



**ADDENDUM #1**  
**ITB/RFP NUMBER: 2016033-PW-B**  
**East Market Street Stormwater Improvements ITB**

DATE: April 14, 2016

TO: All Potential Bidders/Offerors

City of Harrisonburg's East Market Street Stormwater Improvements ITB, is modified as follows:

On April 13, 2016 at 2:00pm local time the City of Harrisonburg held a non-mandatory pre-bid meeting for the above-mentioned solicitation. Attached are the agenda and sign-in sheet from this meeting as well as the results of the geotechnical study performed by Froehling and Robertson.

Notes from the Meeting:

- Funding will be half by the City, half by a VA DEQ Stormwater Assistance Fund, but all work will be coordinated with the City
- Work is scheduled to start right after James Madison University's (JMU) graduation
- For traffic control, the City is open to alternative proposals for closing a traffic lane to get the job done sooner and cheaper, but all alternative solutions must be approved by the City
- Results of the geotechnical study (3 borings) will be included as part of the first addendum (see attached); location of the borings are on the plans
- Impervious liner is intended to be water tight, so must be glued or sealed at the seams
- RSC specifications are from Anne Arundel, Maryland
  - RSC Channel – engineering media is 80% sand, 20% wood chip mixture
- RSC Channel – no known utility conflicts because they are deeper underground; City test pitted depths
- For Boulders, the City listed 4 supplier options in the ITB document, as vendors had reported in the past that it was hard to locate a supplier for this material; other suppliers may be used than the ones listed in the ITB
- For Silica Cobbles, no supplier options were listed in the ITB document but this commodity should be readily available at local quarries
- JMU schedule can be found on their website: <http://www.jmu.edu/>
- Consider heavy traffic volumes into your MOT Plans
- Alternate staging areas and temporary facilities, especially in Phase 3 of the MOT Plan, must be approved by the City; Contractors may consider checking with local businesses to determine if they can utilize unused parking lot space on the local business's property
- All work to be completed by October 30, 2016 – this is final completion date

Questions & Answers

1. Question: Are we able to electronically submit our bids?

Answer: No.

2. Question: Do you have an engineer's estimate for the project?

Answer: Per Code of Virginia 2.2-4342 B, the City will not be providing a cost estimate for this project.

All other requirements, terms and conditions of the ITB/RFP remain unchanged.

Addendum page must be signed and returned with your bid/proposal to acknowledge receipt of this addendum.

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Authorized Signature

By: Pat Hilliard, CPPB  
Procurement Manager



- ❖ Remaining rip-rap to be hauled offsite to Ramblewood Park by the Contractor and stock-piled there.
  - ❖ Additional pay items (Class 1 and A1) are provided, in case some onsite rip-rap is not adequate for re-use.
  - C. Modified Diversion Fence Detail – requires chain link fencing, impermeable liners, rip-rap outlet, and maintaining flow diversions during construction. This is a requirement for the project.
  - D. Silt Fence – used as a secondary flow diversion for runoff into the median. This is a recommendation for the project.
  - E. E&S, Land Disturbing, VSMP Permits – The project requires both a City Land Disturbing Permit and coverage under the VSMP Construction Site Stormwater Permit.
    - ❖ The Contractor will be the operator under these permits, and will be responsible for securing all construction permits prior to beginning construction.
    - ❖ The City will provide the Contractor with a preliminary SWPPP in electronic format with a CGP application. Contractor will then finalize and submit permit applications.
    - ❖ City will pay the fee for VSMP permit registration.
  - F. The Contractor will keep and provide redlines throughout construction. The City will use redlines to prepare as-builts and will handle the BMP certification statement for the project.
- iii. Geotechnical Study
- A. F&R performed a limited investigation of the subgrade (3 test bores within the project limits, #2 through #4). Results will be attached to the bid addendum.
  - B. Test bore locations are also shown on the plans.
  - C. Excavation is unclassified for this project. No rock was encountered in the test bore locations.
- iv. Stormwater Construction Notes
- A. Experience with stream restoration will help with the RSC channel construction techniques.
  - B. Underdrains – Solid and Perforated PVC pipe is being used. Review the details on the plans for the work involved.
  - C. Subgrade – Compacted and Native Subgrade is specified.
  - D. Quality Control - City to provide compaction testing and to approve subgrades for this project. See supplemental specification 01400 for details.
  - E. Geosynthetics – Filter Fabric and Impermeable Liner are being used. Filter fabric is often incidental to the unit cost of other pay items.
  - F. Engineering Media Types
    - ❖ Dry Swale = Bioretention Media per DEQ Specification #9

A. MORTON THOMAS and Associates, Inc.

- ❖ RSC Channel = Engineering Media is a Sand / Wood Chip mixture that can be mixed onsite or offsite, as long as a certification is provided by the Contractor that the resulting mix is in accordance with the supplemental specifications for this project.

G. Landscaping

- ❖ Sod – Tall Fescue with a minimum 10% Kentucky Bluegrass should be locally available for this project.
- ❖ Substitutions during the bid phase are unlikely for plant types unless they are not locally available.

v. Dry Swale

- A. Requires adjustment to conduits for traffic signal and HEC street lights across from Chestnut Ridge Drive. Contractor will be expected to test pit and verify depths and types of conflicts prior to excavation in this area, and the City may choose to revise the riprap fore-bay design to reduce or eliminate conflicts instead of relocating these utilities where possible.
- B. Utilizes Treated Lumber for the Check Dams –
  - ❖ Soil plugs for rebar will require a minimum 90% compaction.
  - ❖ Waterproofing of wood structures prior to backfill is described in the supplemental specifications.
- C. Permanent stabilization with Sod and Landscape Slope Protection (3" mulch with Juniper and Pachysandra). Covers existing steep slope.

vi. Regenerative Stormwater Conveyance (RSC) Channel

- A. No known utility conflicts. Note existing utility crossing depths are shown on the RSC profiles.
- B. Centerline of underdrain varies from Thalweg of RSC Channel (shown on Sheets C1-2 and C1-3).
- C. Boulders: Sources identified in the Supplemental Specifications.
- D. Silica Cobbles: Same as Boulders for Source of Materials is anticipated.

vii. Traffic Discussion

- A. Consider JMU Graduation, Summer Break and 2016 Fall Schedule in planning your work. Work between now and mid-August will be easier as it related to maintenance of traffic.
- B. Consider heavy traffic volumes (peak hours, etc.) during holidays, peak shopping days, dinner at nearby restaurants, etc.

viii. Other Construction Discussion

- A. Staging Areas / Temporary Facilities – City has not secured offsite staging areas. This will be the Contractor's responsibility.
- B. F&R Geotechnical Engineering Report – 3 test holes will be included in the first bid addendum.

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## V. CONTRACTUAL ISSUES

### 1. Pre-Bid Meeting

- i. Attendance at Pre-Bid is Non-Mandatory. Others are encouraged to bid the project.
- ii. Bidder and Supplier List was used to advertise the project (interest is not intended to be limited to those considered by the list).

### 2. Bid Documents

- i. This is a **unit cost bid**. Contract will be awarded to the responsive and responsible contractor who submits the lowest total bid price.
- ii. DEQ Grant Funding is being used for up to 50% of the project cost (SLAF 15-10). DEQ will certify the project at the end.
- iii. The Bid Form includes all Pay Items required for this project, however quantities will be adjusted upward or downward as the work progresses with each pay application.
- iv. Bid submittal requirements are listed on page 3 of the Project Manual. Please review this carefully and include all required documents with your bid response. No electronic or faxed bids will be accepted.
- v. Bid Questions can be submitted to Pat Hilliard until April 20<sup>th</sup>, 12:00noon. See page 4 of the Project Manual for more details.
- vi. Bid addenda will be posted at (<http://www.harrisonburgva.gov/bids-proposals>) and eVA websites, should be signed and included with the submitted bid.
- vii. Bids are due no later than April 27<sup>th</sup>, 3:00pm. **DELIVER BIDS TO THE PURCHASING DEPARTMENT ON THE THIRD FLOOR.** Bids will then be publically read aloud in Room 11, City Hall (same location as the pre-bid). Do not deliver bids to Room 11.
- viii. City Business License is required for the successful award of the contract.

### 3. Time for Completion

- i. JMU Graduation: May 6&7, 2016
- ii. Anticipated Notice to Proceed: May 9, 2016
- iii. All Work to be completed by October 30, 2016 (*this is a fixed end date with no substantial completion date prior to the fixed end date*)
- iv. Time Extensions will be per VDOT R&B 108.04.
- v. Liquidated Damages = \$1,000 per day

## VI. QUESTIONS

**PRE-BID MEETING SIGN IN SHEET**

**Project:**  
**East Market Street Stormwater  
 Improvements**  
**ITB No. 2016033-PW-B**

**Meeting Date:** **April 13, 2015**

**Facilitator:** **Thanh Dang - Don Rissmeyer**

**Place/Room:** **City Hall Room 11 & 12 on  
 Lower Level, Harrisonburg**

Name	Title	Company	Phone	Cell	E-Mail
Steve Hessa	Estimator	Bruce Howard Contracting	804.966.5825	804.937.2616	Stephen Hessa Bruce Howard Contracting.com
LARRY G CONWERSH	PRESIDENT	ARON J CONWEL GEN CONTR INC	540.887.3941	540.526.7311	CONWERSH@TEL ACC. COM
Ricky Dellinger	Sales	<del>Rockydale</del> Mundy Quarries	540.833.2061 <del>540.830.2267</del>	540.820.2267	rdellinger@ rockydalequarries.com
DAVE CIBBELL	Sales	Rockydale Quarries	(540)588- 9488		davidcibell@ rockydalequarries.com
Don Conolly	Unit Mgr VICE PRESIDENT	ACF	510.246.3809	-	Donnelly@ACFENV.COM
JOHN GUANTZ	HAMMOND-MITCHELL, INC	HMI	540.502.4931	540.508.3143	Johnghm@ShenEnv.com
THANH DANG	Geoplot	CITY PW	540.434.5908	-	THANH.DANG@ HARRISONBURGVA.GOV
TOM HARTMAN		"	"	"	TOM.HARTMAN@ HARRISONBURGVA.GOV
Don Rissmeyer	Associate	A Mark Thomas	276.6231 804.916.9476	804.916.9476	drissmeyer@ markthomas.com
Aaron Rhowey		CITY PW	540.292.1764	"	Aaron.Rhowey@ HARRISONBURGVA.GOV





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F&R Record Number 71T0239

December 21, 2015

City of Harrisonburg  
320 East Mosby Road  
Harrisonburg, Virginia 22801

Attn: Mr. Thomas Hartman, PE, LEED AP

Re: East Market Street RSC – Infiltration Testing  
Harrisonburg, Virginia

Dear Mr. Hartman:

F&R has completed its limited subsurface exploration for the referenced project in general accordance with F&R Proposal No. 1671-0257G dated November 6, 2015, and the results are provided herein. F&R's understanding of the project was developed on the basis of our telephone and email correspondence with you and Mr. Don Rissmeyer of A. Morton Thomas & Associates.

It is understood that a Regenerative Stormwater Conveyance Channel (RSC) is planned within the median of East Market Street, between its intersection with Evelyn Byrd Avenue and the cross over into the eastern entrance to the Kohl's parking lot. No preliminary site plans have been provided, but it is understood that RSC design typically utilizes infiltration practices. F&R was requested to provide the soil types, rock depths, groundwater depth, and infiltration rate at 4 locations.

The exploration program was performed on November 23 and December 7, 2014, and consisted of three soil test borings designated B-1 through B-3. The boring locations were staked on the site by representatives of A. Morton Thomas & Associates. Boring B-4 could not be advanced due to concrete which was present below the riprap. At each boring location, the riprap was removed, a hand auger boring was advanced to a depth of 3 feet (below the top of riprap), and the boreholes were then cased with 3-inch diameter solid PVC pipe. The cased boreholes were soaked with water to a depth of 2 feet for 24 hours. After this presoaking period water was added as necessary to the cased borehole to re-establish a depth of 2 feet. Water level readings were taken every 30 minutes for 4 hours, and the infiltration rate is reported as the average rate of water drop over the period of the test (inches per hour). After the infiltration testing was performed, the casing was removed, and the boreholes were advanced to the planned termination depth of 6 feet or prior auger refusal. Auger refusal was encountered in borings B-1 and B-3 at depths of 4.5 feet and 3.5 feet respectively. Samples were collected at regular intervals for further testing in the laboratory.

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Corporate HQ: 3015 Dumbarton Road Richmond, Virginia 23228 T 804.264.2701 F 804.264.1202 [www.fandr.com](http://www.fandr.com)

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*City of Harrisonburg, VA - East Market Street Stormwater Improvements ITB (2016033-PW-B) - Addendum #1*

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In the laboratory, the soil samples were evaluated by a member of our engineering staff in general accordance with techniques outlined in the visual-manual identification procedure (ASTM D 2488). Soils sampled from the approximate infiltration test levels were classified in accordance with the USDA Textural Triangle. The soil descriptions and classifications discussed in this report are based on visual observation and should be considered approximate.

Available geologic publications indicate that the project area is located over the Ordovician age carbonate rocks which are a part of the Beekmantown formation. The Beekmantown is thick-bedded, grey medium-grained dolomite with some blue limestone and significant amount of chert (microcrystalline quartz). Limestone and dolomite are carbonate rocks, which are susceptible to dissolution in the presence of subsurface water. Continued subsurface dissolution of the carbonate bedrock may lead to development of a highly irregular rock profile that may include underground voids. Over time, the soils overlying a void may subside, in a continual process of subsurface chemical erosion of bedrock and infilling by overburden soils. The resulting ground surface depression is known as a sinkhole. Terrain characterized by sinkholes and other solutional features is known as karst.

A summary of the soil conditions at each hand auger is provided in the table below:

<b>Boring Number</b>	<b>Depth (ft)</b>	<b>Soil Description</b>
B-1	0-1	Riprap
	1-3.5	Dark Gray Silty GRAVEL (GM) <b>FILL</b>
	6	Hand Auger Refusal
B-2	0-1	Riprap
	1-4.5	Brown Gravelly Fat CLAY (CH) <b>FILL</b>
	4.5	Hand Auger Refusal
B-3	0-1	Riprap
	2-6	Brown Fat CLAY (CH) <b>RESIDUUM</b>
	6	Boring Terminated

We note that the auger refusals that were recorded in borings B-1 and B-2 occurred within existing fill materials and the refusals are believed to be a results of obstructions that were present in the fill such as cobbles or boulders, rather than the top of bedrock. Ground water was not encountered in the borings.

Typically, in Virginia, the infiltration potential of the soils is evaluated using the Virginia Department of Conservation and Recreation (DCR) Standard General Infiltration Practices. According to DCR requirements, infiltration is only permissible where infiltration rates exceed 0.52 inches per hour, and groundwater or an impermeable layer is not located within 2 to 4 feet of the planned bottom of the facility. The infiltration rate can be determined from field testing and estimated empirically from USDA soil classification. Infiltration is generally not acceptable in fill soils.



Infiltration testing was conducted at each boring location at the specified depth of 3 feet below existing grades (2 ft below bottom of riprap). The results of the infiltration testing, along with the USDA soil classification and the empirical infiltration rate, are included in the table below:

Hole Number	Approx. Test Depth	Infiltration Test Result (inches/hour)	USDA Soil Classification	Empirical Rate (inches/hour)
B-1	3 ft	4	SANDY LOAM	1.02
B-2	3 ft	6	CLAY	0.02
B-3	3 ft	0.00	CLAY	0.02

We note that the field infiltration test results in borings B-1 and B-2 indicated a higher infiltration rate than the empirical rate established by USDA based on soil classification. This is believed to be a result of the tests being run in existing fill materials. Design of the RSC must also consider the underlying karst geology. As indicated in the Virginia Stormwater Management Handbook, "Infiltration is not recommended for areas underlain by karst topography." Based on the foregoing, infiltration practices are not recommended at the locations and subsurface levels tested.

We appreciate the opportunity to work with you on this project. If you have any further questions concerning this letter, or need to discuss this project, please contact us.

Respectfully yours,  
FROEHLING & ROBERTSON, INC.

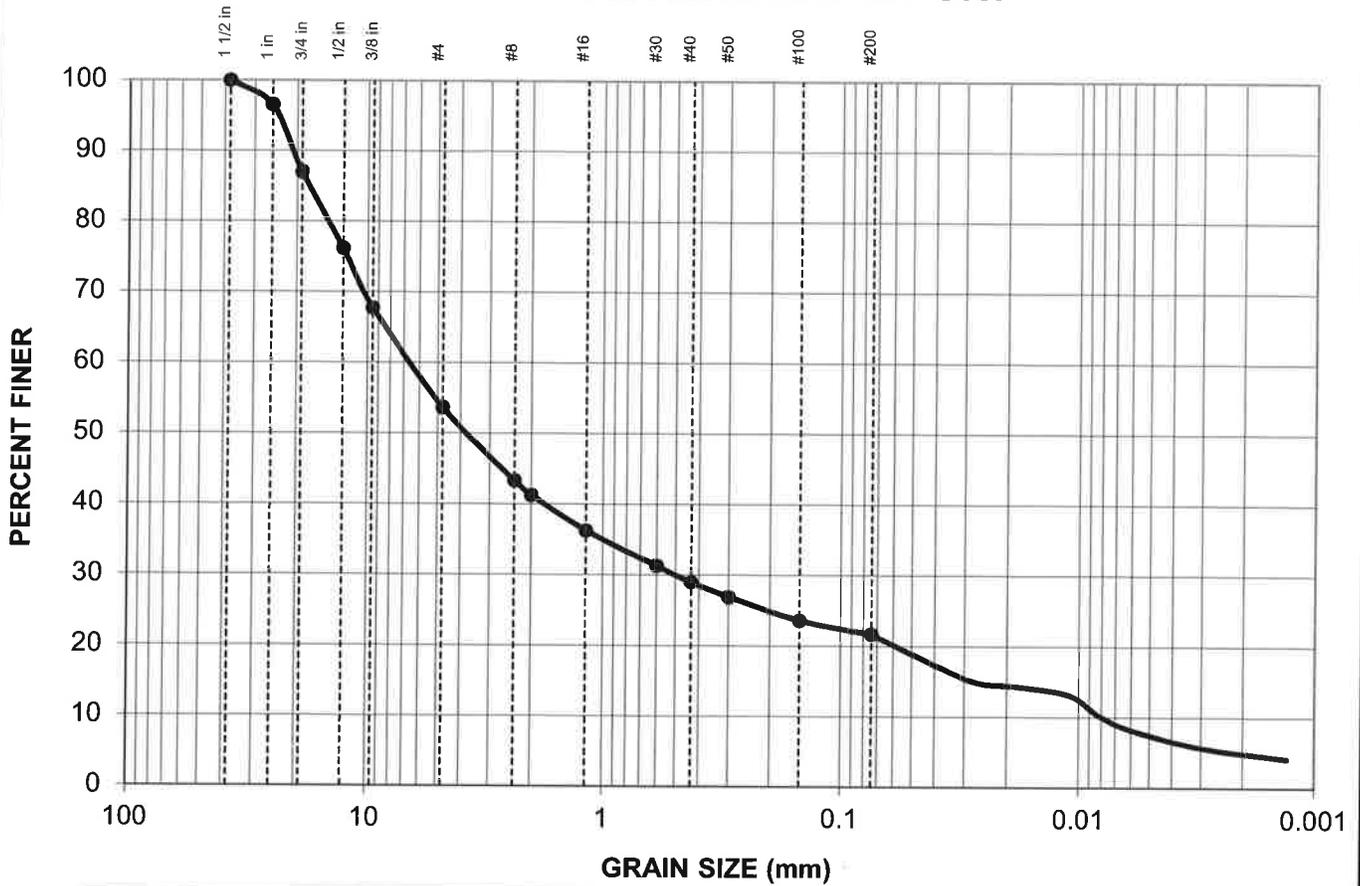


Clyde A. Simmons III, PE  
Senior Geotechnical Engineer

Brendan L. Quirk, P.E.  
Senior Engineer

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# GRAIN SIZE DISTRIBUTION REPORT



	% GRAVEL	% SAND	% SILT	% CLAY
USCS	46.4	32.0	14.1	7.5
USDA	58.8	22.3	14.0	4.9

SIEVE SIZE	PERCENT FINER	SPEC PERCENT	PASS? (X=NO)	
1 1/2 in	100.0			<p style="text-align: center;"><b>Soil Description</b></p> <p style="text-align: center;">brown clayey GRAVEL</p> <p style="text-align: center;"><b>Corrected USDA Data</b></p> <p style="text-align: center;">SAND%= 54.1    SILT%= 34.0    CLAY%= 11.9</p> <p style="text-align: center;"><b>Coefficients</b></p> <p style="text-align: center;">D<sub>85</sub>= 17.754    D<sub>60</sub>= 6.515    D<sub>50</sub>= 3.724  D<sub>30</sub>= 0.499    D<sub>15</sub>= 0.027    D<sub>10</sub>=  C<sub>u</sub>=                    C<sub>c</sub>=</p> <p style="text-align: center;"><b>Classification</b></p> <p style="text-align: center;">USCS= GC                    USDA=</p> <p style="text-align: center;"><b>Remarks</b></p> <p style="text-align: center;">Moisture Content=    %  Organic Content=    %</p>
1 in	96.4			
3/4 in	86.9			
1/2 in	76.1			
3/8 in	67.7			
#4	53.6			
#8	43.3			
#10	41.2			
#16	36.3			
#30	31.3			
#40	29.0			
#50	26.9			
#100	23.6			
#200	21.6			

**Sample No.:**  
Location: B-1

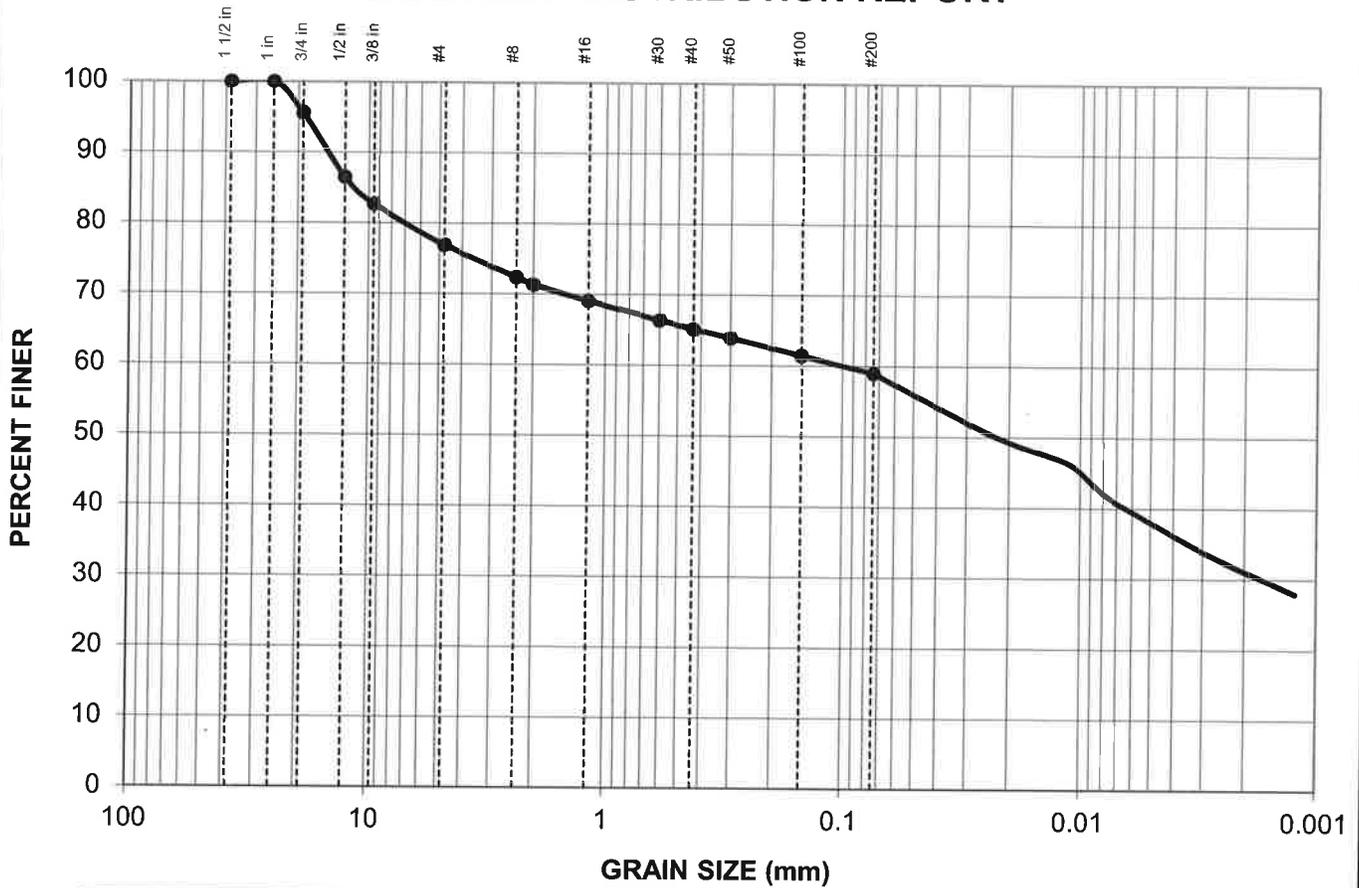
**Date:** 12/21/15  
**Elev/Depth:** 3.5 ft



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Robertson, Inc.

**Client:** City of Harrisonburg  
**Project:** East Market Street RSC  
**Location:** Harrisonburg, VA  
**Project No.:** 71T0239

# GRAIN SIZE DISTRIBUTION REPORT



	% GRAVEL	% SAND	% SILT	% CLAY
USCS	23.2	17.9	21.0	38.0
USDA	28.7	15.3	24.8	31.1

SIEVE SIZE	PERCENT FINER	SPEC PERCENT	PASS? (X=NO)	
1 1/2 in	100.0			<p style="text-align: center;"><b>Soil Description</b></p> <p style="text-align: center;">brown Fat CLAY (CH), some sand and gravel</p> <p style="text-align: center;"><b>Corrected USDA Data</b></p> <p style="text-align: center;">SAND%= 21.5    SILT%= 34.8    CLAY%= 43.7</p> <p style="text-align: center;"><b>Coefficients</b></p> <p style="text-align: center;">D<sub>85</sub>= 11.372    D<sub>60</sub>= 0.099    D<sub>50</sub>= 0.022</p> <p style="text-align: center;">D<sub>30</sub>= 0.002    D<sub>15</sub>=            D<sub>10</sub>=</p> <p style="text-align: center;">C<sub>u</sub>=                    C<sub>c</sub>=</p> <p style="text-align: center;"><b>Classification</b></p> <p style="text-align: center;">USCS= CH                    USDA=    CLAY</p> <p style="text-align: center;"><b>Remarks</b></p> <p style="text-align: center;">Moisture Content=    %</p> <p style="text-align: center;">Organic Content=    %</p>
1 in	100.0			
3/4 in	95.5			
1/2 in	86.5			
3/8 in	82.7			
#4	76.8			
#8	72.3			
#10	71.3			
#16	69.0			
#30	66.3			
#40	65.0			
#50	63.8			
#100	61.4			
#200	59.0			

**Sample No.:**  
Location: B-2

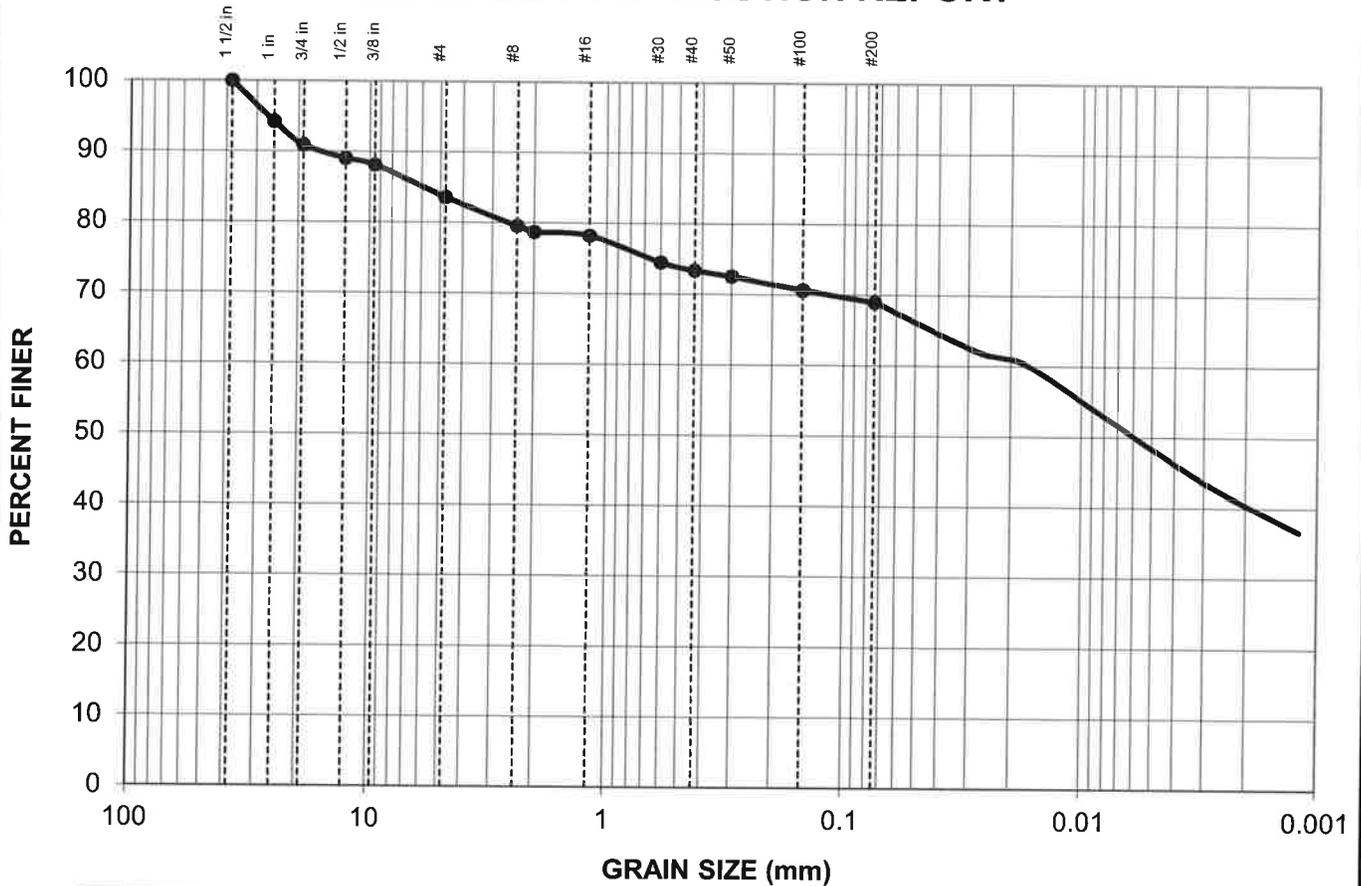
**Date:** 12/21/15  
**Elev/Depth:** 3.5 ft



Froehling and  
Robertson, Inc.

**Client:** City of Harrisonburg  
**Project:** East Market Street RSC  
**Location:** Harrisonburg, VA  
**Project No.:** 71T0239

# GRAIN SIZE DISTRIBUTION REPORT



	% GRAVEL	% SAND	% SILT	% CLAY
USCS	16.5	14.5	20.6	48.4
USDA	21.3	12.5	25.7	40.5

SIEVE SIZE	PERCENT FINER	SPEC PERCENT	PASS? (X=NO)	
1 1/2 in	100.0			<p style="text-align: center;"><b>Soil Description</b> brown fat CLAY, little sand, some gravel</p> <p style="text-align: center;"><b>Corrected USDA Data</b> SAND%= 15.9    SILT%= 32.7    CLAY%= 51.4</p> <p style="text-align: center;"><b>Coefficients</b>                      D<sub>85</sub>= 5.965    D<sub>60</sub>= 0.017    D<sub>50</sub>= 0.006                      D<sub>30</sub>=            D<sub>15</sub>=            D<sub>10</sub>=                      C<sub>u</sub>=              C<sub>c</sub>=</p> <p style="text-align: center;"><b>Classification</b> USCS= CH                      USDA= CLAY</p> <p style="text-align: center;"><b>Remarks</b>                      Moisture Content= %                      Organic Content= %</p>
1 in	94.1			
3/4 in	90.9			
1/2 in	89.0			
3/8 in	88.1			
#4	83.5			
#8	79.5			
#10	78.7			
#16	78.2			
#30	74.5			
#40	73.3			
#50	72.5			
#100	70.6			
#200	69.0			

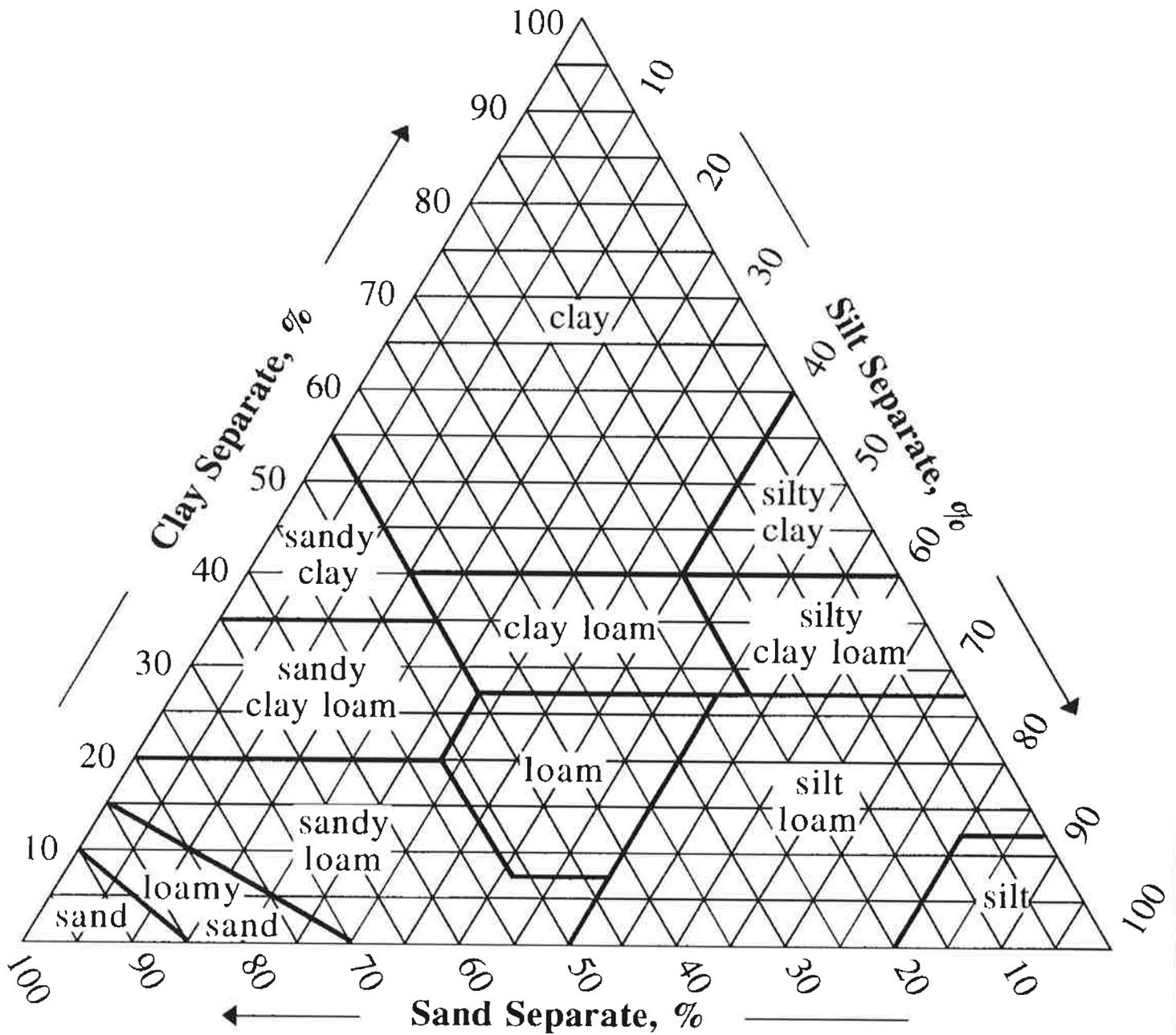
Sample No.:  
Location: B-3

Date: 12/21/15  
Elev/Depth: 3.5 ft



Froehling and  
Robertson, Inc.

Client: City of Harrisonburg  
 Project: East Market Street RSC  
 Location: Harrisonburg, VA  
 Project No.: 71T0239



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## USDA TEXTURAL TRIANGLE



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**Boring Location Plan**

Client: City of Harrisonburg

Project: East Market Street RSC

F&R Project No. 71T0239

Date: Dec., 2015

Scale: No Scale

Drawing No.: 1