inspections, infrastructure components.	X		
D4		Investigate options for utilizing Dominion proffer - $500,000 for recreation, green space.	X	X	
D5		Investigate opportunities to support expanded recreation opportunities, arts, and tourism.	X	X	Coordination with State agencies regarding the installation of additional boat ramps along the Rivanna and James Rivers. Fluvanna After Five @ Pleasant Grove.
D6		Research creating a "teaching farm" at PG Park.		X	Collaborative effort - FCPS? Cooperative Extension? Farm Bureau?
D7		Implement stronger Code Enforcement on the County's Spot Blight Abatement program	X	X	
D8		Review the Subdivision Ordinance on Cluster subdivisions; large lot subdivisions.		X	
D9		Review the Zoning Ordinance to look at higher density options between CPA and R4.		X	
E		**FINANCIAL STEWARDSHIP AND EFFICIENCY**			

#	Complete	2022 Two Year Goals	Year 1	Year 2	Notes
E1		Reduce the County's reliance on creating and mailing paper checks for payments and implement expanded ACH/EFT transaction options.	X		
E2		Implement credit card payment option for citizen at all County funds collection points through MUNIS Cashiering process.	X	X	
E3		Plan for ways to adequately fund, implement and standardize the Capital Improvement Plan, eliminating deferred CIP projects.		X	