

Avon Street Extended (RE)Vision

Documentation Supporting Southern and Western Area Master Plan

THE WORK OF
LINE+GRADE



Submitted as Draft in November 2019

Avon Street Extended (RE)Vision

Professional Services Provided to:

County of Albemarle
Department of Community Development
Transportation Planning
401 McIntire Road
Charlottesville, VA 22902

Prepared for:

5th and Avon Community Advisory Committee

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Project Origins

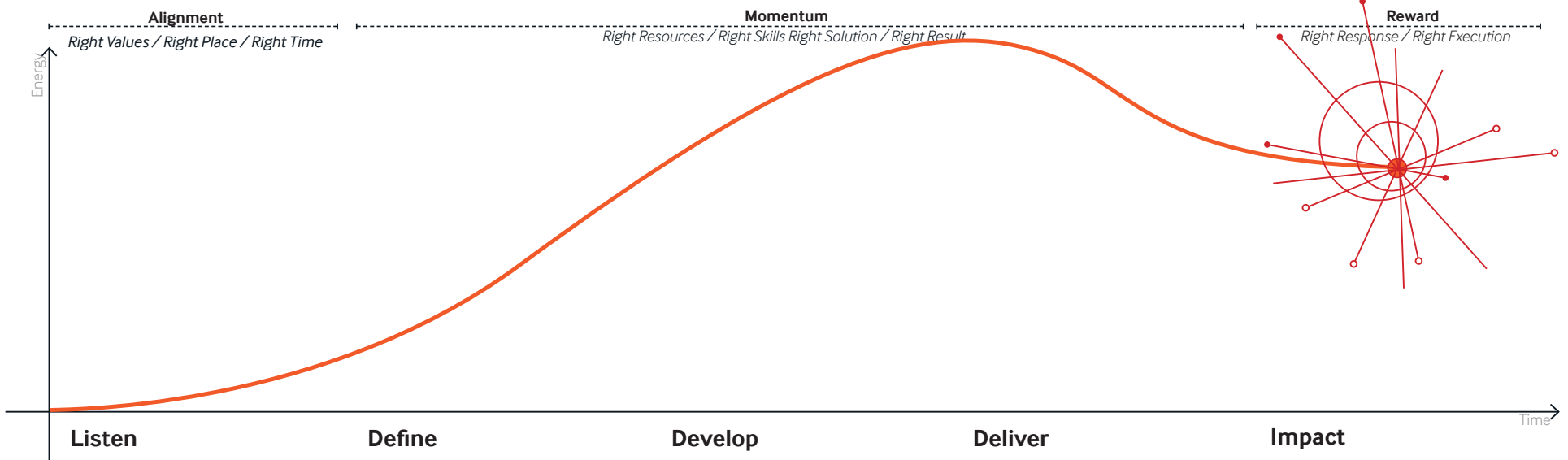
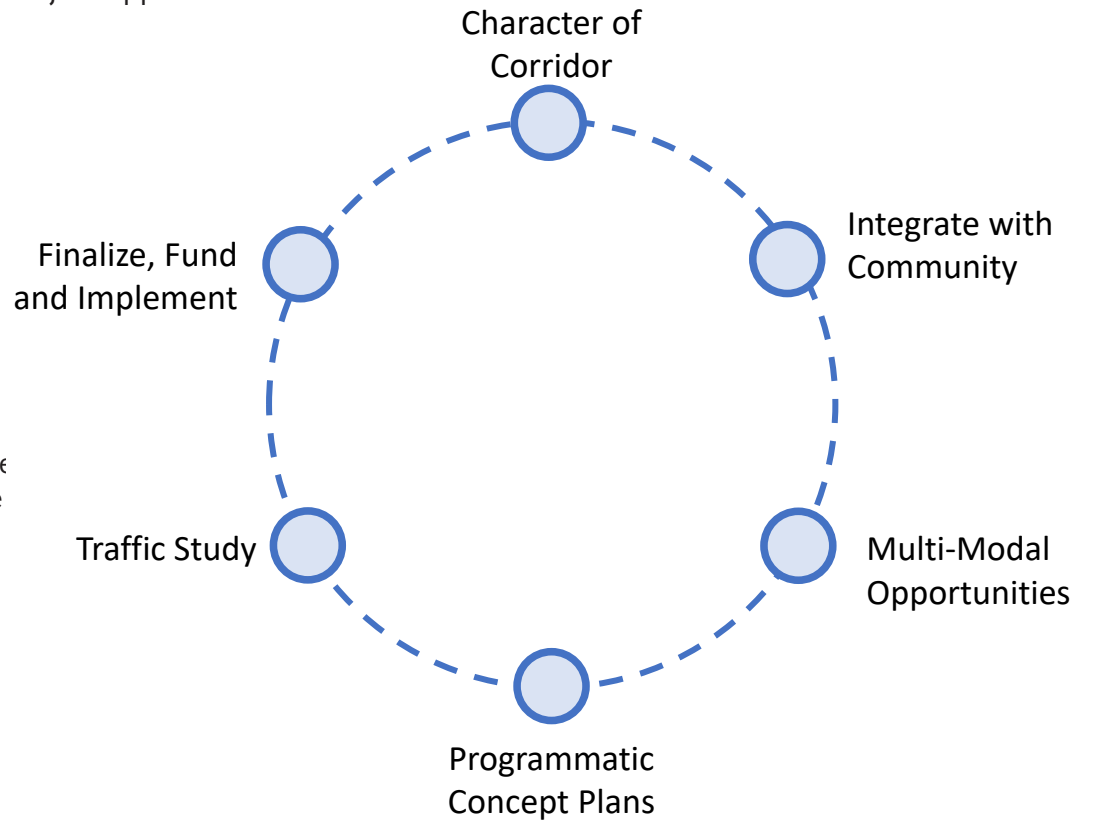
On July 19TH 2018 Line and Grade Civil Engineering presented a project approach to the 5TH and Avon Community Advisory Committee (CAC). The presentation was intended to highlight how our team could act as a liaison for a Community Driven Design Process which would result in a new vision for the Avon Street Extended Corridor - from the City of Charlottesville jurisdictional boundary to Route 20, a length of 2.3 miles.

Using a myriad of examples from similar projects, Line and Grade staff proposed how we would lead the CAC through the design and vision process. The original project approach icon is shown at right. And the Project Trajectory, below. Despite the tendency of an Engineering Firm to think in a linear fashion, projects such as this are necessarily non-linear and iterative. Though these graphics indicate neat-and-tidy transitions between phases, this is not actually the case.

Introduction

What follows is a summary of each CAC Meeting and the design decisions that stemmed from these community meetings. For the purposes of this Memorandum, the work is referred to as **(RE)Vision**.

Project Approach:



Listen:

As the project trajectory image shown on Page 4 suggests: the first phase of the project was for the design team to **listen** to the Community Advisory Committee and member of the community writ large. The summary below details discussion items and feedback from a December 20th, 2018 CAC meeting. A full transcript of the meeting Minutes can be found in Appendix A.

- VDOT has expressed that a second signalized intersection at Southern Parkway will not be permitted.
- Pedestrian experience along existing roadway is very:
 1. "Unpleasant"
 2. "Foreboding"
 3. "Dangerous"
 4. "You take your life into your hands when crossing at Mill Creek"
- How can we keep speed slow?
- Goal of the proposed design changes are to:
 1. Slow traffic
 2. Change perceived character
 3. More residential
- Consider Roundabout at one of the primary intersections
- Pedestrian Connection across Interstate 64
- Existing Turn Lanes seem too long
- Design for Compatibility with City
 1. Discuss with City Staff and Leadership (Counselors, Bike, Ped, Trails)
- Land Use
 1. PVCC Land is for sale
 2. Schools (Cale Elem. Peabody, Monticello HS)
 3. Current and Future Residential (Refer to Springhill Village)
 4. Lakeside North
 5. Jail is along corridor.



"[...] You take your own life into your hands [...]," CAC Member



The intersection of Mill Creek Blvd. and Avon Street Ext. (Note the delivery vehicle).

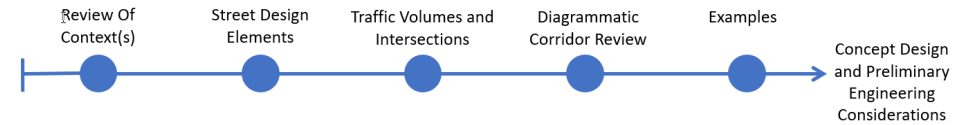


An aerial view of the narrowest portion of the corridor, where Avon Street crosses I64.

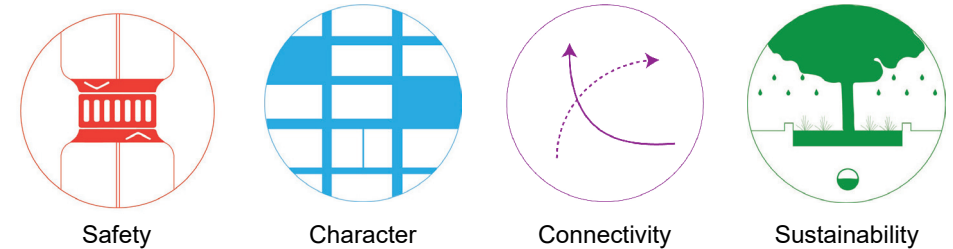
Define:

Having Listened to the CAC's feedback and ideas about the Avon Street Corridor, the Line and Grade team began to categorize and define the Avon corridor by the existing and preferred roadway typologies as well as the adjacent land use zoning. The following notes were generated during the January 17, 2019 CAC meeting. A full transcript of the meeting minutes can be found in Appendix A. The CAC presentation from January 17, 2019 can be found in Appendix B.

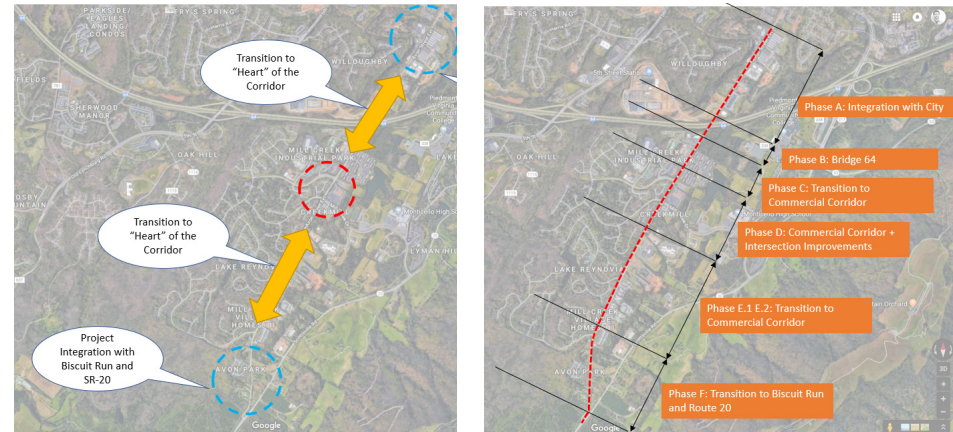
- Summarized main concerns expressed in previous CAC meeting:
 - Safety
 - Aesthetic and Character
 - Connectivity
 - Functionality
- Presented overview of design approach
 - Divided corridor into discreet phases
 - Road diet: re-allocate unnecessary pavement to other users
- Offered design options at key intersections
 - City integration
 - Mill Creek
 - Southern Parkway
 - Cale Entrance
 - 5th Street Station Parkway
 - Route 20/Biscuit Run
- Explored possible typical sections along discreet phases of corridor
 - Phase A – Industrial, City integration
 - Phase B - I64 Bridge
 - Phase C - Industrial transition to Core
 - Phase D - Mill Creek and Southern Pkwy (Core)
 - Phase E - Residential Transition to Core
 - Phase F - Route 20 and Biscuit Run
- CAC Feedback
 - Residential feel is most desirable.
 - Concern was expressed about cost/funding
 - Look at interim solutions
 - Reach out to local VDOT staff



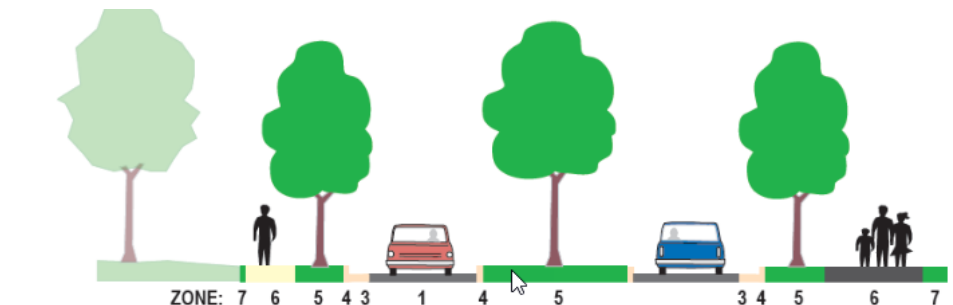
Presentation Outline



Identified Project Goals



Defining Corridor



Explore Street Typologies

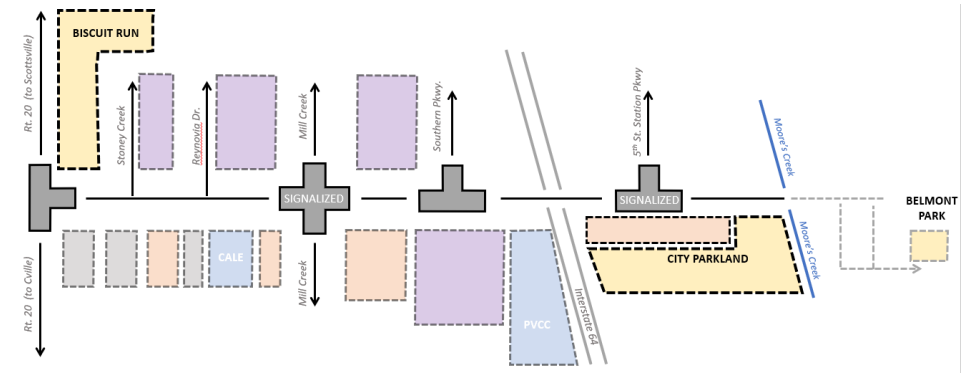
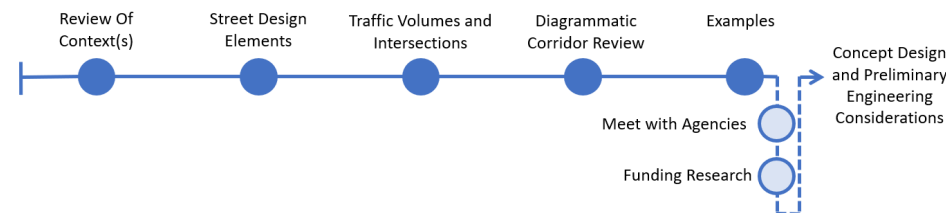
Define:

In due course of the January CAC meeting it was expressed to the Line and Grade team that this community led design process should not allow for detached solutions, but that the proposed solutions should be candidates for state and/or Federal Funding sources. This was welcome feedback as the design team was able to wrap the entire project approach around a series of fund-able, discreet projects. That is to say, the development of additional definitions to guide the project. The February CAC meeting was a presentation of these guiding considerations, identification of discreet projects as well as prospective funding sources. A full transcript of the meeting minutes can be found in Appendix A. The CAC presentation from February 21, 2019 can be found in Appendix B.

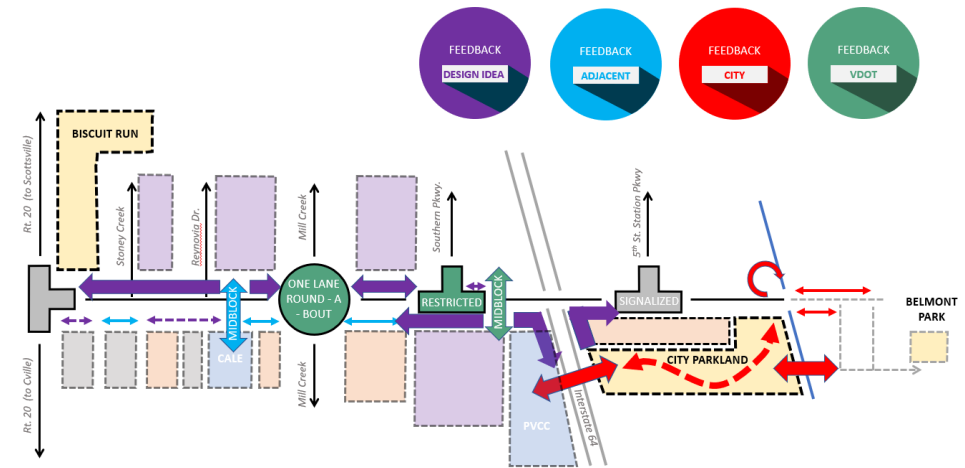
Between the CAC Meetings on January 17, 2019 and February 21, 2019 Line and Grade hosted meetings with several Agencies, including:

- January 29, 2019 Meeting with VDOT
 - VDOT has not looked into roundabouts at Southern Pkwy or Mill Creek
 - No statistical data is needed to propose a roundabout
 - VDOT supports replacing a signalized intersection with a roundabout
 - Consider Mid-Block Crossings
 - Consider Ped Bridge crossing I64 as perpendicular (shorter spans).
- February 14, 2019 Meeting with City
 - City owns 26 Acres behind Public Works yard for potential connection
 - Ped Bridge option on east side of Avon Street Bridge
 - Provide on-road bike accommodations
 - City has an on-the-shelf new roadway striping plan for Avon St (City's)

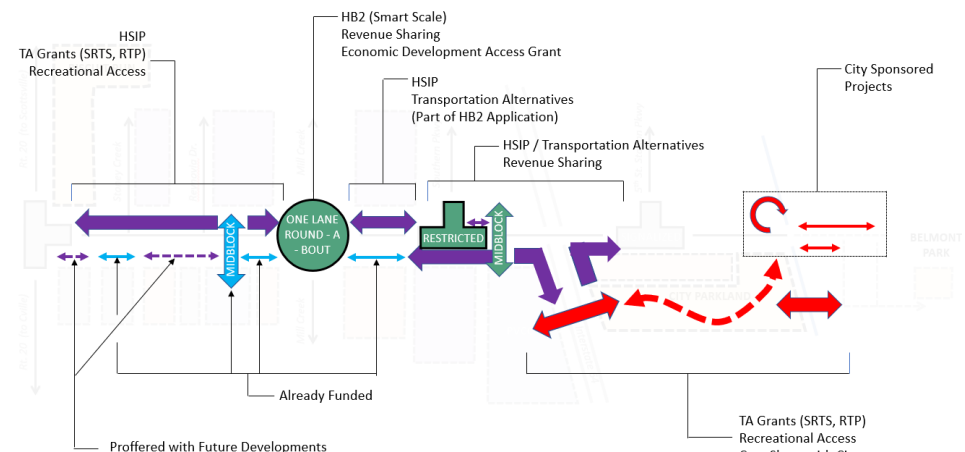
Presentation Outline



Representative Diagram of Corridor



Discrete Project Opportunity Definitions



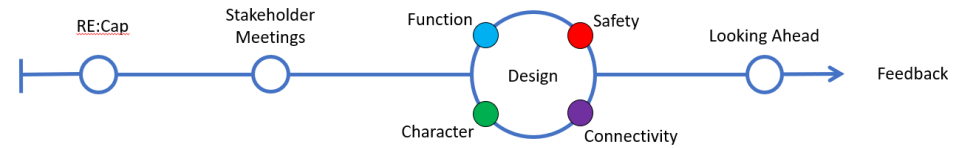
Potential Funding Sources Identified

Develop:

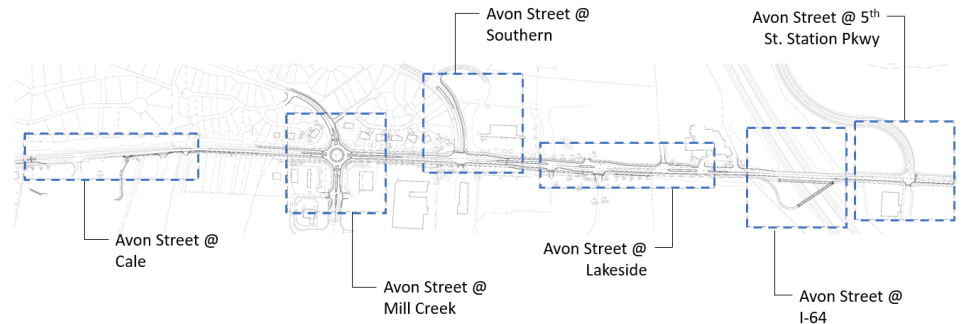
After substantial effort had been put toward defining the context(s), challenges, and funding opportunities within the corridor the design team began to develop and conceptualize programmatic elements associated with the desired improvements. Within each of the *design areas* as shown to the right, Line and Grade proposed improvements analogous to each of the Project Goals defined on Page 6 of this Memo. These elements were presented at the March CAC 2019 a full transcript of these meetings minutes can be found in Appendix A, and a copy of the presentation can be found in Appendix B.

Between the CAC Meetings on February 21, 2019 and March 21, 2019 Line and Grade hosted meetings with several Agencies, including:

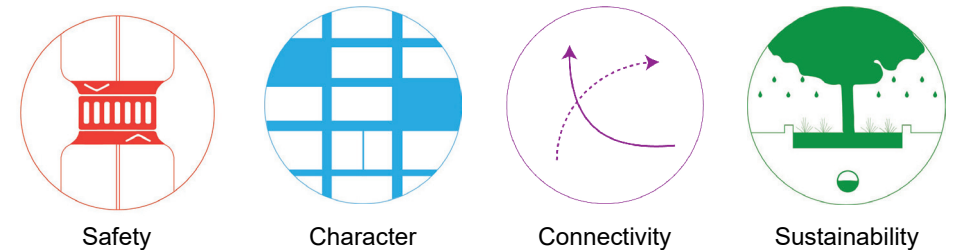
- February 26, 2019 Meeting with Cale Elem.
 - 600-650 children (Pre-K to 5th Grade)
 - Safe Route to School Project underway (AMT Engineers)
 - Peak Traffic Hours: 7:40-8:10 am and 2:30-3:00 pm
 - Left Turn into Cale is difficult with on-coming traffic
 - Majority of walking students come from Avinity neighborhood
- February 27, 2019 Meeting with PVCC
 - PVCC pulls students from Green, Louisa, Albemarle and Fluvanna
 - Very small percentage of cyclists or pedestrians to campus
 - No plans for portion of property adjacent to Avon Street
 - Does not desire bike/ped connection through campus to Monticello



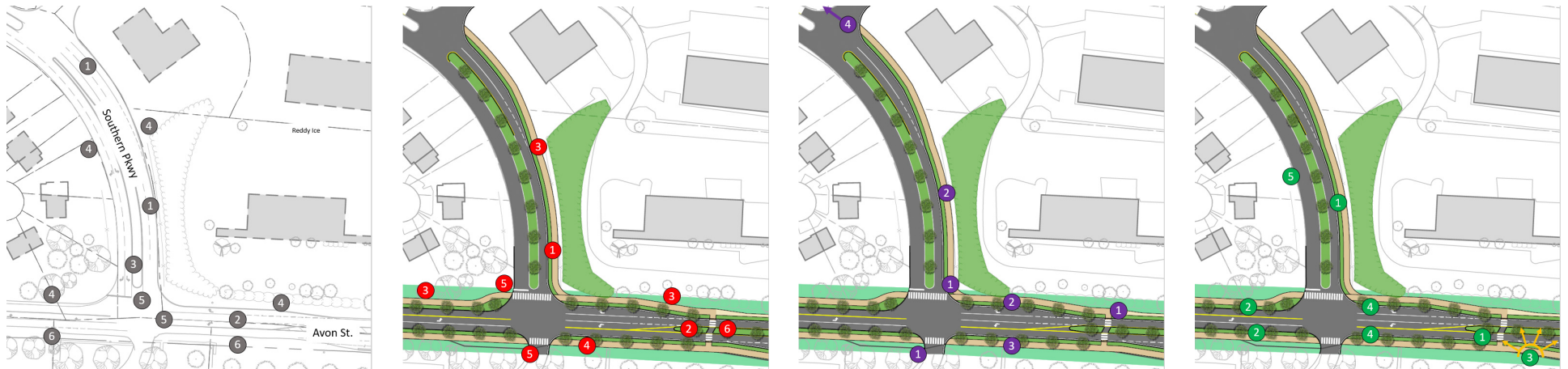
Presentation Outline



Overview of Design Areas



Identified Project Goals



Example of Stated Improvements

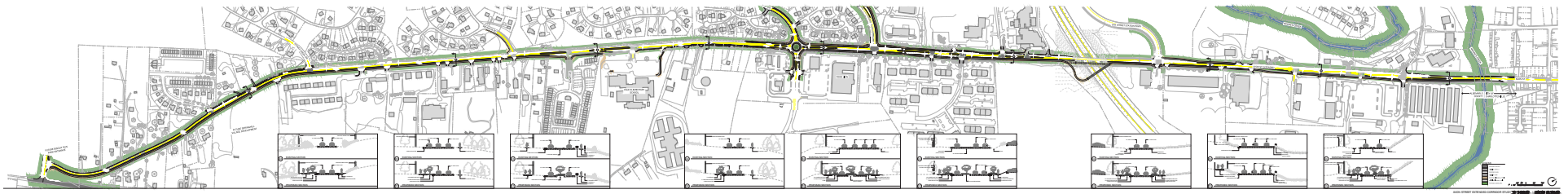
Deliver:

In May 2019, the 5th and Avon CAC hosted a community event at Cale Elementary school. The intent of this meeting was to Deliver the current (RE)Vision drafts to the broader community and solicit feedback regarding the considerations. A copy of this presentation can be found in Appendix B.

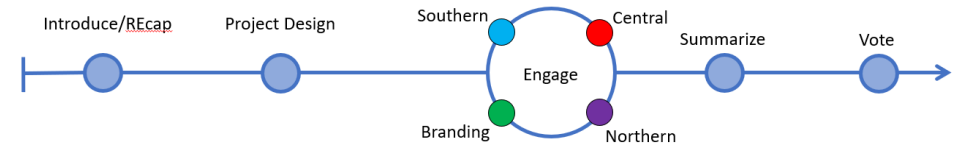
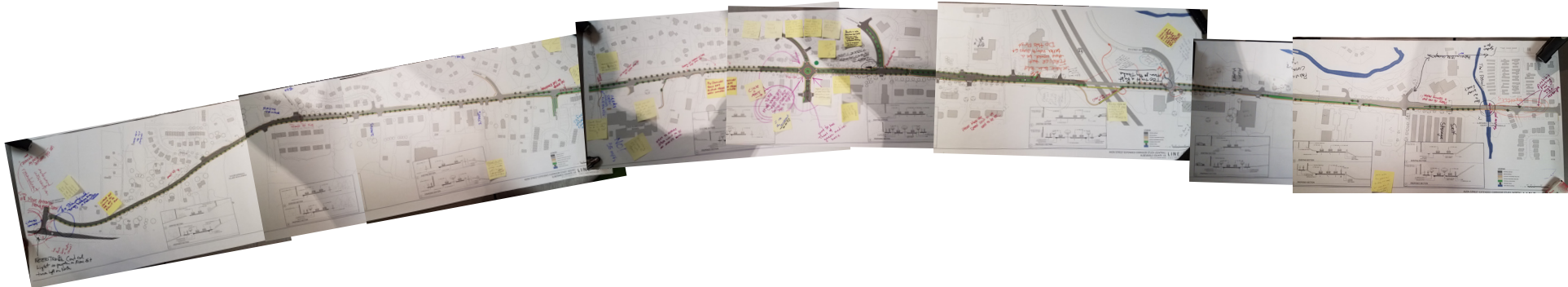
Beyond a presentation and the opportunity to see the designs at close-hand, the citizens were allowed to provide data-points regarding what they felt was the most appropriate place to implement improvements, and, what type of improvements to implement in those area. Comments and feedback were solicited from those in attendance as well an on-line survey. Data sets and public feedback can be found in Appendix C.

Corridor Priority Matrix (Combined)	Route 20 Intersection and Biscuit Run Entrance	Mixed Use: Light Industrial and Residential	Cale Elementary	Mill Creek to Southern Pkwy	Lake Side apts / Armory / Jail	64 Bridge	Integration with City of Charlottesville	Total
Pedestrian Facilities	25	14	14	16	18	10	14	111
More Pedestrian Crossings	13	4	15	11	13	20	7	83
Pedestrian Level Lighting	5	3	4	7	5	0	8	32
Bicycle Facilities	25	15.5	8	12.5	15.5	19.5	18	114
Bike Stations and Bike Parking	1	4	2	3	4	3	4	21
Traffic Calming Measures	6	7	13	11	11	7	8	63
Intersection Improvements	13	13	4	17	18	6	2	73
Landscaping and Street Trees	2.5	5	5	7.5	7.5	4.5	3	35
Corridor Branding	2	2	0	3	2	1	3	13
Mass Transit / On-Demand Transit	5	6	3	14	13	6	6	53
Greenspace and Viewpoints	5	8	6	5	4	7	8	43
Total	102.5	81.5	74	107	111	84	81	641

Aggregated Data Sets



Avon Street Extended Corridor Concept Design As Presented (There is no easy way to show 2.3 miles on an 11' wide piece of paper)



Presentation Outline



Example of Public Feedback

Deliver:

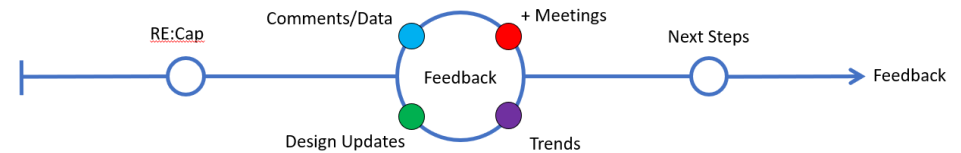
The July CAC meeting primarily consisted of presenting and reviewing the data which was gathered during the Public open house in May. The design team also presented revised design elements which had been updated based on sound feedback and were deemed to benefit the project(s).

Line and Grade also made recommendations to the CAC as to what appeared to be the top three (3) projects based on citizen feedback.

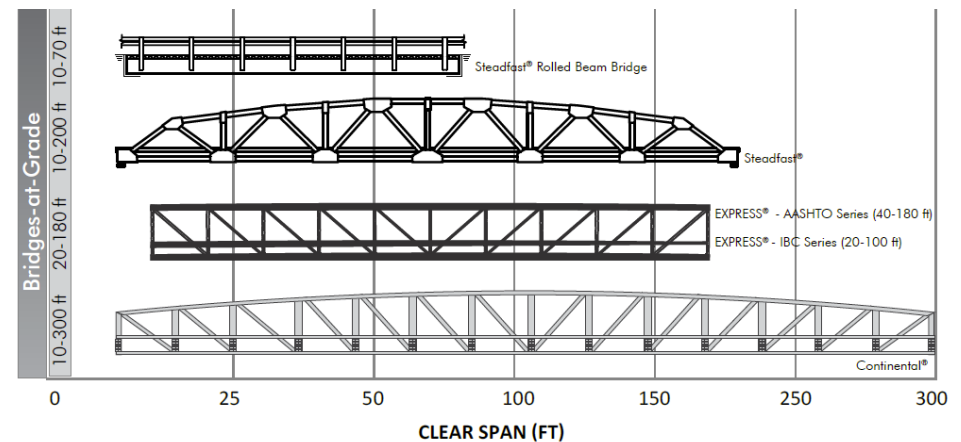
A full transcript of the meeting minutes can be found in Appendix A. The CAC presentation from July 18, 2019 can be found in Appendix B.

Between the CAC Meetings on May 16, 2019 and July 18, 2019 Line and Grade hosted meetings with several Agencies, including:

- **June 6, 2019 Meeting with Charlottesville Area Transit (CAT)**
 1. Bus Stop desired at Avon and 5th Street Station Intersection
 2. Extended turn lanes for bus pull offs
 3. No bus stops within shopping centers. Only in ROW
 4. New Route to Mill Creek anticipated in near future
 5. Proposed Shared Use Path near CAT deemed fully acceptable
 6. CAT prefers roundabouts at ends of lines (supports roundabout plan)
- **July 17, 2019 Meeting with VDOT regarding Ped Bridge**
 1. The Proposed Structure would require a Maintenance Agreement with Albemarle County
 2. Once cost estimates are developed VDOT will help identify appropriate funding strategies
 3. Required Approvals:
 - VDOT District Engineer
 - Federal Highway Administration (FHWA)
 - VDOT Structure and Bridge Department
 4. Design Guidance
 - I-64 Median Rail needs extending
 - New Slope Protection is needed



Presentation Outline



Pedestrian Bridge Structure Selection



Mid-Block Crossing at Cale Elementary

Corridor Priority Matrix	Route 20 Intersection and Biscuit Run Entrance	Mixed Use: Light Industrial and Residential	Cale Elementary	Mill Creek to Southern Pkwy	Lake Side apts / Armory / Jail	64 Bridge	Integration with City of Charlottesville	Total
Pedestrian Facilities	1	1	3	5	3	0	5	24
More Pedestrian Crossings	1	0	3	6	2	17	0	29
Pedestrian Level Lighting	0	1	2	1	1	0	0	5
Bicycle Facilities	4	0.5	1	2.5	1.5	11.5	3	24
Bike Stations and Bike Parking	0	0	1	0	0	0	0	1
Traffic Calming Measures	0	0	4	5	0	0	1	10
Intersection Improvements	9	0	1	13	0	1	0	24
Landscaping and Street Trees	4.5	1	1	2.5	3.5	0.5	0	10
Corridor Branding	0	0	0	2	0	0	0	2
Mass Transit / On-Demand Transit	1	1	0	7	2	2	1	14
Greenspace and Viewpoints	0	0	0	0	0	3	0	4
Total	17.5	4.5	16	45	13	41	10	147

Data Output

Deliver:

The September CAC meeting was yet again an opportunity for the broader public to come and be updated on the progression of the design. However, the meeting was not well attended so it was really a more formal version of the Monthly CAC meeting.

The presentation consisted of an overall recap of the project work, to date. Returning to the original Project Goals (Page 6) and how the proposed design ideas and concept plans honored these goals.

Furthermore, the design team presented the final revised design of the entire corridor, from the City of Charlottesville Jurisdictional Boundary to Route 20 and then presented detailed designs of the top 3 project areas as determined by community feedback. These top project are:

- Pedestrian Crossing of Interstate 65
- Intersection Improvements at Avon Street and Southern Parkway
- Intersection Improvements at Avon Street and Mill Creek Blvd.

Please note that the desired and proposed improvements listed above are not only oriented toward single-occupant vehicles but rather, multi-modal improvements for Pedestrians, Bicyclists, Mass Transportation and traditional vehicular transit.

Each of these project's areas were presented as an isolated project which corresponded with the overall vision of the corridor. When approached in this manner, the corridor will be entirely overhauled piece by piece as funding sources are identified and secured.

The top three design project renderings can be seen to the right.

The cost estimates for each of these projects is included in Appendix D of this Memo.

A full transcript of the meeting minutes can be found in Appendix A. The CAC presentation from July 18, 2019 can be found in Appendix B.

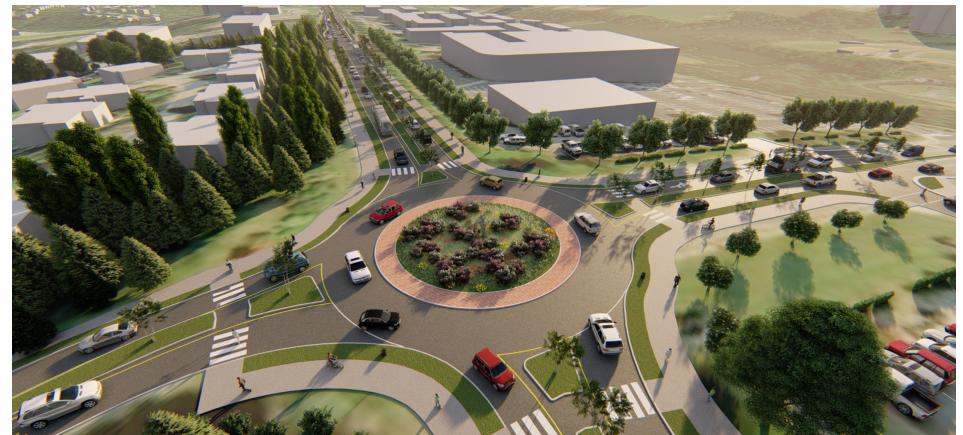
What follows in the next six pages is an enlarged copy of the plans as presented during the September Meeting. The orientation and layout has been adapted to the 8.5x11 landscape format.



Concept Rendering of 2-Span Pedestrian Bridge over I-64

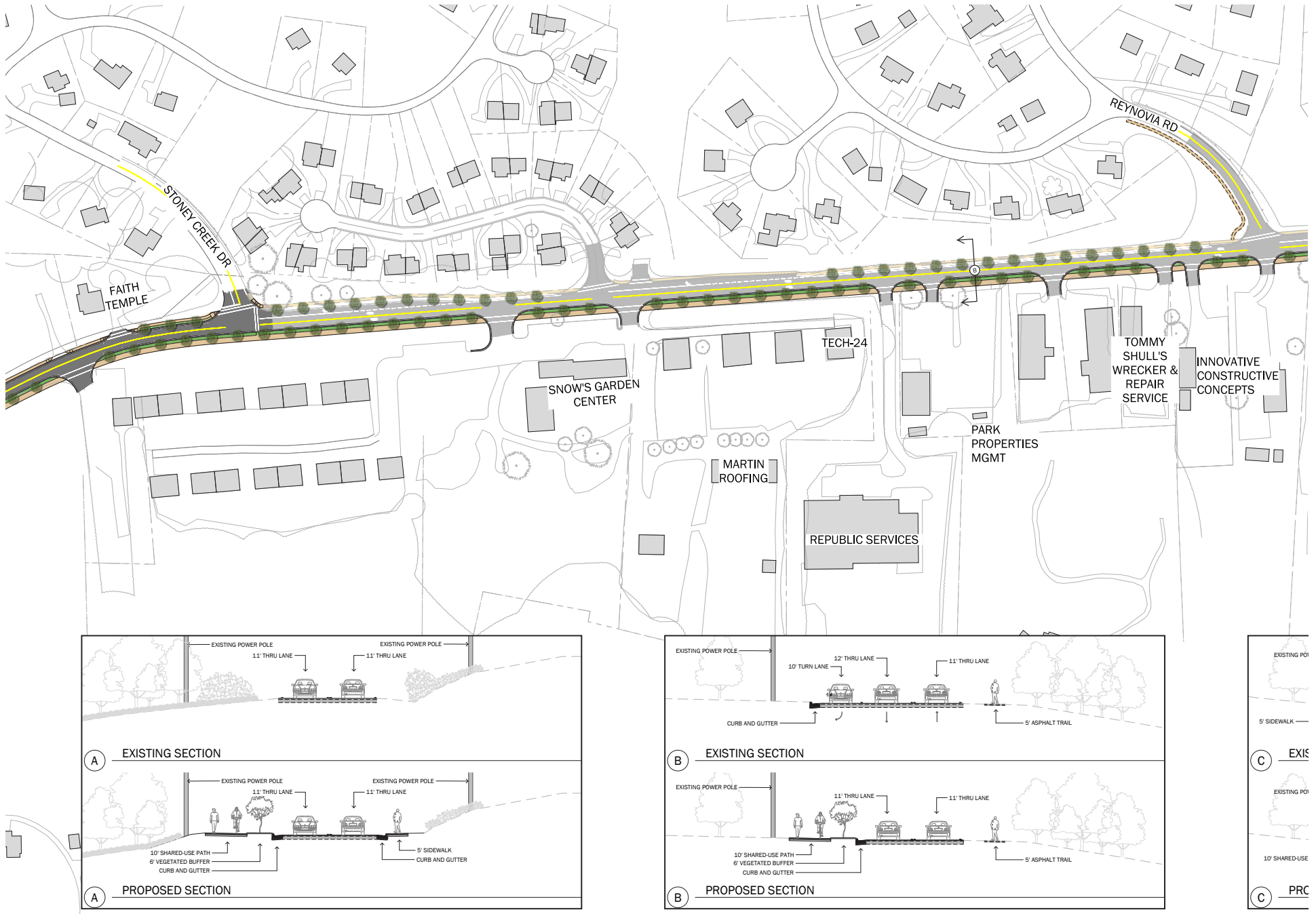


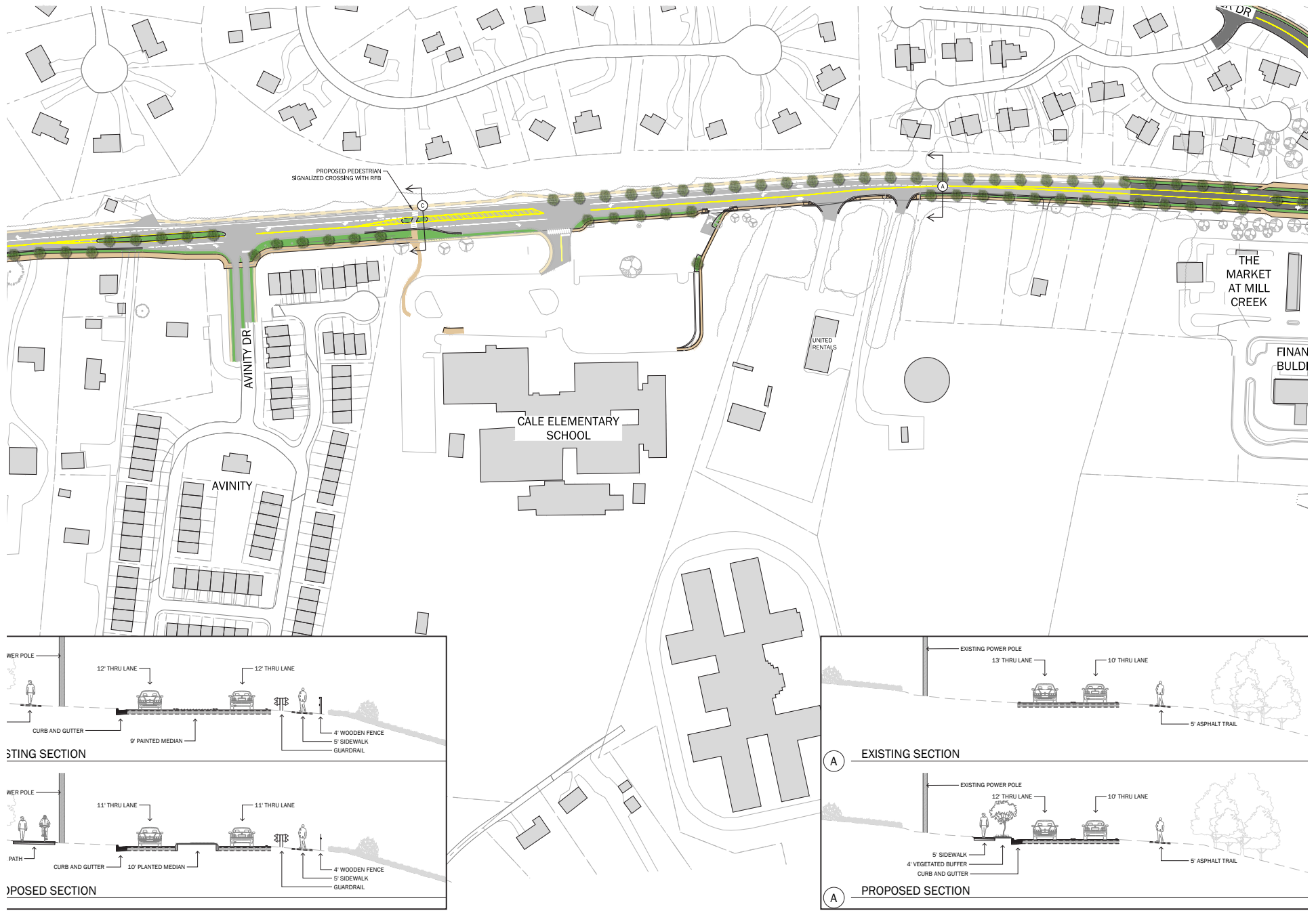
Conceptual Intersection of Avon Street and Southern Parkway

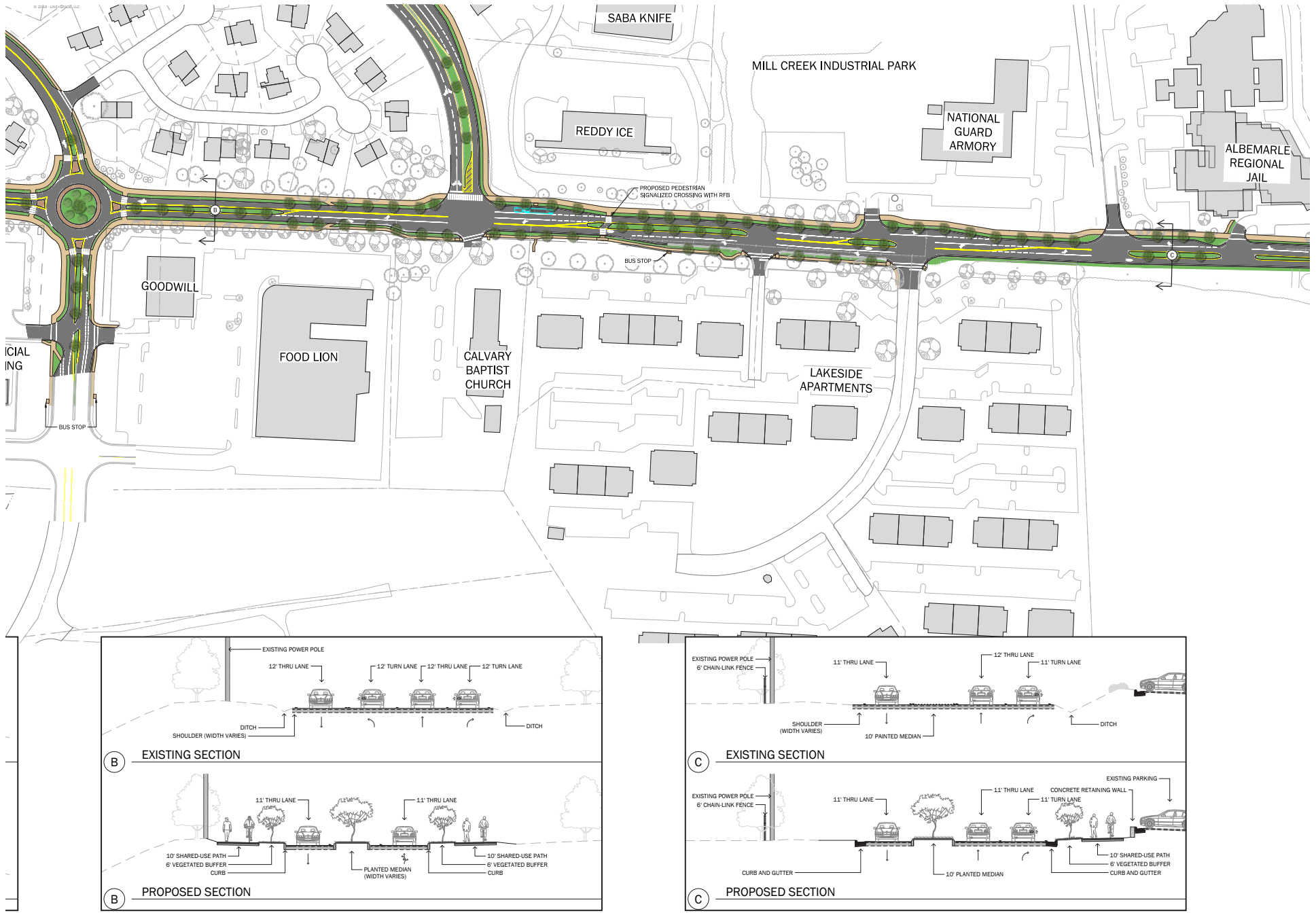


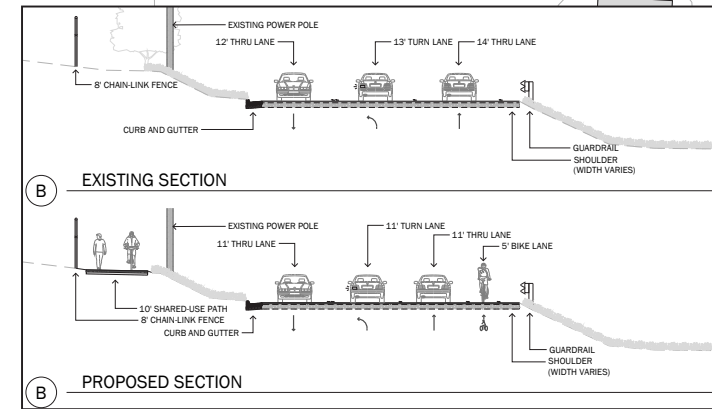
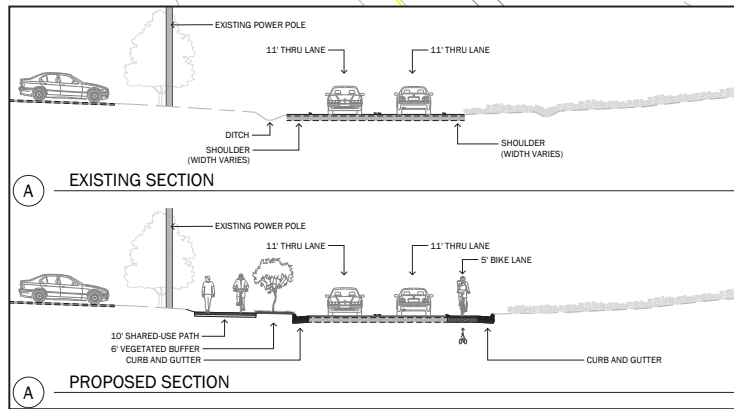
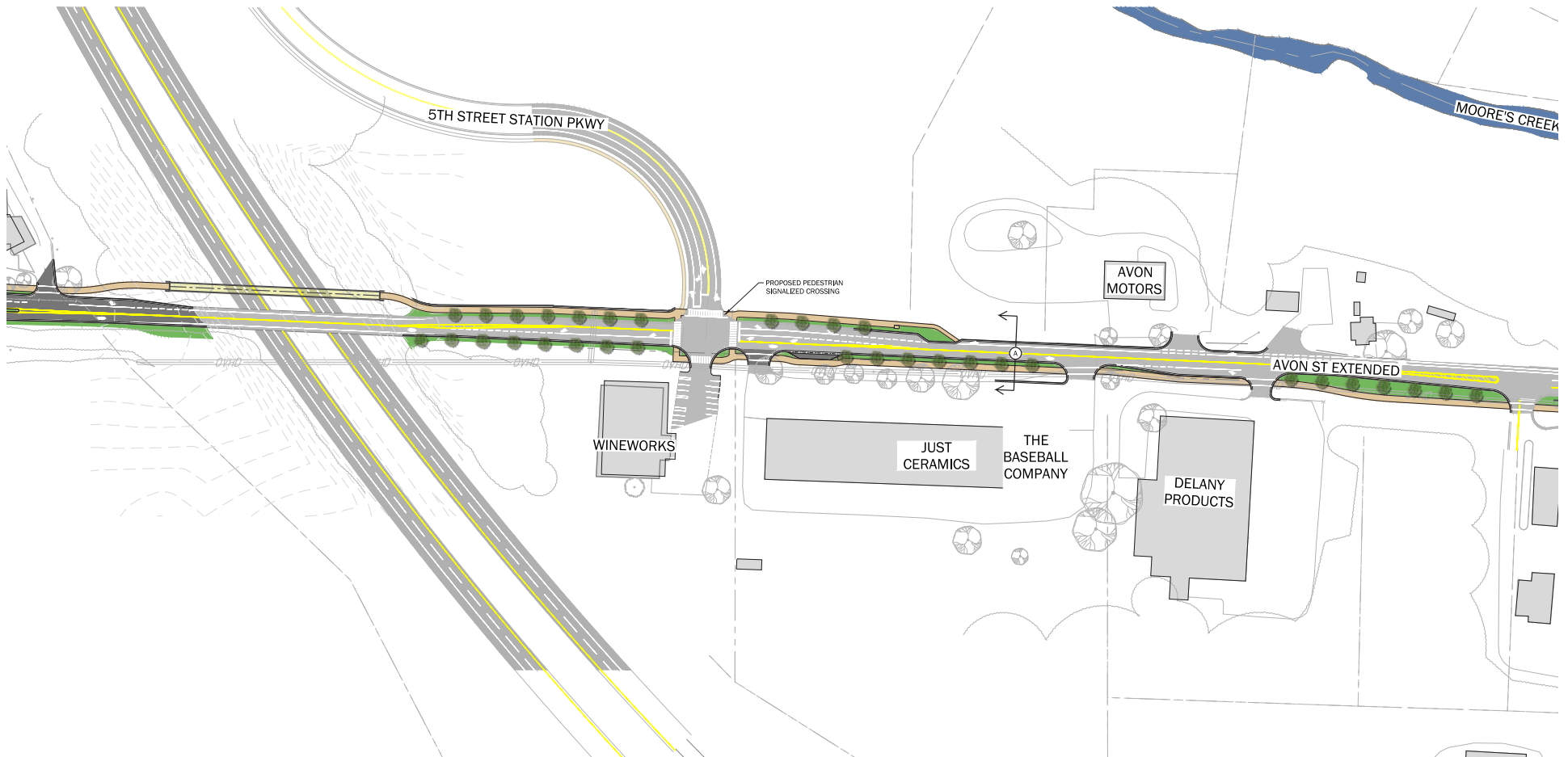
Conceptual Intersection of Avon Street and Mill Creek Blvd.

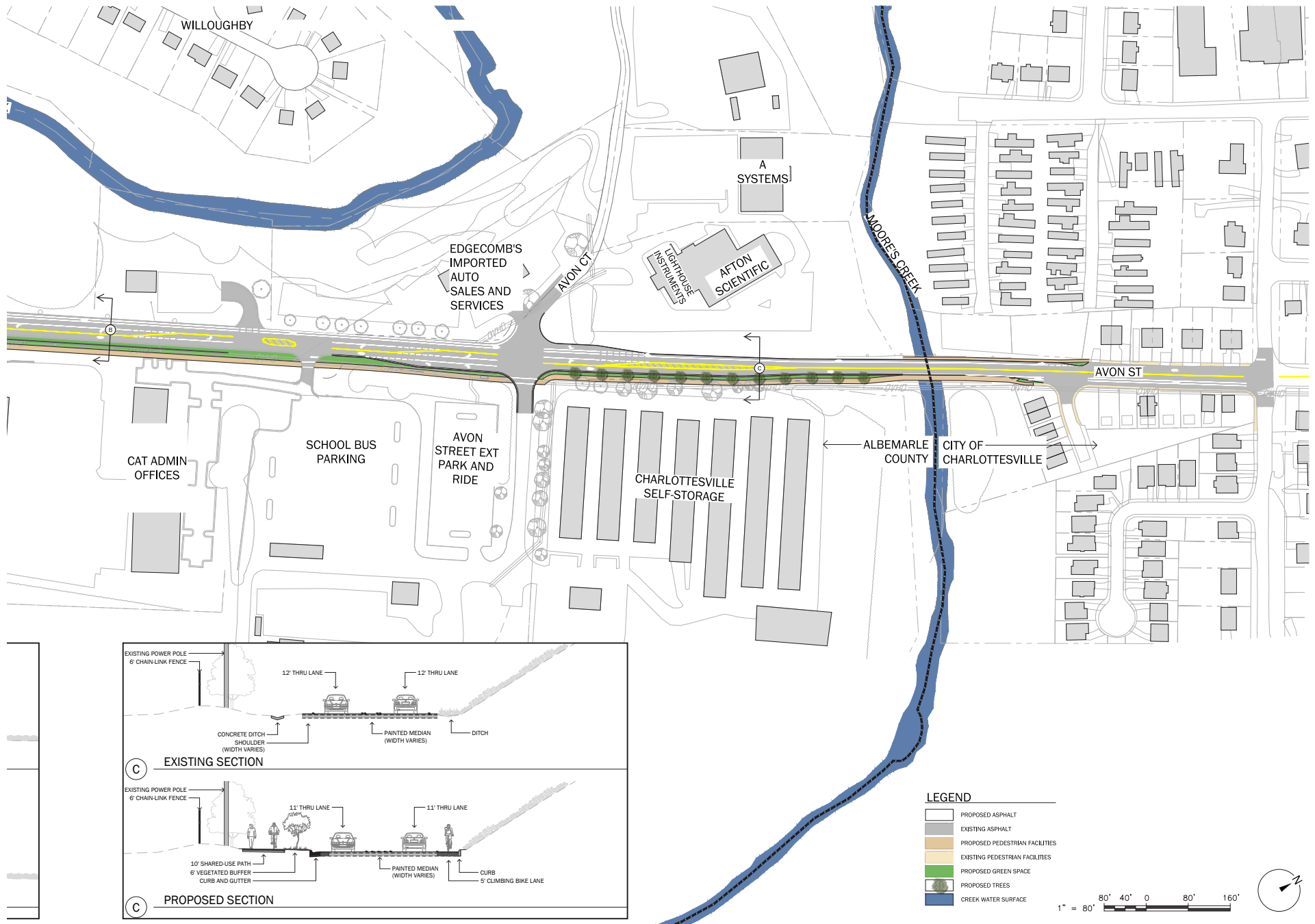












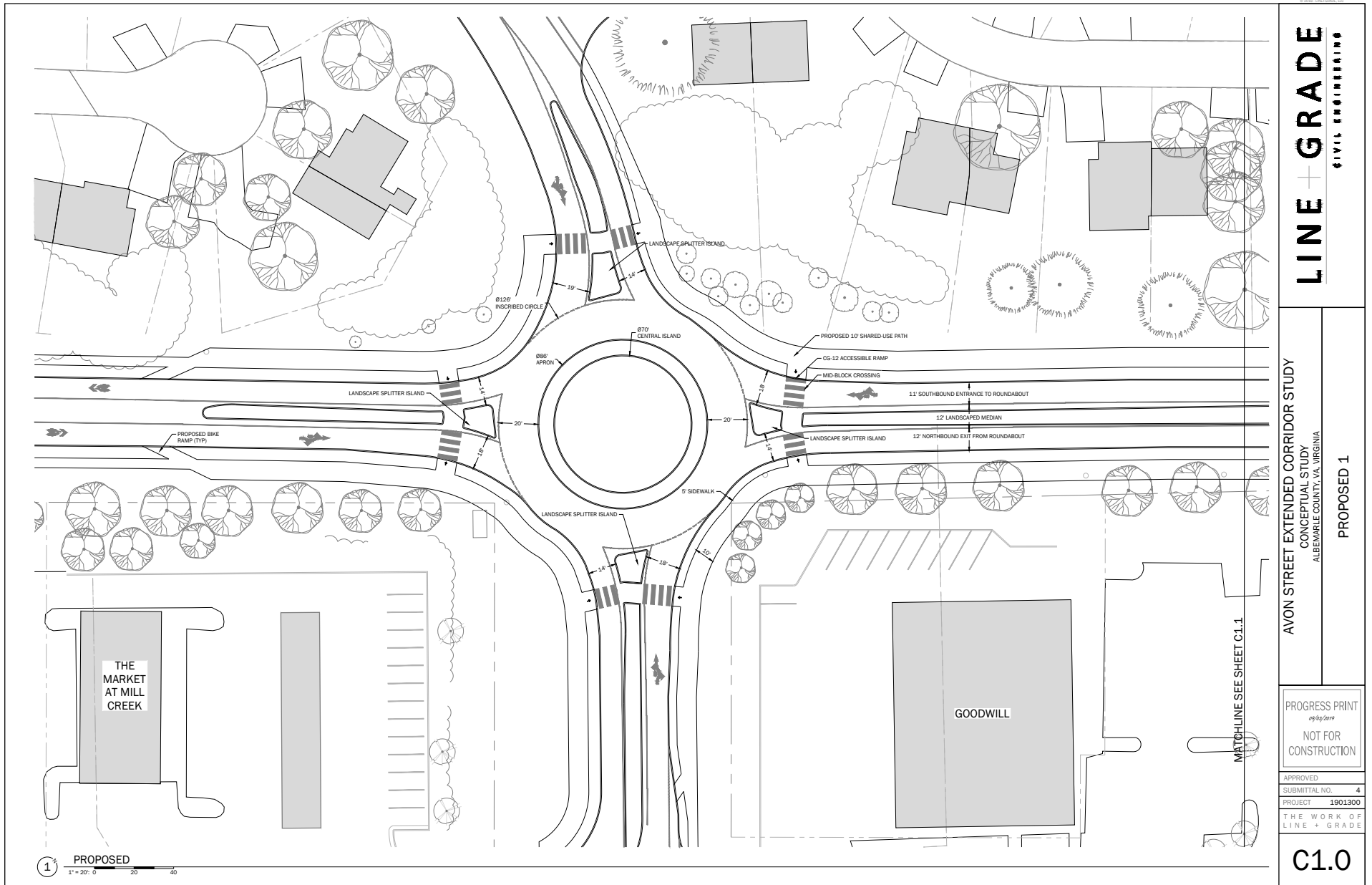
AVON STREET EXTENDED CORRIDOR STUDY
ALBEMARLE COUNTY, VA
JULY 18, 2019

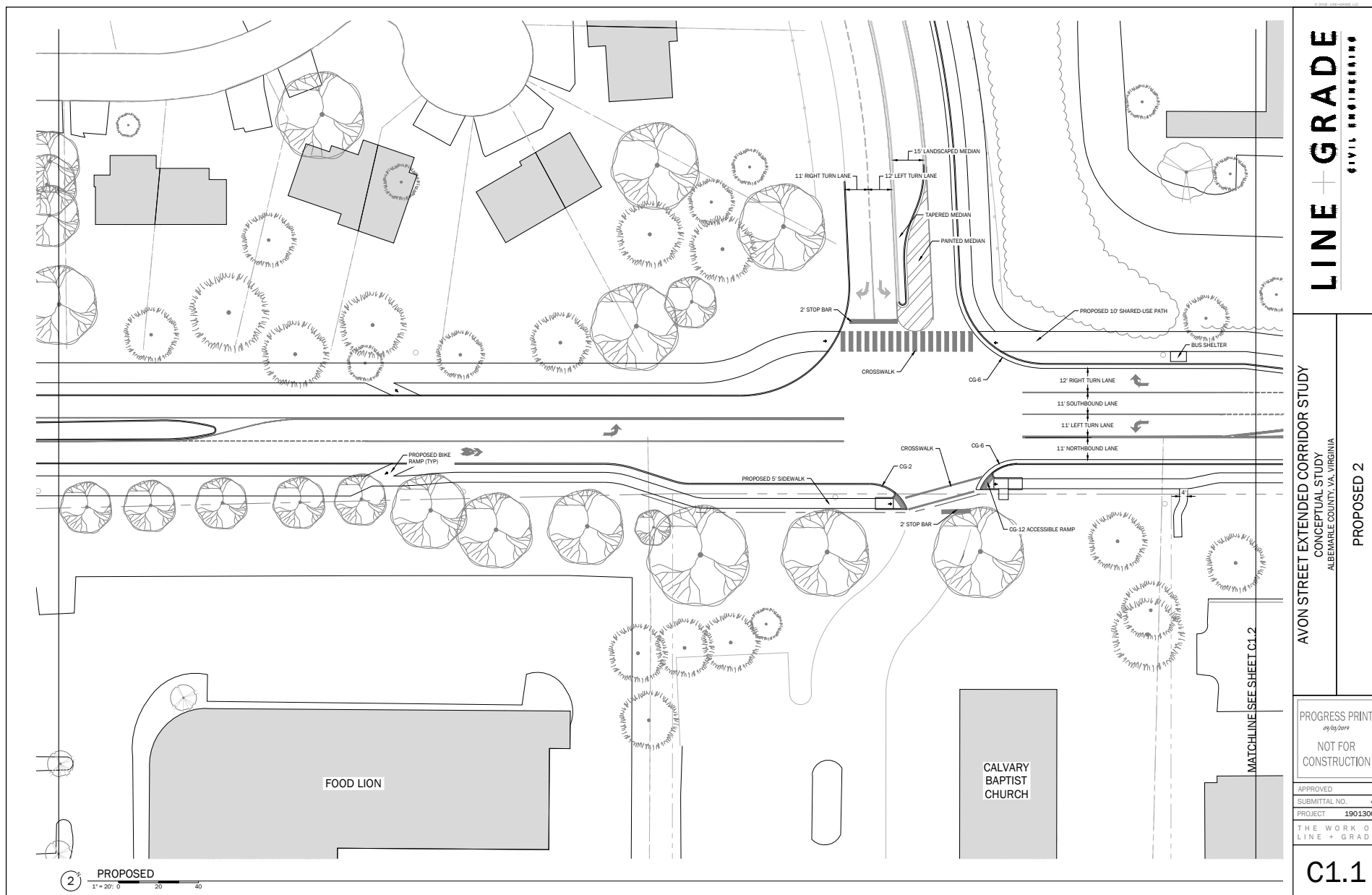
LINE + GRADE
CITY OF CHARLOTTESVILLE

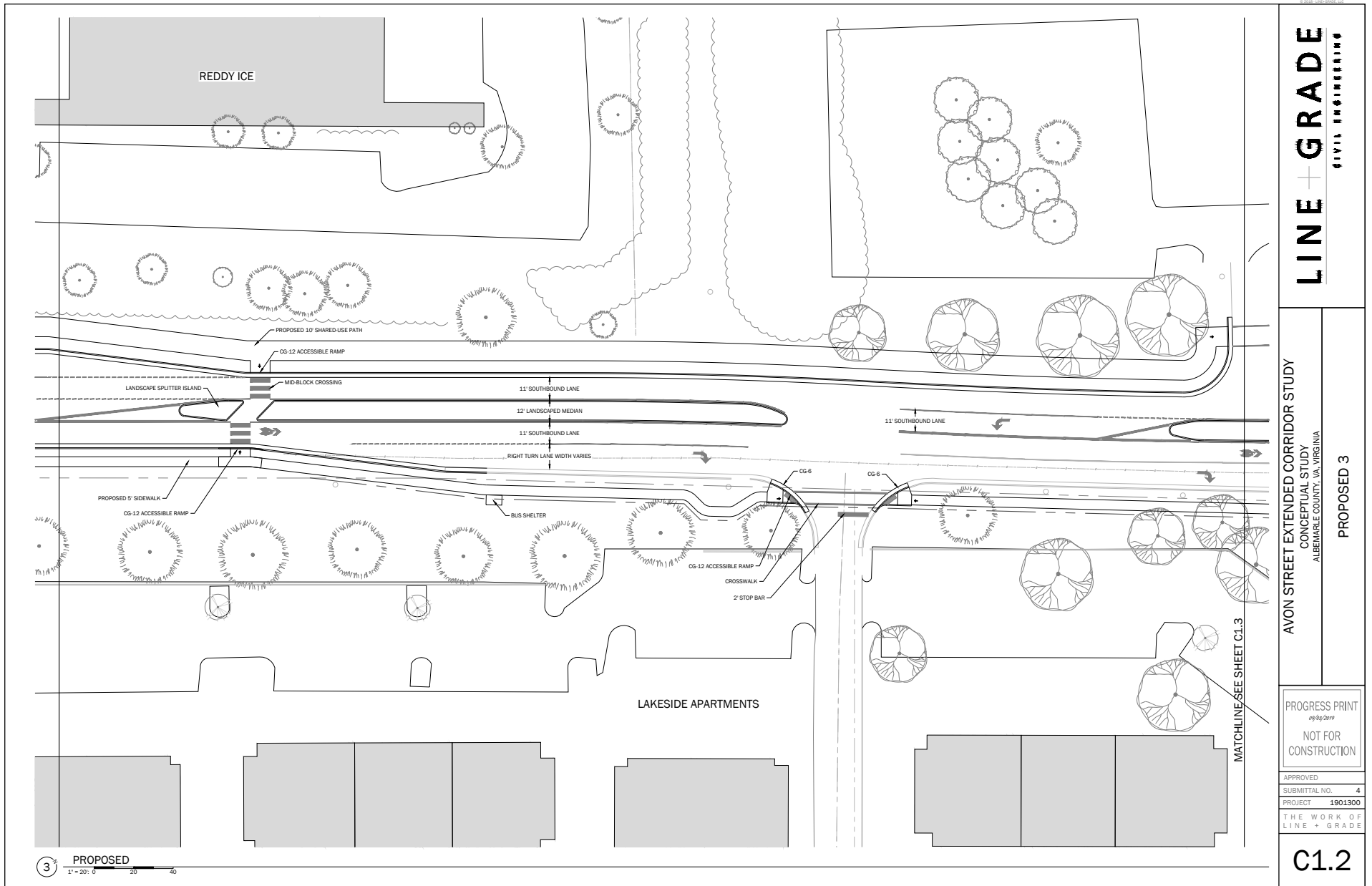
Impact:

This portion of the report is intentionally left blank and will be completed following presentations and feedback from the Planning Commission and the Board of Supervisors.

Appendix D | Plan View Drawings







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LINE + GRADE
CIVIL ENGINEERING

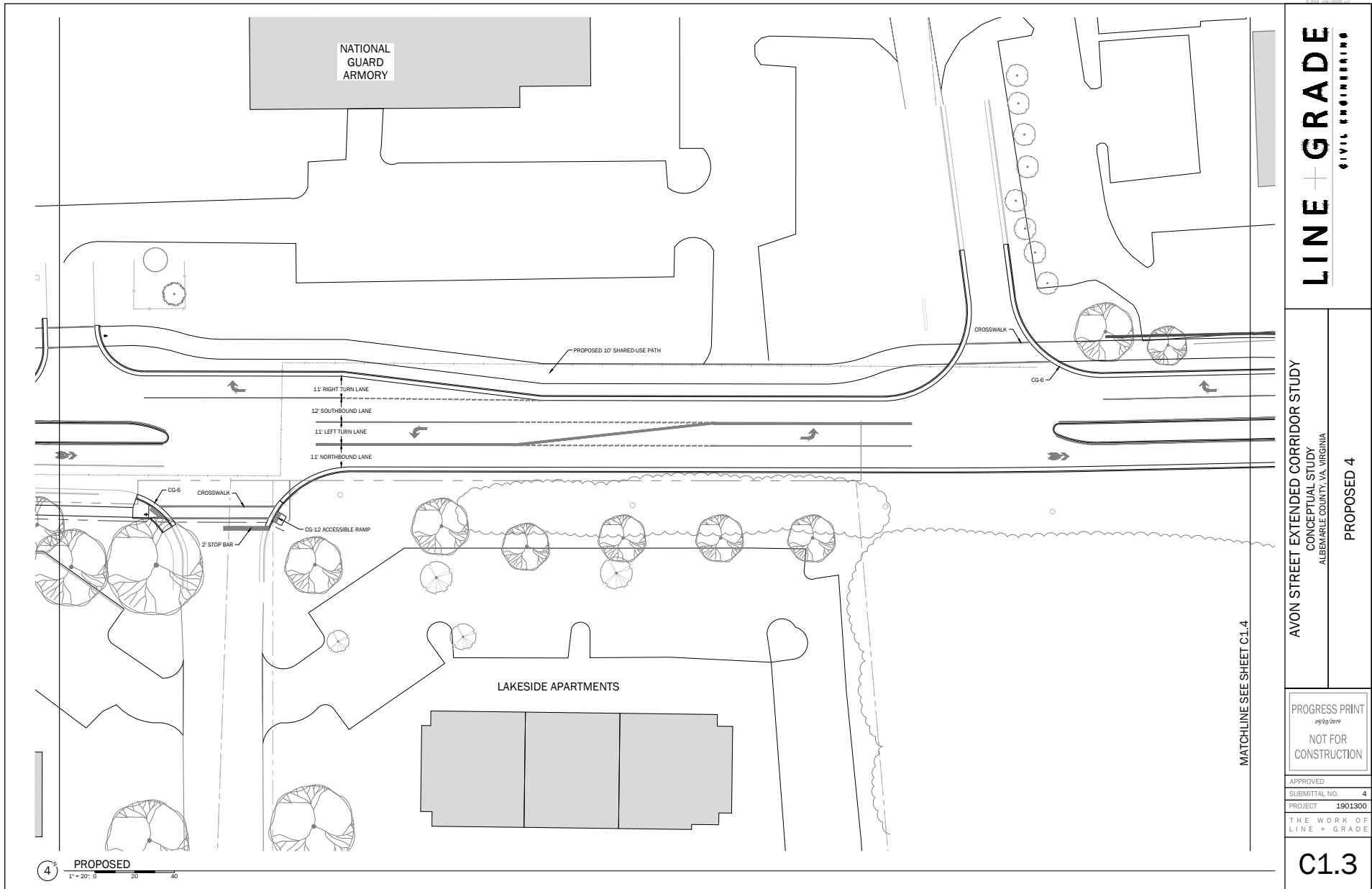
AVON STREET EXTENDED CORRIDOR STUDY
CONCEPTUAL STUDY
ALBEMARLE COUNTY, VA, VIRGINIA

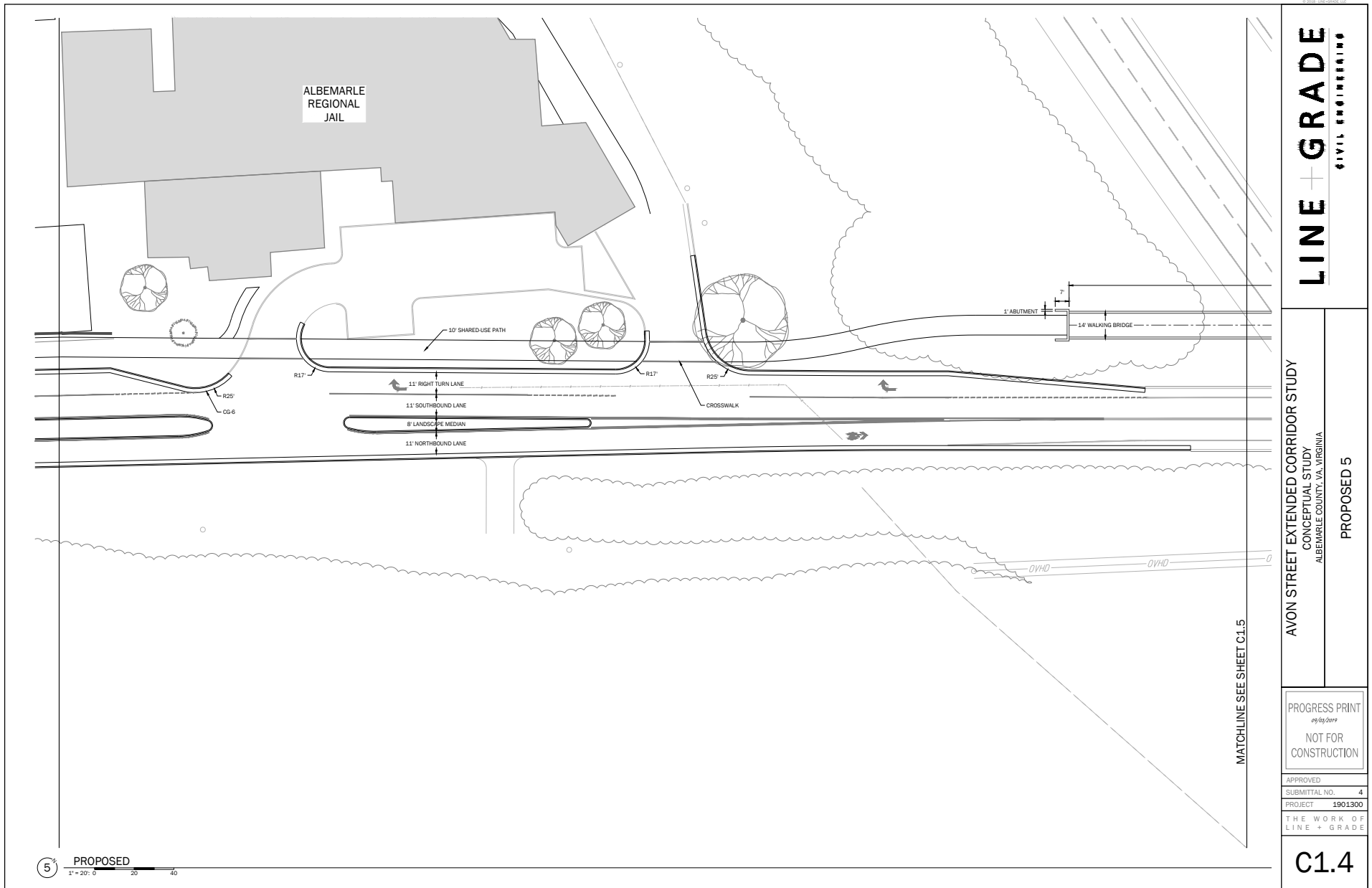
PROPOSED 3

PROGRESS PRINT
09/03/2019
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CONSTRUCTION

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PROJECT	1901300
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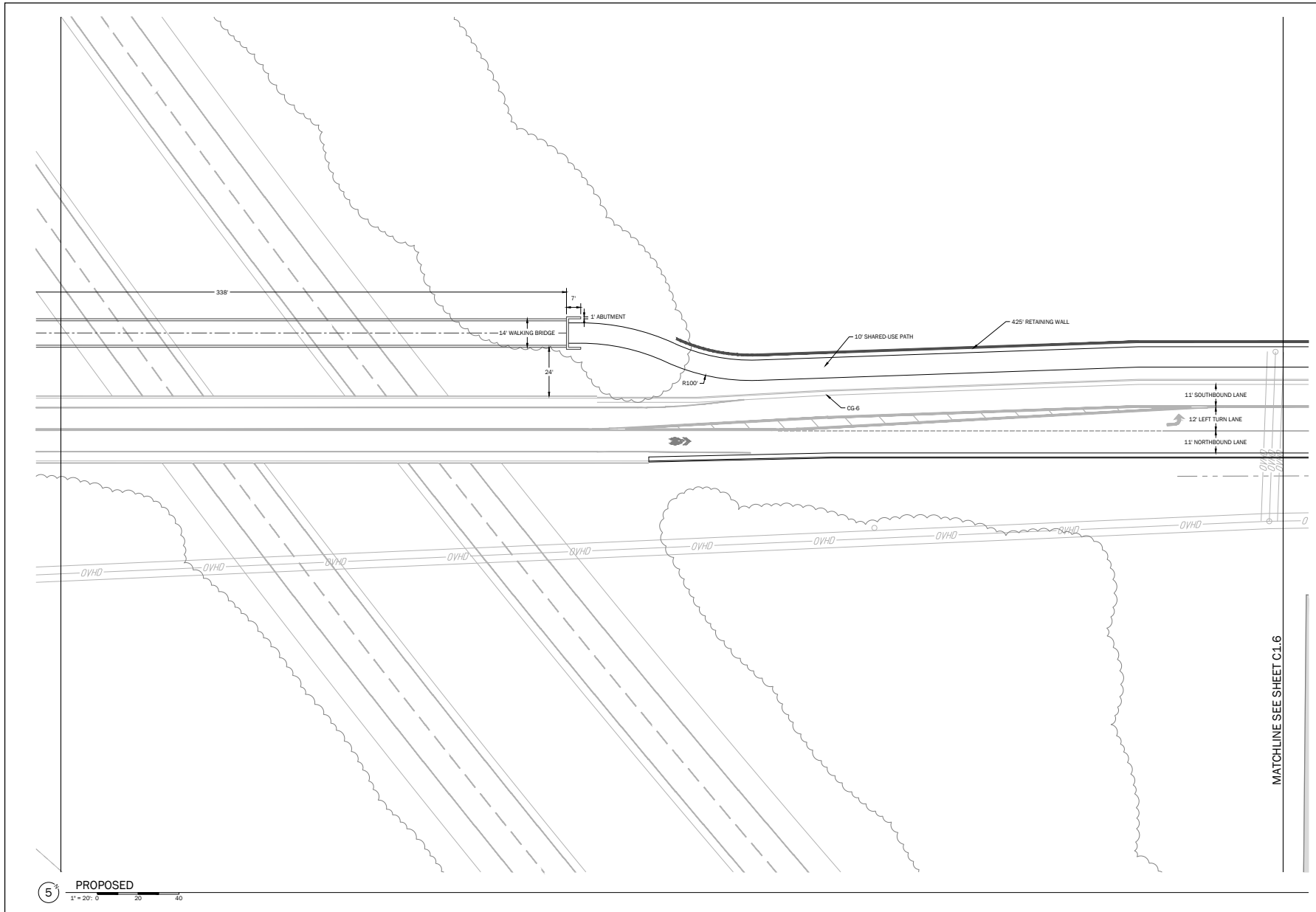
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CIVIL ENGINEERING

AVON STREET EXTENDED CORRIDOR STUDY
CONCEPTUAL STUDY
ALBEMARLE COUNTY, VA, VIRGINIA
PROPOSED 5

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SUBMITTAL NO. 4
PROJECT 1901300
THE WORK OF
LINE + GRADE

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CIVIL ENGINEERING

AVON STREET EXTENDED CORRIDOR STUDY

CONCEPTUAL STUDY

ALBEMARLE COUNTY, VA, VIRGINIA

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09/05/2019

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APPROVED

SUBMITTAL NO. 4

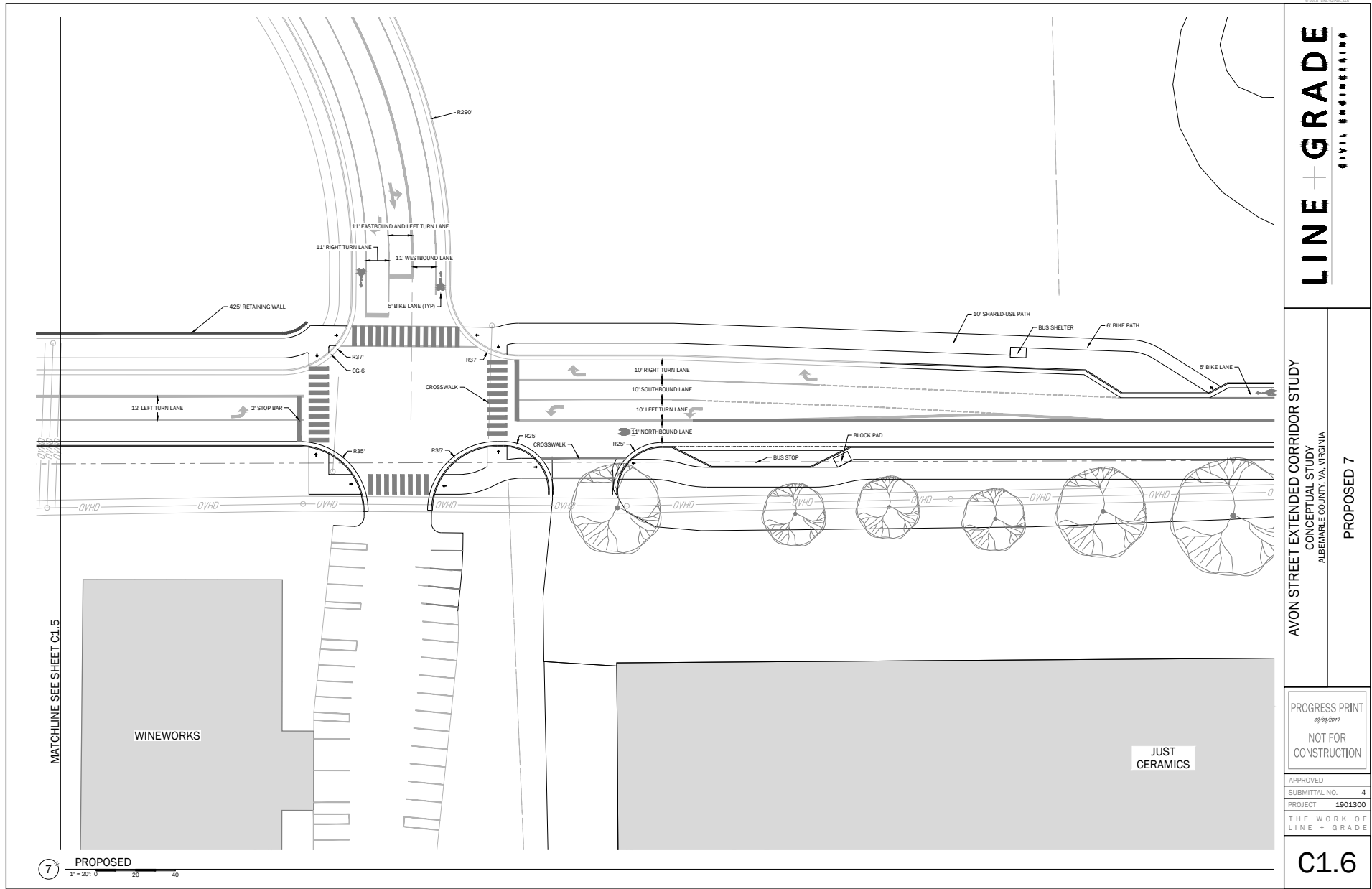
PROJECT 1901300

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C1.5

(RE)VISION Avon Street Extended

Page 227



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CIVIL ENGINEERING

AVON STREET EXTENDED CORRIDOR STUDY
CONCEPTUAL STUDY
ALBEMARLE COUNTY, VA, VIRGINIA

PROPOSED 7

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CONSTRUCTION

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SUBMITTAL NO. 4
PROJECT 1901300
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C1.6

Appendix E | Cost Estimation for Discreet Projects

Project:	Avon Street Extended - Project 1 (Bike/Ped from Mill Creek to Armory)		BASIS OF ESTIMATE
Project ID:		X	Code B - Preliminary Design
Date Prepared:	9/19/2019		Pre-Final (Awaiting Final Coordination)
Project Type:	Pedestrian Improvement Concept Plan		Code C - Final Design
Location:	Albemarle County, VA		

COST ESTIMATE SUMMARY				
LABOR AND MATERIALS SECTIONS	SUBTOTAL	ESTIMATING CONTINGENCY		TOTAL
PRELIMINARY ENGINEERING	\$ 212,000.00	10%	\$ 21,200.00	\$ 233,200.00
VDOT REVIEW	\$ 45,000.00	10%	\$ 4,500.00	\$ 49,500.00
CEI	\$ 40,000.00	10%	\$ 4,000.00	\$ 44,000.00
GENERAL CONDITIONS	\$ 80,000.00	20%	\$ 16,000.00	\$ 96,000.00
SITE DEMOLITION	\$ 41,675.00	20%	\$ 8,335.00	\$ 50,010.00
EROSION AND SEDIMENT CONTROL	\$ 53,000.00	20%	\$ 10,600.00	\$ 63,600.00
MAINTENANCE OF TRAFFIC	\$ 130,000.00	20%	\$ 26,000.00	\$ 156,000.00
SITE IMPROVEMENTS	\$ 156,835.45	20%	\$ 31,367.09	\$ 188,202.54
DRAINAGE	\$ 391,200.00	20%	\$ 78,240.00	\$ 469,440.00
UTILITIES	\$ -	20%	\$ -	\$ -
SIGNAGE AND MARKINGS	\$ 2,464.66	20%	\$ 492.93	\$ 2,957.59
OPINION OF PROBABLE COST				\$ 1,352,910.13

ITEMIZED COSTS

PRELIMINARY ENGINEERING					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	SURVEYING (BOUNDARY, TOPO, PLATS AND CONSTRUCTION STAKE-OUT)	1	LS	\$ 50,000.00	\$ 50,000.00
	ENGINEERING DESIGN (AND POST DESIGN SERVICES) ~20% CONST. COST	1	LS	\$ 150,000.00	\$ 150,000.00
	ENVIRONMENTAL	1	LS	\$ 12,000.00	\$ 12,000.00
SECTION SUBTOTAL:					\$ 212,000.00

VDOT REVIEW					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	VDOT REVIEWS	1	LS	\$ 45,000.00	\$ 45,000.00
SECTION SUBTOTAL:					\$ 45,000.00

CEI					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	CONSTRUCTION ENGINEERING AND INSPECTIONS	1	LS	\$ 40,000.00	\$ 40,000.00
SECTION SUBTOTAL:					\$ 40,000.00

GENERAL CONDITIONS					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	MOBILIZATIONS	1	LS	\$ 60,000.00	\$ 60,000.00
	BONDING / INSURANCES	1	LS	\$ 9,000.00	\$ 9,000.00
	GEOTECHNICAL INSPECTIONS	1	LS	\$ 5,000.00	\$ 5,000.00
	AS-BUILTS / SURVEY STAKEOUT	1	LS	\$ 6,000.00	\$ 6,000.00
SECTION SUBTOTAL:					\$ 80,000.00

SITE DEMOLITION					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	SAWCUT PAVEMENT	1500	LF	\$ 5.00	\$ 7,500.00
	DEMOLITION OF EXISTING PAVEMENT (ASPHALT)	200	SY	\$ 25.00	\$ 5,000.00
	CLEAR AND GRUB	1200	SY	\$ 11.50	\$ 13,800.00
	UNCLASSIFIED EXCAVATION	400	CY	\$ 30.00	\$ 12,000.00
	ROCK EXCAVATION	15	CY	\$ 225.00	\$ 3,375.00
SECTION SUBTOTAL:					\$ 41,675.00

EROSION AND SEDIMENT CONTROL					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	VESCH COMPLIANT PLAN ESTIMATED AS 4% OF CONSTRUCTION COST	1	EA	\$ 53,000.00	\$ 53,000.00
SECTION SUBTOTAL:					\$ 53,000.00

MAINTENANCE OF TRAFFIC					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	VWAPM COMPLIANT PLAN ESTIMATED AS ~10% OF CONSTRUCTION COST	1	EA	\$ 130,000.00	\$ 130,000.00
SECTION SUBTOTAL:					\$ 130,000.00

SITE IMPROVEMENTS					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL

	CURB AND GUTTER (CG-6)	1600	LF	\$ 25.00	\$ 40,000.00
	4" CONCRETE SIDEWALK	50	SY	\$ 58.00	\$ 2,900.00
	ACCESSIBLE RAMPS (CG-12)	12	EA	\$ 690.00	\$ 8,280.00
	ASPHALT TRAIL (2" VDOT SM-9.5)	127	CY	\$ 345.00	\$ 43,763.89
	VDOT 21A STONE	925	TN	\$ 28.75	\$ 26,586.56
	ASPHALT PATCHING (3" VDOT SM-12.5; 8" VDOT #21B)	3200	SF	\$ 8.63	\$ 27,600.00
	2" TOPSOIL, SEED, & MULCH (IN ALL DISTURBED AREAS)	400	SY	\$ 5.75	\$ 2,300.00
	SELECT FILL	200	CY	\$ 27.03	\$ 5,405.00
SECTION SUBTOTAL:					\$ 156,835.45

DRAINAGE					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	VDOT DI-1	3	EA	\$ 3,500.00	\$ 10,500.00
	VDOT DI-3B	10	EA	\$ 5,000.00	\$ 50,000.00
	18" RCP (0'-4') (STONE BASE, BACKFILL INCLUDED)	1500	LF	\$ 85.00	\$ 127,500.00
	VDOT ES-1 (18")	2	EA	\$ 500.00	\$ 1,000.00
	UD-4 UNDERDRAINS	500	LF	\$ 16.00	\$ 8,000.00
	EW-12	4	EA	\$ 800.00	\$ 3,200.00
	SWM - WATER QUALITY NUTRIENT CREDIT PURCHASE	1	LS	\$ 40,000.00	\$ 40,000.00
	SWM - WATER QUANTITY COMPLIANCE SYSTEM	1	LS	\$ 150,000.00	\$ 150,000.00
	VSMP PERMITTING AND/OR CONSTRUCTION GENERAL PERMIT IF REQ'D	1	LS	\$ 1,000.00	\$ 1,000.00
SECTION SUBTOTAL:					\$ 391,200.00

UTILITIES					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	ADJUST MANHOLE LID	2	EA		\$ -
SECTION SUBTOTAL:					\$ -

SIGNAGE AND MARKINGS					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	PAVEMENT MARKINGS (4" YELLOW OR WHITE)	350	LF	\$ 3.45	\$ 1,207.50
	PAVEMENT MARKINGS (24" WHITE)	36	LF	\$ 23.81	\$ 857.16
	WAYFINDING SIGNS	2	EA	\$ 200.00	\$ 400.00
SECTION SUBTOTAL:					\$ 2,464.66

Project:	Avon Street Extended - Project 2 (Pedestrian Bridge)		BASIS OF ESTIMATE
Project ID:		X	Code B - Preliminary Design
Date Prepared:	9/19/2019		Pre-Final (Awaiting Final Coordination)
Project Type:	Pedestrian Improvement Concept Plan		Code C - Final Design
Location:	Albemarle County, VA		

COST ESTIMATE SUMMARY				
LABOR AND MATERIALS SECTIONS	SUBTOTAL	ESTIMATING CONTINGENCY		TOTAL
PRELIMINARY ENGINEERING	\$ 193,000.00	10%	\$ 19,300.00	\$ 212,300.00
VDOT REVIEW	\$ 50,000.00	10%	\$ 5,000.00	\$ 55,000.00
CEI	\$ 40,000.00	10%	\$ 4,000.00	\$ 44,000.00
GENERAL CONDITIONS	\$ 230,000.00	20%	\$ 46,000.00	\$ 276,000.00
SITE DEMOLITION	\$ 34,416.67	20%	\$ 6,883.33	\$ 41,300.00
EROSION AND SEDIMENT CONTROL	\$ 120,000.00	20%	\$ 24,000.00	\$ 144,000.00
MAINTENANCE OF TRAFFIC	\$ 180,000.00	20%	\$ 36,000.00	\$ 216,000.00
SITE IMPROVEMENTS	\$ 2,279,597.24	20%	\$ 455,919.45	\$ 2,735,516.68
DRAINAGE	\$ 152,500.00	20%	\$ 30,500.00	\$ 183,000.00
UTILITIES	\$ 72,000.00	20%	\$ 14,400.00	\$ 86,400.00
SIGNAGE AND MARKINGS	\$ 2,464.66	20%	\$ 492.93	\$ 2,957.59
	OPINION OF PROBABLE COST			\$ 3,996,474.28

ITEMIZED COSTS

PRELIMINARY ENGINEERING					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	SURVEYING (BOUNDARY, TOPO, PLATS AND CONSTRUCTION STAKE-OUT)	1	LS	\$ 35,000.00	\$ 35,000.00
	ENGINEERING DESIGN (AND POST DESIGN SERVICES) ~20% CONST. COST	1	LS	\$ 150,000.00	\$ 150,000.00
	ENVIRONMENTAL	1	LS	\$ 8,000.00	\$ 8,000.00
SECTION SUBTOTAL:					\$ 193,000.00

VDOT REVIEW					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	VDOT REVIEWS	1	LS	\$ 50,000.00	\$ 50,000.00
SECTION SUBTOTAL:					\$ 50,000.00

CEI					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	CONSTRUCTION ENGINEERING AND INSPECTIONS	1	LS	\$ 40,000.00	\$ 40,000.00
SECTION SUBTOTAL:					\$ 40,000.00

GENERAL CONDITIONS					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	MOBILIZATIONS	1	LS	\$ 160,000.00	\$ 160,000.00
	BONDING / INSURANCES	1	LS	\$ 30,000.00	\$ 30,000.00
	GEOTECHNICAL INSPECTIONS	1	LS	\$ 20,000.00	\$ 20,000.00
	AS-BUILTS / SURVEY STAKEOUT	1	LS	\$ 20,000.00	\$ 20,000.00
SECTION SUBTOTAL:					\$ 230,000.00

SITE DEMOLITION					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	SAWCUT PAVEMENT	500	LF	\$ 5.00	\$ 2,500.00
	DEMOLITION OF EXISTING PAVEMENT (ASPHALT)	333	SY	\$ 25.00	\$ 8,316.67
	CLEAR AND GRUB	1400	SY	\$ 11.50	\$ 16,100.00
	UNCLASSIFIED EXCAVATION	100	CY	\$ 30.00	\$ 3,000.00
	ROCK EXCAVATION	20	CY	\$ 225.00	\$ 4,500.00
SECTION SUBTOTAL:					\$ 34,416.67

EROSION AND SEDIMENT CONTROL					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	VESCH COMPLIANT PLAN ESTIMATED AS 3% OF CONSTRUCTION COST	1	EA	\$ 120,000.00	\$ 120,000.00
SECTION SUBTOTAL:					\$ 120,000.00

MAINTENANCE OF TRAFFIC					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	VWAPM COMPLIANT PLAN ESTIMATED AS ~5% OF CONSTRUCTION COST	1	EA	\$ 180,000.00	\$ 180,000.00
SECTION SUBTOTAL:					\$ 180,000.00

SITE IMPROVEMENTS					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	CURB AND GUTTER (CG-6)	743	LF	\$ 25.00	\$ 18,575.00
	PREFABRICATED BRIDGE AND STRUCTURE	1	LS	\$ 2,200,000.00	\$ 2,200,000.00

Project:	Avon Street Extended - Project 3 (Int. Imp. @ Mill Creek + Southern)		BASIS OF ESTIMATE
Project ID:		X	Code B - Preliminary Design
Date Prepared:	9/19/2019		Pre-Final (Awaiting Final Coordination)
Project Type:	Pedestrian Improvement Concept Plan		Code C - Final Design
Location:	Albemarle County, VA		

COST ESTIMATE SUMMARY				
LABOR AND MATERIALS SECTIONS	SUBTOTAL	ESTIMATING CONTINGENCY		TOTAL
PRELIMINARY ENGINEERING	\$ 188,000.00	10%	\$ 18,800.00	\$ 206,800.00
VDOT REVIEW	\$ 60,000.00	10%	\$ 6,000.00	\$ 66,000.00
CEI	\$ 50,000.00	10%	\$ 5,000.00	\$ 55,000.00
GENERAL CONDITIONS	\$ 315,000.00	20%	\$ 63,000.00	\$ 378,000.00
SITE DEMOLITION	\$ 171,444.44	20%	\$ 34,288.89	\$ 205,733.33
EROSION AND SEDIMENT CONTROL	\$ 32,000.00	20%	\$ 6,400.00	\$ 38,400.00
MAINTENANCE OF TRAFFIC	\$ 60,000.00	20%	\$ 12,000.00	\$ 72,000.00
SITE IMPROVEMENTS	\$ 534,859.32	20%	\$ 106,971.86	\$ 641,831.19
DRAINAGE	\$ 319,300.00	20%	\$ 63,860.00	\$ 383,160.00
UTILITIES	\$ 152,000.00	20%	\$ 30,400.00	\$ 182,400.00
SIGNAGE AND MARKINGS	\$ 33,507.16	20%	\$ 6,701.43	\$ 40,208.59
	OPINION OF PROBABLE COST			\$ 2,269,533.11

ITEMIZED COSTS

PRELIMINARY ENGINEERING					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	SURVEYING (BOUNDARY, TOPO, PLATS AND CONSTRUCTION STAKE-OUT)	1	LS	\$ 30,000.00	\$ 30,000.00
	ENGINEERING DESIGN (AND POST DESIGN SERVICES) ~20% CONST. COST	1	LS	\$ 150,000.00	\$ 150,000.00
	ENVIRONMENTAL	1	LS	\$ 8,000.00	\$ 8,000.00
SECTION SUBTOTAL:					\$ 188,000.00

VDOT REVIEW					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	ROW	1	LS	\$ 50,000.00	\$ 50,000.00
	VDOT REVIEWS	1	LS	\$ 60,000.00	\$ 60,000.00
SECTION SUBTOTAL:					\$ 60,000.00

Project:	Avon Street Extended - Project 3 (Int. Imp. @ Mill Creek + Southern)		BASIS OF ESTIMATE
Project ID:		X	Code B - Preliminary Design
Date Prepared:	9/19/2019		Pre-Final (Awaiting Final Coordination)
Project Type:	Pedestrian Improvement Concept Plan		Code C - Final Design
Location:	Albemarle County, VA		

COST ESTIMATE SUMMARY				
LABOR AND MATERIALS SECTIONS	SUBTOTAL	ESTIMATING CONTINGENCY		TOTAL
PRELIMINARY ENGINEERING	\$ 188,000.00	10%	\$ 18,800.00	\$ 206,800.00
VDOT REVIEW	\$ 60,000.00	10%	\$ 6,000.00	\$ 66,000.00
CEI	\$ 50,000.00	10%	\$ 5,000.00	\$ 55,000.00
GENERAL CONDITIONS	\$ 315,000.00	20%	\$ 63,000.00	\$ 378,000.00
SITE DEMOLITION	\$ 171,444.44	20%	\$ 34,288.89	\$ 205,733.33
EROSION AND SEDIMENT CONTROL	\$ 32,000.00	20%	\$ 6,400.00	\$ 38,400.00
MAINTENANCE OF TRAFFIC	\$ 60,000.00	20%	\$ 12,000.00	\$ 72,000.00
SITE IMPROVEMENTS	\$ 534,859.32	20%	\$ 106,971.86	\$ 641,831.19
DRAINAGE	\$ 319,300.00	20%	\$ 63,860.00	\$ 383,160.00
UTILITIES	\$ 152,000.00	20%	\$ 30,400.00	\$ 182,400.00
SIGNAGE AND MARKINGS	\$ 33,507.16	20%	\$ 6,701.43	\$ 40,208.59
	OPINION OF PROBABLE COST			\$ 2,269,533.11

ITEMIZED COSTS

PRELIMINARY ENGINEERING					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	SURVEYING (BOUNDARY, TOPO, PLATS AND CONSTRUCTION STAKE-OUT)	1	LS	\$ 30,000.00	\$ 30,000.00
	ENGINEERING DESIGN (AND POST DESIGN SERVICES) ~20% CONST. COST	1	LS	\$ 150,000.00	\$ 150,000.00
	ENVIRONMENTAL	1	LS	\$ 8,000.00	\$ 8,000.00
SECTION SUBTOTAL:					\$ 188,000.00

VDOT REVIEW					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	ROW	1	LS	\$ 50,000.00	\$ 50,000.00
	VDOT REVIEWS	1	LS	\$ 60,000.00	\$ 60,000.00
SECTION SUBTOTAL:					\$ 60,000.00

CEI					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	CONSTRUCTION ENGINEERING AND INSPECTIONS	1	LS	\$ 50,000.00	\$ 50,000.00
SECTION SUBTOTAL:					\$ 50,000.00

GENERAL CONDITIONS					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	MOBILIZATIONS	1	LS	\$ 200,000.00	\$ 200,000.00
	BONDING / INSURANCES	1	LS	\$ 40,000.00	\$ 40,000.00
	GEOTECHNICAL INSPECTIONS	1	LS	\$ 25,000.00	\$ 25,000.00
	AS-BUILTS / SURVEY STAKEOUT	1	LS	\$ 50,000.00	\$ 50,000.00
SECTION SUBTOTAL:					\$ 315,000.00

SITE DEMOLITION					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	SAWCUT PAVEMENT	5100	LF	\$ 5.00	\$ 25,500.00
	DEMOLITION OF EXISTING PAVEMENT (ASPHALT)	1412	SY	\$ 25.00	\$ 35,305.56
	REMOVE EXISTING TRAFFIC SIGNALS	1	LS	\$ 80,000.00	\$ 80,000.00
	CLEAR AND GRUB	1556	SY	\$ 11.50	\$ 17,888.89
	UNCLASSIFIED EXCAVATION	200	CY	\$ 30.00	\$ 6,000.00
	ROCK EXCAVATION	30	CY	\$ 225.00	\$ 6,750.00
SECTION SUBTOTAL:					\$ 171,444.44

EROSION AND SEDIMENT CONTROL					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	VESCH COMPLIANT PLAN ESTIMATED AS 4% OF CONSTRUCTION COST	1	EA	\$ 32,000.00	\$ 32,000.00
SECTION SUBTOTAL:					\$ 32,000.00

MAINTENANCE OF TRAFFIC					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	VWAPM COMPLIANT PLAN ESTIMATED AS ~10% OF CONSTRUCTION COST	1	EA	\$ 60,000.00	\$ 60,000.00
SECTION SUBTOTAL:					\$ 60,000.00

SITE IMPROVEMENTS					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	CURB AND GUTTER (CG-6)	5500	LF	\$ 25.00	\$ 137,500.00

	MODIFIED CG3 AND ROUNDABOUT APRON	300	LF	\$ 50.00	\$ 15,000.00
	4" CONCRETE SIDEWALK	16921	SF	\$ 10.00	\$ 169,210.00
	ACCESSIBLE RAMPS (CG-12)	20	EA	\$ 690.00	\$ 13,800.00
	ASPHALT TRAIL (2" VDOT SM-9.5)		CY	\$ 345.00	\$ -
	VDOT 21A STONE	761	TN	\$ 28.75	\$ 21,891.54
	ASPHALT PATCHING (3" VDOT SM-12.5; 8" VDOT #21B)	16500	SF	\$ 8.63	\$ 142,312.50
	2" TOPSOIL, SEED, & MULCH (IN ALL DISTURBED AREAS)	1412	SY	\$ 5.75	\$ 8,120.28
	SELECT FILL	1000	CY	\$ 27.03	\$ 27,025.00
SECTION SUBTOTAL:					\$ 534,859.32

DRAINAGE					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	VDOT DI-1	1	EA	\$ 3,500.00	\$ 3,500.00
	VDOT DI-3B	8	EA	\$ 5,000.00	\$ 40,000.00
	18" RCP (0'-4') (STONE BASE, BACKFILL INCLUDED)	1200	LF	\$ 85.00	\$ 102,000.00
	VDOT ES-1 (18")	4	EA	\$ 500.00	\$ 2,000.00
	UD-4 UNDERDRAINS	1200	LF	\$ 16.00	\$ 19,200.00
	EW-12	2	EA	\$ 800.00	\$ 1,600.00
	SWM - WATER QUALITY NUTRIENT CREDIT PURCHASE	1	LS	\$ 50,000.00	\$ 50,000.00
	SWM - WATER QUANTITY COMPLIANCE SYSTEM	1	LS	\$ 100,000.00	\$ 100,000.00
	VSMP PERMITTING AND/OR CONSTRUCTION GENERAL PERMIT IF REQ'D	1	LS	\$ 1,000.00	\$ 1,000.00
SECTION SUBTOTAL:					\$ 319,300.00

UTILITIES					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	UTILITY RELOCATIONS	1	LS	\$ 150,000.00	\$ 150,000.00
	ADJUST MANHOLE LID	4	EA	\$ 500.00	\$ 2,000.00
SECTION SUBTOTAL:					\$ 152,000.00

SIGNAGE AND MARKINGS					
ITEM CODE	ITEM DESCRIPTION	QTY	UNITS	UNIT COST	ITEM TOTAL
	PAVEMENT MARKINGS (4" YELLOW OR WHITE)	5000	LF	\$ 3.45	\$ 17,250.00
	PAVEMENT MARKINGS (24" WHITE)	36	LF	\$ 23.81	\$ 857.16
	MUTCD SIGNS	30	EA	\$ 500.00	\$ 15,000.00
	WAYFINDING SIGNS	2	EA	\$ 200.00	\$ 400.00
SECTION SUBTOTAL:					\$ 33,507.16