# TOWN OF ROUND HILL - SOUTHERN GREENWAY

Pedestrian Improvements
Feasibility Report

December 22, 2022
March 31, 2023 (revised)

Prepared for:

Town of Round Hill

Prepared by:

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## Table of Contents



## List of Figures

## List of Tables



## Appendices

# 1.0 INTRODUCTION

The Town of Round Hill, Virginia is located at the crossroads of Virginia Routes 7 and 719, approximately 50 miles northwest of Washington D.C. It is a historic town surrounded by farmland and modern neighborhoods. The Southern Greenway project proposes pedestrian improvements in the Town of Round Hill.

This pedestrian improvement is a part of a larger scale project: The Main Street Enhancement Project, as specified in the Town of Round Hill Comprehensive Plan 2017-2037. The purpose of the Main Street Enhancement Project is to expand the existing pedestrian network through the proposal of multiple project phases. Phase One and the Franklin Park Trail are complete; the proposed pedestrian improvement discussed in this feasibility report would complete Greenway Phase Three. With the completion of all phases, a continuous pedestrian and biker friendly network would be established. This would serve as an amenity for nearby residents and visitors who need access through the Town and would improve the public safety of pedestrians.

This project proposes a concrete sidewalk with curb and gutter that runs entirely along the east side of New Cut Road and Airmont Road from the intersection of New Cut Road and Loudoun Street to Stone Oak Place (Lake Ridge Estates neighborhood). The sidewalk will run approximately 0.4 miles. A conceptual plan view layout utilizing Loudoun County 2022 GIS data and typical sections are provided. An overall aerial image showing the proposed sidewalk alignment is shown in Figure 1.

This feasibly report will address the site constraints, provide a conceptual construction cost, and identify anticipated conceptual right-of-way and easement requirements.

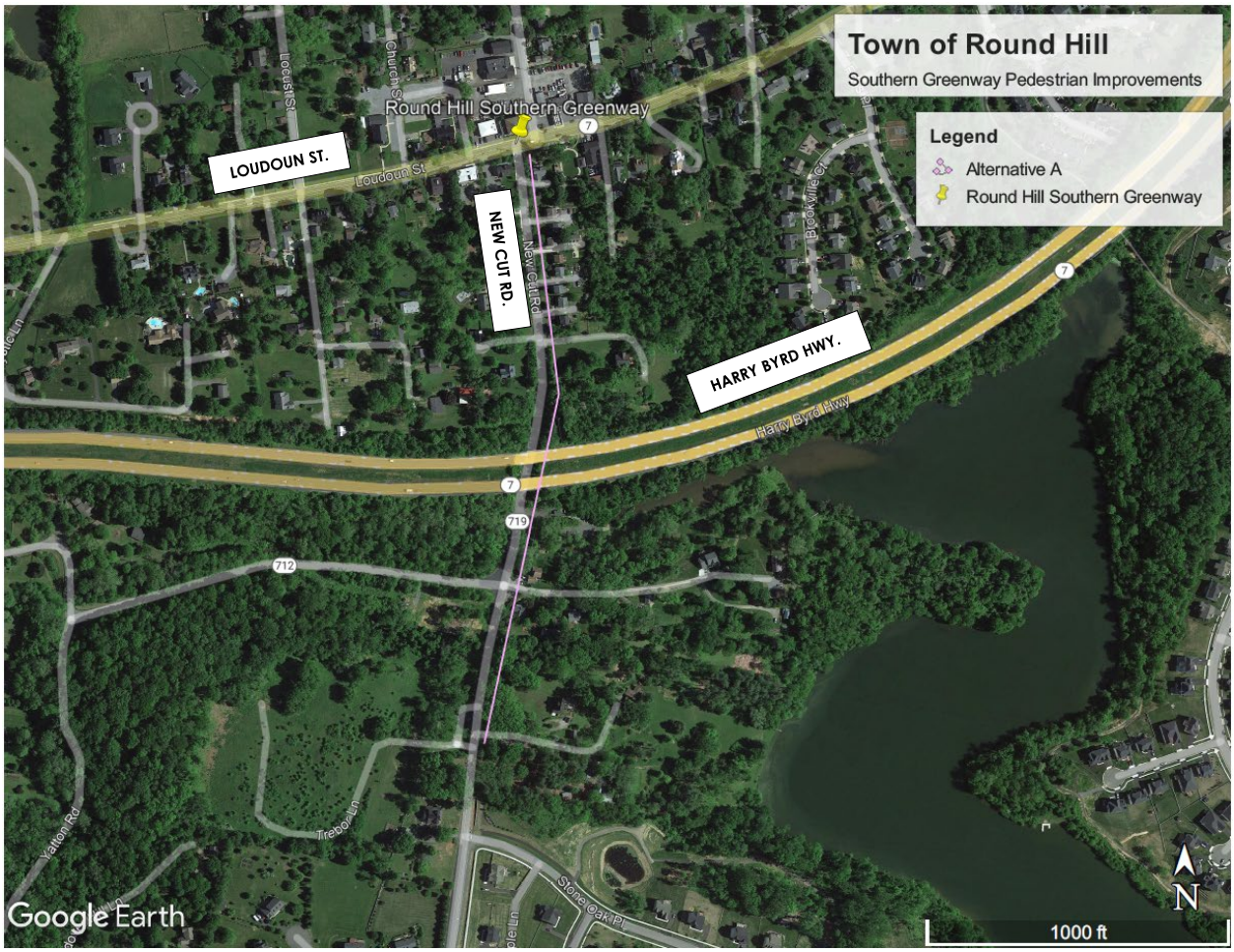



**Figure 1 – Aerial image showing proposed sidewalk alignment**

# 2.0 PROJECT BACKGROUND & REPORT SCOPE

In January 2017, the Town Council adopted the Comprehensive Plan 2017-2037 in which the following strategy was included: "Consider a sidewalk and stormwater management project from the Rt.7/Main St intersection south below the bypass to connect to residents of Hayman Lane and Lake Ridge Estates." "The Southern Greenway Pedestrian Improvements" is identified as Greenway Phase 3 on the Bicycle and Pedestrian Facilities map in Chapter 10 of the Comprehensive Plan (see Appendix A). This pedestrian improvement project will be in substantial conformance with Section 3: Pedestrian Ways and Section 4: Round Hill Greenway of the Comprehensive Plan.

Additionally, this pedestrian improvement is within the Route 719 South Area Plan and meets the goals adopted by this planning area by providing a safe, efficient, accessible circulation network which accommodates pedestrians, and provides adequate transportation linkages to the region. The improvement will also meet the goals and recommendations set forth in the Town Streetscape Master Plan.

In December 2020, the Town Council adopted the FY2022 Strategic Action Plan which included the construction of the Southern Greenway Pedestrian Improvements as a priority project.

The scope of this feasibility report includes review of the pedestrian improvement for Southern Greenway as requested by the Town Administrator. Stantec has performed a site visit with the Town to conduct a visual inspection and discussion regarding the existing conditions and potential development. At the beginning of this feasibility study, several alignment alternatives were discussed and considered. The alternatives included crosswalks across New Cut Road and Airmont Road. Upon further discussion with the Town and VDOT, the justification for mid-block crossings was excluded from the scope of this analysis. Therefore, the Town has identified one alignment along the east side of New Cut Road and Airmont Road that does not include any crossings. Alternative alignments could be considered by the Town, upon request, however the engineer believes the analysis of this presented alignment represents the most conservative cost estimate for the improvement that also meets VDOT design standards without variance.

# 3.0 EXISTING CONDITIONS

The proposed pedestrian alignment demands overcoming multiple existing site constraints. See Appendix C for a conceptual plan view layout of the proposed sidewalk alignment with existing GIS data. At the Loudoun Street and New Cut Road intersection, there is an existing sidewalk and ramp that the proposed sidewalk will connect to. See site photographs in Figure 2.


**Figure 2 - Existing Ramp at Loudoun St**

Heading south on New Cut Road, there are approximately 700 feet of existing residential properties that have driveways stemming from New Cut Road. An existing channel runs parallel to the roadway and flows through the culverts at each existing driveway. The proposed sidewalk will cross over the existing driveways, channel, vegetation, and other existing site features along the property frontages. See site photographs in Figure 3.


**Figure 3 - Residential Properties Frontage**

The sidewalk will run alongside approximately 300 linear feet of existing 2:1 slopes, located south of the residential properties and north of the Rt 7 overpasses. See site photographs in Figure 4.


**Figure 4 - Existing 2:1 Slopes**

South and adjacent to the existing 2:1 slopes, the proposed sidewalk will cross underneath two Harry Byrd Highway (Route 7) overpasses. There are concrete slope protections under each overpass. See site photographs in Figure 5.


**Figure 5 - Rt 7 Overpasses**

Roughly an additional 100 feet south of the overpasses, the pedestrian alignment will cross over an existing 10' X 12' twin box culvert with guardrail and wetlands. The culvert size was approximated by visual field inspection, and was not verified by measurements or record drawings. This crossing of Simpson's Creek discharges to Sleeter Lake. See site photographs in Figure 6.


**Figure 6 - Existing Box Culvert**

Approximately another 100 feet south of the existing box culvert, the roadside has steep grades in the location of the proposed sidewalk. The steep slopes will require proposing a retaining wall behind the sidewalk. See site photographs in Figure 7.


**Figure 7 - Steep Slopes**

Lastly, the proposed sidewalk will tie into an existing trail that extends from the Lake Ridge Estates neighborhood, near Stone Oak Place. See site photographs in Figure 8.


**Figure 8 - Existing Trail Tie-In**

Per visual inspection on a site visit, there are many Miss Utility markings on the roadway that indicate the presence of existing utilities at the intersection of Hayman Lane and New Cut Road/Airmont Road, such as sanitary sewer and water mains and laterals.

# 4.0 BASIS OF DESIGN

This feasibility report assumes design for the sidewalk and associated improvements is based on the following criteria:

- Virginia Department of Transportation (VDOT) Road Design Manual
- Americans with Disabilities Act (ADA) and U.S. Access Board Public Rights-of-Way Accessibility Guidelines (PROWAG)
- Town of Round Hill Comprehensive Plan 2017-2037
- Town of Round Hill Route 719 South Area Plan
- Town of Round Hill Zoning Ordinance
- Town of Round Hill Streetscape Master Plan
- Town of Round Hill Stormwater Master Plan
- Loudoun County Facilities Standards Manual

## A. ROAD DESIGN CRITERIA

### i. Sidewalks

The VDOT Road Design Manual has width requirements for new sidewalks. Per page A(1)-72, new sidewalks shall be minimum 5 feet wide, excluding the width of curb. Where this is not feasible, a minimum width of 4 feet shall be provided with the use of a design waiver. When a sidewalk is constructed adjacent to a retaining wall, a minimum width of 6 feet shall be provided from the edge of the sidewalk to the face of the retaining wall. A design waiver may be pursued for sidewalks in accordance with the VDOT IIM-LD-227-14 (or latest edition).

### ii. Buffer Strips

The VDOT Road Design Manual has width requirements for buffer strips between the back of curb and the sidewalk to ensure there is space to place all lateral obstructions such as signs, utility poles, landscaping, etc. The width of the buffer strip is determined by the posted speed. Per page A(1)-70 of the VDOT Road Design Manual, if the posted speed is greater than 25 mph, a 4-foot wide buffer shall be provided. If the speed is 25 mph or less, a 3-foot wide buffer shall be provided. See Figure 9 for the VDOT detail of the buffer width requirement. Airmont Road has a posted speed of 35 mph, and New Cut Road has a posted speed of 25 mph.

A design waiver may be pursued for buffer strips that cannot meet these requirements in accordance with the VDOT IIM-LD-227-14 (or latest edition).

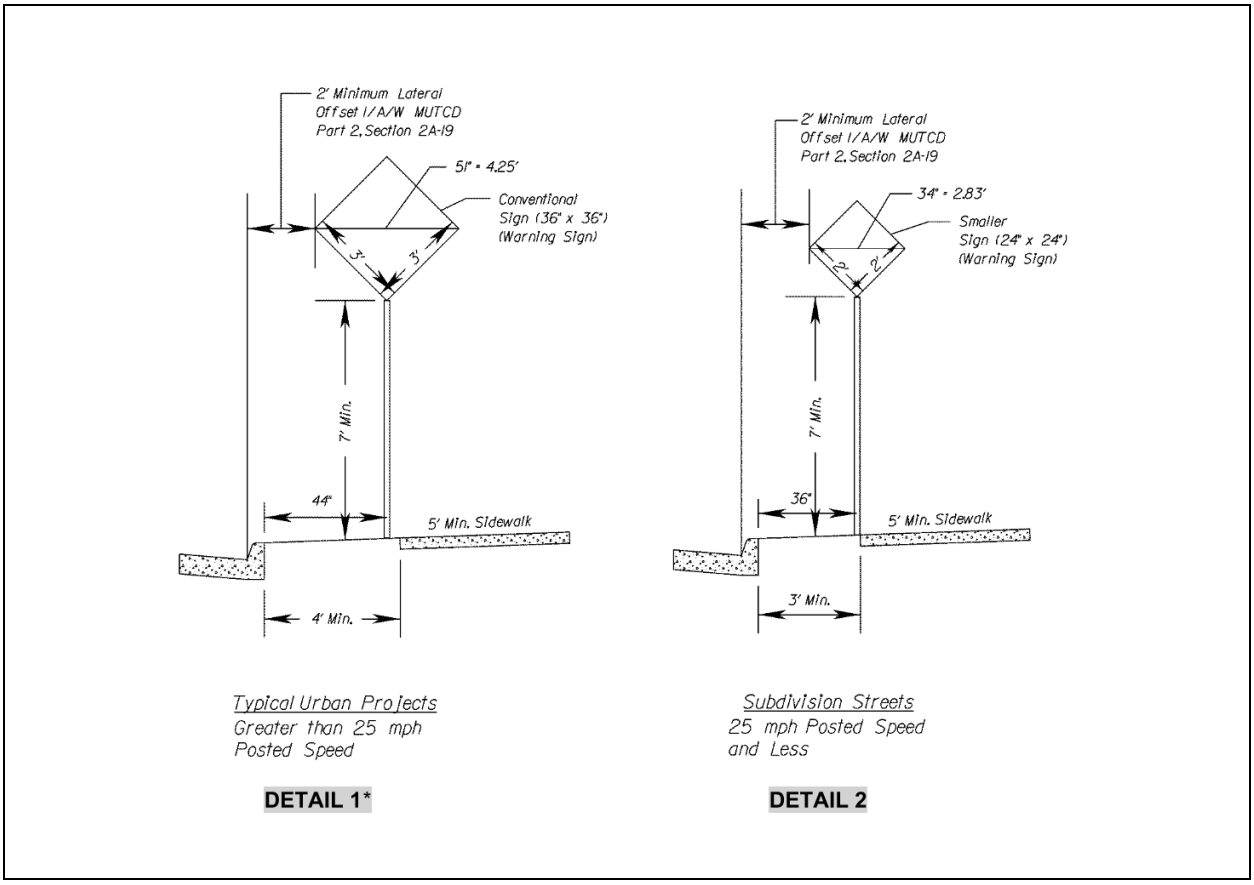



**Figure 9 - VDOT Buffer Width Details**

### iii. Curb and Gutter

The Future Transportation Map from the Town of Round Hill Comprehensive Plan (see Appendix B) illustrates future Town of Round Hill goals for road improvements. As shown on the map, this project falls into the "U2" category representing Urban (Curb & Gutter)- for a two-lane road county designation. A design waiver may be pursued for curb and gutter in accordance with the VDOT IIM-LD-227-14 (or latest edition).

# B. ACCESSIBILITY

In accordance with the U.S. Access Board Public Rights-of-Way Accessibility Guidelines (PROWAG), the following criteria (excerpts provided) should be considered for final design:

- R302.5.1: where pedestrian access routes are contained within a street or highway right-of-way, the grade of pedestrian access routes shall not exceed the general grade established for the adjacent street or highway.
- R302.5.3: Where pedestrian access routes are contained within a pedestrian street crossing, the grade of pedestrian access routes shall be 5 percent maximum
- R302.5.4: Where compliance with R302.5.1 or R302.5.2 is not practicable due to existing terrain or infrastructure, right-of-way availability, a notable natural feature, or similar existing physical constraints, compliance is required to the extent practicable.
- R302.6: Except as provided in R302.6.1 and R302.6.2, the cross slope of pedestrian access routes shall be 2 percent maximum.

# 5.0 PROPOSED PEDESTRIAN ALIGNMENT

The Southern Greenway pedestrian improvement includes the proposal of a concrete sidewalk with buffer and curb and gutter along the east side of New Cut Road and Airmont Road. The width of the concrete sidewalk and buffer strip vary along the alignment due to VDOT design requirements (see Chapter 4A- Road Design Criteria). The sidewalk is 5-feet wide along the entire length of the alignment, excluding the locations where a retaining wall is proposed. The sidewalk is 6-feet wide in the areas with the retaining wall. A 3-foot buffer is held from Loudoun Street to Hayman Lane, and a 4-foot buffer is held from Hayman Lane south to the point of the existing trail tie-in.

The proposed improvements are only on the east side of the road, therefore sidewalk, curb and gutter, and drainage improvements are not included on the west.

A conceptual plan view layout utilizing Loudoun County 2022 GIS data, and typical sections along the alignment, are provided in Appendix C. Unique typical sections are provided as they vary at different areas along the alignment. Unless otherwise noted, proposed grades shall tie into existing grades at maximum 3:1 slope. See Figure 1 for an aerial view of the project site with an approximate sidewalk alignment shown in pink.

## A. DESIGN CONSIDERATIONS

There are multiple design considerations associated with this pedestrian improvement plan due to the existing site conditions along New Cut Road and Airmont Road. Major engineering and environmental constraints include disturbance along residential properties, crossing under overpasses, a culvert crossing, managing steep slopes, and others.

### i. Residential Properties

There are approximately 700 feet of existing residential properties that have driveways with existing culverts that tie into New Cut Road. There are also existing stone towers, shrubs, mailboxes, etc. along the path that would need to be relocated to align the sidewalk. See Typical Section #1 in Appendix C. In select areas, a new Right of Way line will need to be proposed and in others, temporary grading easements will be required. See Appendix D for a Right-of-Way Data Table with a detailed breakdown of the potential project impacts on nearby properties. With the proposal of a sidewalk across the driveways, the existing culverts will need to be removed and new storm lines with inlets will be installed. New driveway entrances will also need to be constructed. Driveways have been drafted in plan view in Appendix C per the Loudoun County Facilities Standards Manual- Standard Curb and Gutter Individual Driveway Entrance Detail.

### ii. Steep Slopes

Per visual analysis from a site visit and analysis of GIS topography, there are approximately 300 feet of existing 2:1 slopes north and adjacent to the existing overpasses. Final design options include: maintaining the existing 2:1 slopes with no grading change; providing a new retaining wall on the back of the sidewalk; or grading the area to maximum 3:1 slopes.

### iii. Overpasses

The proposed sidewalk will cross underneath two Harry Byrd Highway (Route 7) overpasses. Under the overpasses, there are existing concrete slope protections. The layout of the sidewalk encroaches into the concrete slope protection for the east abutments. See Typical Section #2 in Appendix C.

Since the concrete slope protection is not a part of the bridge structure, it can be altered without any detriment to the existing bridge abutments. However, the proposed design will have to incorporate a slope protection component that ties into the existing concrete slope protection. Depending on the elevation of the back side of the sidewalk and the elevation of the existing slope protection, a small parapet wall may be required along the back side of the sidewalk. This parapet wall, if necessary, will aid in protecting the slope leading up to the abutments.

VDOT may require bridge monitoring of the abutments during construction along the overpasses, therefore bridge monitoring has been included in the feasibility cost estimate.

### iv. Culvert Crossing

The proposed sidewalk will cross over an existing culvert with guardrail and wetlands. The existing guardrail would need to be relocated. See Typical Section #3 in Appendix C. The existing culvert is a twin cast-in-place box culvert with each cell consisting of 10'-0" span x 12'-0" rise (culvert size approximated by visual field inspection; not verified by measurements or record drawings). There is an existing headwall and wingwall at each end and Simpsons Creek runs through this culvert.

To fit the proposed sidewalk, the existing culvert would need to be extended approximately 10 linear feet on the east end of the culvert. The extension would require the following structural related tasks:

- A geotechnical report with recommendation on the foundation requirements for the culvert extension. At least one boring near the east end of the culvert would be required.
- The latest loading rating calculations of the box culvert under New Cut Road and/or Airmont Road shall be furnished by the State or County.
- Stream diversion of Simpsons Creek during the demolition and construction necessary for the culvert extension.

- Removal of the existing headwall and wingwalls at the east end of the culvert. This would have to be done in a manner to maintain the surrounding embankments.
- Construction of the culvert extension by attaching it to the existing culvert cells. Doweling reinforcement bars into the existing culvert top, bottom, and wall slabs would be required to properly attach the existing culvert to the new culvert.
- A new headwall and wingwalls would be attached to the new east end of the culvert.
- Backfilling around the culvert to meet the proposed grades and sidewalk.

If a design waiver is submitted and approved by VDOT to remove or modify the 3' utility buffer, the extension of the culvert can be avoided. If so, a 6 foot sidewalk would be required in lieu of the 5 foot sidewalk and the headwall of the culvert would sit adjacent to the edge of the sidewalk. The existing headwall would also need to be vertically extended.

For the purposes of the conceptual construction cost estimate, the culvert extension is assumed.

**Environmental Requirements:** Stantec conducted a preliminary desktop review of readily available resources to identify potential environmental constraints, and potential impacts to jurisdictional resources which may require permitting with the US Army Corps of Engineers (Corps), Department of Environmental Quality (DEQ) or the Virginia Marine Resource Commission (VMRC).

**Wetland Delineation and Permitting:** This project will require a wetland delineation to document the stream and any potential wetlands in the area. The report will be used for planning and design purposes and will be submitted to the Corps with the permit application. The Corps will issue a preliminary jurisdictional determination (PJD) with the permit.

If the project can be designed to avoid widening the culvert, and all work can be constructed in uplands, then no environmental permits would be required. Waivers from the Virginia Department of Transportation and or Loudoun County may be required for a modified sidewalk.

If the culvert is widened, the project is anticipated to qualify for a Nationwide Permit (NWP) from the Corps and an associated Section 401 water quality certification from the DEQ. Potential nationwide permit options could include the Nationwide 18: Minor Discharges or the Nationwide 42: Recreational Facilities. A permit from the VMRC is not anticipated because the drainage area of Simpson Creek is marginally less than five square miles (4.96 square miles as determined by Stream Stats).

The permit application will consist of the JPA form along with a narrative and appendices containing the required environmental documentation, including the information on threatened and endangered species and cultural resources, discussed in the following paragraphs. Mapping, design plans and impact maps will need to be provided to illustrate the project and the impacts to environmental resources.

The permit for the culvert extension may be complicated by two issues discussed in following sections:

- The green floater (state endangered species)
- Round Hill historic district

**Threatened and Endangered Species (Section 7 Consultation):** Stantec searched the following databases for federally and state-listed species (results in Table 1):

- USFWS Information, Planning and Conservation (IPaC)
- Department of Wildlife Resources (DWR); Virginia Fish & Wildlife Information Service (VaFWIS)
- Center for Conservation Biology (CCB) Eagle Nest Locator
- Department of Conservation and Recreation; Natural Heritage Data Explorer (NHDE)
- DWR Northern Long-eared bat (NLEB) Winter Habitat and Roost Trees Application

**Table 1 - Threatened and Endangered Species Identified as Potentially Occurring within the Project**

| Species | Source | Status |
|---|---|---|
| Northern long-eared bat *(Myotis septentrionalis)* | USFWS IPaC | FE/ST |
| Monarch butterfly (*Danaus plexippus)* | USFWS IPaC | N/A |
| Green floater (*Lasmigona subviridis)* | DWR VaFWIS / DCR NHDE | ST |
| FE= Federally Endangered, FT = Federally Threatened, ST= State Threatened | | |

The IPaC database identified the federally listed northern long-eared bat (NLEB), and the candidate species monarch butterfly as potentially occurring within the Project area. Additionally, the VaFWIS database confirmed the state listed green floater as occurring within two miles of the project area. Lastly, the NHDE identified green floater as occurring within the project watershed.

Limited tree cutting along the roadway will be required for construction. The NLEB was recently upgraded to federally endangered and tree clearing may require coordination with USFWS. There are currently no Section 7 requirements for Monarch butterfly, a candidate species.

If the project requires instream work at Simpson Creek for the extension of the existing culvert, a mussel survey and coordination with DWR may be required. If the species is observed during the survey, a relocation effort and or time of year restrictions may be required as the green floater has been observed within the waterway.

**Cultural Resources (Section 106 Coordination):** The Department of Historic Resources (DHR) Virginia Cultural Resources Information System (VCRIS) database was searched for the presence of known archaeological resources and architectural resources within the Project area identified as listed, eligible, or potentially eligible for listing on the National Register of Historic Places (NRHP). There is one known archeological site, one known architectural site, and four properties

associated with the Round Hill Historic District. Table 2 below details the known resources within the project area. Based on the scope of work, it is anticipated the project will require coordination with DHR during the permitting process. The best possible outcome of this this coordination would result in a "No Adverse Effect" determination.

**Table 2 - Architectural Resources within the Project Area**

| DHR ID # | Resource Name | Eligibility Status |
|---|---|---|
| 44LD0356 | Terrestrial, Open Air | Not Evaluated |
| 291-0010-0049 | House, 8 New Cut Road | Not Evaluated |
| 291-0010-0050 | Clayton L. Everhart House | Not Evaluated |
| 291-0010-0051 | House, 12 New Cut Road | Not Evaluated |
| 291-0010-0052 | Orrison House | Not Evaluated |
| 291-0010 | Round Hill Historic District | NRHP / VLR Listing |

These permitting recommendations are based on Stantec's current understanding of the Project. If the construction methodology, access, and/or land disturbance change, then these conclusions may no longer be valid. Should the scope of work need to be modified, please advise Stantec so that the Project can be reviewed in further detail.

### v. Retaining Wall

Per the proposed sidewalk layout, a retaining wall south of Hayman Lane is required to maintain the property grades. See Typical Section #5 in Appendix C. As shown in this typical section, the sidewalk in this area will be 6 feet wide and the retaining wall will sit adjacent to the east side of the proposed sidewalk. The existing properties are up to 8 feet higher in elevation than the adjacent roadway. Therefore, a retaining will be required to maintain the surrounding slopes.

The retaining wall will be approximately 410 linear feet, with an average height of 8 feet. For the purposes of this feasibility report, a VDOT standard concrete gravity wall is assumed. The concrete wall can be stamped or a stone veneer can be added to fit the aesthetics of the area. The conceptual cost estimate assumes the standard pricing for retaining wall only, final design and finishes will be at additional cost not currently included in this estimate.

One of the challenges of the concrete gravity retaining wall would be the temporary or permanent right-of-way acquisition from the effected property owners (see Appendix D for Right-of-Way Data Sheet). The base of the retaining wall is wider where the wall is higher, therefore more right-of-way acquisition or easement area will be required. For the purpose of this report, a maximum wall height of 12 feet is assumed which correlates to an approximate 7-foot wide base (per VDOT RW-3 concrete gravity wall). This assumption was used to approximate the location of the proposed right-of-way behind the retaining wall.

Another option for retaining wall that results in the least amount of disturbance to the adjacent property is a pile and lagging type retaining wall. The Pile and Lagging System will consist of a Drilled Concrete Shaft for foundation, Steel Piles, and Precast Concrete Lagging. The precast

lagging can be constructed of various types of exposed facing, to fit the aesthetics of the area. The lagging panels can be made to resemble concrete, rock, brick, stone, etc. Generally, this wall type is more expensive than a concrete gravity wall.

Areas along these steep slopes have existing trees and vegetation that will require removal. The runoff from the existing hill upstream of the wall will run into the wall and flow down along the wall and daylight. Geotechnical borings will be required prior to final wall design.

### vi. Right-of-Way and Easement Acquisition

A conceptual Right-of-Way (ROW) Data Sheet was prepared to list the impacted properties and the approximate area of fee take (ROW acquisition) and easements. Additionally, this table includes a short list of potential impacts to each property, including notes of shared driveways, trees, and existing physical features.

The road frontage of these pedestrian improvements anticipates that 19 properties will be directly impacted by this project. Five (5) properties are anticipated to require right-of-way acquisitions based on the proposed typical sections. Fourteen (14) properties are anticipated to require temporary construction easements, which assumes an approximate 10-foot offset from the cut/fill line. The number of properties impacting permanent utility easements will be determined with final design.

It is noted that a large portion of the project is within VDOT ROW, and subject to VDOT review and approval.

See the Right-of-Way Data Sheet in Appendix D for more detailed information about disturbances within the Right-of-Way.

### vii. Storm Drainage and Stormwater Management

**Storm Drainage:** The Town's roadway system generally lacks adequate drainage capacity as identified in the Stormwater Master Plan prepared in January 2005. Portions of the master drainage plan have been implemented with the E Loudoun Street and Main Street improvements projects completed in 2020-2022. It is noted that the 2005 Stormwater Master Plan did not include the entire extents of the Southern Greenway project south of the Rt 7 overpasses because this portion of land was not included in the Town limits at the time.

In accordance with the Town Comprehensive Plan 2017-2037, Chapter 10: Transportation, Section 6: Stormwater Management: "All roadway and sidewalk projects should be constructed in accordance with the adopted Stormwater Master Plan for the town. The policies established in that plan will eliminate hazardous roadside ditches, prevent street and sidewalk flooding, as well as protect local streams from becoming contaminated from run-off. All policies and standards should be environmentally sensitive in their function, design and construction."

For this feasibility report, the "high end" solution proposed in the Stormwater Master Plan is assumed for the New Cut Road portion of the project, shown below in Figure 10. The Master Plan shows inlets on both sides of the road, however this pedestrian improvement includes curb and gutter only on the east side of the road. Since there are no changes proposed to the west side of the road, storm drainage improvements are not assumed.

The "high end" solution assumed 15"-36" RCP storm pipes with inlet spacing approximately every 100 LF of roadway. Therefore, the conceptual cost for storm drainage for this project assumes an average cost of 30" RCP pipe, and VDOT standard curb inlets (DI-3B (L=10')) every 100 LF along the entire length of the project. Inlets and piped drainage along the west side of the road are excluded.

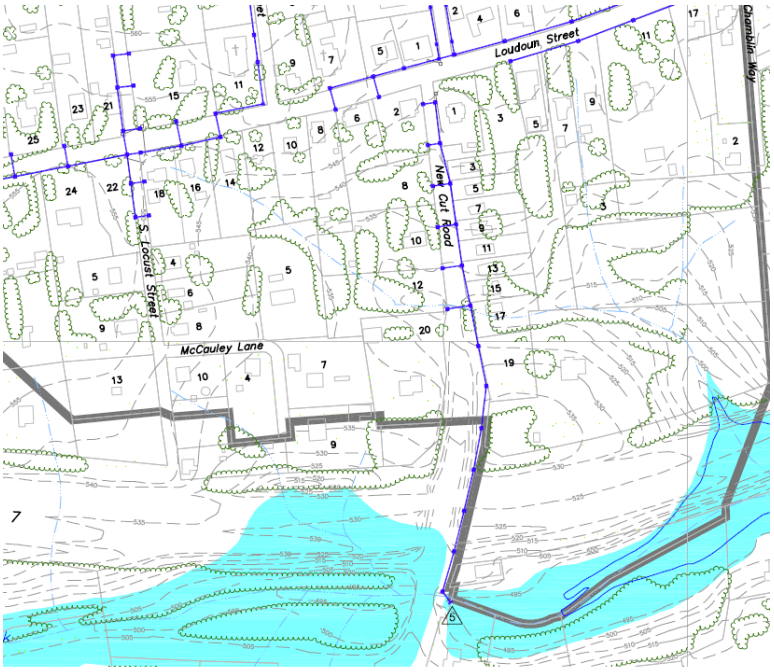



Exhibit C - "High End" Solution
Town of Round Hill, Virginia
Stormwater Master Plan

**Figure 10 - "High End" Solution from Stormwater Master Plan**

This analysis assumes two outfalls into Simpson's Creek at the location of the existing twin box culvert. There are two major drainage sheds: one from the intersection of New Cut Road and Loudoun Street running south to the outfall at Simpson's Creek, and one from the intersection of Stone Oak Place and Airmont Road north to the outfall at Simpson's Creek. Two new outfalls

into Simpson's Creek will need to be provided to discharge the piped storm system into the downstream receiving channel.

**Virginia Stormwater Management Program (VSMP) Authority:** Loudoun County serves as the designated VSMP authority for projects within the Town of Round Hill. As such, final design for storm drainage, stormwater management water quantity, stormwater management water quality, and erosion and sediment control shall follow the Loudoun County Facilities Standards Manual and Virginia state code. Final stormwater management and erosion and sedimental control approval and permitting will be submitted to Loudoun County review and approval.

**Stormwater Management Water Quantity**: In accordance with the FSM 5.230.A.2.c for Channel Protection, "*when stormwater from a development is discharged to a Natural Conveyance Systems – Natural perennial or intermittent streams, unimproved ephemeral channels, or swales. The maximum peak flow rate from the post-development 1-year 24- hour storm shall be calculated in accordance with the Energy Balance Methodology below or another methodology that is approved by the Director and the Water Control Board*".

Channel Protection compliance can be met through enhanced outlet protection aprons at each proposed outfall, level spreader lip to provide detention, or a manhole with sump depth to provide detention. This will require additional analysis at final design.

In accordance with the FSM 5.230.A.3 for Flood Protection, "*stormwater discharges to conveyance systems that currently do not experience localized flooding during the 10-year 24-hour storm: a) The post-development flow from a 10-year 24-hour storm shall be confined in the conveyance system to avoid the localized flooding*".

The limits of analysis for Flood Protection will be at the discharge point in Simpson's Creek, where there is a mapped floodplain. Assuming the existing channel does not overtop in the 10-year storm, the final design will need to demonstrate the proposed improvements are also confined within the existing channel. This will require additional analysis at final design.

**Stormwater Management Water Quality**: In accordance with the FSM 5.230.B.1.b.iv, "*the total phosphorus load of a linear development project occurring on prior developed lands shall be reduced by 20 percent below the pre-development total phosphorus load*".

Compliance can be achieved through manufactured treatment devices or nutrient credit purchase, or a combination thereof. The Main Street improvements project utilized nutrient credit purchase to meet phosphorus reduction requirements (it is noted this project was grandfathered under previous technical criteria for stormwater management and is not considered a direct comparison for stormwater management compliance methodology). For the purposes of the conceptual construction cost estimate, nutrient credit purchase is assumed. An estimate of pricing per pound of phosphorus is included in the conceptual cost estimate based upon a nearby project in Loudoun County in the same Hydrologic Unit Code (HUC)

boundary. Nutrient Credit availability and pricing will need to be solicited from a certified credit bank, such as Resource Environmental Solutions (RES), and confirmed at preliminary design.

### viii. Lighting

In accordance with the Town Comprehensive Plan 2017-2037, Chapter 10: Transportation, Section 10: Streetscape Plan: "The Town wants to reinvent itself as pedestrian and bicyclist friendly in order to improve the health and well-being for residents and to increase the town's reputation as a destination for visitors. Achieving this goal means systematic and well-planned transportation improvements for pedestrian crossings at intersections, pedestrian safety at night, and pedestrians' access to local amenities, such as streetlights. The Town wants to use pedestrian level streetlights to provide safety for pedestrians, as well as to unify the town under recognizable design elements, such as the current use of the street signs which all match the same unique style and design throughout the town and parts of the Joint Land Management Area (JLMA)." Per Loudoun County Zoning, the JLMA is defined as "the growth area surrounding an incorporated town and served by public water and sewer or projected to be served in the near future."

In coordination with the recent improvements completed on the Main Street and E Loudoun Street improvements projects, the conceptual construction cost estimate for this feasibility report includes proposed conduit and lighting every 300 LF along the sidewalk. Lighting is only assumed to be required along the east side of the road along the proposed improvement and is not included along the west side. Additional coordination with Virginia Dominion Power will be required during the final design phase to determine conduit requirements and final lighting spacing and photometrics.

### ix. Landscaping

In accordance with the Town Comprehensive Plan 2017-2037, Chapter 10: Transportation, Section 3: Pedestrian Ways: "Street trees could be incorporated along some sidewalks to provide some shade as long as the street trees are sensitive to the scale and function of the area."

In accordance with the Town Zoning Ordinance Section 14.5 Street Tree Planting: "Street trees shall be required along both sides of all newly constructed streets which are dedicated for public use. Street trees shall be planted in an area generally within 20 feet of the public right-of-way. The developer shall provide an average of at least one deciduous canopy tree for every 40 feet of street frontage that has or will have a trunk at least 12 inches in diameter when fully mature."

The conceptual construction cost estimate for this feasibility report includes proposed street trees every 40 LF, located in the buffer strip along the sidewalk. However, it is noted that there were no proposed landscaping or street trees along the Main Street road improvements project.

### x. Utilities

Per a site visit using visual inspection, there are many existing utilities at the intersection of Hayman Lane and New Cut Road/Airmont Road that will require survey and final engineering design to resolve. Sanitary sewer and water service laterals for all properties affected by the improvement will need to be located and verified with the final design for conflict with proposed storm drainage system. Additionally, sewer cleanouts and water meters might need relocation per final design.

Utility relocations and associated test pits are excluded from the scope of the conceptual construction cost estimate, and will be determined with final design.

## C. WAIVERS

As discussed in the Basis of Design and Design Considerations sections of this report, waivers should be considered to reduce sidewalk and buffer width requirements, and remove curb and gutter. Another option to reduce impacts of the project would be to propose header curb (VDOT CG-2) instead of curb and gutter (VDOT CG-6). The Main Street improvements project constructed header curb to reduce the right-of-way acquisition and property impacts in the reduced right-of-way of the existing downtown area. Reduced buffer widths should be considered in areas of the overpasses, culvert crossing, and retaining wall.

Obtaining waivers should be considered for final design as they will reduce project impacts and therefore reduce costs. Waivers/exceptions should be prepared in accordance with VDOT IIM-LD-227.14 (or latest edition).

# 6.0 CONCEPTUAL CONSTRUCTION COST ESTIMATE

The conceptual construction cost estimate is based on quantities taken for items in a feasibility construction stage. The VDOT 2020 Pay Item Code Table-as of 11/18/2022 was used for the VDOT Bid Item Number and the VDOT 1-Year Statewide and District Averages documents were used for the average item costs.

Assumptions for quantities of certain design elements are included in Chapter 5A-Design Considerations of this feasibility report. For instance, light poles are assumed every 40 LF along the east side of the road only.

A typical 30% construction contingency was not applied for this project due to the history of sidewalk and trail projects that have proved to always be more complicated than expected. A 40% construction contingency was added to the sum of the construction costs. The total conceptual construction cost is $6,315,865, which is a total of the estimated construction and design costs. See Appendix E for the conceptual cost estimate calculations.

# 7.0 ADDITIONAL PROJECT INFORMATION

## A. ROAD CROSSINGS

There is an existing asphalt trail on the east side of Airmont Road that leaves Lake Ridge Estates and heads north. The asphalt trail turns west at 17738/17750 Airmont Road and picks up on the west side near Trebor Lane. This is an unmarked crossing across Airmont Rd.
The Lake Ridge Estates Zoning Map Amendment (ZMAP 2006-02) included a proffer to construct an off-site trail along Airmont Road with a mid-block painted crosswalk that would connect the off-site trail with the on-site trail.

In October 2015, Bowman Consulting Group was retaining by K. Hovanian at Lake Ridge Estates, LLC to prepare a crosswalk study for a painted crosswalk on Airmont Road (Rt 719). VDOT Traffic Engineering reviewed the study and determined that a mid-block crosswalk was not recommended. Therefore, an asphalt trail remains in place with no paint markings, accessible ramps, and/or warning signs. It is the engineer's and VDOT's understanding that the asphalt trail in this area was installed without a VDOT permit.

As a part of this feasibility study, Stantec coordinated with VDOT Traffic Engineering to discuss possible sidewalk alignment(s) that included a mid-block crossing. VDOT was amenable to a review of a new crosswalk study, in accordance with the IIM-TE-384 Pedestrian Crossing Accommodations at Unsignalized Locations. The marked crosswalk would need to be justified in accordance with this memorandum and the Town would be prepared to build connectivity within one year. The current sidewalk alignment presented in this study does not require a mid-block crossing. If, in the future, another alignment configuration is considered that includes crossings, a new study will need to be submitted to VDOT for review.

## B. SPEED STUDY

In June 2022, the Town of Round Hill Mayor and Town Council prepared a staff report for action regarding the speed limit on Airmont Road heading into the Town limits. The existing posted speed is 35 mph and the Town proposes a change in the speed limit to 25 mph. Additionally, the Town proposes installation of solar speed radar signs in this location and multiple locations along Town limits. This report assumes the existing 35 mph speed which requires a 4-foot buffer between the back of curb and proposed sidewalk. If the speed is reduced along this corridor, then the buffer can be adjusted to 3-feet between the back of curb and proposed sidewalk. This would decrease the amount of impact to the frontage along several properties, particularly in the areas where a retaining wall is required.

The Town's Streetscape Master Plan recommends developing a traffic calming strategy along south gateway to manage traffic speed entering Town. The Town should seek assistance from VDOT in consideration for any traffic calming improvements in association with this project.

# C. PROJECT FUNDING

In 2019, the Town began to plan for the Southern Greenway improvement and prepared a Transportation Alternatives Grant Application. Along with this application, a Capital Improvement Program (CIP) sheet was prepared by the Town that identified a total project cost of $3,220,500 with 80% of the project funded with the VDOT grant.

In April 2021, Loudoun County included the construction of the Southern Greenway Pedestrian Improvements in their 6-Year Capital Improvement Program. Additionally, a VDOT Transportation Alternatives (TA) Application was submitted which included $1,360,000 in TA Funding with $340,000 Local 20% Match Required for a total project cost of $1,700,000.

It is noted that the basis of these project cost estimates was for a previous alignment alternative which assumed use of the existing asphalt trail along the west side of Airmont Road. Therefore, comparison should not be made between the presented cost in this feasibility report and previous funding applications or scoping costs.

In June 2021, the Town Council adopted the FY2022 Budget which included $250,000 for the Design & Plans for the Southern Greenway Pedestrian Improvements.

Utilization of federal or state funding for any or all project phases should be considered. If federal or state funds are issued for this project, the Town would follow the VDOT Locally Administered Projects (LAP) program. The LAP program assists the Local Public Agency (the Town) in the administration of federal and state funded transportation projects.

# 8.0 ALIGNMENT OPTIONS

The Town requested Stantec explore two cost-effective options for the proposed alignment. These options implement waivers recommended in this report that the engineer believes optimize improvements, reduce costs, and reduce impacts to properties, existing streams, and wetlands. The options presented follow the previously discussed assumptions within this report, unless otherwise noted. Waivers and exceptions will be subject to VDOT review and approval, and should be prepared in accordance with VDOT IIM-LD-227.14 (or latest edition). Revised drawings, Right-of-Way impacts, and a cost estimate for each alternative option are provided.

## A. OPTION #1

Option #1 incorporates the proposal of buffer width waivers at critical points along the alignment, curb and gutter at one segment, and a ditch and shoulder at another segment. Header curb with an extended travel lane width is proposed in lieu of a curb and gutter at select locations along the alignment.

The Town recently approved a ditch and shoulder section when supporting a curb and gutter waiver for the neighboring Lake Ridge Estates development. The nearby Main Street improvements project also constructed header curb in lieu of curb and gutter. For cost estimate purposes, proposed storm lines are only assumed in areas with proposed curb and gutter or header curb.

A conceptual plan view layout utilizing Loudoun County 2022 GIS data, and typical sections along the alignment, are provided in Appendix C.1. Unique typical sections are provided for Option #1 as they vary at different sections along the alignment. Unless otherwise noted, proposed grades shall tie into existing grades at a maximum 3:1 slope.

### i. Residential Properties

The typical section proposed along the existing residential properties remains unchanged in comparison to the original alignment's typical section. The proposal of a buffer width waiver is not implemented in this area to maintain consistency with the buffer across the street and a curb and gutter is utilized instead of a header curb, to ensure proper drainage along the roadside. A ditch and shoulder was explored for this section, however, is not proposed due to its considerable width of encroachment on the residential properties frontage. See Conceptual Plan View Alignment and Typical Section #1 in Appendix C.1.

### ii. Steep Slopes

At approximately station 16+50, the curb and gutter transitions to a ditch and shoulder section that is approximately 350-feet long. This section is proposed on top of existing 2:1 slopes north and adjacent to the existing overpasses. Per the VDOT Road Design Manual, the shoulder is 4

feet wide. A typical v-ditch with 3:1 slopes is assumed for purposes of this report, however the ditch will be sized based on hydraulic analysis in final design. Per the VDOT Road Design Manual, a 1-foot-wide minimum graded area between the ditch and the sidewalk and behind the back of the sidewalk is required. A 3-foot buffer area is provided behind the back of the sidewalk to ensure sufficient space for all lateral obstructions such as signs, utility poles, landscaping, etc. Then the proposed grades tie-back into the existing grade at a 2:1 slope. See Conceptual Plan View Alignment and Typical Section #2 in Appendix C.1.

### iii. Overpasses

At approximately station 20+00, the ditch and shoulder transitions to a header curb with 3-foot buffer, 5-foot sidewalk, and a 13-foot travel lane. This typical section will continue underneath two Harry Byrd Highway (Route 7) overpasses. A ditch and shoulder was explored for this section, however, is not proposed due to the constraint of the existing buildable width under the overpasses. The header curb serves as a buffer for pedestrian safety. In final design, reduction of the buffer width can be considered based on the surveyed condition of the existing concrete slope protection. See Conceptual Plan View Alignment and Typical Section #3 in Appendix C.1.

### iv. Culvert Crossing

The proposed sidewalk crosses over an existing culvert with guardrail and wetlands. To eliminate the culvert extension, a buffer width waiver is proposed at the culvert crossing. Additionally, header curb, a 6-foot sidewalk, and a 12-foot travel lane is proposed. The existing culvert headwall sits adjacent to the back of the sidewalk and will be vertically extended with the use of a parapet wall to act as a barrier. Proposed guardrail will be tied in at both ends of the parapet wall and the existing guardrail will be relocated. See Conceptual Plan View Alignment and Typical Section #4 in Appendix C.1.

At approximately station 23+25, the 6-foot sidewalk transitions back to a 5-foot sidewalk with a 3-foot buffer. The header curb and12' travel lane continues. The guardrail is positioned behind the sidewalk and continues up to intersection of Airmont Road and Hayman Lane. See Conceptual Plan View Alignment and Typical Section #5 in Appendix C.1.

### v. Retaining Wall

Per the proposed sidewalk layout, a retaining wall south of Hayman Lane is required to maintain the property grades. To reduce the height of the wall, a buffer width waiver is proposed at the retaining wall. The average height of the retaining wall is reduced to 6-feet, compared to average height of 8-feet in the original alignment with the required buffer. The retaining wall remains adjacent to the east side of the 6-foot proposed sidewalk. See Conceptual Plan View Alignment and Typical Section #7 in Appendix C.1.

One of the challenges of the concrete gravity retaining wall would be the temporary or permanent right-of-way acquisition from the effected property owners (see Appendix D.1 for

Right-of-Way Data Sheet). For the purpose of this report, a maximum wall height of 10-feet is assumed which correlates to an approximate 5-foot-wide base (per VDOT RW-3 concrete gravity wall). This assumption was used to approximate the location of the proposed right-of-way behind the retaining wall.

### vi. Right-of-Way and Easement Acquisition

A conceptual Right-of-Way (ROW) Data Sheet for Option #1 was prepared to list the impacted properties and the approximate area of fee take (ROW acquisition) and easements. The road frontage of these pedestrian improvements anticipates that 19 properties will be directly impacted by this project. Five (5) properties are anticipated to require right-of-way acquisitions based on the proposed typical sections. Fourteen (14) properties are anticipated to require temporary construction easements, which assumes an approximate 10-foot offset from the cut/fill line.

Due to the typical section adjustments in Option #1, there is generally less right-of-way acquisition area and less temporary construction easement area compared to the original alignment. The number of properties impacting permanent utility easements will be determined with final design. See the Right-of-Way Data Sheet in Appendix D.1 for more detailed information about disturbances within the Right-of-Way.

### vii. Conceptual Construction Cost Estimate

The total conceptual construction cost is $4,450,513, which is a total of the estimated construction and design costs. See Appendix E.1 for the conceptual cost estimate calculations.

## B. OPTION #2

Option #2 incorporates the proposal of buffer width waivers at critical points along the alignment, curb and gutter at one segment, and a ditch and shoulder at another segment. Header curb with an extended travel way is proposed in lieu of a curb and gutter at select locations along the alignment.

A conceptual plan view layout utilizing Loudoun County 2022 GIS data, and typical sections along the alignment, are provided in Appendix C.2. For Option #2, Typical Sections #1-#6 remain the same as what is proposed for Option #1. Only Typical Section #7 was changed. Unless otherwise noted, proposed grades shall tie into existing grades at a maximum 3:1 slope.

### i. Retaining Wall

For the proposed sidewalk alignment, a retaining wall or extensive grading south of Hayman Lane is required to maintain the property grades as discussed in the original alignment and Option #1. Option #2 proposes a 3:1 grading tie-out in lieu of proposing a retaining wall. The proposed temporary construction easement/limits of grading is shown in the provided Conceptual Plan View. To reduce the amount of grading, a buffer width waiver is proposed in this area. See Conceptual Plan View Alignment and Typical Section #7 in Appendix C.2.

### ii. Right-of-Way and Easement Acquisition

A conceptual Right-of-Way (ROW) Data Sheet for Option #2 was prepared to list the impacted properties and the approximate area of fee take (ROW acquisition) and easements. The road frontage of these pedestrian improvements anticipates that 19 properties will be directly impacted by this project. Five (5) properties are anticipated to require right-of-way acquisitions based on the proposed typical sections. Fourteen (14) properties are anticipated to require temporary construction easements, which assumes an approximate 10-foot offset from the cut/fill line.

Since Option #2 proposes a grading tie-out instead of a retaining wall, there is more temporary construction easement and property impact at the south end of the project. There is significant grading impact to the properties at 35739 Hayman Ln and 17732 Airmont Rd. There is an existing fence and backyard that is impacted at the Hayman Ln property. There are significant tree impacts along the 17732 and 17750 Airmont Rd properties. The limits of temporary construction easement for these properties are shown in yellow on sheet 5 of Appendix C.2. Final design should consider whether a hybrid approach in this area is feasible and practicable, which would include a shorter retaining wall along the 35739 Hayman Ln property, then transition to a grading tie-out along the frontage of 17732 Airmont Rd property.

The number of properties impacting permanent utility easements will be determined with final design. See the Right-of-Way Data Sheet in Appendix D.2 for more detailed information about disturbances within the Right-of-Way.

### iii. Conceptual Construction Cost Estimate

The total conceptual construction cost is $3,700,375, which is a total of the estimated construction and design costs. See Appendix E.2 for the conceptual cost estimate calculations.

# 9.0 CONCLUSION

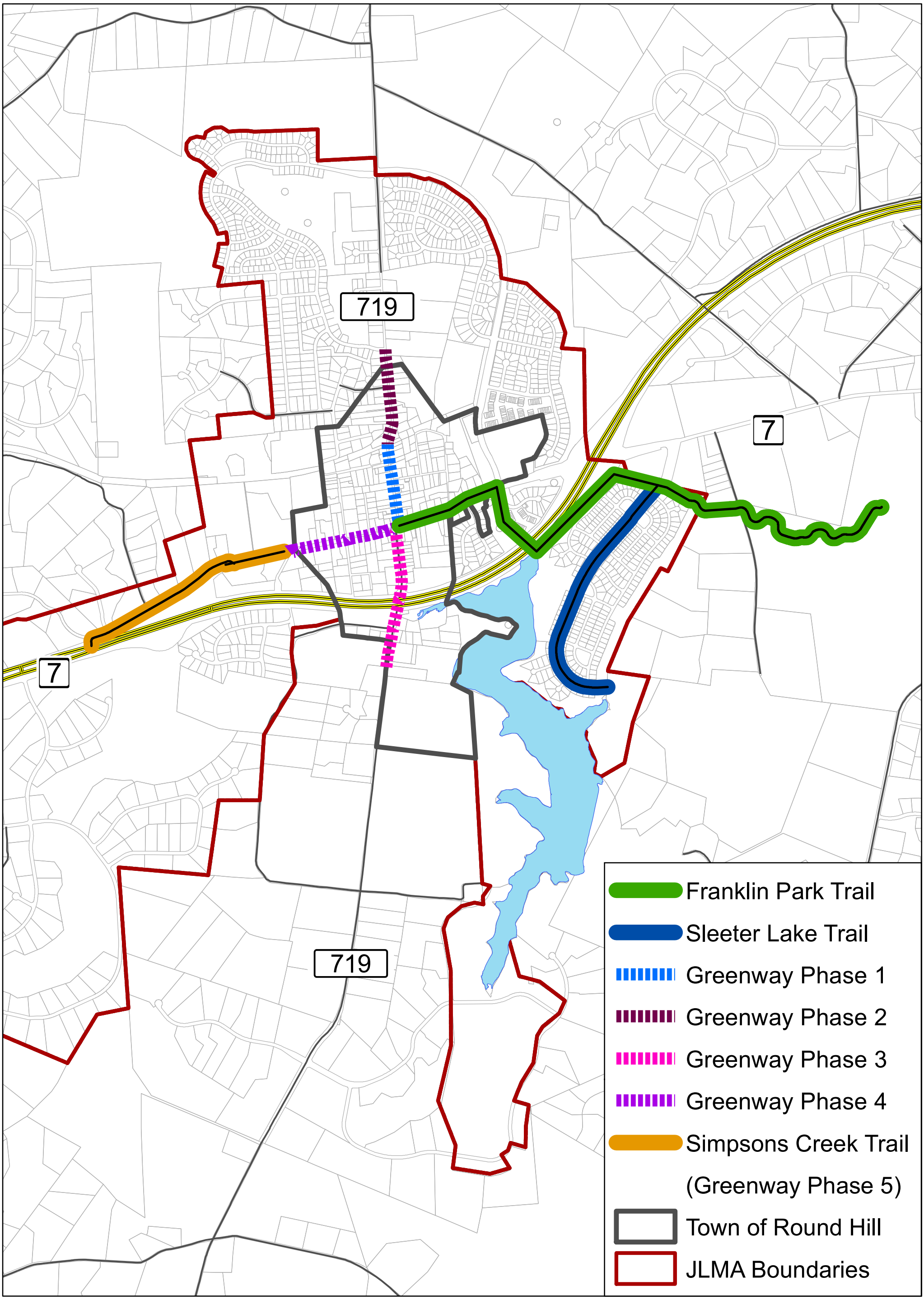
Based on this preliminary engineering analysis, it is concluded that the Southern Greenway sidewalk is feasible from an engineering perspective. There will be engineering and environmental challenges with respect to the Route 7 overpasses, existing culvert crossing at Simpson's Creek, and existing topography along New Cut Road and Airmont Road. However, none of these challenges are insurmountable. A series of design considerations and waiver opportunities have been recommended throughout this report to provide direction and consideration for final design. Additionally, two alignment options have been presented to reduce cost and impact to existing properties. If implemented, the engineer believes impact to properties, environment, and cost could be reduced.

The next step towards the implementation of this pedestrian improvement project would require creating a preliminary engineering design plan, initiating funding requests, and coordinating with VDOT.

# APPENDIX A:

## TOWN COMPREHENSIVE PLAN- BICYCLE & PEDESTRIAN FACILITIES MAP

# 10-3 Bicycle & Pedestrian Facilities

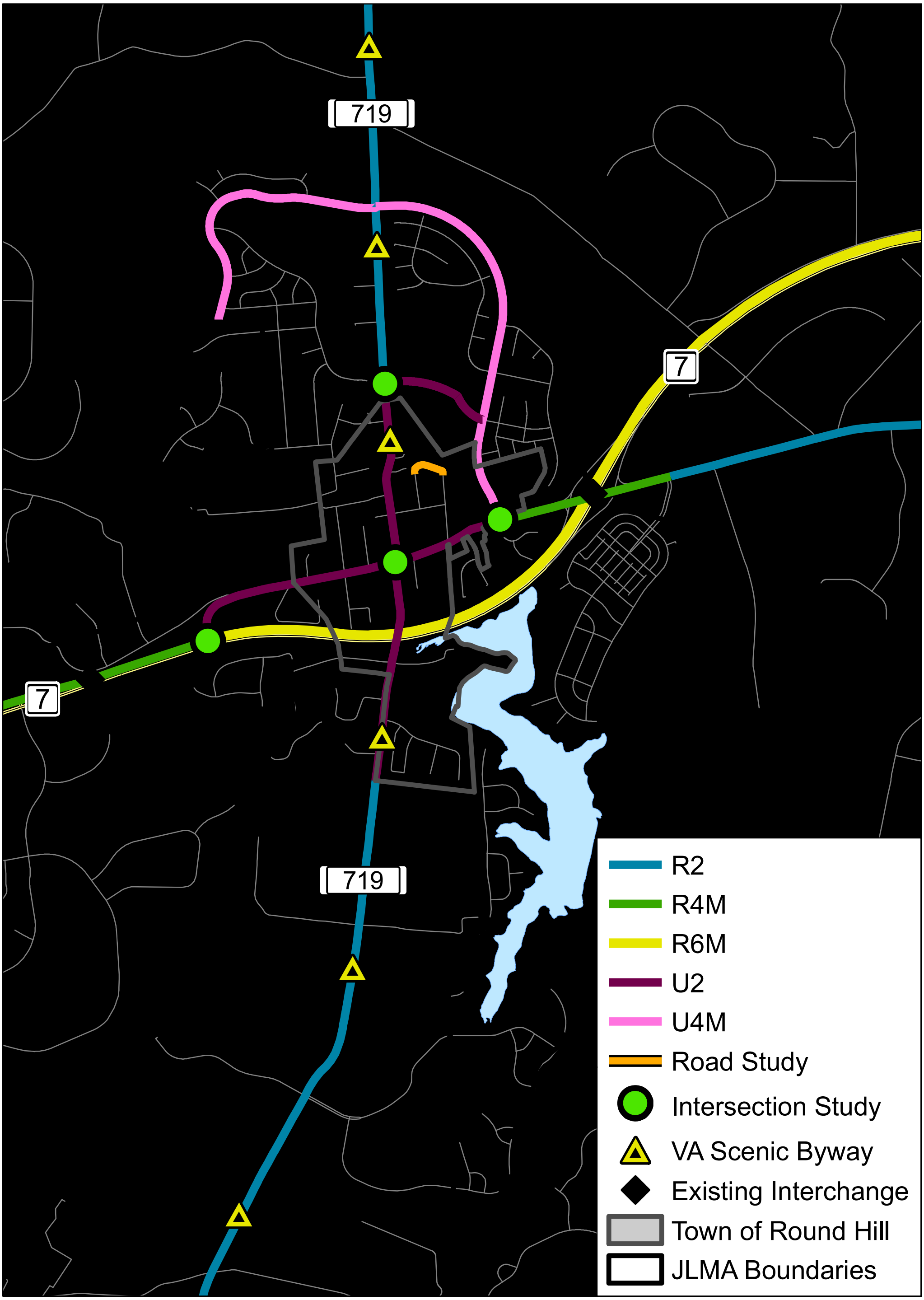



Amended December 9, 2016

# APPENDIX B:

## TOWN COMPREHENSIVE PLAN- FUTURE TRANSPORTATION MAP

# 10-4 Future Transporation

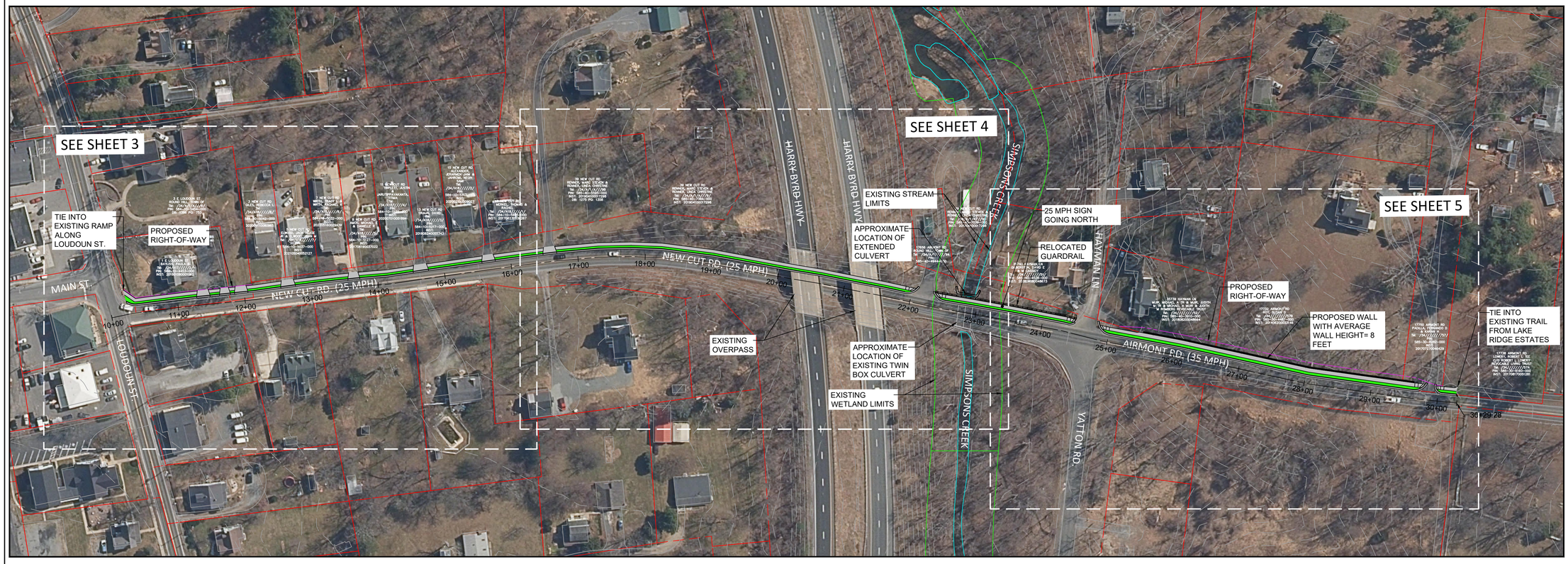



0 0.5 1 Miles

Amended December 20, 2016

# APPENDIX C:

## CONCEPTUAL PLAN VIEW ALIGNMENT & TYPICAL SECTIONS




# OVERALL MAP

GENERAL NOTE:

1. DRAWING BASE PROVIDED BY LOUDOUN COUNTY GIS (2022).

N

0 80' 160'

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Client/Project
Town of Round Hill
Southern Greenway Pedestrian Improvement Feasability Study
Round Hill, VA

Title
OVERALL MAP

Project Number: 2029040015
File Name: drawing.dwg

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Sheet 1 of 5

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ORIGINAL SHEET - ANSI D

# TYPICAL SECTIONS
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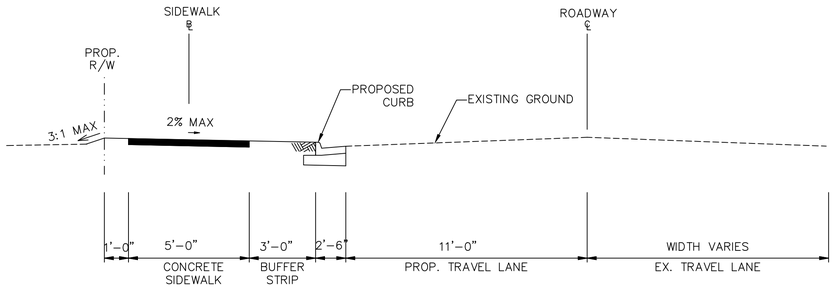


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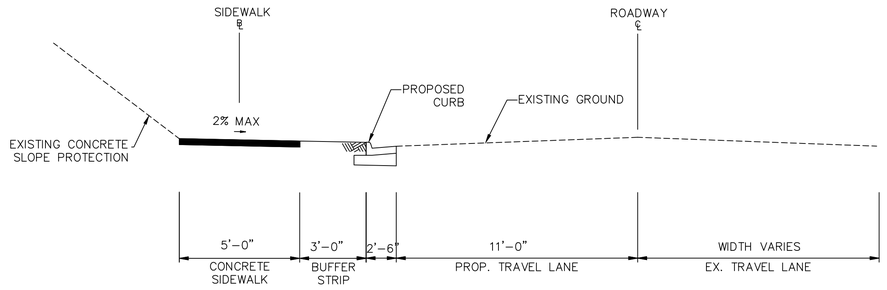
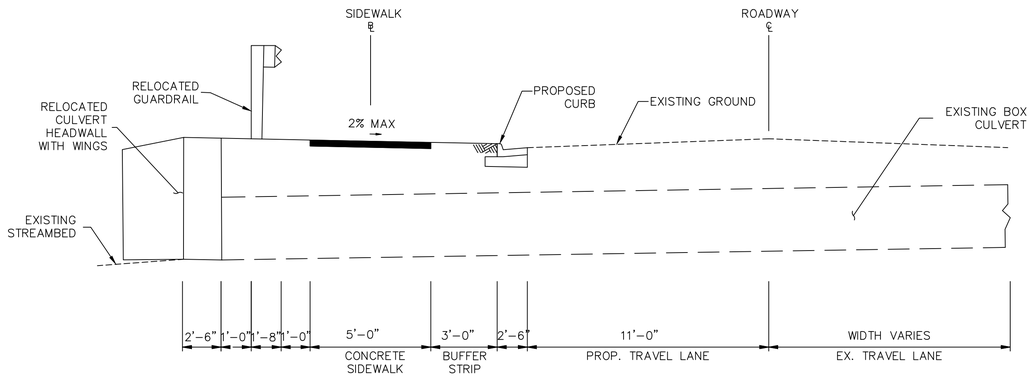
FOR 25 MPH POSTED SPEED OR LESS




## TYPICAL SECTION #2

(UNDER OVERPASS- APPROXIMATELY STATIONS 20+17 TO 20+60 AND 21+08 TO 21+52)

FOR 25 MPH POSTED SPEED OR LESS




## TYPICAL SECTION #3

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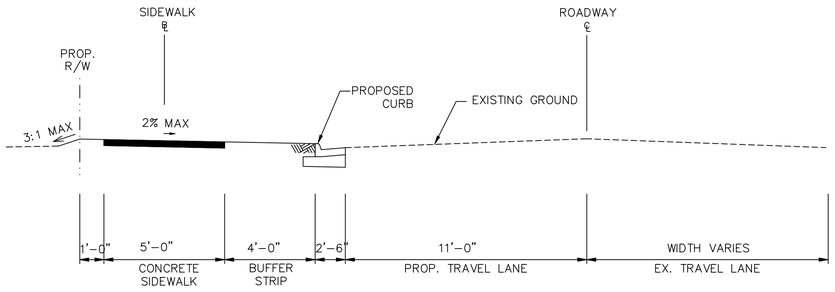
FOR 25 MPH POSTED SPEED OR LESS

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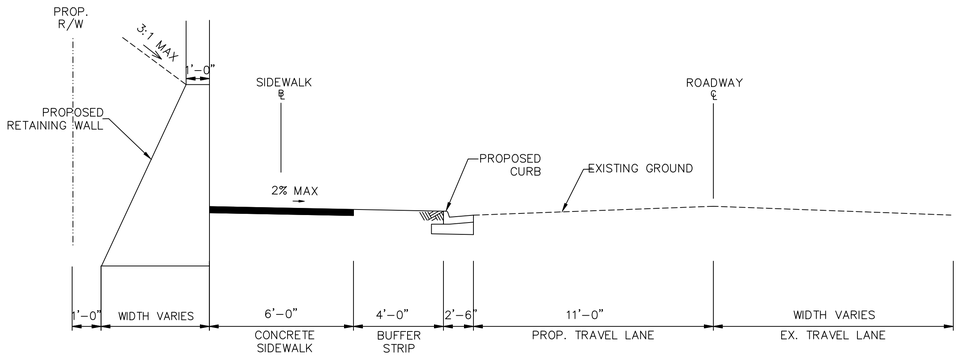
FOR 30 MPH POSTED SPEED OR MORE




## TYPICAL SECTION #5

(AT RETAINING WALL- APPROXIMATELY STATIONS 25+50 TO 29+83)

FOR 30 MPH POSTED SPEED OR MORE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Town of Round Hill

Sourthern Greenway Pedestrian Improvement Feasability Study
Round Hill, VA

Title

TYPICAL SECTIONS

Project Number: 2029040015
File Name: drawing.dwg

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Client/Project
Town of Round Hill

Southern Greenway Pedestrian Improvement Feasability Study
Round Hill, VA

Title
PLAN VIEW LAYOUT

Project Number: 2029040015
File Name: drawing.dwg

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Revision 0

Sheet 3 of 5

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ORIGINAL SHEET - ANSI D

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RENNER, MARC STEVEN &
RENNER, LINDA CHRISTINE
TM: /34/A/1/A///9B
PIN: 585-40-5595-000
INST: 201904100017298
DB: 1275 PG: 1358

39 NEW CUT RD
RENNER, MARC STEVEN &
RENNER, LINDA CHRISTINE
TM: /34/A/1/A///9/
PIN: 585-40-7384-000
INST: 201904100017298

HARRY BYRD HWY

HARRY BYRD HWY

39 NEW CUT RD
RENNER, MARC STEVEN &
RENNER, LINDA CHRISTINE
TM: /34/A/1/A///9C
PIN: 585-40-7039-000
INST: 201904100017298

EXISTING STREAM LIMITS

17656 AIRMONT RD
ROUND HILL, TOWN OF
TM: /34/A/1/A///9A
PIN:
585-40-4944-000

APPROXIMATE LOCATION OF EXTENDED CULVERT

RELOCATED GUARDRAIL

SIMPSONS CREEK

NEW CUT RD. (25 MPH)

17+00 18+00 19+00 20+00 21+00 22+00 23+00

EXISTING OVERPASS

APPROXIMATE LOCATION OF EXISTING TWIN BOX CULVERT

EXISTING WETLAND LIMITS

SIMPSONS CREEK

MATCHLINE SEE SHEET 3

MATCHLINE SEE SHEET 5

N

0 25' 50'

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Client/Project
Town of Round Hill

Southern Greenway Pedestrian Improvement
Feasability Study
Round Hill, VA

Title
PLAN VIEW LAYOUT

Project Number: 2029040015
File Name: drawing.dwg

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Client/Project
Town of Round Hill

Southern Greenway Pedestrian Improvement
Feasability Study
Round Hill, VA

Title
PLAN VIEW LAYOUT

Project Number: 2029040015
File Name: drawing.dwg

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Drawing No.

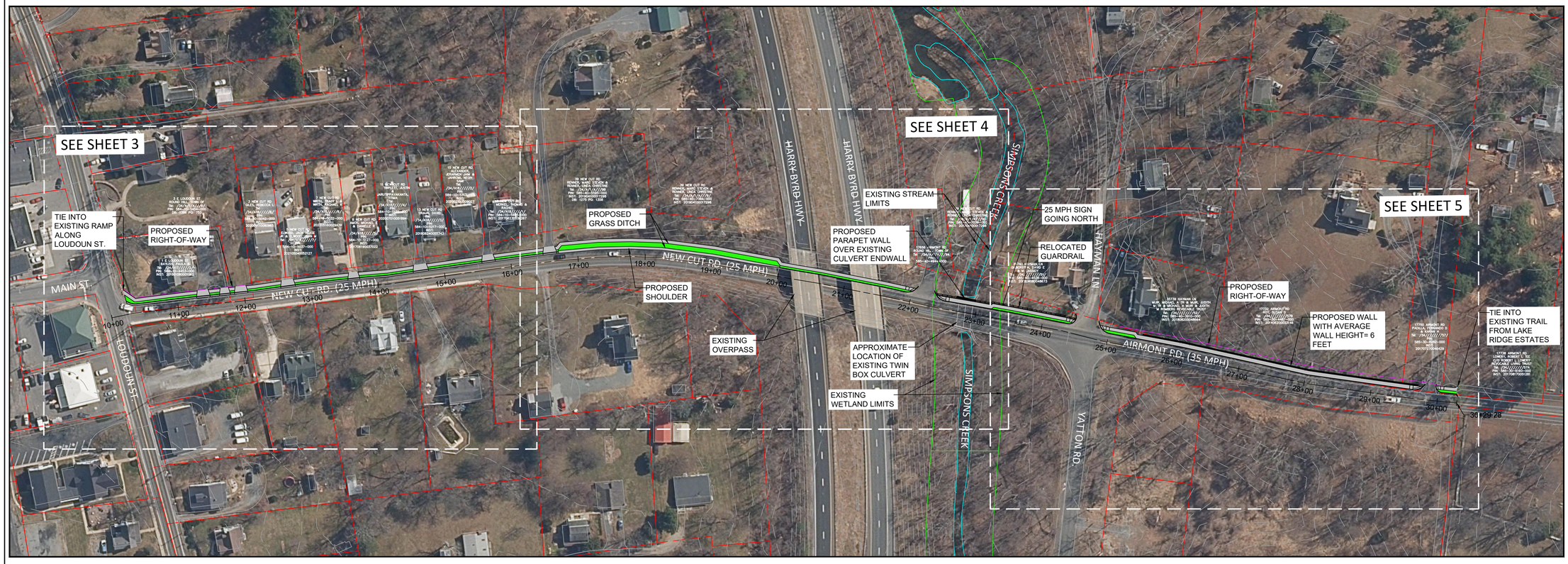
Revision 0

Sheet 5 of 5

# APPENDIX C.1:

## CONCEPTUAL PLAN VIEW ALIGNMENT & TYPICAL SECTIONS

## OPTION #1




# OVERALL MAP

GENERAL NOTE:

1. DRAWING BASE PROVIDED BY LOUDOUN COUNTY GIS (2022).

0 80' 160'

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Client/Project
Town of Round Hill

Southern Greenway Pedestrian Improvement Feasability Study (Option 1)
Round Hill, VA

Title
OVERALL MAP

Project Number: 2029040015
File Name: drawing.dwg

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Drawing No.

Revision 0

Sheet 1 of 5

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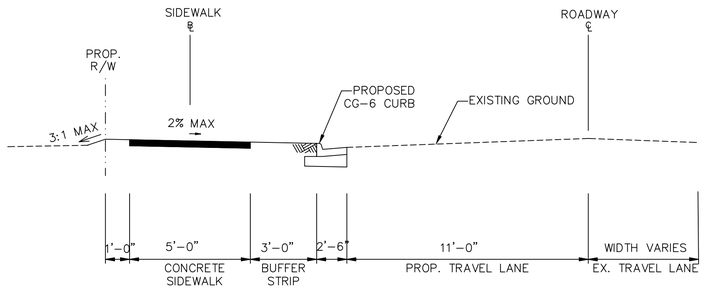


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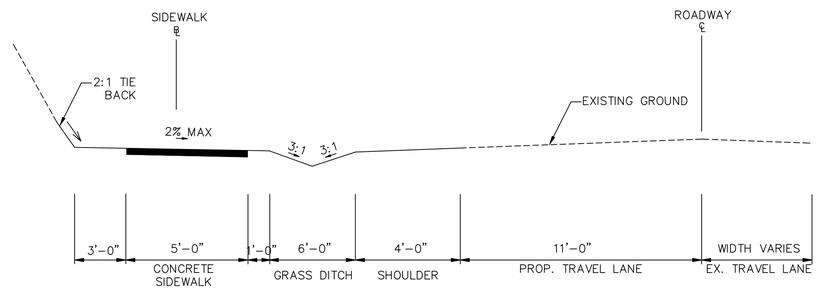
FOR 25 MPH POSTED SPEED OR LESS

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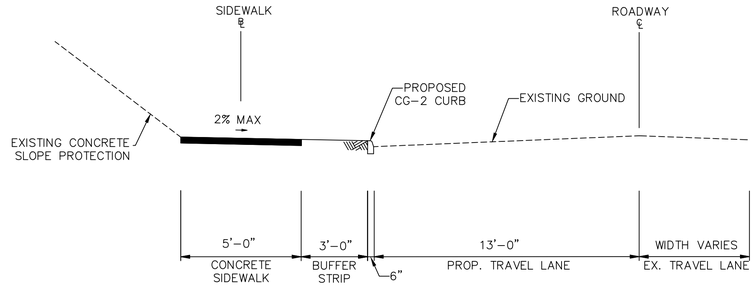


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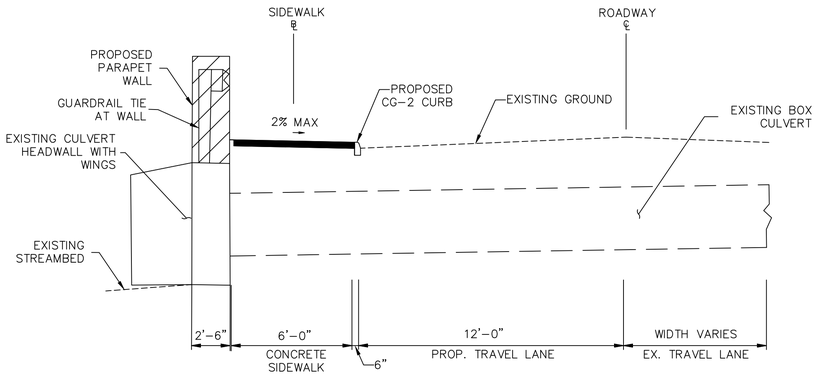
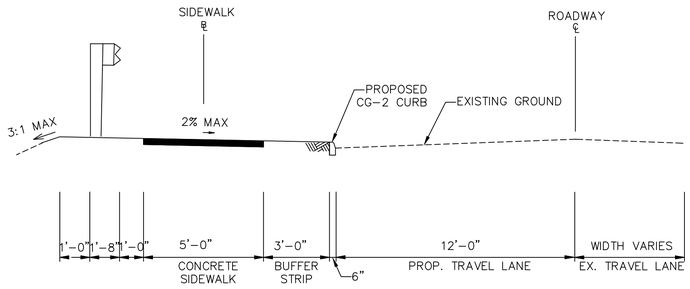
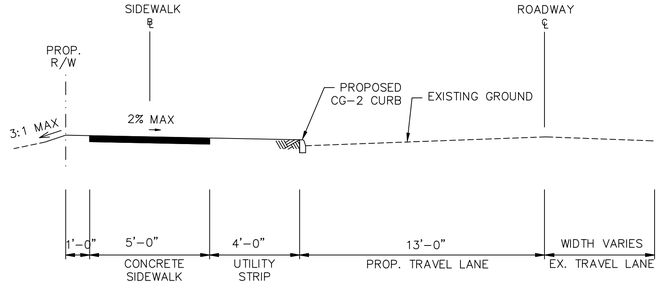



## TYPICAL SECTION #4
(APPROXIMATELY STATIONS 22+25 TO 23+25)



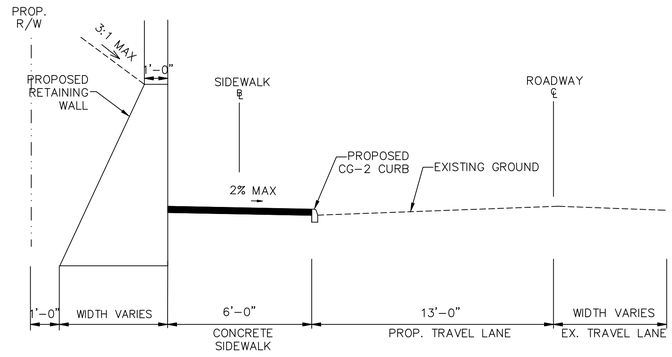

## TYPICAL SECTION #5
(APPROXIMATELY STATIONS 23+25 TO 24+50)

FOR 25 MPH POSTED SPEED OR LESS




## TYPICAL SECTION #6
(APPROXIMATELY STATIONS 24+50 TO 25+50 AND 30+00 TO 30+29)

FOR 30 MPH POSTED SPEED OR MORE




## TYPICAL SECTION #7
(APPROXIMATELY STATIONS 25+50 TO 29+75)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Client/Project
Town of Round Hill

Sourthern Greenway Pedestrian Improvement
Feasability Study (Option 1)
Round Hill, VA

Title
TYPICAL SECTIONS

Project Number: 2029040015
File Name: drawing.dwg

| Dwn. | Chkd. | Dsgn. | YY.MM.DD |
|---|---|---|---|
| NS | SNO | NS | 23.03.24 |

Drawing No.

Revision 0

Sheet 2 of 5

2023/03/29 9:38 AM By: Singh, Neha

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|---|---|---|---|---|

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Client/Project
Town of Round Hill

Southern Greenway Pedestrian Improvement Feasability Study (Option 1)
Round Hill, VA

Title
PLAN VIEW LAYOUT

Project Number: 2029040015
File Name: drawing.dwg

| NS | SNO | NS | 23.03.24 |
|---|---|---|---|
| Dwn. | Chkd. | Dsgn. | YY.MM.DD |

Drawing No.

Revision 0

Sheet 3 of 5

2023.03.29 9:39 AM By: srigh.Neha

ORIGINAL SHEET - ANSI D

39 NEW CUT RD
RENNER, MARC STEVEN &
RENNER, LINDA CHRISTINE
TM: /34/A/1/A///9B
PIN: 585-40-5595-000
INST: 201904100017298
DB: 1275 PG: 1358

39 NEW CUT RD
RENNER, MARC STEVEN &
RENNER, LINDA CHRISTINE
TM: /34/A/1/A///9/
PIN: 585-40-7384-000
INST: 201904100017298

HARRY BYRD HWY

HARRY BYRD HWY

39 NEW CUT RD
RENNER, MARC STEVEN &
RENNER, LINDA CHRISTINE
TM: /34/A/1/A///9C
PIN: 585-40-7039-000
INST: 201904100017298

PROPOSED GRASS DITCH

EXISTING STREAM LIMITS

17656 AIRMONT RD
ROUND HILL, TOWN OF
TM: /34/A/1/A///9A
PIN:
585-40-4944-000

17+00

18+00

NEW CUT RD. (25 MPH)

19+00

PROPOSED SHOULDER

PROPOSED PARAPET WALL OVER EXISTING CULVERT ENDWALL

20+00

RELOCATED GUARDRAIL

21+00

22+00

23+00

SIMPSONS CREEK

EXISTING OVERPASS

APPROXIMATE LOCATION OF EXISTING TWIN BOX CULVERT

SIMPSONS CREEK

MATCHLINE SEE SHEET 3

EXISTING WETLAND LIMITS

MATCHLINE SEE SHEET 5

N

0 25' 50'

2023/03/09 9:39 AM By: EnTyn Nieho

ORIGINAL SHEET - ANSI D


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| 1 | Issued | | | YY.MM.DD |

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Client/Project
Town of Round Hill

Southern Greenway Pedestrian Improvement Feasability Study (Option 11)
Round Hill, VA

Title
PLAN VIEW LAYOUT

Project Number: 2029040015
File Name: drawing.dwg

| Dwn. | Chkd. | Dsgn. | |
|---|---|---|---|
| NS | SNO | NS | 23.03.24 |
| | | | YY.MM.DD |

Drawing No.

Revision 0

Sheet 4 of 5


2023/03/29 9:39 AM By: Seth Nehs

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Client/Project
Town of Round Hill

Southern Greenway Pedestrian Improvement Feasability Study (Option 1)
Round Hill, VA

Title
PLAN VIEW LAYOUT

Project Number: 2029040015
File Name: drawing.dwg

| Dwn. | Chkd. | Dsgn. | YY.MM.DD |
|---|---|---|---|
| NS | SNO | NS | 23.03.24 |

Drawing No.

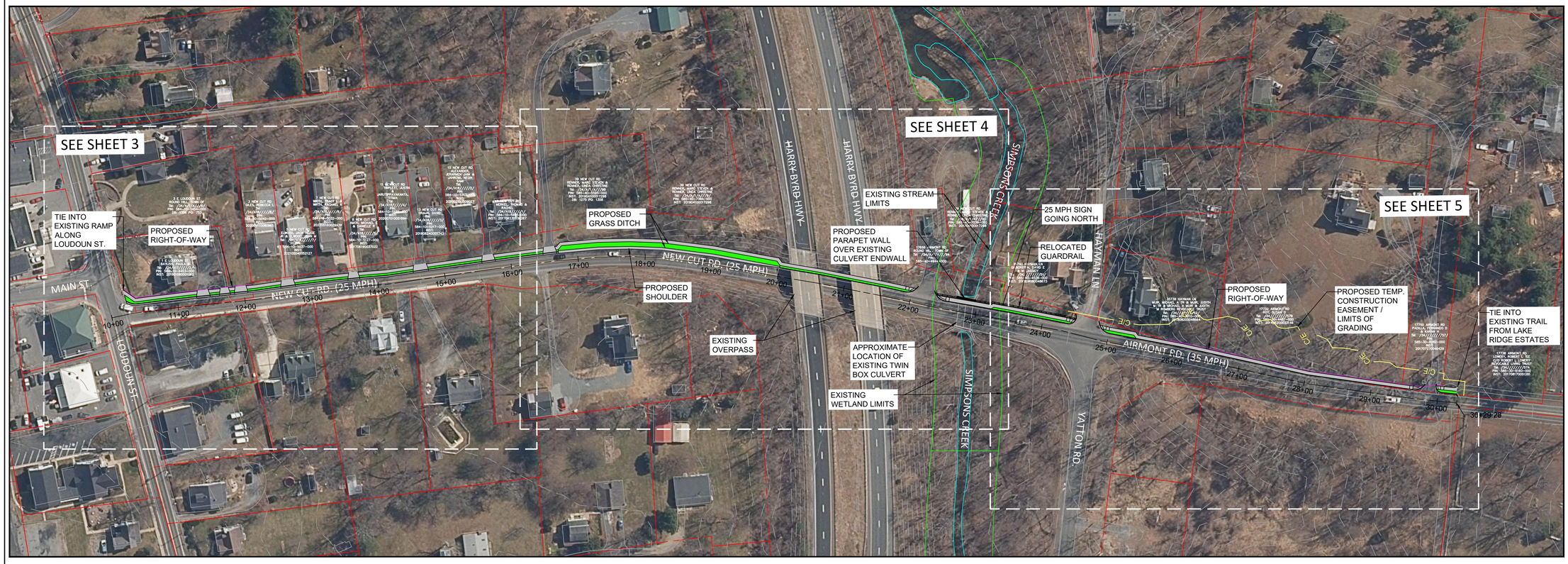
Revision 0

Sheet 5 of 5

# APPENDIX C.2:

## CONCEPTUAL PLAN VIEW ALIGNMENT & TYPICAL SECTIONS

## OPTION #2




# OVERALL MAP

GENERAL NOTE:

1. DRAWING BASE PROVIDED BY LOUDOUN COUNTY GIS (2022).

0 80' 160'

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Client/Project
Town of Round Hill

Southern Greenway Pedestrian Improvement Feasability Study (Option 2)
Round Hill, VA

Title
OVERALL MAP

Project Number: 2029040015
File Name: drawing.dwg

| NS | SNO | NS | 23.03.24 |
|---|---|---|---|
| Dwn. | Chkd. | Dsgn. | YY.MM.DD |

Drawing No.

Revision 0

Sheet 1 of 5

2023.03.29 11:59 AM By: Singh, Neha

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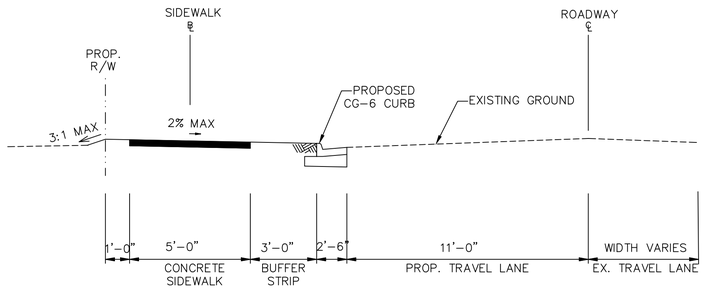
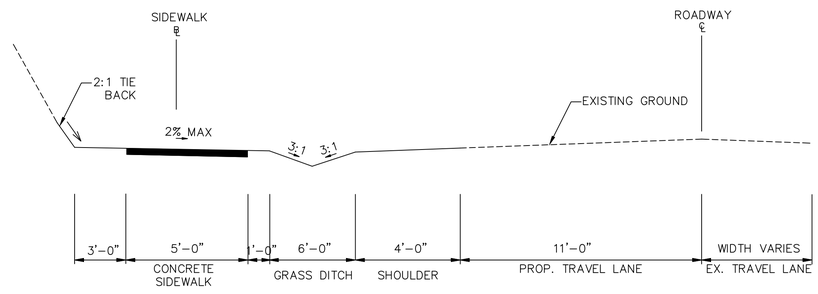
# TYPICAL SECTIONS
(NOT TO SCALE)

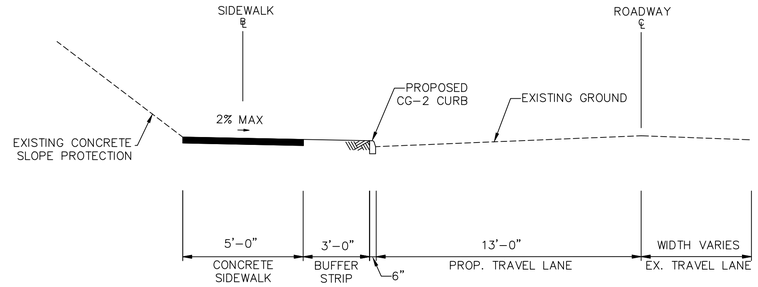



## TYPICAL SECTION #1
(APPROXIMATELY STATIONS 10+00 TO 16+50)

FOR 25 MPH POSTED SPEED OR LESS

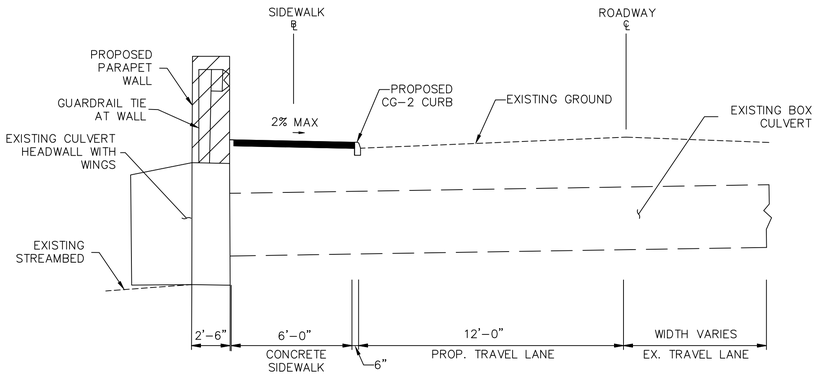



## TYPICAL SECTION #2
(APPROXIMATELY STATIONS 16+50 TO 20+00)

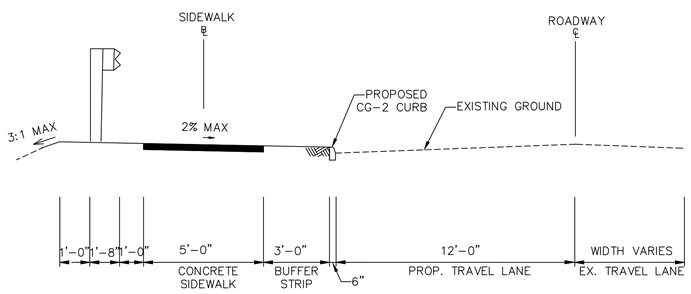



## TYPICAL SECTION #3
(APPROXIMATELY STATIONS 20+00 TO 22+00)

FOR 25 MPH POSTED SPEED OR LESS

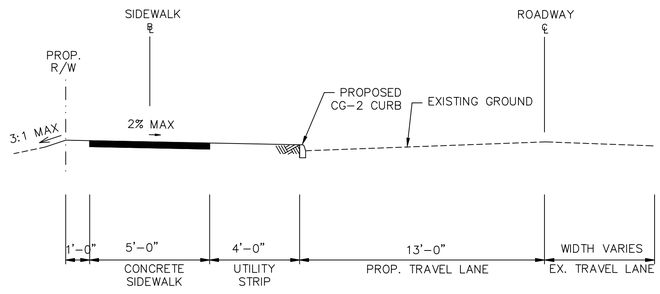



## TYPICAL SECTION #4
(APPROXIMATELY STATIONS 22+25 TO 23+25)



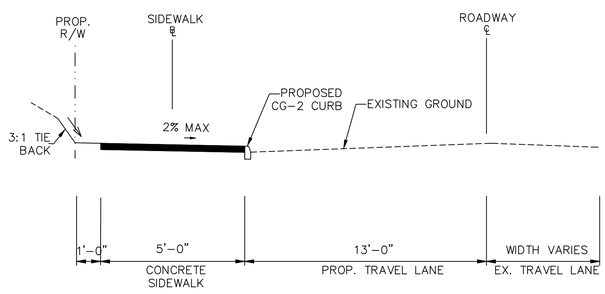

## TYPICAL SECTION #5
(APPROXIMATELY STATIONS 23+25 TO 24+50)

FOR 25 MPH POSTED SPEED OR LESS




## TYPICAL SECTION #6
(APPROXIMATELY STATIONS 24+50 TO 25+50 AND 30+00 TO 30+29)

FOR 30 MPH POSTED SPEED OR MORE




## TYPICAL SECTION #7
(APPROXIMATELY STATIONS 25+50 TO 29+75)

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Client/Project
Town of Round Hill

Sourthern Greenway Pedestrian Improvement
Feasability Study (Option 2)
Round Hill, VA

Title
TYPICAL SECTIONS

Project Number: 2029040015
File Name: drawing.dwg

| Dwn. | Chkd. | Dsgn. | YY.MM.DD |
|---|---|---|---|
| NS | SNO | NS | 23.03.24 |

Drawing No.

Revision 0

Sheet 2 of 5

2023/03/29 11:59 AM By: Steffan Nehro

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2023.03.29 12:00 PM By: Singh, Neha

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Client/Project
Town of Round Hill

Southern Greenway Pedestrian Improvement Feasability Study (Option 2)
Round Hill, VA

Title
PLAN VIEW LAYOUT

Project Number: 2029040015
File Name: drawing.dwg

| NS | SNO | NS | 23.03.24 |
|---|---|---|---|
| Dwn. | Chkd. | Dsgn. | YY.MM.DD |

Drawing No.

Revision 0

Sheet 3 of 5

39 NEW CUT RD
RENNER, MARC STEVEN &
RENNER, LINDA CHRISTINE
TM: /34/A/1/A///9B
PIN: 585-40-5595-000
INST: 201904100017298
DB: 1275 PG: 1358

39 NEW CUT RD
RENNER, MARC STEVEN &
RENNER, LINDA CHRISTINE
TM: /34/A/1/A///9/
PIN: 585-40-7384-000
INST: 201904100017298

HARRY BYRD HWY

HARRY BYRD HWY

39 NEW CUT RD
RENNER, MARC STEVEN &
RENNER, LINDA CHRISTINE
TM: /34/A/1/A///9C
PIN: 585-40-7039-000
INST: 201904100017298

PROPOSED GRASS DITCH

EXISTING STREAM LIMITS

17656 AIRMONT RD
ROUND HILL, TOWN OF
TM: /34/A/1/A///9A
PIN:
585-40-4944-000

17+00

18+00

NEW CUT RD. (25 MPH)

19+00

PROPOSED SHOULDER

PROPOSED PARAPET WALL OVER EXISTING CULVERT ENDWALL

20+00

RELOCATED GUARDRAIL

21+00

22+00

23+00

SIMPSONS CREEK

EXISTING OVERPASS

APPROXIMATE LOCATION OF EXISTING TWIN BOX CULVERT

SIMPSONS CREEK

MATCHLINE SEE SHEET 3

MATCHLINE SEE SHEET 5

EXISTING WETLAND LIMITS

N

0 25' 50'

2023/03/29 12:00 PM By: sSingh, Neha

ORIGINAL SHEET - ANSI D


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|---|---|---|---|---|
| 1 | Issued | | | YY.MM.DD |

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Client/Project
Town of Round Hill

Southern Greenway Pedestrian Improvement Feasability Study (Option 2)
Round Hill, VA

Title
PLAN VIEW LAYOUT

Project Number: 2029040015
File Name: drawing.dwg

| Dwn. | Chkd. | Dsgn. | YY.MM.DD |
|---|---|---|---|
| NS | SNO | NS | 23.03.24 |

Drawing No.

Revision 0

Sheet 4 of 5


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Client/Project
Town of Round Hill

Southern Greenway Pedestrian Improvement
Feasability Study (Option 2)
Round Hill, VA

Title
PLAN VIEW LAYOUT

Project Number: 2029040015
File Name: drawing.dwg

| Dwn. | Chkd. | Dsgn. | YY.MM.DD |
|---|---|---|---|
| NS | SNO | NS | 23.03.24 |

Drawing No.

Revision 0

Sheet 5 of 5

# APPENDIX D:

## RIGHT-OF-WAY DATA SHEET

# RIGHT-OF-WAY DATA SHEET

**Town of Round Hill**
**Southern Greenway Pedestrian Improvements**

| PARCEL NO. | LANDOWNER | ADDRESS | PARCEL ID # | SHEET NO. | AREA | | | | IMPACTS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | TOTAL PROPERTY | FEE TAKING | FEE REMAINDER | EASEMENTS TEMPORARY | |
| | | | | | SQ. FEET | SQ. FEET | SQ. FEET | SQ. FEET | |
| 1 | BAYLISS, PAULA B | 1 E LOUDOUN ST | 584-10-4453-000 | 3 | 18,295 | 3,200 | 15,095 | 1,500 | - connect to or rebuild existing ramp along E Loudoun St<br>- existing stone pillars (2) at sidewalk connection on E Loudoun St corner<br>- existing row of hedges and trees to be removed<br>- 2 entrances from New Cut Road<br>- existing stone pillars (2) and "bridge" on New Cut Road entrance<br>- property includes existing prescriptive ROW and 25' ROW reservation area |
| 2 | ROUND HILL, TOWN OF | 3 E LOUDOUN ST | 584-10-5454-000 | 3 | 27,007 | 750 | 26,257 | 400 | - Town park access, requires curb cut |
| 3 | GILES, REBECCA L | 3 NEW CUT RD | 584-10-5042-000 | 3 | 8,712 | | | 400 | - shared driveway with 5 New Cut Rd |
| 4 | ELWOOD, JACK REASE JR & ELWOOD, JOAN M | 5 NEW CUT RD | 584-10-5037-000 | 3 | 8,712 | | | 300 | - shared driveway with 3 New Cut Rd |
| 5 | WIRTH, TRACY L & WIRTH, RACHAEL K | 7 NEW CUT RD | 584-10-5032-000 | 3 | 8,712 | | | 250 | - shared driveway with 9 New Cut Rd |
| 6 | AMOS, MICHAEL E & DANIELLE R | 9 NEW CUT RD | 584-10-5127-000 | 3 | 8,712 | | | 200 | - shared driveway with 7 New Cut Rd<br>- existing trees could be impacted |
| 7 | TRIPLETT, JUSTIN & JARUTIPPAYAKANTA, TITIMA | 11 NEW CUT RD | 584-10-5122-000 | 3 | 8,712 | | | 200 | - shared driveway with 13 New Cut Rd<br>- existing trees could be impacted |
| 8 | CRAUN, DAVID | 13 NEW CUT RD | 584-10-5217-000 | 3 | 8,712 | | | 200 | - shared driveway with 11 New Cut Rd |
| 9 | ALEXANDER, JERARMEN JAIM & JAHROMI, NEGIN SAMI | 15 NEW CUT RD | 584-10-5313-000 | 3 | 8,276 | | | 150 | - shared driveway with 17 New Cut Rd |
| 10 | MERKEL, THOMAS & RACHEL | 17 NEW CUT RD | 584-10-5405-000 | 3 | 12,632 | | | | - shared driveway with 15 New Cut Rd<br>- mailbox access to be considered |
| 11 | RENNER, MARC STEVEN & RENNER, LINDA CHRISTINE | 39 NEW CUT RD | 585-40-5595-000 | 4 | 17,424 | | | | - driveway and existing fence and gate<br>- mailbox access to be considered |
| 12 | RENNER, MARC STEVEN & RENNER, LINDA CHRISTINE | 39 NEW CUT RD | 585-40-7384-000 | 4 | 141,134 | | | | - no impacts anticipated |
| 13 | ROUND HILL, TOWN OF | 17656 AIRMONT RD | 585-40-4944-000 | 4 | 5,663 | | | | - no impacts anticipated<br>- Town Utility Department property (719 Lift Station) |
| 14 | RENNER, MARC STEVEN & RENNER, LINDA CHRISTINE | 39 NEW CUT RD | 585-40-7039-000 | 4 | 62,726 | | | | - no impacts anticipated<br>- property downstream of existing culvert is privately owned |
| 15 | GILBERSTON, DAVID E & M CASSIDY | 35740 HAYMAN LN | 585-40-4528-000 | 5 | 24,394 | | | 200 | - property downstream of existing culvert is privately owned<br>- driveway ties into Hayman Lane intersection |
| 16 | MUIR, MICHAEL A TR & MUIR, JUDITH M TR & MICHAEL A MUIR & JUDITH M ROMBERG REVOCABLE TRUST | 35739 HAYMAN LN | 585-40-3910-000 | 5 | 19,602 | 1,650 | 17,952 | 3,500 | - existing fence along property line<br>- proposed retaining wall<br>- mailbox "bank" (in ROW) |
| 17 | ROY, SUSAN D | 17732 AIRMONT RD | 585-30-4487-000 | 5 | 94,090 | 5,000 | 89,090 | 7,800 | - shared driveway with 17750, 17738 and 17732 Airmont Road<br>- proposed retaining wall<br>- existing trees impacted |
| 18 | PADILLA, FERNANDO D & KARAN H | 17750 AIRMONT RD | 585-30-8282-000 | 5 | 306,662 | 1,000 | 305,662 | 1,550 | - shared driveway with 17750, 17738 and 17732 Airmont Road<br>- proposed retaining wall<br>- existing stone pillars (2) and address sign at entrance |
| 19 | LOWERY, ROBERT L TEE C/O ROBERT L LOWERY REVOCABLE LIVING TRUST | 17738 AIRMONT RD | 585-30-6160-000 | 5 | 91,040 | | | 700 | - shared driveway with 17750, 17738 and 17732 Airmont Road<br>- tie into existing asphalt trail<br>- existing asphalt trail is within a permanent easement (instrument #201405190025920); may require additional temporary construction easement |

# APPENDIX D.1:

## RIGHT-OF-WAY DATA SHEET

## OPTION #1

# RIGHT-OF-WAY DATA SHEET

**Town of Round Hill**
**Southern Greenway Pedestrian Improvements**
**OPTION #1**

| PARCEL NO. | LANDOWNER | ADDRESS | PARCEL ID # | SHEET NO. | AREA | | | | IMPACTS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | TOTAL PROPERTY | FEE TAKING | FEE REMAINDER | EASEMENTS TEMPORARY | |
| | | | | | SQ. FEET | SQ. FEET | SQ. FEET | SQ. FEET | |
| 1 | BAYLISS, PAULA B | 1 E LOUDOUN ST | 584-10-4453-000 | 3 | 18,295 | 3,200 | 15,095 | 1,500 | - connect to or rebuild existing ramp along E Loudoun St<br>- existing stone pillars (2) at sidewalk connection on E Loudoun St corner<br>- existing row of hedges and trees to be removed<br>- 2 entrances from New Cut Road<br>- existing stone pillars (2) and "bridge" on New Cut Road entrance<br>- property includes existing prescriptive ROW and 25' ROW reservation area |
| 2 | ROUND HILL, TOWN OF | 3 E LOUDOUN ST | 584-10-5454-000 | 3 | 27,007 | 750 | 26,257 | 400 | - Town park access, requires curb cut |
| 3 | GILES, REBECCA L | 3 NEW CUT RD | 584-10-5042-000 | 3 | 8,712 | | | 400 | - shared driveway with 5 New Cut Rd |
| 4 | ELWOOD, JACK REASE JR & ELWOOD, JOAN M | 5 NEW CUT RD | 584-10-5037-000 | 3 | 8,712 | | | 300 | - shared driveway with 3 New Cut Rd |
| 5 | WIRTH, TRACY L & WIRTH, RACHAEL K | 7 NEW CUT RD | 584-10-5032-000 | 3 | 8,712 | | | 250 | - shared driveway with 9 New Cut Rd |
| 6 | AMOS, MICHAEL E & DANIELLE R | 9 NEW CUT RD | 584-10-5127-000 | 3 | 8,712 | | | 200 | - shared driveway with 7 New Cut Rd<br>- existing trees could be impacted |
| 7 | TRIPLETT, JUSTIN & JARUTIPPAYAKANTA, TITIMA | 11 NEW CUT RD | 584-10-5122-000 | 3 | 8,712 | | | 200 | - shared driveway with 13 New Cut Rd<br>- existing trees could be impacted |
| 8 | CRAUN, DAVID | 13 NEW CUT RD | 584-10-5217-000 | 3 | 8,712 | | | 200 | - shared driveway with 11 New Cut Rd |
| 9 | ALEXANDER, JERARMEN JAIM & JAHROMI, NEGIN SAMI | 15 NEW CUT RD | 584-10-5313-000 | 3 | 8,276 | | | 150 | - shared driveway with 17 New Cut Rd |
| 10 | MERKEL, THOMAS & RACHEL | 17 NEW CUT RD | 584-10-5405-000 | 3 | 12,632 | | | | - shared driveway with 15 New Cut Rd<br>- mailbox access to be considered |
| 11 | RENNER, MARC STEVEN & RENNER, LINDA CHRISTINE | 39 NEW CUT RD | 585-40-5595-000 | 4 | 17,424 | | | | - driveway and existing fence and gate<br>- mailbox access to be considered |
| 12 | RENNER, MARC STEVEN & RENNER, LINDA CHRISTINE | 39 NEW CUT RD | 585-40-7384-000 | 4 | 141,134 | | | | - no impacts anticipated |
| 13 | ROUND HILL, TOWN OF | 17656 AIRMONT RD | 585-40-4944-000 | 4 | 5,663 | | | | - no impacts anticipated<br>- Town Utility Department property (719 Lift Station) |
| 14 | RENNER, MARC STEVEN & RENNER, LINDA CHRISTINE | 39 NEW CUT RD | 585-40-7039-000 | 4 | 62,726 | | | | - no impacts anticipated<br>- property downstream of existing culvert is privately owned |
| 15 | GILBERSTON, DAVID E & M CASSIDY | 35740 HAYMAN LN | 585-40-4528-000 | 5 | 24,394 | | | 150 | - property downstream of existing culvert is privately owned<br>- driveway ties into Hayman Lane intersection |
| 16 | MUIR, MICHAEL A TR & MUIR, JUDITH M TR & MICHAEL A MUIR & JUDITH M ROMBERG REVOCABLE TRUST | 35739 HAYMAN LN | 585-40-3910-000 | 5 | 19,602 | 1,000 | 18,602 | 2,200 | - existing fence along property line<br>- proposed retaining wall<br>- mailbox "bank" (in ROW) |
| 17 | ROY, SUSAN D | 17732 AIRMONT RD | 585-30-4487-000 | 5 | 94,090 | 3,600 | 90,490 | 5,700 | - shared driveway with 17750, 17738 and 17732 Airmont Road<br>- proposed retaining wall<br>- existing trees impacted |
| 18 | PADILLA, FERNANDO D & KARAN H | 17750 AIRMONT RD | 585-30-8282-000 | 5 | 306,662 | 800 | 305,862 | 1,350 | - shared driveway with 17750, 17738 and 17732 Airmont Road<br>- proposed retaining wall<br>- existing stone pillars (2) and address sign at entrance |
| 19 | LOWERY, ROBERT L TEE C/O ROBERT L LOWERY REVOCABLE LIVING TRUST | 17738 AIRMONT RD | 585-30-6160-000 | 5 | 91,040 | | | 700 | - shared driveway with 17750, 17738 and 17732 Airmont Road<br>- tie into existing asphalt trail<br>- existing asphalt trail is within a permanent easement (instrument #201405190025920); may require additional temporary construction easement |

# APPENDIX D.2:

## RIGHT-OF-WAY DATA SHEET

## OPTION #2

# RIGHT-OF-WAY DATA SHEET

**Town of Round Hill**
**Southern Greenway Pedestrian Improvements**
**OPTION #2**

| PARCEL NO. | LANDOWNER | ADDRESS | PARCEL ID # | SHEET NO. | AREA | | | | IMPACTS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | TOTAL PROPERTY | FEE TAKING | FEE REMAINDER | EASEMENTS TEMPORARY | |
| | | | | | SQ. FEET | SQ. FEET | SQ. FEET | SQ. FEET | |
| 1 | BAYLISS, PAULA B | 1 E LOUDOUN ST | 584-10-4453-000 | 3 | 18,295 | 3,200 | 15,095 | 1,500 | - connect to or rebuild existing ramp along E Loudoun St<br>- existing stone pillars (2) at sidewalk connection on E Loudoun St corner<br>- existing row of hedges and trees to be removed<br>- 2 entrances from New Cut Road<br>- existing stone pillars (2) and "bridge" on New Cut Road entrance<br>- property includes existing prescriptive ROW and 25' ROW reservation area |
| 2 | ROUND HILL, TOWN OF | 3 E LOUDOUN ST | 584-10-5454-000 | 3 | 27,007 | 750 | 26,257 | 400 | - Town park access, requires curb cut |
| 3 | GILES, REBECCA L | 3 NEW CUT RD | 584-10-5042-000 | 3 | 8,712 | | | 400 | - shared driveway with 5 New Cut Rd |
| 4 | ELWOOD, JACK REASE JR & ELWOOD, JOAN M | 5 NEW CUT RD | 584-10-5037-000 | 3 | 8,712 | | | 300 | - shared driveway with 3 New Cut Rd |
| 5 | WIRTH, TRACY L & WIRTH, RACHAEL K | 7 NEW CUT RD | 584-10-5032-000 | 3 | 8,712 | | | 250 | - shared driveway with 9 New Cut Rd |
| 6 | AMOS, MICHAEL E & DANIELLE R | 9 NEW CUT RD | 584-10-5127-000 | 3 | 8,712 | | | 200 | - shared driveway with 7 New Cut Rd<br>- existing trees could be impacted |
| 7 | TRIPLETT, JUSTIN & JARUTIPPAYAKANTA, TITIMA | 11 NEW CUT RD | 584-10-5122-000 | 3 | 8,712 | | | 200 | - shared driveway with 13 New Cut Rd<br>- existing trees could be impacted |
| 8 | CRAUN, DAVID | 13 NEW CUT RD | 584-10-5217-000 | 3 | 8,712 | | | 200 | - shared driveway with 11 New Cut Rd |
| 9 | ALEXANDER, JERARMEN JAIM & JAHROMI, NEGIN SAMI | 15 NEW CUT RD | 584-10-5313-000 | 3 | 8,276 | | | 150 | - shared driveway with 17 New Cut Rd |
| 10 | MERKEL, THOMAS & RACHEL | 17 NEW CUT RD | 584-10-5405-000 | 3 | 12,632 | | | | - shared driveway with 15 New Cut Rd<br>- mailbox access to be considered |
| 11 | RENNER, MARC STEVEN & RENNER, LINDA CHRISTINE | 39 NEW CUT RD | 585-40-5595-000 | 4 | 17,424 | | | | - driveway and existing fence and gate<br>- mailbox access to be considered |
| 12 | RENNER, MARC STEVEN & RENNER, LINDA CHRISTINE | 39 NEW CUT RD | 585-40-7384-000 | 4 | 141,134 | | | | - no impacts anticipated |
| 13 | ROUND HILL, TOWN OF | 17656 AIRMONT RD | 585-40-4944-000 | 4 | 5,663 | | | | - no impacts anticipated<br>- Town Utility Department property (719 Lift Station) |
| 14 | RENNER, MARC STEVEN & RENNER, LINDA CHRISTINE | 39 NEW CUT RD | 585-40-7039-000 | 4 | 62,726 | | | | - no impacts anticipated<br>- property downstream of existing culvert is privately owned |
| 15 | GILBERSTON, DAVID E & M CASSIDY | 35740 HAYMAN LN | 585-40-4528-000 | 5 | 24,394 | | | 200 | - property downstream of existing culvert is privately owned<br>- driveway ties into Hayman Lane intersection |
| 16 | MUIR, MICHAEL A TR & MUIR, JUDITH M TR & MICHAEL A MUIR & JUDITH M ROMBERG REVOCABLE TRUST | 35739 HAYMAN LN | 585-40-3910-000 | 5 | 19,602 | 250 | 19,352 | 4,500 | - existing fence along property line<br>- proposed grading tie-out into property, possible fence impacts<br>- mailbox "bank" (in ROW) |
| 17 | ROY, SUSAN D | 17732 AIRMONT RD | 585-30-4487-000 | 5 | 94,090 | 1,600 | 92,490 | 14,500 | - shared driveway with 17750, 17738 and 17732 Airmont Road<br>- proposed grading tie-out into property<br>- existing trees impacted |
| 18 | PADILLA, FERNANDO D & KARAN H | 17750 AIRMONT RD | 585-30-8282-000 | 5 | 306,662 | 500 | 306,162 | 1,850 | - shared driveway with 17750, 17738 and 17732 Airmont Road<br>- proposed grading tie-out into property<br>- existing treet impated<br>- existing stone pillars (2) and address sign at entrance |
| 19 | LOWERY, ROBERT L TEE C/O ROBERT L LOWERY REVOCABLE LIVING TRUST | 17738 AIRMONT RD | 585-30-6160-000 | 5 | 91,040 | | | 700 | - shared driveway with 17750, 17738 and 17732 Airmont Road<br>- tie into existing asphalt trail<br>- existing asphalt trail is within a permanent easement (instrument #201405190025920); may require additional temporary construction easement |

# APPENDIX E:

## CONCEPTUAL COST ESTIMATE CALCULATION

**CONCEPTUAL CONSTRUCTION COST ESTIMATE**

**TOWN OF ROUND HILL**
**SOUTHERN GREENWAY**
**12/22/2022**

| VDOT Bid Item # | Description | Amount | Unit | Average Unit Cost | Total Cost | VDOT R&B Spec. |
|---|---|---|---|---|---|---|
| 513SD20-0001 | MOBILIZATION (8%) | 1 | LS | $ 230,036 | $ 230,036 | 513 |
| 517SD20-0001 | CONSTRUCTION SURVEYING CONSTR. | 1 | LS | $ 55,000 | $ 55,000 | 517 |
| 301SD20-0002 | CLEARING AND GRUBBING | 1.93 | ACRE | $ 50,000 | $ 96,500 | 301 |
| 303SD20-0001 | REGULAR EXCAVATION | 4600 | CY | $ 60 | $ 276,000 | 303 |
| 305SD20-0001 | BORROW EXCAVATION | 530 | CY | $ 65 | $ 34,450 | 305 |
| 303SD20-0004 | GRADING | 1 | LS | $ 15,000 | $ 15,000 | 303 |
| 504SD20-0003 | HYDR. CEMENT CONC. SIDEWALK 4" | 1015 | SY | $ 127 | $ 128,905 | 504 |
| 504SD20-0002 | CG-12 DETECTABLE WARNING SURFACE | 8 | SY | $ 350 | $ 2,800 | 504 |
| 502SD20-0022 | STD. COMB. CURB & GUTTER CG-6 | 1962 | LF | $ 55 | $ 107,910 | 502 |
| 502SD20-0029 | ENTRANCE GUTTER CG-9D | 222 | SY | $ 150 | $ 33,300 | 502 |
| 412SD20-0044 | SAW CUTTING | 2029 | LF | $ 53 | $ 107,537 | 412 |
| 505SD20-0073 | REMOVE EXISTING GUARDRAIL | 215 | LF | $ 13 | $ 2,731 | 505 |
| 505SD20-0009 | REMOVE EX. GUARDRAIL TERMINAL | 2 | EA | $ 500 | $ 1,000 | 505 |
| 505SD20-0030 | GUARDRAIL GR-2 | 215 | LF | $ 40 | $ 8,600 | 505 |
| 505SD20-0039 | GUARDRAIL TER.SITE PREPARATION | 1 | EA | $ 800 | $ 800 | 505 |
| 508SD20-0004 | DEMO. OF PAVEMENT FLEXIBLE | 451 | SY | $ 15 | $ 6,765 | 508 |
| 315SD20-0007 | ASPHALT CONCRETE TY. SM-9.5A | 82 | TON | $ 200 | $ 16,400 | 315 |
| 315SD20-0010 | ASPHALT CONCRETE TY. BM-25.0A | 88 | TON | $ 150 | $ 13,200 | 315 |
| 308SD20-0012 | AGGR. BASE MATL. TY. I NO. 21B | 1078 | TON | $ 90 | $ 97,020 | 308 |
| 700SD20-0195 | CONDUIT PVC 3" | 2029 | LF | $ 18 | $ 36,522 | 700 |
| 700SD20-0197 | TRENCH EXCAVATION ECI-1 | 2029 | LF | $ 19 | $ 38,551 | 700 |
| 700SD20-0157 | LIGHTING POLE LP-2 TYPE E | 7 | EA | $ 7,000 | $ 49,000 | 700 |
| 521SD20-0001 | MAILBOX POST, SINGLE | 19 | EA | $ 550 | $ 10,450 | 521 |
| 700SX20-0021 | NS TRAFFIC SIGN | 4 | EA | $ 750 | $ 3,000 | 700 |
| 512SP20-0002 | NS MAINTENANCE OF TRAFFIC (15%) | 1 | LS | $ 431,317 | $ 431,317 | ATTD |
| 506SD20-0002 | RETAINING WALL RW-3 | 365 | CY | $ 2,000 | $ 730,000 | 506 |
| 601SD20-0001 | SEL TREE REMOVAL TRIM AND CLEAN | 0.47 | ACRE | $ 19,116 | $ 8,985 | 601 |
| 605SX20-0018 | NS PLANT OR TREE | 51 | EA | $ 1,650 | $ 84,150 | 605 |
| 414SD20-0009 | DRY RIPRAP CL.I 18" | 10 | SY | $ 1,100 | $ 11,000 | 414 |
| 414SD20-0056 | DRY RIPRAP CL.II 38" | 222 | SY | $ 1,200 | $ 266,667 | 414 |
| 303SD20-0017 | MINOR STR. EXCAV. BOX CULVERT | 116 | CY | $ 60 | $ 6,960 | 303 |
| 302SD20-0051 | 30" STORM SEWER PIPE | 2029 | LF | $ 210 | $ 426,090 | 302 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 302SD20-0314 | DROP INLET DI-3B, L=10' | 21 | EA | $ 8,635 | $ 181,335 | 302 |
| 302SD20-0013 | ENDWALL EW-12 | 2 | EA | $ 2,500 | $ 5,000 | 302 |
| 510SX20-0028 | NS REMOVE EXIST. ENDWALL | 1 | EA | $ 15,000 | $ 15,000 | 510 |
| 302SD20-0671 | TEMP.DIVE.CHANNEL LINING CL. B | 100 | SY | $ 29 | $ 2,900 | 302 |
| 302SD20-0672 | TEMP. DIVE. CHANNEL EXCAVATION | 35 | CY | $ 60 | $ 2,100 | 302 |
| 303SD20-0021 | TEMPORARY DIVERSION DIKE | 60 | LF | $ 45 | $ 2,700 | 303 |
| - | OVERSIZED SINGLE BOX CULVERT 12'X10' | 20 | LF | $ 1,640 | $ 32,800 | - |
| - | STANDARD WING FOR BOX CULVERT (1 SIDE) 10' HIGH | 2 | EA | $ 3,500 | $ 7,000 | - |
| - | TIMBER WALL LEVEL SPREADER | 12 | LF | $ 310 | $ 3,720 | - |
| - | SLOPE PROTECTION AT BRIDGE CROSSING | 100 | LF | $ 26 | $ 2,600 | - |
| - | BRIDGE MONITORING | 2 | EA | $ 10,000 | $ 20,000 | - |
| - | EROSION AND SEDIMENT CONTROL (10%) | 1 | LS | $ 287,545 | $ 287,545 | - |
| **SUBTOTAL** | | | | | **$** | **3,899,344** |
| **CONTINGENCY (40%)** | | | | | **$** | **1,559,738** |
| **CONSTRUCTION OVERSIGHT/INSPECTION (12%)** | | | | | **$** | **467,921** |
| **STORMWATER MANAGEMENT CREDITS** | | | | | **$** | **31,360** |
| **ESTIMATED CONSTRUCTION COST** | | | | | **$** | **5,958,363** |
| **ESTIMATED DESIGN COST (6%)** | | | | | **$** | **357,502** |
| **TOTAL ESTIMATED COST** | | | | | **$** | **6,315,865** |

# APPENDIX E.1:

## CONCEPTUAL COST ESTIMATE CALCULATION

## OPTION #1

**CONCEPTUAL CONSTRUCTION COST ESTIMATE**
**OPTION #1**
**TOWN OF ROUND HILL**
**SOUTHERN GREENWAY**
**03/29/2023**

| VDOT Bid Item # | Description | Amount | Unit | Average Unit Cost | Total Cost | VDOT R&B Spec. |
|---|---|---|---|---|---|---|
| 513SD20-0001 | MOBILIZATION (8%) | 1 | LS | $ 160,397 | $ 160,397 | 513 |
| 517SD20-0001 | CONSTRUCTION SURVEYING CONSTR. | 1 | LS | $ 55,000 | $ 55,000 | 517 |
| 301SD20-0002 | CLEARING AND GRUBBING | 1.85 | ACRE | $ 50,000 | $ 92,500 | 301 |
| 303SD20-0001 | REGULAR EXCAVATION | 1530 | CY | $ 60 | $ 91,800 | 303 |
| 305SD20-0001 | BORROW EXCAVATION | 355 | CY | $ 65 | $ 23,075 | 305 |
| 303SD20-0004 | GRADING | 1 | LS | $ 15,000 | $ 15,000 | 303 |
| 504SD20-0003 | HYDR. CEMENT CONC. SIDEWALK 4" | 1033 | SY | $ 127 | $ 131,191 | 504 |
| 504SD20-0002 | CG-12 DETECTABLE WARNING SURFACE | 8 | SY | $ 350 | $ 2,800 | 504 |
| 502SD20-0022 | STD. COMB. CURB & GUTTER CG-6 | 650 | LF | $ 55 | $ 35,750 | 502 |
| 502SD20-0011 | CURB, STD. CG-2 | 1000 | LF | $ 50 | $ 50,000 | 502 |
| 502SD20-0029 | ENTRANCE GUTTER CG-9D | 222 | SY | $ 150 | $ 33,300 | 502 |
| 412SD20-0044 | SAW CUTTING | 2029 | LF | $ 53 | $ 107,537 | 412 |
| 505SD20-0073 | REMOVE EXISTING GUARDRAIL | 215 | LF | $ 13 | $ 2,731 | 505 |
| 505SD20-0009 | REMOVE EX. GUARDRAIL TERMINAL | 2 | EA | $ 500 | $ 1,000 | 505 |
| 505SD20-0030 | GUARDRAIL GR-2 | 200 | LF | $ 40 | $ 8,000 | 505 |
| 505SD20-0045 | FIXED OBJECT ATTACH. GR-FOA-1 TY. I | 2 | EA | $ 3,500 | $ 7,000 | 505 |
| - | CONCRETE PARAPET WALL | 29 | LF | $ 46 | $ 1,334 | - |
| 505SD20-0039 | GUARDRAIL TER.SITE PREPARATION | 1 | EA | $ 800 | $ 800 | 505 |
| 508SD20-0004 | DEMO. OF PAVEMENT FLEXIBLE | 451 | SY | $ 15 | $ 6,765 | 508 |
| 315SD20-0007 | ASPHALT CONCRETE TY. SM-9.5A | 144 | TON | $ 200 | $ 28,800 | 315 |
| 315SD20-0010 | ASPHALT CONCRETE TY. BM-25.0A | 154 | TON | $ 150 | $ 23,100 | 315 |
| 308SD20-0012 | AGGR. BASE MATL. TY. I NO. 21B | 1385 | TON | $ 90 | $ 124,650 | 308 |
| 700SD20-0195 | CONDUIT PVC 3" | 2029 | LF | $ 18 | $ 36,522 | 700 |
| 700SD20-0197 | TRENCH EXCAVATION ECI-1 | 2029 | LF | $ 19 | $ 38,551 | 700 |
| 700SD20-0157 | LIGHTING POLE LP-2 TYPE E | 7 | EA | $ 7,000 | $ 49,000 | 700 |
| 521SD20-0001 | MAILBOX POST, SINGLE | 19 | EA | $ 550 | $ 10,450 | 521 |
| 700SX20-0021 | NS TRAFFIC SIGN | 4 | EA | $ 750 | $ 3,000 | 700 |
| 512SP20-0002 | NS MAINTENANCE OF TRAFFIC (15%) | 1 | LS | $ 300,745 | $ 300,745 | ATTD |
| 506SD20-0002 | RETAINING WALL RW-3 | 232 | CY | $ 2,000 | $ 464,000 | 506 |
| 601SD20-0001 | SEL TREE REMOVAL TRIM AND CLEAN | 0.47 | ACRE | $ 19,116 | $ 8,985 | 601 |
| 605SX20-0018 | NS PLANT OR TREE | 51 | EA | $ 1,650 | $ 84,150 | 605 |
| 414SD20-0009 | DRY RIPRAP CL.I 18" | 10 | SY | $ 1,100 | $ 11,000 | 414 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 302SD20-0051 | 30" STORM SEWER PIPE | 1686 | LF | $ 210 | $ 354,060 | 302 |
| 302SD20-0314 | DROP INLET DI-3B, L=10' | 17 | EA | $ 8,635 | $ 146,795 | 302 |
| 302SD20-0013 | ENDWALL EW-12 | 2 | EA | $ 2,500 | $ 5,000 | 302 |
| - | TIMBER WALL LEVEL SPREADER | 12 | LF | $ 310 | $ 3,720 | - |
| - | SLOPE PROTECTION AT BRIDGE CROSSING | 100 | LF | $ 26 | $ 2,600 | - |
| - | BRIDGE MONITORING | 2 | EA | $ 10,000 | $ 20,000 | - |
| - | EROSION AND SEDIMENT CONTROL (10%) | 1 | LS | $ 200,497 | $ 200,497 | - |
| **SUBTOTAL** | | | | | **$** | **2,741,603** |
| **CONTINGENCY (40%)** | | | | | **$** | **1,096,641** |
| **CONSTRUCTION OVERSIGHT/INSPECTION (12%)** | | | | | **$** | **328,992** |
| **STORMWATER MANAGEMENT CREDITS** | | | | | **$** | **31,360** |
| **ESTIMATED CONSTRUCTION COST** | | | | | **$** | **4,198,597** |
| **ESTIMATED DESIGN COST (6%)** | | | | | **$** | **251,916** |
| **TOTAL ESTIMATED COST** | | | | | **$** | **4,450,513** |

# APPENDIX E.2:

## CONCEPTUAL COST ESTIMATE CALCULATION

## OPTION #2

**CONCEPTUAL CONSTRUCTION COST ESTIMATE**
**OPTION #2**
**TOWN OF ROUND HILL**
**SOUTHERN GREENWAY**
**03/29/2023**

| VDOT Bid Item # | Description | Amount | Unit | Average Unit Cost | Total Cost | VDOT R&B Spec. |
|---|---|---|---|---|---|---|
| 513SD20-0001 | MOBILIZATION (8%) | 1 | LS | $ 132,393 | $ 132,393 | 513 |
| 517SD20-0001 | CONSTRUCTION SURVEYING CONSTR. | 1 | LS | $ 55,000 | $ 55,000 | 517 |
| 301SD20-0002 | CLEARING AND GRUBBING | 2.09 | ACRE | $ 50,000 | $ 104,500 | 301 |
| 303SD20-0001 | REGULAR EXCAVATION | 3100 | CY | $ 60 | $ 186,000 | 303 |
| 305SD20-0001 | BORROW EXCAVATION | 380 | CY | $ 65 | $ 24,700 | 305 |
| 303SD20-0004 | GRADING | 1 | LS | $ 15,000 | $ 15,000 | 303 |
| 504SD20-0003 | HYDR. CEMENT CONC. SIDEWALK 4" | 1033 | SY | $ 127 | $ 131,191 | 504 |
| 504SD20-0002 | CG-12 DETECTABLE WARNING SURFACE | 8 | SY | $ 350 | $ 2,800 | 504 |
| 502SD20-0022 | STD. COMB. CURB & GUTTER CG-6 | 650 | LF | $ 55 | $ 35,750 | 502 |
| 502SD20-0011 | CURB, STD. CG-2 | 1000 | LF | $ 50 | $ 50,000 | 502 |
| 502SD20-0029 | ENTRANCE GUTTER CG-9D | 222 | SY | $ 150 | $ 33,300 | 502 |
| 412SD20-0044 | SAW CUTTING | 2029 | LF | $ 53 | $ 107,537 | 412 |
| 505SD20-0073 | REMOVE EXISTING GUARDRAIL | 215 | LF | $ 13 | $ 2,731 | 505 |
| 505SD20-0009 | REMOVE EX. GUARDRAIL TERMINAL | 2 | EA | $ 500 | $ 1,000 | 505 |
| 505SD20-0030 | GUARDRAIL GR-2 | 200 | LF | $ 40 | $ 8,000 | 505 |
| 505SD20-0045 | FIXED OBJECT ATTACH. GR-FOA-1 TY. I | 2 | EA | $ 3,500 | $ 7,000 | 505 |
| - | CONCRETE PARAPET WALL | 29 | LF | $ 46 | $ 1,334 | - |
| 505SD20-0039 | GUARDRAIL TER.SITE PREPARATION | 1 | EA | $ 800 | $ 800 | 505 |
| 508SD20-0004 | DEMO. OF PAVEMENT FLEXIBLE | 451 | SY | $ 15 | $ 6,765 | 508 |
| 315SD20-0007 | ASPHALT CONCRETE TY. SM-9.5A | 144 | TON | $ 200 | $ 28,800 | 315 |
| 315SD20-0010 | ASPHALT CONCRETE TY. BM-25.0A | 154 | TON | $ 150 | $ 23,100 | 315 |
| 308SD20-0012 | AGGR. BASE MATL. TY. I NO. 21B | 1385 | TON | $ 90 | $ 124,650 | 308 |
| 700SD20-0195 | CONDUIT PVC 3" | 2029 | LF | $ 18 | $ 36,522 | 700 |
| 700SD20-0197 | TRENCH EXCAVATION ECI-1 | 2029 | LF | $ 19 | $ 38,551 | 700 |
| 700SD20-0157 | LIGHTING POLE LP-2 TYPE E | 7 | EA | $ 7,000 | $ 49,000 | 700 |
| 521SD20-0001 | MAILBOX POST, SINGLE | 19 | EA | $ 550 | $ 10,450 | 521 |
| 700SX20-0021 | NS TRAFFIC SIGN | 4 | EA | $ 750 | $ 3,000 | 700 |
| 512SP20-0002 | NS MAINTENANCE OF TRAFFIC (15%) | 1 | LS | $ 248,236 | $ 248,236 | ATTD |
| 601SD20-0001 | SEL TREE REMOVAL TRIM AND CLEAN | 0.79 | ACRE | $ 19,116 | $ 15,102 | 601 |
| 605SX20-0018 | NS PLANT OR TREE | 51 | EA | $ 1,650 | $ 84,150 | 605 |
| 414SD20-0009 | DRY RIPRAP CL.I 18" | 10 | SY | $ 1,100 | $ 11,000 | 414 |
| 302SD20-0051 | 30" STORM SEWER PIPE | 1686 | LF | $ 210 | $ 354,060 | 302 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 302SD20-0314 | DROP INLET DI-3B, L=10' | 17 | EA | $ 8,635 | $ 146,795 | 302 |
| 302SD20-0013 | ENDWALL EW-12 | 2 | EA | $ 2,500 | $ 5,000 | 302 |
| - | TIMBER WALL LEVEL SPREADER | 12 | LF | $ 310 | $ 3,720 | - |
| - | SLOPE PROTECTION AT BRIDGE CROSSING | 100 | LF | $ 26 | $ 2,600 | - |
| - | BRIDGE MONITORING | 2 | EA | $ 10,000 | $ 20,000 | - |
| - | EROSION AND SEDIMENT CONTROL (10%) | 1 | LS | $ 165,491 | $ 165,491 | - |
| **SUBTOTAL** | | | | | **$** | **2,276,026** |
| **CONTINGENCY (40%)** | | | | | **$** | **910,411** |
| **CONSTRUCTION OVERSIGHT/INSPECTION (12%)** | | | | | **$** | **273,123** |
| **STORMWATER MANAGEMENT CREDITS** | | | | | **$** | **31,360** |
| **ESTIMATED CONSTRUCTION COST** | | | | | **$** | **3,490,920** |
| **ESTIMATED DESIGN COST (6%)** | | | | | **$** | **209,455** |
| **TOTAL ESTIMATED COST** | | | | | **$** | **3,700,375** |