



Rinker Design Associates, P.C.

*Land Development * Surveying * Land Planning
Transportation * Environmental * Right of Way*

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Manassas, VA 20109

Local: 703-368-7373
www.rdacivil.com

March 11, 2015

Dennis Johnson, P.E.
Director of Public Works – Town of Vienna
127 Center Street (S)
Vienna, VA, 22180

RE: Proposal for Professional Services
Survey & Design Engineering Services:
Ayr Hill Ave. NE (Center Street N to Dominion Road NE) – Install Sidewalk , C&G Typical Section,
Retaining Wall and Adjacent Grading to Accommodate Sidewalk

Dear Mr. Johnson:

Please find attached our fee proposal for professional engineering design and surveying services for the completion of plans for the proposed pedestrian improvements for the following:

- Ayr Hill Ave. NE – The scope of the project is to provide a curb & gutter section (with sidewalk) along Ayr Hill Ave NE between Center Street N NE and Dominion Road NE.
 - Additionally, it was determine that a retaining wall and adjacent property grading will have to be addressed
 - Major Improvements to existing drainage system is anticipated.

The plans will be prepared in accordance with the Town's requirements and the RFP 12-01 On-Call Engineering Services (RFP), whichever may apply.

1.0 Scope of Services:

The scope of services, based on information provided by the Town, will consist of the following:

1. RDA will obtain additional topographic and property survey within the project's scope adequate to provide construction level plans of the pedestrian improvements identified. Survey is anticipated to be necessary to encompass just beyond the project limits to ensure proper drainage design is provided. As requested by the Town of Vienna, the following will also be applicable:
 - a. RDA will provide utility designations and conduct underground utility designation research. RDA may utilize a sub-consultant to conduct the utility designation. (Note: Only four test-pits are proposed. Any additional test pits that may be required will be billed at cost with prior authorization/additional P/O from the Town.)
 - b. RDA will conduct boundary research for property lines and show with topographic survey.
2. The project's design improvements will generally follow the design intent as follows:
 - a. Provide for a curb/gutter section with sidewalk and green-space.

- b. Curb ramps will be provided within the project limits to meet the latest ADA requirements as needed/directed by the Town.
 - c. The plans will also show the potential locations for tree plantings of the Town's choice to be installed in the utility strip (or behind sidewalk) if warranted/desired; however a formal landscaping plan will not be provided within the project's plan set.
3. Pavement Design Recommendation for widening, retaining wall and parking lot pavement will be provided. A retaining wall design will also be provided for construction. See Attachment 3 for sub-consultant design fee and scope of work for retaining wall and geotechnical recommendations.
4. RDA will provide for drainage improvements within the project limits to address drainage concerns that maybe present. Given cost is a limiting factor, all drainage improvements are subject to actual construction funding and RDA will work with Town to provide as much as possible.
 - a. RDA will review water quantity requirements. For the scope of this project no man-hours have been assumed to design any downstream improvements/design(s) to address any potential substandard conditions. If the Town requires downstream improvements be made, additional man-hours will be required.
 - b. This project assumes the plans will only need to comply with Town of Vienna requirements and no submittal to Fairfax County is required.
5. RDA assumes that a **FULL** roadway construction plan package will be required for this project's plan assembly, and will generally follow VDOT's "minimum level" construction plan assembly to enable a wide range of contractors to understand the plans for bidding, particularly for TMP/SOC.
6. RDA will prepare quantities/estimate for final construction package and project's bid-package. Additionally RDA will prepare a scope of work for the bid-package and assist the Town with any follow up questions from the bid-package.
7. RDA will perform utility coordination services as appropriate. RDA assumes Town's utility franchise agreements will be in effect for all utilities. At this time forty (40) man-hours are allocated. If additional man-hours are needed, RDA will request a change order.
8. RDA will provide for Construction Support to assist the Town's construction manager during construction as needed on an hourly basis. At this time thirty-two (32) man-hours are allocated. If additional man-hours are needed, RDA will request a change order.

RDA assumes the Town of Vienna will send out survey notification letters to properties within the Project's limits prior to RDA survey crews surveying properties.

In the event plats are required, RDA advises that any plats will cost \$2,100.00 per property, per plat for this project. RDA will only proceed with plats when provided with an additional approved P/O received from the Town.

Additional Option 1: The Town's Transportation Safety Commission received a petition to construct additional sidewalk/improvements on Ayr Hill Ave NW between Center Street N and Lawyers NW. RDA, pursuant to direction/additional authorization from the Town will perform Task 1 through Task 8 for this additional segment of Ayr Hill Ave NW if directed, however no retaining wall is planned for this segment.



2.0 Excluded Project Services:

The following represents a list of services/items that were not priced as part of this scope of work, and at this time it is not anticipated they will be needed as part of this task. RDA is committed to providing a wide range of services, and if the Town needs additional services including those excluded (provided they are among RDA's services), we will gladly submit a contract modification for any additions at the Town's request.

- Utility Test-Pits and Utility relocation plans (Public and Private)
 - RDA advises the Town if additional test-pits are required, it will be \$850.00 per test pit and an additional \$75.00 per vertical foot after six feet for the test-pit. If test-pits are required RDA shall submit a contract addendum for approval prior to the work to be completed.
- Shop Drawings or As-built drawings
- Construction Services or Support Services
 - Preparation of complete Construction Bid Documents/Package
 - Construction management and inspection
 - Review/Approve Contractor's Request for Change Orders
- Right of Way Acquisition Services
- Any Traffic Engineering studies, traffic counts, signal plans
- Design Waiver/Exception Request(s)
- Any Construction or Utility Stakeout
- Any Title Reports
- Any stormwater management design
- Fees/Purchase of Nutrient Credits
- Environmental Assessment/Review, Mitigation and any related permits, including VSMP permits.

4.0 Deliverables and Work Schedule:

Schedule:

RDA is committed to attempting to meet any additional reasonable deadline the Town requires for this project.

Deliverables:

RDA will obtain written (emailed) approval, or receipt of previous stage comments from the Town before proceeding next plan level stage.

- Concept Plans in color to Review with Stakeholders
- Pre-Final Plan (95%) to Submit to all stakeholders, for final approval.
- Final Plans/Construction Plan (100%) – RDA will provide plans that will provide all the additional construction details and quantities.

If significant changes (including any drainage design changes) are requested for Final Submission, RDA shall be permitted, based on man-hours to make adjustments request additional man-hours/funds to make the changes. Note: No mylar prints are assumed to be required as part of this project.



5.0 Task Order Fee Summary

The estimated Total Project Fee is **\$60,633** of which is \$49,464 is to be administered LUMP-SUM for survey, engineering design, geotechnical investigation/retaining wall and direct costs and \$11,169 is to be administered as an amount NOT TO EXCEED for all other tasks for this project.

If "Additional Option 1" is authorized by the Town, the Total Project Fee increases as follows:

\$99,720 of which is \$88,551 is to be administered LUMP-SUM for survey, engineering design, geotechnical investigation/retaining wall and direct costs and \$11,169 is to be administered as an amount NOT TO EXCEED for all other tasks for this project

Please see **Attachment 1 & 2** for a breakdown of the Task Order Fee Summary.

RDA is looking forward to the opportunity to provide these professional engineering services for the Town of Vienna. Should you have any questions, please do not hesitate to contact me at 703-368-7373, or e-mail me at mkim@rdacivil.com.

Sincerely,



Mo Kim, P.E.
Principal/Vice President of Operations



Attachment 1

**Rinker Design Associates, P.C.
Town of Vienna
Ayr Hill Ave N.E. Roadway and Sidewalk Project**

Fee Proposal

Survey Task Total (Lump Sum):	\$16,560
Engineering Design Task Total (Lump Sum):	\$18,260
Geotechnical Investigation/Retaining Wall (Lump Sum)	\$14,515
Utility Coordination (NTE)	\$6,205
Construction Support (NTE)	\$4,964
Total Direct Costs* (Lump Sum)	<u>\$129</u>
Total Project Fee	\$60,633
Additional Option 1 Task (Lump-Sum)	\$39,087
Total Project Fee (with Option 1)	\$99,720

*Assumes plans will be submitted VIA PDF's only.



Rinker Design Associates, P.C.

Town of Vienna

Ayr Hill Ave N.E. Roadway and Sidewalk Project

Fee Estimate

Element of Work	MAN-HOURS									
	Rate /Hr	Lump Sum	Project Manager \$155.12	Senior Engineer \$129.33	Project Engineer \$99.04	Engineer Technician \$80.62	Land Surveyor \$142.65	Survey Technician \$87.55	2 Man Field Crew \$152.53	Hours / Fee Estimate
SURVEY, DESIGN & CONST. SUPPORT										
100 - FIELD SURVEY AND BASE MAPPING										
Land Records Research							2	4		6
Boundary Survey							2	8	6	16
GPS Control							2	4	2	8
Topographic Survey							2	6	32	40
Check Survey Data for Completeness							2	6		8
101 -UTILITY DESIGNATION										
Utility Designation		\$1,150					2	6	8	16
Test-Pits (4 @ \$850.00 each)		\$3,400								
Hours							12	34	48	94
Subtotal (LUMP-SUM)		\$4,550					\$1,712	\$2,977	\$7,321	\$16,560
200 - DESIGN SERVICES										
Title Sheet & Typical Sections/Plan Details			1	2	6	6				15
Concept Plans/Color Exhibits					8	8				16
Plan and Profile			4	10	16	16				46
E/S Control Measures			1		2	1				4
Drainage Design			2	3	5	6				16
Storm Profiles			1	2	8	8				19
Drainage Area and Plan Research				2	3	2				7
Drainage Computations			2	4	6					12
Cross-Sections			2	2	8	4				16
TMP/SOC Plan			1	2	8	2				13
Quantities and Scope/Bid Assistance			1	4	4	4				13
Hours ((LUMP-SUM))			15	31	74	57				177
Subtotal (LUMP-SUM)			\$2,327	\$4,009	\$7,329	\$4,595				\$18,260
201- Geotechnical Investigation (See Attachment 2)										
Retaining Wall Design		\$9,715								9,715
		\$4,800								4,800
Hours (LUMP-SUM)										14,515
Subtotal (LUMP-SUM)										
300- UTILITY COORDINATION			40							40
Hours (NOT TO EXCEED)			40							40
Subtotal (NOT TO EXCEED AMOUNT)			\$6,205							\$6,205
400- CONSTRUCTION SUPPORT			32							32
Hours (NOT TO EXCEED)			32							32
Subtotal (NOT TO EXCEED AMOUNT)			\$4,964							\$4,964
500 - Additioanl Option 1 Task										
Additional Survey and Boundary Research							8	24	40	72
Additional Utility Designation		\$1,250					2	8		10
Additional Test-Pits (4 @ \$850 each)		\$3,400								
Additional Design Services			4	8	32	16				60
Additional Drainage Services			4	10	24	16				54
Additional Bid/Sumaries			4	6	3	3				16
Additional Utility Coord/Construction Support			10							10
Hours ((LUMP-SUM))			22	24	59	35	10	32	40	222
Subtotal (LUMP-SUM)		\$4,650	\$3,413	\$3,723	\$9,152	\$5,429	\$1,551	\$4,964	\$6,205	\$39,087
ESTIMATED PROJECT TOTAL										\$99,591





Rinker Design Associates, P.C.
Town of Vienna
Ayr Hill Ave N.E. Roadway and Sidewalk Project

Direct Cost Summary

1) Meetings/Travel

a. Project Site				
2 trips @	36 miles r/t x \$0.55 per mi	=	\$39.60	
		=		
b. Client/Public Meetings				
2 trips @	36 miles r/t x \$0.55 per mi	=	\$39.60	

Subtotal \$79

2) Presentation Materials (For deliverables only, to be billed at cost)

a. Xerochrome Color Copies (8 1/2" x 11")				
x	\$1.50 per copy	=	\$0.00	
b. Graphic Foam Core Displays (4.0' x 8.0')				
number @	\$400.00 per display	=	\$0.00	

Subtotal \$0

3) Engineering Products (For deliverables only, to be billed at cost)

a. Engineering Mylar (24" x 36")				
0 x	\$10.00 each	=	\$0.00	
b. Engineering Paper Print (11" x 17")				
0 x	\$1.00	=	\$0.00	
c. Engineering Paper Print (24" x 36" for submissions)				
0 x	\$1.75	=	\$0.00	

Subtotal \$0

4) Other Miscellaneous Costs (For deliverables only, to be billed at cost)

a. Reports & Site Plan research for Design	=	\$50.00	
a. Long Distance Telephone	=	\$0.00	
b. Postage	=	\$0.00	
c. Plan/Exhibit Delivery	=	\$0.00	

Subtotal \$50

TOTAL ESTIMATED DIRECT COSTS	\$129
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GEOTECHNICAL COST PROPOSAL**Improvements to Ayr Hill Avenue NE
Vienna, Virginia****DMY Proposal No. 01.02413.01**

(Submitted: February 23, 2015)

CATEGORY	COST
Field Exploration	\$5,795.64
Laboratory Testing	\$905.00
Geotechnical Engineering and Report	\$2,637.72
Expenses	\$376.00
PROJECT TOTAL	\$9,714.36
Optional Retaining Wall Design	\$4,800.00

Assumptions/Project Information:

1. The Town of Vienna is proposing roadway improvements along both the eastbound and westbound lanes of Ayr Hill Avenue NE from Center Street North to Dominion Road NE. The total length of the roadway to be improved is approximately 270 feet. We understand that the proposed improvements will consist of widening the existing eastbound and westbound lanes of Ayr Hill Avenue NE with most of the new pavement along the eastbound lanes. As part of the proposed improvement, we understand that new curb and gutter will be installed on both lanes of Ayr Hill Avenue NE. In addition to new roadway, a retaining wall will be constructed along the westbound lane. Based on existing topography, the retaining wall will be about 5 feet high and located on the edge of the westbound lane. The type of wall was not indicated on the plans provided, but will likely be either a post and panel or concrete gravity wall. We understand that Ayr Hill Avenue NE is maintained by the Town of Vienna and have structured our proposal accordingly.
2. The proposed geotechnical field exploration will consist of the following, in general accordance with Town of Vienna requirements:
 - a) Performing a site reconnaissance.
 - b) Drilling one (1) Standard Penetration Test (SPT) boring within the eastbound lane of Ayr Hill Avenue NE. The boring will be extended to a depth of 6 feet below existing site grades. Drilling two (2) Standard Penetration Test (SPT) borings within the westbound lane of Ayr Hill Avenue NE. The borings will be extended to a depth of 10 feet below existing site grades and will also be used to obtain geotechnical information for both the roadway and the retaining wall.
 - c) Drilling one (1) Standard Penetration Test (SPT) boring at the top of the existing slope along the westbound lane of Ayr Hill Avenue NE for the proposed retaining wall alignment. The boring will be extended to a depth of 15 feet.
 - d) Conducting pavement coring at the three (3) boring locations mentioned in Item (b) above. The existing pavement composition, including the type and thickness of sub-base, will be determined at each location.
 - e) Obtaining one (2) bulk soil sample for CBR test for evaluation of the existing subgrade for pavement design purposes.
 - f) Where encountered, measuring groundwater elevations in the SPT borings.
3. A DMY field engineer will be on-site during drilling for field logging throughout the field exploration program.

4. Laboratory testing program will consist of natural moisture content, USCS classification tests, and CBR tests on select soil samples. Also, pavement cores will be visually examined and photographed in accordance with VDOT requirements approximately determine each asphalt pavement course and to document the pavement core conditions. All proposed laboratory tests will be performed in accordance with VDOT Virginia Test Methods.
5. Upon completion of the field and laboratory testing programs, a geotechnical report will be submitted to discuss the subsurface exploration and laboratory testing programs, summarize subsurface conditions and laboratory test results, and provide geotechnical recommendations and pavement design for the design and construction of the roadway widening. Geotechnical recommendations for use by the wall designer will also be addressed in the Geotechnical Engineering report. We will also address any Town of Vienna review comments and submit a revised geotechnical report as necessary.
6. We have included an optional fee to perform global stability analysis and preparing working design plans for the proposed retaining wall. Global analysis may not be required, depending on soil conditions and height retained.
7. DMY will obtain necessary Town of Vienna permits for site access prior to our mobilization.
8. We assume all field exploration will be performed during normal work hours.
9. We anticipate that traffic control will be required for all the pavement cores and roadway borings. We have included one (1) full day of traffic control services in this cost estimate. We assume a crash truck (TMA) is not required. The actual number of traffic control days will be affected by the specific traffic control setup configurations and locations.
10. We assume that the boreholes can be backfilled with auger cuttings and excess auger cuttings can be disposed of in nearby grassy areas. The borings in the paved areas will be backfilled and patched with asphalt cold mix.
11. Underground utilities will be cleared by MISS Utility.
12. We reserve the right to adjust this cost estimate if our scope of work has been changed or additional scope of work has been requested. We will provide you a separate cost estimate at that time for your review and approval.
13. This cost estimate was prepared for Rinker Design Associates by Mark Clippinger, P.E. on February 23, 2015 and reviewed by Rabih Khouri, P.E.

DMY GEOTECHNICAL COST ESTIMATE
Ayr Hill Avenue NE Roadway Improvements
2/23/2015

Field Exploration	Quantity	Unit Rate	Cost
Site Reconnaissance	3 hours	\$98.96 /hr.	\$296.88
Minimum Day Charge for SPT Drill Rig/Crew	1 day	\$2,000.00 /day	\$2,000.00
Field Work Coordination	1 hours	\$100.00 /hr.	\$100.00
Bag Samples of Auger Cuttings	1 samples	\$55.00 /sample	\$55.00
Pavement Core and Patching	5 cores	\$250.00 /core	\$1,250.00
Field Engineer - Drilling Supervision	6 hours	\$98.96 /hr.	\$593.76
Traffic Control with Flagging	1 days	\$1,500.00 /day	\$1,500.00
Field Exploration Subtotal:			\$5,795.64
Laboratory Testing	Quantity	Unit Rate	Cost
Moisture Content Tests	16 tests	\$10.00 /test	\$160.00
Atterberg Limits Tests	2 tests	\$70.00 /test	\$140.00
Sieve Analysis	2 tests	\$70.00 /test	\$140.00
CBR with Standard Proctor	1 tests	\$315.00 /test	\$315.00
Pavement Core Photographs&Examination	3 cores	\$50.00 /core	\$150.00
Laboratory Testing Subtotal:			\$905.00
Geotechnical Engineering and Report	Quantity	Unit Rate	Cost
Senior Reviewer	2 hours	\$159.62 /hour	\$319.24
Senior Project Engineer	hours	\$100.00 /hour	\$0.00
Senior Engineer/Project Manager	8 hours	\$135.67 /hour	\$1,085.36
Project Engineer	7 hours	\$98.96 /hour	\$692.72
CADD Draftsman	1 hours	\$73.04 /hour	\$73.04
Secretary	1 hours	\$67.36 /hour	\$67.36
Report Revision	1 lump sum	\$400.00 /each	\$400.00
Geotechnical Engineering and Report:			\$2,637.72
Expenses	Quantity	Unit Rate	Cost
Mileage	100 miles	\$0.56 /mile	\$56.00
Report Copies	4 copies	\$80.00 /copy	\$320.00
Expenses Subtotal:			\$376.00
Optional Retaining Wall Design	Quantity	Unit Rate	Cost
Global Stability Analyses	0 section	\$700.00 /section	\$0.00
Retaining Wall Design, including Plans	1 lump sum	\$4,800.00 /each	\$4,800.00
Retaining Wall Design Subtotal:			\$4,800.00
ESTIMATED PROJECT TOTAL:			\$9,714.36
ESTIMATED OPTIONAL COST FOR RETAINING WALL:			\$4,800.00