CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

CALVERT REGIONAL PARK – PHASE 3

CECIL COUNTY, MARYLAND:
ENGINEERING AND CONSTRUCTION DIVISION

Cecil County Finance Department/
Purchasing Division
200 Chesapeake Blvd, Suite 1400
Elkton MD 21921
PurchasingOffice@ccgov.org
410-996-5395

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

CALVERT REGIONAL PARK – PHASE 3

ATTACHMENTS

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

Cecil County, Maryland
Purchasing Department
200 Chesapeake Blvd., Suite 1400
Elkton, MD 21921

INVITATION TO BID

Sealed bid proposals for **Bid No. 20-18-56016 Calvert Regional Park - Phase 3** as described in the proposal package, for the Cecil County, Maryland, Department of Public Works will be received from qualified bidders until **1:30pm, March 11, 2020** at the Purchasing Office, 200 Chesapeake Blvd, Suite 1400, Elkton, MD 21921.

The project includes various site work to construct four (4) new multi-purpose athletic fields with supporting site improvements (e.g., parking areas, fencing and gates, curbing, signage, etc.). The site work for this project includes earthwork, sod installation, asphalt paving, stormwater drainage controls and stormwater management facilities. The project will include the installation and maintenance of temporary erosion and sediment control during construction and permanent stabilization of areas disturbed once construction is complete.

A **Mandatory** pre-bid information conference will be held on **February 18, 2020 at 11:00am** in the Perryville Conference Room, County Administration Building, 200 Chesapeake Blvd., Elkton, MD 21921. Bids will not be accepted from any contractor that did not attend a mandatory pre-bid information conference.

Bid packages are provided at no charge on the Cecil County web-page (http://www.ccgov.org/dept_purchasing/index.cfm) as a PDF document for all vendors to download. Bid packages may be purchased at the Purchasing Office at a **non-refundable** cost of **$75.00** per package for hard copies, or **$10** per package for electronic copies (PDF format) provided on a compact disc.

Additional specifications and/or instructions to bidders may also be obtained by emailing PurchasingOffice@ccgov.org, cc; ckamit@ccgov.org or calling the Purchasing Office, (Connie Kamit, Purchasing Agent), at 410-996-5395.

Electronically submitted bid proposals will not be accepted. Bid proposals are provided as a .pdf document for all vendors to download. **All vendors wishing to submit a proposal should obtain an original set of documents or a compact disc from the Cecil County Purchasing Office. If you choose to download the package from the website, you shall notify the Purchasing Office via e-mail or phone. Not meeting this requirement may result in your proposal being considered as non-responsive. Changes or addendums to this proposal and/or other documents will be posted to the proposal documents on the County web-page and sent directly to vendors who have obtained an original set of proposal documents or a compact disc or have obtained an electronic copy from the Purchasing Office. The County is not responsible for information obtained from sources outside the Cecil County Purchasing Office, including downloads from the County website. Vendors**

obtaining electronic copies of the proposal documents from outside the Purchasing Office will be directly responsible for obtaining updates, changes or addendums either from the updated web-page or by contacting the Purchasing Office.

All questions or discussions concerning this bid, bid documents, specifications, etc., shall only be coordinated through the Purchasing Office. The County shall not be responsible for information obtained outside the County Purchasing Office, concerning this or any other County bid, RFP, solicitation or quote.

The Purchasing Office will provide vendor lists on the Cecil County web-site for all solicitations published unless a vendor/contractor provides a written request **barring the disclosure of their information prior to specific proposal award**.

The Contract will be awarded to the lowest responsible, responsive bidder. Cecil County, Maryland reserves the right to reject any or all bids and to waive technicalities. All contract awards are based upon budgetary constraints.

LOCAL CONTRACTORS PREFERENCE: Section 92 of the Cecil County Code provides for Local Preference whereby the County Executive reserves the right to show preference to local bidders in the purchase of supplies, equipment, and services.

Cecil County, Maryland

By: Connie Kamit
Purchasing Agent

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

NOTICE TO BIDDERS

All parties interested in submitting a Bid to complete the work detailed and specified for this project, must thoroughly review and properly complete **all forms** provided in the proposal form packet. **Failure to complete such forms may result in rejection of the Bid.** Owner reserves the right to reject any or all Bids containing bidding irregularities.

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

LOCAL CONTRACTORS PREFERENCE

Section 92 of the Cecil County Code entitled “Local Preference” reads as follows:

“Cecil County, Maryland reserves the right to show preference to local bidders in the purchase of supplies, equipment, and services. The amount shall not exceed 6% of the amount bid or quoted, and/or $60,000, whichever is less. A “local bidder” is defined as an individual or business that maintains a place of business or maintains an inventory of merchandise and/or equipment in Cecil County that is licensed by Cecil County and/or the State of Maryland if required, and is subject to Cecil County real and/or personal property taxes. Any local bidder in default on payment of any county or state tax or license shall not be eligible to receive preference until all taxes or licenses due are paid”.

Bidders are cautioned to note the specific and several requirements, above, that may qualify a bidder for local preference consideration. A bidder wishing to receive local preference consideration must be able to demonstrate qualification under **all** the noted requirements.

No bidder should assume, regardless of whether the bidder qualifies under the definition of “Local Bidder,” that Cecil County, Maryland would grant preference on this contract to any bidder. Cecil County, Maryland **reserves** the right to do so under Section 92 of the Cecil County Code but is not **bound** to do so under any circumstance, regardless of precedent.

Any bidder that wishes to be considered a “Local Bidder,” in the County’s award of the contract **shall** submit with the bid any and all documentation that establishes that the bidder, identified by name in the submitted bid, meets the definition of “Local Bidder.” Neither County Executive nor the Procurement Officer shall be bound by any information or documentation provided by the bidder after opening of the bids. However, the County reserves all rights to investigate a bidder’s potential qualification as a “Local Bidder” and use any relevant information in its determination of a bidder’s qualification under the definition, regardless of when it is obtained.

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

NON-RESIDENT CONTRACTOR NOTIFICATION

At the request of the Maryland State Comptroller of the Treasury a list of all Non-Resident Contractors awarded a contract **for the improvement of real property** in the amount of $500,000 dollars or more and all non-resident sub-contractors that equals or exceeds $50,000 or reasonably can be expected to equal or exceed $50,000 **shall** be forwarded by Cecil County, Maryland to the Maryland State Comptroller of the Treasury, Compliance Division, 301 W. Preston Street, Room 407, Baltimore MD 21201. The notification shall be forwarded by Cecil County, Maryland once the "Notice to Proceed" is sent and shall include the following information:

- Type of project
- Site Address
- Contractor's Name and address
- Date of the Contract
- Contracted amount

- "Non-resident Contractor" is defined as a contractor that does not maintain a regular place of business in the state of Maryland.

- "Regular place of business" is defined as: 1.) a bona fide office, other that a statutory office, 2.) a factory, 3.) a warehouse, 4.) or any other space in this state, which a person is doing business in its own name in a regular and systematic manner and that is continuously maintained, occupied, and used by the person carrying on its business through its regular employees regularly in attendance.

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

All applicable questions must be answered and included with the bid. The data given must be clear and comprehensive. A copy of the Bidder's State of Maryland Construction Firm License or required applicable license **shall** be attached to this form. Information concerning this license can be obtained from Cecil County Clerk of the Court's Office at (410) 996-5373. You can also receive information necessary for corporations to do business in the State of Maryland from the State of Maryland Sales and Use Tax Division. Ask for a Corporation Qualifying Package at (410) 225-1340. All vendors shall ensure they are **qualified and registered** to do business within the State of Maryland. **Businesses established outside the State of Maryland may be required to be qualified as a Foreign Business to be eligible to provide service within the State of Maryland.** Questions concerning qualification and registration may be referred to (410)-767-1170.

1. Name of Contract: **CALVERT REGIONAL PARK – PHASE 3**
2. Contract No.: **Bid No. 20-18-56016**
3. Name of Bidder: _____
4. Bidder's Federal Employee I.D. No.: _____
5. **State of Maryland Construction Firm License No**.:_____
6. Business License (Cecil County) Control No.: _____
7. Business Address: _____
   _____
8. Remittance Address: _____
   _____
9. Contact person & number: _____
10. When Organized: _____
11. Where Incorporated:_____
12. **Foreign Business No.**: _____
13. **Federal Tax ID #.**: _____
14. Has the Bidder paid any sales tax on the equipment to be used on the project?
    Yes_____No_____
15. If so, at what rate was the sales tax paid?_____
    _____Percent to State of_____
16. How many years has the bidder been engaged in this business under your present firm name?_____
17. Have you ever refused to sign a contract at your original bid?
    Yes____No____
18. Have you ever defaulted on a contract? Yes_____No_____
    Remarks:_____
19. Will you, upon request, furnish any other pertinent information that Cecil County, Maryland may require? Yes_____No_____
20. Do you assert that you qualify under definition of "Local Bidder" under Cecil County Code Section 92? YES __ NO __ (If yes, attach appropriate documentation)
21. Does your business maintain a regular place of business in the State of Maryland (Resident) _____ or would your business be considered Non-Resident _____?
    Dated this _____ day of _____, 201_.
22. Has the bidder or firm ever been disbarred, suspended or otherwise prohibited from doing work with the local, state, and/or federal government. Yes ____ No ____
    (if yes explain _____)

With the submission of this certification, the bidder thereto certifies that the information supplied is, to the best of your knowledge, accurate and correct.

_____
Name of Bidder
By:_____
Printed Name_____
Title:_____

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

EXPERIENCE AND EQUIPMENT CERTIFICATION

I. General

(a) Legal Title, Address and Phone Number of Organization

_____
_____
_____

(b) Maryland Representative's Name, Title and Address

_____
_____

(c) Corporation____ Co-Partnership___ Individual ___ (Check One)

II. Name and Title of Corporate Officers authorized to sign Contract, Documents, Extra Work orders, Estimates and other pertinent Contract forms. Please be advised that it will be necessary to inform the Cecil County Department of Public Works of any changes in the above authorization.

NAME	TITLE
_____	_____
_____	_____
_____	_____
_____	_____

III. Experience

(a) Indicate type of contracting undertaken by your organization and years of experience.

General:_____ Years Type:_____
_____
_____
_____

Subcontractor:_____ Years Type:_____
_____
_____
_____

(b) State experience of principal members of your organization.

Experience

Name	Title (as Pres., Mgr., etc)	Years	Type of Work Experience (Hwy. Bridges Paving, etc.)	In What Capacity (Foreman Supt., etc.)

(c) Give any special qualifications of firm members (Registered Engineer, Surveyors, etc.)

_____

_____

_____

(d) List some principal projects completed by your organization.

Description	General/Sub (If Sub, What Type of Work	Your Contract Amount	Year

(e) The bidder must submit at least (3) project profiles involving a similar size and scope (e.g., construction of athletic fields including, earthwork, grading, sod installation, stormwater drainage structures, stormwater management facilities, asphalt paving, and other related work) performed within the past (6) years. At least two (2) projects must be complete (i.e., accepted by the Owner and final payment received). Briefly describe the scope of each project using the one page project profile form provided in the attachments. Please provide appropriate references and contact information of owner, engineer, and construction manager for each project. **This information must be furnished by each bidder. Not providing the required information and project profiles will constitute the bidder being non-responsive.**

(f) Have you ever performed work for the U.S. Government? _____ Any County or City Government?_____. If yes to any of the above, please list references:
_____
_____
_____
_____

(g) Have you ever failed to complete any work awarded to you?___ If so, where and why?
_____
_____
_____
_____

(h) Has any officer or partner of your organization ever been an officer or partner of some other organization that failed to complete a construction contract?_____. If so, state name of individual, other organization and reason therefore:
_____
_____
_____

(i) Has any officer or partner of your organization ever failed to complete a contract handled in his own name?_____. If so, state name of individual, name of owner and reason therefore:
_____
_____
_____
_____

(j) Has the bidder ever been party to a contract that was terminated (either for default or convenience) during the past three (3) years?_____. If so, please set forth a complete description of the circumstances, including the identity of the party that terminated the contract, the nature of the Project, etc.:
_____
_____
_____
_____

IV. Equipment

What equipment do you own, rent, or intend to buy for use on this project without adversely affecting other projects now under construction by you? Please only list the major equipment you plan to use on this project.

Quant.	Item	Descrip., Size, Capacity	Cond.	Years Service	Present Location	Date Avail. For Project

V. Award of Contract

a) If awarded this contract, do you intend to sublet any portion of the work? _____.
If so, indicate the name of the subcontractor, bid item number(s) to be subcontracted, and dollar amount of work to be subcontracted.

Subcontractor Name	Scope of Work (Bid Item No.)	Dollar Amount

b) Work presently under contract to, or pending award to your organization.

Contract No. or Description	Total Cost of Project	Amount of Work Completed	Amount to be Completed	Probable Date of Completion

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

STATE OF MARYLAND
SALES AND USE TAX
ADMISSIONS AND AMUSEMENT TAX
LAWS AND REGULATIONS
ISSUED BY
COMPTROLLER OF THE TREASURY SALES AND USE TAX DIVISION

11-221 Taxation by Other Law

(c) Sales tax paid in other jurisdiction –

(1) to the extent that a buyer pays another state a tax on a sale or gross receipts from a sale of tangible personal property or a taxable service that the buyer acquires before the property of service enters this State, the sales and use tax does not apply to use of the property or service in this State.

(2) If the tax paid to another State is less than the sales and use tax, the buyer shall pay the difference between the sales and use tax and the amount paid to the other state in accordance with the formula under 1-303 (b).

11-214 Nonresident Property

The sales and use tax does not apply to use of tangible personal property or a taxable service that:

(1) a nonresident

(i) acquires before the property or service enter the State; and

(ii) uses:

1. for personal enjoyment or use or for a use that the Comptroller specifies by regulation, other than for a business purpose; or

2. does not remain in the State for more than 30 days

11-303 Depreciation Allowance

(a) In general - a buyer is allowed a depreciation allowance as an adjustment to taxable price if:

(1) Tangible personal property or a taxable service is acquired before the tangible personal property is brought into the State for use in the State or before the taxable service is used in the State; and

(2) The use first occurs in another state of federal jurisdiction.

(b) Amount allowance - The allowance under subsection (a) of this section for each full year that follows the date of purchase is 10% of the taxable price paid to acquire the tangible personal property or taxable service.

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

PROPOSAL

BID NO. 20-18-56016

CALVERT REGIONAL PARK – PHASE 3

_____
Bidder's Name & Signature for Identification

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

PROPOSAL

Made this _____ day of _____ , 20 _____
by _____
(Company Name)
Contact Person: _____
Business Address: _____
Payment Remittance Address
Business Phone No.: _____
Business FAX No. : _____
e-mail Address: _____
Cell-phone No : _____

The bidder declares that the only person, firm, or corporation, or persons, firms, or corporations, that has or have any interest in this proposal or in the Contract or Contracts proposed to be taken is or are the undersigned; that this proposal is made without any connection or collusion with any person, firm, or corporation making a proposal for the same work; that the attached specifications have been carefully examined and are understood; that as careful an examination has been made as is necessary to become informed as to the character and extent of the work required; and that it is proposed and agreed, if the proposal is accepted to contract with Cecil County, Maryland, in the form of Contract heretofore attached, to do the required work in the manner set forth in the specifications.

The bid price on the attached and signed Proposal Forms is to include and cover the furnishing of all equipment, materials, and labor requisite and proper and the providing of all necessary machinery, tools, apparatus, and means for performing the work, and described, and shown in the plans and specifications within the prescribed time. If this proposal shall be accepted by said County and the undersigned shall refuse or neglect within ten days after receiving the Contract for execution to execute the same, and to give stipulated bond, then said County may at their option determine that the bidder has abandoned the Contract; and thereupon the proposal and the acceptance thereof shall be null and void; and the deposit accompanying the proposal shall be forfeited to and become the property of the County.

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

PROPOSAL

In the case of firms, the firm's name must be signed and subscribed to by at least one member. In the case of corporations, the corporate name must be signed by some authorized officer or agent thereof, who shall also subscribe his name and office. If practical, the seal of the corporation shall be affixed.

I/We identify by number, date and number of pages the following addenda:

No.	Date	No. of Pages
_____	_____	_____
_____	_____	_____
_____	_____	_____

The names and addresses of all members of a firm or the names, addresses, and titles of every officer of a corporation, as the case may be, must be given here by the member of the firm or by the officer or agent of the corporation who signs the proposal.

_____
_____
_____
_____
_____

TOTAL BID AMOUNT

The Bid Form lists all anticipated work tasks, the unit of measure and estimated quantities. The bidders shall insert as indicated a unit price or lump sum price for each listed work task, and multiply that price by the quantity to arrive at an extended total for each work task. All extended prices are then summed to arrive at the Total Bid Amount for the project. The bid will be awarded to the bidder that has the lowest total bid price and is responsive and responsible as defined in the bid/contract documents.

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

PROPOSAL

PROJECT: CALVERT REGIONAL PARK – PHASE 3

DATE: _____

BIDDER: _____BY: _____
(To be same as in the Proposal Agreement)

BUSINESS ADDRESS: _____

TELEPHONE NUMBER: _____

This is to certify that _____has received Addendum No. _____ through No. _____ and this project reflects changes created by the addenda.

PROPOSAL FORM: CALVERT REGIONAL PARK – PHASE 3A

Item No.	Bid Item	Units	Estimated Quantity	Unit Price ($)	Bid Price ($)
3A-1	Mobilization/Demobilization	LS	1		
3A-2	Erosion and Sediment Control	LS	1		
3A-3	Site Preparation/Clearing	LS	1		
3A-4	Strip/Stockpile Topsoil onsite for re-use	CY	7,000		
3A-5	Earthwork	LS	1		
3A-6	Supply & Install 8” GAB for ALL Roadways and Parking Lots	SY	34,650		
3A-7	Supply & Install 1.5” Surface Course Asphalt Paving for Access Road and Parking Area adjacent to Cecil Arena	SY	8,030		
3A-8	Supply & Install 3” Base Course Asphalt Paving for Access Road and Parking Area adjacent to Cecil Arena	SY	8,030		
3A-11	Supply & Install 6” GAB for Trail/Walk	SY	1,250		
3A-12	Supply & Install 2.5” Asphalt Paving for Trail/Walk	SY	1,250		

Item No.	Bid Item	Units	Estimated Quantity	Unit Price ($)	Bid Price ($)
3A-13	Supply & Install 4” GAB for Concrete Walk	SY	110		
3A-14	Supply & Install 5” Concrete Walk	SY	110		
3A-15	Supply & Install Concrete Curb & Gutter ALL Roadways and Parking Lots	LF	3,130		
3A-16	Supply & Install Concrete Stairs with Handrail	EA	1		
3A-18	Construct SWM Facility #2 (ESD M-2)	LS	1		
3A-19	Construct SWM Facility #3 (ESD M-2)	LS	1		
3A-20	Construct SWM Facility #4 (ESD M-2)	LS	1		
3A-21	Construct SWM Facility #5 (ESD M-2)	LS	1		
3A-22	Supply & Install 15” HPDE Storm Drain	LF	30		
3A-23	Supply & Install 18” HPDE Storm Drain	LF	350		
3A-24	Supply & Install 24” HPDE Storm Drain	LF	475		
3A-25	Supply & Install 30” HPDE Storm Drain	LF	575		
3A-27	Supply & Install Storm Drain End Sections	EA	7		
3A-28	Supply & Install Storm Drain Inlets	EA	11		
3A-29	Supply & Install Cleanouts	EA	6		
3A-30	Supply & Install Headwalls	EA	2		
3A-31	Supply & Install Storm Drain Manholes	EA	3		
3A-32	Turf Establishment (Non-sod areas)	SF	255,600		
3A-33	Soil Stabilization Matting	SY	3,700		

Item No.	Bid Item	Units	Estimated Quantity	Unit Price ($)	Bid Price ($)
3A-34	Stormwater Management Facility Shrub Plantings	EA	59		
3A-35	Stormwater Management Facility Plug Plantings	EA	660		
3A-36	Supply & Install Removable Locking Steel Bollard	EA	6		
3A-37	Supply & Install Split Rail Fencing	LF	3,045		
3A-38	Supply & Install Vinyl Privacy Fencing	LF	1,000		
3A-39	Supply & Install Wooden Guide Rail	LF	2,400		
3A-40	Construction Stake-out	LS	1		
3A-41	Asbuilt Survey	LS	1		
TOTAL PHASE 3A BID AMOUNT:					

Item No.	Add Alternate Bid Item	Units	Estimated Quantity	Unit Price ($)	Bid Price ($)
3A-A-1	Supply & Install 1.5” Surface Course Asphalt Paving for Parking Lot in Front of Cecil Arena	SY	6,130		
3A-A-2	Supply & Install 3” Base Course Asphalt Paving for Parking Lot in Front of Cecil Arena	SY	6,130		
3A-A-3	Supply & Install 1.5” Surface Course Asphalt Paving for Athletic Field Parking Lots	SY	11,920		
3A-A-4	Supply & Install 3” Base Course Asphalt Paving for Athletic Field Parking Lots	SY	11,920		
3A-A-5	Supply & Install 1.5” Surface Course Asphalt Paving for RSHS Parking Lots	SY	8,570		
3A-A-6	Supply & Install 3” Base Course Asphalt Paving for RSHS Parking Lots	SY	8,570		
3A-A-11	Install Pavement Markings	LS	1		
3A-A-12	Supply & Install Concrete Wheel Stops	EA	284		

Item No.	Add Alternate Bid Item	Units	Estimated Quantity	Unit Price ($)	Bid Price ($)
3A-A-13	Supply & Install ADA Parking Signage	EA	24		
3A-A-14	Supply & Install On-Site Traffic Signage	EA	12		
3A-A-15	Supply & Install Ball Stop Post and Netting System	LF	1,212		
3A-A-16	Supply & Install 24' Double Swing Arm Gate	EA	4		
3A-A-17	Supply and Install 12' Single Swing Arm Gate	EA	6		
3A-A-18	Athletic Field Bermuda Sod (Installation Only)	SF	243,000		
3A-A-19	Miscellaneous Fescue Sod (Installation Only)	SF	50,400		
3A-A-20	Supply & Install Bermuda Sod on Athletic Fields	SF	243,000		
3A-A-21	Supply & Install Miscellaneous Fescue Sod	SF	50,400		
3A-A-22	Supply Water for Sod Establishment	1000 GAL	1,500		
3A-A-23	Supply and Install Route 272 Signs and Pavement Markings per Drawing MSP-21	LS	1		
3A-A-24	Supply and Install Guide Signs	EA	4		
3A-A-27	Tree Plantings	EA	167		
3A-A-28	Strip, Load, Haul, Stockpile Topsoil from RSHS Football Field to Designated Onsite Location	CY	3000		

Item No.	Contingent Bid Item	Units	Estimated Quantity	Unit Price ($)	Bid Price ($)
3A-C-1	Class 1-A Excavation – Replace Unsuitable Material with CR-6 Backfill	CY	2,500		
3A-C-2	Supply & Install Athletic Field Underdrain	LF	8,000		
3A-C-3	Supply & Install Soil Cement Subbase – 12" Depth	SY	17,500		

PROPOSAL FORM: CALVERT REGIONAL PARK – PHASE 3B

Item No.	Bid Item	Units	Estimated Quantity	Unit Price ($)	Bid Price ($)
3B-1	Mobilization/Demobilization	LS	1		
3B-2	Erosion and Sediment Control	LS	1		
3B-3	Site Preparation/Clearing	LS	1		
3B-4	Strip/Stockpile Topsoil onsite for re-use	CY	1,500		
3B-5	Earthwork	LS	1		
3B-6	Supply & Install 8” GAB for ALL Roadways and Parking Lots	SY	16,940		
3B-9	Supply & Install 1.5” Surface Course Asphalt Paving for Access Road	SY	2050		
3B-10	Supply & Install 3” Base Course Asphalt Paving for Access Road	SY	2050		
3B-11	Supply & Install 6” GAB for Trail/Walk	SY	540		
3B-12	Supply & Install 2.5” Asphalt Paving for Trail/Walk	SY	540		
3B-13	Supply & Install 4” GAB for Concrete Walk	SY	50		
3B-14	Supply & Install 5” Concrete Walk	SY	50		
3B-15	Supply & Install Concrete Curb & Gutter ALL Roadways and Parking Lots	LF	1,639		
3B-17	Construct SWM Facility #1 (ESD M-2)	LS	1		
3B-22	Supply & Install 15” HPDE Storm Drain	LF	130		
3B-23	Supply & Install 18” HPDE Storm Drain	LF	525		
3B-25	Supply & Install 30” HPDE Storm Drain	LF	450		
3B-26	Supply & Install 36” HPDE Storm Drain	LF	250		

Item No.	Bid Item	Units	Estimated Quantity	Unit Price ($)	Bid Price ($)
3B-27	Supply & Install Storm Drain End Sections	EA	5		
3B-28	Supply & Install Storm Drain Inlets	EA	7		
3B-29	Supply & Install Cleanouts	EA	1		
3B-30	Supply & Install Headwalls	EA	2		
3B-31	Supply & Install Storm Drain Manholes	EA	3		
3B-32	Turf Establishment	SY	9,470		
3B-33	Soil Stabilization Matting	SY	1,230		
3B-34	Stormwater Management Facility Shrub Plantings	EA	59		
3B-35	Stormwater Management Facility Plug Plantings	EA	200		
3B-36	Supply & Install Removable Locking Steel Bollard	EA	2		
3B-37	Supply & Install Split Rail Fencing	LF	1,469		
3B-39	Supply & Install Wooden Guide Rail	LF	192		
3B-40	Construction Stake-out	LS	1		
3B-41	Asbuilt Survey	LS	1		
TOTAL PHASE 3B BID AMOUNT:					

Item No.	Add Alternate Bid Item	Units	Estimated Quantity	Unit Price ($)	Bid Price ($)
3B-A-7	Supply & Install 1.5” Surface Course Asphalt Paving for Western Parking Lot	SY	9,190		
3B-A-8	Supply & Install 3” Base Course Asphalt Paving for Western Parking Lot	SY	9,190		
3B-A-9	Supply & Install 1.5” Surface Course Asphalt Paving for Eastern Parking Lots	SY	5,700		
3B-A-10	Supply & Install 3” Base Course Asphalt Paving for Eastern Parking Lot	SY	5,700		
3B-A-11	Install Pavement Markings	LS	1		
3B-A-12	Supply & Install Concrete Wheel Stops	EA	133		
3B-A-13	Supply & Install ADA Parking Signage	EA	9		
3B-A-14	Supply & Install On-Site Traffic Signage	EA	12		
3B-A-15	Supply & Install Ball Stop Posts and Netting System	LF	404		
3B-A-16	Supply & Install 24’ Double Swing Arm Gate	EA	2		
3B-A-17	Supply & Install 12’ Single Swing Arm Gate	EA	2		
3B-A-18	Athletic Field Bermuda Sod (Installation Only)	SF	81,000		
3B-A-19	Miscellaneous Fescue Sod (Installation Only)	SF	20,070		
3B-A-20	Supply & Install Athletic Field Bermuda Sod	SF	81,000		
3B-A-21	Supply & Install Miscellaneous Fescue Sod	SF	20,070		
3B-A-22	Supply Water for Sod Establishment	DAY	30		
3B-A-23	Supply & Install Route 272 Signs and Pavement Markings per Drawing MSP-22	LS	1		
3B-A-24	Supply & Install Guide Signs	EA	2		
3B-A-27	Tree Plantings	EA	72		

Item No.	Contingent Bid Item	Units	Estimated Quantity	Unit Price ($)	Bid Price ($)
3B-C-1	Class 1-A Excavation – Unsuitable Material with CR-6 Backfill	CY	2,500		
3B-C-2	Supply & Install Athletic Field Underdrain	LF	8,000		
3B-C-3	Supply & Install Soil Cement Subbase – 12" Depth	SY	8500		

NOTES:

1. **Bidders are directed to Section 01025 – Measurement and Payment of the Technical Specifications for specific definition of the above pay items.**

2. **In an effort to fully utilize the budget available and maximize the amount of work awarded within the project, Cecil County may use the Add Alternate Bid Items listed above. Add alternates are additional items of work that may be awarded as part of the contract if the base bid is below the approved Capital Improvement Project budget.**

3. **Contingent Bid items will not be included in the Basis of Award.**

4. **The Basis of Award shall be the lowest responsive Total Bid Amount from a responsible bidder, plus any add alternate bid items selected by Cecil County, based on available budget for the project. Bidders shall supply a bid for all add alternate bid items.**

5. **The award of Phase 3B is contingent on FY21 funding approval and will be added to the contract value via change order after July 1, 2020. Work cannot be initiated on Phase 3B until the change order is issued to the contractor. The award of Phase 3B is also contingent on the contractor adequately advancing work on Phase 3A in accordance with the approved project schedule.**

TOTAL PHASE 3A BID AMOUNT: $_____

TOTAL PHASE 3B BID AMOUNT: $_____

TOTAL BID AMOUNT (Phase 3A + Phase 3B): $_____

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

BIDDER CERTIFICATION OF PROPOSAL

The above statements are certified to be true and accurate and we have the equipment, labor, supervision and financial capacity to perform this Contract for the Total Bid Amount above, either with our organization, or with subcontractors.

Dated this _____ day of _____, 201_.

By:_____

_____
(Title of Person Signing)

_____
(Name of Organization)

State of _____

County of _____, ss.

_____being duly sworn, states he is _____ of
(Office)
_____ and that the answers to the foregoing questions and all statements therein contained are true and correct.

Sworn to before me this _____ day of _____ 201_.

_____
Notary Public

_____
(My Commission Expires:)

(NOTARY SEAL)

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

GENERAL PROVISIONS

GENERAL

These General Provisions are a part of the Contract. In case of any conflict with the Special Provisions, the Special Provisions shall govern.

DEFINITIONS

(a) Responsible bidder: bidder or offeror who has the capability in all respects to perform fully the contract requirements, and the experience, integrity, perseverance, reliability, capacity, facilities, equipment, and credit which will assure good faith performance.

(b) Responsive bidder: is a vendor who has submitted a bid, which conforms in all material respects to the requirements stated in the proposal.

(c) Contractor: Is the bidder or offeror who is awarded the Contract pursuant to this invitation for bid.

METHOD OF AWARD

(a) The County reserves the right to reject any or all bids.

(b) The Contract shall be awarded or rejected within 90 days from the date of opening bids.

(c) If the bidder to whom an award is made shall fail to execute the Contract in the specified time indicated in (d) below, the award may be annulled and the Contract awarded to the second lowest and responsible bidder, or the County may reject all of the bids as their interest may require.

(d) Once all contracts and bond requirements are prepared for the contractor's signature and completion, a package will be sent by certified mail and the contractor will have ten (10) work days from the date of receipt to complete the required paperwork and return for final processing. If the contractor is unable to complete the package within set time limits, the contractor may request in writing a limited one-time extension two (2) work days prior to completion date. If the extension is provided, the timeframe will be determined by the County. Once all time limits are surpassed and the required paperwork is not completed and returned, the County has the right to award the bid to the next qualified vendor and the original vendor may forfeit the bid bond/certified check, etc., as liquidated damages.

BASIS OF AWARD

The Contract may be awarded to the lowest responsive and responsible bidder whose proposal complies with all the requirements prescribed. In acceptance of bids, the County will be guided by consideration of the interests of the public and the County shall be under no obligation to accept the lowest bid. Proposals may be rejected if they show any omissions, alterations of form, additions not called for, conditional or alternate bids, or irregularities of any kind. To insure fair competition and to permit a determination of the lowest bidder, unresponsive bids or bids obviously unbalanced may be rejected.

The County also reserves the right to reject any and/or all bids or to waive any technicalities it deems in the best interest of Cecil County.

All contracts and/or quantities are contingent on budgeting constraints. All awards are based on Total Bid Amounts. The County reserves the right to add or delete items from the bid package due to budget constraints, which may result in changing the Total Bid Amount. The awarded vendor will be notified of any changes resulting in a bid price change.

NOTICE TO PROCEED

Contractor shall proceed within seven (7) calendar days after receipt of such notice. **Failure to proceed within the seven (7) calendar day period may result in Cecil County, Maryland terminating the Contract Agreement.**

PROSECUTION OF WORK

After the work has once been started, it shall be prosecuted continuously on all acceptable working days without stoppage until the Contractor completes the contract. In case the Contractor neglects or fails to work continuously on all acceptable working days, the County Executive through the Director of Public Works or the Purchasing Office, may terminate the Contract and use any method that he deems necessary to complete the Contract.

FAILURE TO COMPLETE WORK ON TIME

Should the Contractor fail to complete fully and to all intents and purposes, the work as specified in the proposal and contract on or before the completion time, the said Contractor shall pay to the County such sum as is specified in the paragraph entitled “LIQUIDATED DAMAGES”.

LIQUIDATED DAMAGES

It is hereby understood and mutually agreed, by and between the Contractor and the County that "Time is of the Essence" with regard to the performance of this Contract, such that the date of beginning and the time for completion as specified in the Contract of the work to be done hereunder are Essential Conditions of the Contract; and it is further mutually understood and agreed that the work embraced in this Contract shall be commenced on a date to be specified in the "Notice to Proceed". The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the County, that the time for the completion of the work described herein, is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

If the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the County, then the Contractor does hereby agree, as a part, consideration for the awarding of this Contract, to pay to the County the damages for such breach of Contract as hereinafter set forth, for each and every work day that the Contractor shall be in default after the time stipulated in the Contract for completing the work. The said amount is fixed and agreed upon by and between the Contractor and the County because of the impracticability and difficulty of fixing and ascertaining the actual damages the County would in such event sustain, and said amount is agreed to be a fair estimate of the amount of damages which the County would on account of unexcused project delays sustain and said amount be withheld from time to time by the County from current periodical estimates.

It is further agreed that time is of the essence of each and every portion of this Contract and of the specifications, wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the Contract, additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this Contract. Provided that the Contractor shall not be charged with liquidated damages or any excess cost when the County determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the County; provided further that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

(a) To any preference, priority, or allocation order duly issued by the Government;

(b) To unforeseeable cause beyond the control and without the fault of negligence of the Contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the County, acts of another Contractor in the performance of a contract with the County, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; and

(c) To any delays of subcontractors or supplies occasioned by any of the causes specified in subsections (a) and (b) of this article.

Provided further, that the Contractor shall, within three (3) days from the beginning of such delay, unless the County shall grant a further period of time prior to the date of final settlement of the Contract, notify the County, in writing, of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

Provided further, that the amount of liquidated damages shall be **$1800** per work day.

RESPONSIBILITY FOR DIRECT DAMAGES

In addition to the assessment of liquidated damages for delay, it is hereby understood and mutually agreed, by and between the Contractor and the County that the Contractor shall be responsible to the County for payment of direct costs incurred by the County if it is necessary for the County to supervise or correct work that does not comply with the Contract Documents.

CERTIFIED CHECK OR BID BOND

(a) No bid will be considered unless accompanied by a certified check or an acceptable bid bond of the bidder, payable to the order of Cecil County, Maryland, for five (5) percent of the total bid, which will be forfeited to the County as liquidated damages in case an award is made and the Contract and Bond are not promptly and properly executed as required within ten (10) days after the award of the Contract.

(b) The certified check and/or bid bonds of all except the two lowest bidders shall be returned after the Contract is awarded; and the checks of the two lowest bidders shall be returned after the proper execution of the Contract Documents with the low bidder.

(c) If the low bidder shall fail to execute the Contract Documents as specified, he shall forfeit the bid bond or certified check as liquidated damages and the Contract may be awarded to the second low bidder as specified in the paragraph entitled **METHOD OF AWARD.**

CONTRACT PAYMENT AND CONTRACT PERFORMANCE BOND

The Contract Payment and Contract Performance Bond are each to be in an amount equal to one hundred percent of the Contract amount. If the total **PRICE BID** is less than $100,000.00, the Contract Payment and Performance Bonds will not be required.

INSTRUCTIONS TO BIDDERS

One original, two copies and one electronic copy on CD or thumb drive of the bids shall be submitted in a sealed envelope addressed to:

Cecil County Purchasing Office
200 Chesapeake Boulevard, Suite 1400
Elkton, Maryland 21921

The Contractor's name and address shall appear in the upper left hand corner of the bid envelope with the job name and contract number appearing in the lower left hand corner of the envelope. Failure to submit a bid in this manner shall be considered cause for rejection of the bid.

RESPONSIBILITY FOR COMPLETE PROJECT

It is the responsibility of the Contractor to construct the work under this Contract so that it will be completed and finished in every detail. If mention has been omitted in the Contract Documents of any items of work or materials usually furnished or necessary for the completion or proper functioning of the project, it will be included without extra payment.

METHOD OF PAYMENT

A Purchase Order will be sent to the contractor upon award of the contract. All payments will be remitted within thirty (30) days (net 30) upon receipt of an invoice. Payment/Final payment will be remitted upon acceptance of the completed project and receipt of final invoice.

All invoices shall be submitted to: Cecil County Finance Department
Accounts Payable
200 Chesapeake Blvd., Suite 1100
Elkton, MD 21921

Payment will be for the price bid upon; and estimates will be paid monthly. Retainage shall be 10% of the total amount for the first 50% of the contract. Retainage will be paid upon final acceptance of the project by the County. All invoices shall be reviewed and approved by a Contractor Representative and the County's Representative before submission. Payment requests are to be completed on Cecil County's Periodic Estimate for Partial Payment form, submitted in triplicate with original signatures. An electronic version is available, by contacting Katie O'Connor, Engineering & Construction Division, Cecil County Department of Public Works, via email koconnor@ccgov.org. The County may elect to retain the entire payment for contracts with a duration of less than 30 days until satisfactory completion of the work. In addition, in the event the County has incurred actual damages on account of the Contractor's performance under this Agreement, and/or in the event that the assessment of liquidated damages seems likely, the County may withhold such amounts from progress payments that are reasonably necessary to protect the County from these types of damages.

WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE

(a) The Contractor shall take out and maintain during the life of the Contract the Statutory Worker's Compensation and Employer's Liability Insurance for all of his employees to be engaged in work on the project under the Contract.

(b) In case any portion of the project is sublet, the Contractor shall require all of the subcontractors similarly to take out and maintain during the entire life of the Contract the Statutory Worker's Compensation and Employer's Liability Insurance for all of their employees to be engaged in work in the project under the Contract.

(c) The Contractor and the subcontractor shall not begin work until the Contractor has first filed with the County, satisfactory evidence that insurance of the above nature is in full force and effect (receipt of Certificate of Insurance naming the Cecil County, Maryland as an additional insured).

INSURANCE REQUIREMENTS FOR VENDORS AND SUBCONTRACTORS

All vendors or contractors who perform any type of work or service on Cecil County, Maryland property or in areas where the County is responsible or liable must maintain such insurance coverage(s) as determined by the County to protect the County's interest(s). The following coverage and amount are generally required, but the County reserves the right to modify these requirements at its discretion or reject any insurance policies which do not meet these criteria.

- General Liability Insurance not less than $1,000,000 per occurrence and $2,000,000 aggregate. Coverage shall not contain any endorsement(s) excluding or limiting products/completed operations, contractual liability or cross liability. The County must be named insured and a certificate of insurance must be provided.
- Workman's Compensation Insurance at minimum Maryland Statutory Limits.
- Business Auto (includes trucks) Liability insurance not less than $1,000,000 per occurrence for all leased, owned, non-owned and hired vehicles when vehicles are utilized to perform the work or services required by the County.

The Contractor shall provide a "Certificate of Insurance" naming the Cecil County, Maryland as an "Additional Insured" and showing the levels of Worker's Compensation and all Liability Coverage. " No purchase order will be released until a valid certificate(s) of insurance evidencing all required insurance coverage and documentation is provided to the Purchasing Office.

DAMAGES

The Contractor shall be responsible for any and all injuries to persons and damages to property resulting from the performance of the work specified, materials applied and/or equipment used.

TEMPORARY SUSPENSION OF THE WORK

The County shall have authority to suspend the work wholly or in part for such period or periods as it may deem necessary, due to unsuitable weather or such other

conditions as are considered unfavorable for the prosecution of the work, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given or to perform any or all provisions of the Contract. The Contractor shall immediately comply with the written order of the County to suspend work wholly or in part. In all cases of suspension of construction operations, the work shall not be resumed again until the County gives written permission. Provided that reasonable cause exists for the County to exercise this authority to suspend the Work, the Contractor agrees that he shall not make any claim for charges or claims for damages by him for any delays or hindrances, from any cause whatsoever during the progress of any portion of the services specified in this Agreement. Such delays or hindrances, if any, may be compensated for by an extension of contract time only for such reasonable period as the County may decide. Time extensions will be granted only for excusable delays such as delays beyond the control and without the fault or negligence of the Contractor.

For the avoidance of doubt, the limitation on damages pursuant to this section includes but is not limited to damages incurred by the Contractor for principal office overhead and expenses including the compensation of personnel stationed there (including but not limited to *Eichleay* formula calculation or otherwise), for losses of financing, business and reputation, loss of efficiency and alleged impacts relating to employee costs incurred on account of project suspensions or delays, and for loss of anticipated profit.

Nothing contained in this Section shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents, nor shall it preclude any award of direct costs incurred by either party on account of the other party's failure to properly perform its contractual obligations and which are not schedule dependent.

ANNULMENT OF CONTRACT

Should the Contractor fail to make satisfactory progress, or to comply with orders of the County, or should he neglect or refuse to remove materials, or to perform anew such work as has been rejected as defective and unsuitable, or if the Contractor shall become insolvent or be declared bankrupt, or shall make an assignment for the benefit of creditors or from any other cause shall not carry on the work in an acceptable manner, the County shall have the right to declare the Contract in default without process or action at law, and to turn over to the surety for completion or, at his option, or in case performance is guaranteed by negotiable securities, to take over the work and complete it, either by day labor or by re-letting all or any part of the work. Upon receiving notice to this effect, the Contractor shall vacate possession and give up the said work, or the parts thereof specified in said notice, peaceably to the County. Neither by taking over of the work by the County, nor by the declaration of an uncured default of this Contract shall the County forfeit the right to recover damages from the Contractor or

his Surety for failure to complete his Contract. Should the cost of completing the work be in excess of the original Contract price, the Contractor and his Surety shall be held responsible for such excess cost.

EXTRA WORK

The Contractor shall perform extra work for which there is no provision included in the Contract whenever, to complete fully the work as contemplated, it is deemed necessary or desirable, by written authority of the County, and such extra work shall be performed in accordance with the specifications therefore, or in the best workmanlike manner as directed. This extra work will be paid for at a unit price or lump sum to be agreed upon in writing by the Contractor and the County, or where such a price or sum cannot be agreed upon by both parties, or where this method of payment is impracticable, the County may order the Contractor to do such work on a "Force Account" basis, as specified hereinafter.

The County, before ordering any extra work performed, from time to time may determine; (1) what extra time, if any, will be allowed for said work, or (2) that the extra work is to be performed concurrently with the work under the Contract and without allowance of any additional time.

EXTRA WORK AS A PART OF CONTRACT

No order for extra work, nor doing the performance of any extra work at any time or place shall in any manner or extent relieve the Contractor or the Surety of his bond from any of their obligations under the Contract documents; all extra work orders being given and all extra work being performed, under and in accordance with the Contract are to be considered a part of the same and subject to each and every one of the terms and requirements of the Contract documents, and fully covered by the bond furnished by the Contractor.

FORCE ACCOUNT WORK

All extra work directed by the County in writing to be performed on a "Force Account" basis will be paid for in the following manner:

(a) For all labor and foremen in direct charge of the specific operation, the Contractor shall receive the rates of wage applicable to this Contract, to be agreed upon in writing before starting such work, for each and every hour that said labor and foremen are actually engaged in such work, to which shall be added an amount equal to fifteen percent (15%) of the sum thereof.

(b) For all materials used, the Contractor shall receive the actual cost of such materials, including freight charges, as shown by original receipted bills, to which sum shall be added an amount equal to fifteen percent (15%) of the sum thereof.

(c) For any machine-power tools or equipment, and for any hauling equipment, including fuel and lubricants, which it may be deemed necessary or desirable to use, the County shall allow the Contractor a reasonable rental price, to be agreed upon in writing before such work is begun, for each and every hour/day/week or month that said tools or equipment are in use on such work, and to which sum no percentage shall be added.

The compensation as herein provided shall be received by the Contractor as payment in full for extra work performed on a "Force Account" basis, and shall include supervision, use of tools and equipment for which no rental is allowed, and profit. The Contractor's representatives and the County shall compare records of extra work done on a "Force Account" basis at the end of each day. Copies of these records shall be made in duplicate, upon the County's "Force Account" forms provided for this purpose, by the County and signed by both the County and the Contractor's representatives, one copy being forwarded respectively to the County and the Contractor. All claims for extra work performed on a "Force Account" basis shall be submitted to the County by the Contractor upon certified triplicate statements, which shall also include the value of all material used in such work; and said statement shall be filed not later than the fifteenth (15^{th}) day of the month following that in which the work was actually performed and shall include all labor charges, etc., and material charges insofar as they can be verified.

Should the Contractor refuse or fail to prosecute the work as directed or to document his claim as required, then the County may withhold payment of all current estimates until the Contractor's refusal or failure is eliminated, or after giving the Contractor due notice, the County may make payment for said work on the basis of a reasonable estimate of the value of the work performed.

On extra work as defined in this paragraph, the Contractor will be reimbursed for his expenditures for Workmen's Compensation Insurance, Public Liability Insurance, Social Security Taxes and Unemployment Compensation covering the men actually engaged upon such extra work. No percentage will be added to such payments, but the Contractor shall be entitled to receive only the actual amount of money expended for such Workmen's Compensation Insurance, Public Liability Insurance, Social Security Taxes, and Unemployment Compensation. Such payments shall be based upon the prevailing standard insurance rates supported by receipted vouchers from the insurance vendors and upon the actual amount of taxes paid for Social Security and Unemployment Compensation as evidenced by proper documents furnished by the Contractor.

CLAIMS

Should the Contractor believe that it is entitled to any additional compensation or time, over or beyond the compensation or time stipulated in the Contract documents, or for compensation or an extension of contract time over or beyond that allowed or approved by the County for damages, losses, expenses, or delays alleged to have been sustained by it in connection with this Contract, the Contractor shall file a written notice of claim thereof with the County prior to incurring any costs for which it may claim a right to additional compensation. Unless otherwise specified or required, in the events of alleged delay to the schedule, such notice shall be given no later than twenty (20) days after the onset of such alleged damages, losses, expenses, or delays.

Unless otherwise specified, within thirty (30) days after giving the required notice, but not later than final payment, the Contractor shall file with the County a written, itemized statement of the details and amount of such claim of damage, loss, expenses, or delay. Unless the Contractor timely files its written notice of claim and statement of costs as

prescribed herein, the Contractor's claim for such additional compensation shall be absolutely invalidated; and it shall not be entitled to any compensation on account of such alleged damage, loss, expenses, or delay.

The County shall ascertain the facts and shall approve an equitable adjustment to the Contract amount and/or time when, in his judgment, the findings of fact warrant it. The County shall issue a written decision on the claim within thirty (30) days after receipt of the Contractor's itemized statement of the claim unless extended by mutual written agreement. If the County does not issue a decision within thirty (30) days or any extension thereof, the County shall be deemed as having made a final decision denying the claim. The County's decision shall be final and conclusive on the parties, except as provided in "Breaches and Dispute Resolution".

BREACHES AND DISPUTE RESOLUTION

- Disputes – Disputes arising in the performance of this Contract which are not resolved by agreement of the parties as discussed in Claims Section of this contract, shall be submitted in writing on company letter head to the authorized County Representative Titled "Dispute to Claim Response" with the project name and bid number. A decision will be issued in writing by the authorized representative of Cecil County, Maryland. This decision shall be final and conclusive unless within ten (10) days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to Cecil County, Maryland. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The appeal will be in writing on company letterhead addressed to "Purchasing Department", titled "Appeal to County Claim Response" with the project name and bid number. The decision of the Cecil County, Maryland shall be binding upon the Contractor and the Contractor shall abide be the decision.

-Performance During Dispute – Unless otherwise directed by Cecil County, Maryland, Contractor shall continue performance under this Contract while matters in dispute are being resolved.

-Claims for Damages – Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages
therefore shall be made in writing to such other party within a reasonable time after the first observance of such injury of damage.

-Remedies – Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the Cecil County, Maryland and the Contractor arising out of or relating to this agreement or its breach will be decided by **Binding Arbitration**. By submitting a proposal you agree to these conditions.

Arbitration of Dispute: In any claim, dispute or other matter in question arising out of or related to this Agreement, the Parties must submit the issue to binding arbitration in accordance with *Title 3, Subtitle 2, Courts and Judicial Proceedings Article, Annotated Code of Maryland*, before the Circuit Court for Cecil County prior to filing any action in any Court.

Waiver of Jury Trail: The parties hereto waive their right to elect a jury trial in any dispute involving their rights under this Agreement.

-Rights and Remedies – The duties and obligations imposed by the Contract Documents and the rights and remedies available there under shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the Cecil County, Maryland shall constitute a waiver of any right or duty under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach there under.

EXAMINATION OF SITE AND DATA

Before submitting proposals, prospective bidder should carefully examine the Proposed Contract Documents, inspect the site of the proposed project, acquaint themselves with all governing laws, ordinances, etc., and otherwise thoroughly familiarize themselves with all matters which may affect the performance of the work. Including, but not limited to, the implementation of construction means and methods (e.g., dewatering, braced excavations, earthwork practices, etc.) associated with anticipated site conditions required to satisfactorily complete the project within the contract duration. The act of submitting a proposal shall be considered as meaning that the bidder has so familiarized himself and, therefore, no concession will be granted by the County because of any claim of misunderstanding or lack of information. Bidders are expected to read and study the drawings and specifications with special care and to observe all their requirements. Discrepancies, ambiguities, errors or omissions noted by bidders should be reported promptly to the County for correction or interpretation before the date of the opening of bids.

APPROXIMATE QUANTITIES

The Contractor's attention is called to the fact that the quantities given are estimated quantities and are intended as a guide to the bidder, but in no way bind or limit the County to the actual amount of work to be performed or the quantity of material to be furnished. Any estimates of quantities herein furnished by the County are approximations only, and have been used by the County as a basis for estimating the cost of the work and will also be used for the purpose of tabulating and comparing the bids and awarding the Contract. The County has endeavored to estimate these quantities correctly according to his knowledge and the information as shown on the plans; but it is not guaranteed that these estimated quantities are accurate and if the Contractor, is developing and/or submitting his bid or bids relies upon the accuracy of said estimated quantities, he does so at his own risk.

ALTERATIONS

The County reserves the right to change the alignment, grade, form, length, dimensions, or materials of the work under the Contract whenever any conditions or obstructions are met that render such changes desirable or necessary. In the event, such alterations make the work less expensive to the Contractor, a proper deduction shall be made from the Contract prices and the Contractor shall have no claim on this account for

damages or for anticipated profits on the work that may be dispensed with. In the event, such alterations make the work more expensive, a proper addition shall be made to the Contract prices. Any such deduction or addition shall be determined by the County, who shall remain the final authority in such determination, and per the claims provision of this contract.

PERSONAL LIABILITY OF PUBLIC OFFICIALS

In carrying out any of the provisions of this Contract or in exercising any power of authority granted to him thereby, there shall be no personal liability upon the County or his authorized agent being understood that in such matters he acts as the agent or representative of the County.

SUBLETTING OF CONTRACT

The Contractor shall not sublet, sell or assign all or any portion of the Contract, or the work provided therein, without the consent of the County. All subcontractors must be approved by the County before performing any work on the project. Subletting or assigning more than fifty percent (50%) of the dollar value of the Contract work shall not be permitted. Where subcontractors are used, contractor shall submit all insurance information for all subcontractors.

INSPECTION

The County may appoint such persons as he may deem necessary to properly inspect the materials furnished or to be furnished, and the work performed under this Contract, and to see that the same strictly corresponds with the drawings and specifications; such materials and workmanship shall be always subject to the approval of the County, but no inspection, approval or acceptance of any part of the work herein contracted for, or of the materials used therein or any payment on account thereof, shall prevent the rejection of said work or materials found to be defective, or not, in accordance with the requirements of the Contract. Work and materials will be inspected promptly, but if for any reason delay should occur, the Contractor shall have thereby no claim for damages or extra compensation. The Contractor shall provide testing as required by this Contract. Inspectors are available from 7:00 AM – 5:00 PM Monday through Friday.

TIME OF COMPLETION DATE

(a) Construction shall be substantially complete (i.e. full completion of athletic fields, parking areas, and stormwater management facilities) by October 30, 2020.

(b) If the work is delayed through no fault of the Contractor, the time of completion shall be extended as determined by the County.

(c) Should work not be completed by October 30, 2020 the Contractor shall be assessed **$1800 per work day** Liquidated Damage Cost for each day thereafter until the project is completed and accepted by the Owner.

(d) The time frame applies to the estimated quantity of services under this bid. Should the number of services increase by more than 10%, the time frame will be increased proportionately.

SANITARY FACILITIES

The Contractor shall provide portable sanitary facilities, maintain same during the length of the project and remove same when project is done.

SITE CLEAN UP AND RESTORATION

(a) The Contractor shall keep all trash, garbage, spent material containers, etc., picked up on a daily basis.

(b) The Contractor shall restore the site to a condition equal to that in which it was found.

(c) Should daily site cleaning and final restoration not be performed, the Owner shall have such done with the costs of same being charged to the Contractor.

WARRANTY

The contractor shall warrant all work for one (1) year or the standard warranty of the manufacturer, whichever is longer. Failure to correct warranty issues promptly and to the satisfaction of the Department on this or other contracts may result in finding the Contractor non-responsive for future contracts/bids. All required Bonds shall remain active to cover the agreed warranty period. Any issue discovered and documented during the warranty period shall require the existing bonds to remain active beyond the agreed warranty period until the issues are resolved and agreed upon by all parties. All releases of contract bonds shall be in writing from Cecil County, Maryland or a release of bond document signed by a Cecil County, Maryland authorized representative.

TRANSPORTATION

Prices quoted shall be net, including transportation and delivery charges fully pre-paid by the seller, f.o.b. destination (PROJECT SITE). No additional charges will be allowed for packing, packages or partial delivery costs. By submitting their quote, all vendors certify and warrant that the price offered for f.o.b. destination includes only the actual freight rate cost at the lowest and best rate and based upon actual weight of the goods to be shipped. Standard commercial packaging, packing and shipping containers will be used, except as otherwise specified herein.

CONTINGENT ITEMS

Construction items which are identified in the “Proposal Form” as “Contingent Bid Items” are established for the sole purpose of obtaining unit costs on pay items that may be incorporated into the project. The County’s representative shall have sole discretion in determining whether and to what extent such items will be incorporated into the project. The County’s Representative may order incorporation of such items at any location within

the Contract and at anytime during the work. Neither the Contractor nor his subcontractor and the County shall make claims for additional compensation because of any increase, de-crease or elimination of such items.

CONTRACT TERM

Cecil County, Maryland intends that the contractor awarded a contract, will perform the work commencing upon the date specified in the Notice to Proceed or notification of award and terminate upon expiration or completion of the project or product delivery, unless terminated by the County with the delivery of written notification of contract termination. All contracts extending beyond the County's fiscal year (June 30th annually) shall be subject to budget appropriation. In the event the on-going contract does not acquire funding to continue, the awarded contractor shall be notified in writing at the earliest possible and contract termination shall be coordinated.

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

SPECIAL PROVISIONS

GENERAL:

1. All work must be completed according to applicable local, state, and federal laws, guidelines, regulations, specifications, etc., to include the following:

-Cecil County Department of Public Works (CCDPW) Code and Standard Specifications, including all revisions and attachments to the Contract.

- Maryland Department of Transportation, State Highway Administration, **Standard Specifications for Construction and Materials, dated July 2019, including all revisions.** All references to "State of Maryland", "State", "S.H.A.", and "Administration" in the Maryland State Highway Specifications and this Invitation for Bids shall mean Cecil County, Maryland. All references to "Engineer" " in the Maryland State Highway Specifications and this Invitation for Bids shall mean the Cecil County Engineer or his authorized representative.

- Standard MD Details referred to on the Plans shall be those of the current State Highway Administration Book of Standards for Highway and Incidental Structure.

2. All bid packages will include proof of certification or license to perform the prescribed type of project within the State of Maryland (if applicable).

3. These Special Provisions are a part of the contract. In cases of any conflict with the General Provisions, the Special Provisions shall govern.

4. A **mandatory** "Pre-Bidding Information Conference" for the purpose of answering questions of parties interested in the work will be conducted in the Perryville Conference Room, County Administrative Building, 200 Chesapeake Blvd., Elkton, Maryland 21921 at **11:00am, February 18, 2020.** Failure to attend the pre-bid information conference shall result in consideration of the vendor's bid proposal as non-responsive. The Bid Opening will be held at **1:30pm, March 11, 2020** in the Perryville Conference Room, County Administrative Building, 200 Chesapeake Blvd., Elkton, MD 21921

ORDER OF PRECEDENCE FOR CONTRACT DOCUMENTS:

1. In the event of conflict between quality of the work as called for by the Contract Documents, the County shall have the right to insist upon the delivery of the strictest requirements, the highest quality, or the highest quantity at no additional cost to the County.

2. In the event of a conflict between other contract terms, the following order of precedence shall control:

   a. **Contract plans, contract specifications, County Standards, Maryland State Highway Standard details and specifications, other state standards**

SCOPE OF WORK (INCLUDING SPECIFICATIONS):

Project Location: Calvert Regional Park/Rising Sun High School

Project Address: 211 Brick Meeting House Road, North East, MD 21901

Project Description:
The project includes various site work to construct four (4) new multi-purpose athletic fields with supporting site improvements (e.g., parking areas, fencing and gates, curbing, signage, etc.). The site work for this project includes earthwork, sod installation, asphalt paving, stormwater drainage controls and stormwater management facilities. The project will include the installation and maintenance of temporary erosion and sediment control during construction and permanent stabilization of areas disturbed once construction is complete.

PERMITS

Erosion and Sediment Control approval is required for this project. Cecil County Soil Conservation District approved plans are a part of the Contract Documents. NPDES Permit is required for this project.

SHA Access Permit is required for work along the MD Route 272. SHA Access Permit is currently in process and is anticipated to be approved and provided to the Contractor either by addendum or at the time of bid award.

Stormwater Management approval is required for this project. Cecil County Department of Public Works approved plans are a part of the Contract Documents.

An NPDES Permit is required for this project and is included as part of the Contract Documents.

The Contractor shall thoroughly familiarize itself with the terms and conditions of all applicable project permits. While the County has obtained the above referenced permits, it is the Contractor's sole responsibility to abide by and/or perform in accordance with all of the terms and conditions of these permits. Any permit violations, fines, fees, or claims arising from the Contractor's failure to comply with permit conditions will be the sole responsibility of the Contractor and not the County, and the Contractor shall hold the County harmless and indemnify the County against all fines, fees, or claims arising out Contractor violation of said permits. All modifications of these approvals and/or permits shall be obtained and paid for by the Contractor.

CONTRACTOR'S RESPONSIBILITY

A. It shall be the Contractor's responsibility to schedule and coordinate all work to be performed under this Contract to insure continuous and smooth operations of the work and completion within the times specified in the proposal.

B. The Scope of Work is intended to cover the complete project. It shall be distinctly understood that failure to mention any work, which would normally be required to

complete the project shall not relieve the Contractor of his responsibility to perform such work.

C. The contractor shall supply all labor, materials, equipment, insurance, permits, etc. necessary to perform the mentioned work. At the completion of the project, the contractor is responsible for the removal and proper disposal of all debris, etc. associated with their work on the project. **The contractor may haul construction debris from clearing, grubbing, demolition, and excavated materials to the Cecil County Central Landfill however the standard tipping fee will be charged to the contractor.**

D. It shall be the contractor's responsibility to furnish all fabricated materials (e.g., precast concrete, metals, mechanical/electrical equipment, and any other materials or products requiring fabrication) in new condition as per the project documents. The contractor is responsible for ensuring all fabricated materials are constructed in accordance with the project specifications. The County reserves the right to reject any fabricated materials/equipment observed to have been repaired without the consent of the County, to be damaged or defective, or not in compliance with the contract documents at any time (fabrication or field) during the contact period.

E. It shall be the Contractor's responsibility to obtain all necessary building and electrical permits through Cecil County Department of Permits and Inspections, and to follow all requirements of the permits. If a grading permit is required it will be the responsibility for the Contractor to obtain this permit from the Cecil County Department of Land Use and Development Services, Division of Development Plans Review, prior to earth disturbing activities.

F. The contractor shall provide a copy of all required licenses to perform the work of prime and/or subcontractors to the County prior to commencing with that phase of work.

G. The contractor shall coordinate with adjacent property owners to minimize inconvenience.

H. **Stormwater As-Built Documents:** During construction, the Contractor shall maintain a set of redline drawings documenting any changes or deviations from the Construction Plans. Upon completion of the construction project, a stormwater management as-built survey shall be submitted to the Engineer, in AutoCAD format, for approval. The redline drawing and survey shall include all required information in accordance with the most current as-built plan review checklist. The redline drawing and survey will be used by the Engineer to develop a Stormwater Management Asbuilt Plan for submittal to the Cecil County Department of Land Use and Development Services, Division of Development Plans Review for approval.

I. The contractor shall assign an Erosion Control Manager who is certified and has a current "green" or "yellow" card. The erosion control manager will be onsite

during earth disturbing activities and will be responsible for inspections as required and record keeping.

SCHEDULE OF OPERATIONS AND PERSONNEL

Before commencement of any work on this project, the Contractor shall submit and obtain the County's approval of a **Schedule of Operation and a Resume of the Project Manager** for this contract, (Personnel information shall be submitted with bid package)**.** The **Schedule of Operation** shall include the methods of operation and construction sequences and shall provide for the completion of the project within the time specified in the Proposal. It shall make reasonable accommodation for weather delays and shall reflect County-observed holidays. In addition, the schedule shall incorporate the following required schedule constraints:

- All construction must be substantially complete by October 30 (including Phase 3B if awarded)
- Asphalt path between field hockey and soccer field to be removed and replaced with sod between July 20 – August 15.
- Access Road from Rising Sun High School to athletic fields behind Cecil Arena to be constructed between July 20 – August 15
- Cecil Arena must remain open during construction with the exception of the month of August. Sufficient parking and safe access in and out of the building must be provided. All construction around Cecil Arena must be complete by September 1.
- Bermuda Sod shall be installed no earlier than June 1 and must be completed by July 30.
- Contractor shall give the County a minimum 1 week notice for the delivery of sod to be supplied by the County.
- Contractor shall prepare final subgrade for athletic fields and obtain approval of subgrade elevation from the County inspector a minimum of 48 hours before sod delivery.
- No work on parking area proposed on Rising Sun High School Football Practice Field until September 14. Practice field must be available for use between mid-August and September 14.
- All Phase 3B work, if awarded, cannot be performed until after July 1.

The Contractor shall work Monday thru Friday with Saturday as a make-up day for weather delays. No work will be permitted on Sundays unless requested at least 72 hours in advance and approved by the Construction Manager. Work is permitted from 7:00 am to 5:00 pm unless otherwise approved by the Construction Manager. The contractor shall schedule their operations accordingly to meet the required contract completion date. The County will consider an alteration to these work hours if requested a minimum of 72 hours in advance but does not guarantee approval or the availability of construction inspection.

Unless stated otherwise the schedule may be a bar chart activity chart or in a CPM schedule format. The contractor must provide an updated schedule with each periodic estimate. Payment of periodic estimates will not be approved unless an updated schedule is submitted.

SAFETY:

Before commencement of any work on this project, the Contractor shall submit and obtain the County's acknowledgement of an established **Company Safety Program.** Work performed shall be consistent with the following guidelines and references and in compliance with all applicable local, state, and federal regulations and standards including, but not limited to, those listed below. In the case that these requirements are conflicting, the one which offers the greatest protection shall be followed.

A. Occupational Safety and Health Administration (OSHA) Construction Industry Standards, 29 CFR1926, and General Industry Standards, 29 CFR 1910.
B. National Fire Protection Association (NFPA), 327

At a minimum, all workers employed by the contractor or any subcontractors shall wear and/or use the following:

- Standard work clothes (long pants, shirts with sleeves)
- Hard Hat
- High visibility safety shirt, vest, or jacket
- Steel toe work boots
- Leather work gloves (as work tasks dictate)
- Safety glasses with affixed side shields (as work tasks dictate)
- Hearing protection (as work tasks dictate)

Hazards associated with the work shall be evaluated by the contractor and appropriate measures taken to ensure the safety of contractor employees, County personnel, and the public.

TRAFFIC CONTROL:

Contractor shall provide all necessary traffic control devices and personnel to protect construction personnel and traveling public to the satisfaction of the Department of Public Works and in accordance with MOSH/OSHA Standards and the Maryland Manual of Uniform Traffic Control Devices, 2011 Edition and all revisions.

Penalties: It is the Contractor's responsibility to install and maintain the maintenance of traffic operations, as specified in the contract documents, throughout the duration of the project. The Contractor will be issued a written and/or verbal notice of violation for maintenance of traffic operations not in compliance with the contract documents by the County and/or their representatives. Immediate action to correct the violation is required within 24 hours of the written and/or verbal notification. Failure to correct the violation after the first 24 hours will result in penalties of $100.00 per 24 hours until corrected and accepted by the County. Examples of violations, but not limited to, as follows:

- Operations not in accordance with the project specifications.
- Damaged or missing signage.

Fines, in any, will be deducted from the monthly invoice payment.

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

Cecil County, Maryland
200 Chesapeake Boulevard
Elkton, MD 21921

INDEMNITY/HOLD HARMLESS AGREEMENT

To the fullest extent permitted by law, the undersigned Organization agrees to indemnify and hold Cecil County, Maryland, its elected and appointed officials, employees, and volunteers, and others working on behalf of Cecil County, Maryland, harmless from and against all loss, cost, expense, damage, liability or claims, whether groundless or not, arising out of the bodily injury, sickness or disease (including death resulting at any time therefrom) which may be sustained or claimed by any person or persons, or the damage or destruction of any property, including the loss of use thereof, based on any act or omission, negligent or otherwise, of the Organization, or anyone acting on its behalf in connection with or incident to **Bid No. 20-18-56016: Calvert Regional Park Phase 3,** except that the Organization shall not be responsible to Cecil County, Maryland on indemnity for damages caused by or resulting from Cecil County, Maryland's sole negligence; and the Organization shall, at its own cost and expense, defend any such claims and any suit, action, or proceeding which may be recovered in any suit, action, or proceeding, and any and all expense including, but not limited to, costs, attorney's fees and settlement expenses, which may be incurred therein.

Name of Organization: _____

Authorized Signature: _____

Address of Organization: _____

Phone: _____ Date: _____

CECIL COUNTY, MARYLAND
BID NO. 20-18-56016

CONTRACTOR BID CHECKLIST

The following is a checklist to assist the contractor in verifying all required information is provided at the Bid Opening. It remains the contractor's responsibility to ensure all information is complete and attached, including information, which may not be listed on this checklist. Any information missing at the time of the bid opening may result in rejection of the bid proposal. No proposals will be accepted after the designated bid opening time.

1) Completion of Certification of Bidder's Qualifications (CBQ-1) and attached applicable **copies of required license**.

2) Completion of pages EEC-1 thru EEC-4.

3) Bidder's name and signature page BSI-1.

4) Completion of pages P-1 thru P-10.

5) Bidder's Certification Page BC-1.

6) Bid bonds, Payment bonds, and Performance bonds if applicable.

7) Bid package labeled properly for identification.

8) Indemnity/Hold Harmless Agreement page HHA-1.

9) Evidence of applicability as "Local Bidder" if applicable.

10) Bidder's Design/Build specification drawings/engineered drawings if applicable.

11) W/MBE documentation and certifications when applicable.

12) One original, two copies and one electronic copy on CD or thumb drive of the bids shall be submitted in a sealed envelope. See page GP-5 for further information.

13) The awarded contractor will be required to submit a completed Agreement of Jurisdiction and W-9 forms.

PROJECT PROFILE FORM

BID NO.: 20-18-56016

CALVERT REGIONAL PARK – PHASE 3

Project Name: _____

Contractor's Project Manager: _____

Project Location (County, State, or Municipality): _____

Owner/Client Info:

Company: _____
Private or Public: _____
Primary Contact: _____
Title (if known): _____
Address: _____
_____
Phone: _____
Email: _____

Engineer or Construction Manager Info:

Company: _____
Engineer or CM: _____
Primary Contact: _____
Title (if known): _____
Address: _____
_____
Phone: _____
Email: _____

Cost:

Original Contract Value: _____
Total Change Order Value: _____
Explanation of change orders: _____
_____
_____
_____

Schedule:

Start date: _____
Contract Completion date: _____
Actual Completion date: _____
Were schedule extensions approved (y/n): _____

Overall Project Size (acreage, square footage, linear feet, etc.): _____

Project Technical Scope:

_____
_____
_____
_____
_____
_____
_____
_____


CECIL COUNTY
1674

CECIL COUNTY DEPARTMENT OF PUBLIC WORKS

CALVERT REGIONAL PARK

PHASE 3

BID NO. 20-18-56016

TECHNICAL SPECIFICATIONS

SECTION 01000: SCOPE OF WORK

PART I - GENERAL

1.01 GENERAL

The project includes various site work to construct four (4) new multi-purpose athletic fields, access road, and parking lots with supporting site improvements (e.g., fencing and gates, curbing, signage, etc.). The site work for this project includes earthwork, sod installation, asphalt paving, stormwater drainage controls and stormwater management facilities. The project will include temporary erosion and sediment control during construction and permanent stabilization of areas disturbed during construction.

This section provides a general description of the scope of work. The CONTRACTOR shall also reference the most recent publication of the Maryland Department of Transportation Standard Specifications for Construction and Materials, unless otherwise stated in these specifications or the contract drawings.

The following description of work shall be used as a general guide for the contractor. The contractor shall submit to the COUNTY a detailed schedule of work outlining the specific sequence of construction for review and approval.

The work includes, but is not limited to, the following:

1. Establishing and maintaining temporary erosion and sediment controls. This includes periodic inspection as required by stormwater permitting for the project and repair or replacement of damaged controls for the duration of the project.
2. Clearing and grubbing project work areas within the defined limit of disturbance for each area.
3. Provide construction stakeout and surveying throughout construction activities.
4. Various earthwork activities including excavation, backfill, and grading to achieve specified lines and grades for athletic fields, parking areas, and stormwater drainage swales/controls.
5. Install curb and gutter, asphalt paving, wheel stops, and pavement markings.
6. Excavate and construct all proposed stormwater management facilities including submerged gravel wetland facilities.
7. Install topsoil and sod on athletic fields and in stormwater management features, as specified.
8. Permanent stabilization of project areas including supplying and installing topsoil, seed, mulch and/or soil stabilization matting, as specified.
9. Restoration all disturbed areas.

10. Removing any temporary erosion and sediment controls once project work is complete and work areas are adequately stabilized.

Other additional work that may be added to the project scope based on budget constraints includes installation of additional asphalt paving, concrete wheel stops, pavement markings, split rail fencing, gates, wooden guide rail, barrier netting and posts, bollards, and signage.

CONTRACTOR is to coordinate his work activities with the COUNTY and any other contractors/subcontractors that may be working onsite or in the vicinity of the project area during construction activities.

1.02 CONTRACT WORK

This project consists of lump sum and unit price pay items, as listed on the Bid Proposal Form and forms the basis for payment of the work in this contract. The work included in each lump sum and unit price pay item is described or referenced in the Measurement and Payment section of these Technical Specifications.

The CONTRACTOR shall provide all materials, labor and equipment to install, construct, place in satisfactory operational condition, and maintain until final acceptance by the COUNTY of each lump sum and unit price pay item of this contract. The CONTRACTOR is **not** exempt from paying sales tax. This project is **not** a prevailing wage job.

The list of work items as described in this section are presented solely for the convenience of the CONTRACTOR and does not necessarily include all of the items of work specified or shown on the Drawing, which are required under this contract to complete the work. The CONTRACTOR is to include in the total project cost, any item or services required to complete this project as identified in the Contract Documents, which may not be specifically identified as a unit price pay item or lump sum item of work.

The CONTRACTOR shall furnish sufficient manpower and equipment to meet or exceed the project schedule without regard to inclement weather conditions or other delay related circumstances.

When a conflict is identified within the Contract Documents, the conflict shall be immediately brought to the attention of the COUNTY for resolution.

1.03 WORK HOURS

Construction work shall be performed between 7:00 a.m. and 5:00 p.m. Monday through Friday, excluding Holidays, with Saturdays as a makeup day for weather delays. The CONTRACTOR may request an extension of hours giving at least 48 hour notice to COUNTY prior to initiation of any such extension. Extensions are not guaranteed and are subject to approval by the COUNTY.

1.04 SCHEDULE

The CONTRACTOR shall prepare a Detailed Construction Schedule for the project prior to starting work and be prepared to review the schedule with the COUNTY at the pre-construction meeting. The construction schedule shall be consistent with the overall project

completion date and meet all specified milestones and schedule constraints listed in the Special Provisions. The CONTRACTOR shall make reasonable allowances for inclement weather within the construction schedule. The construction schedule shall include estimated time units for each phase of the project including: mobilization dates for CONTRACTOR and each Sub-contractor; field work start/completion dates; individual task duration time in workdays; and any other factors that are critical to the timely completion of the project. The CONTRACTOR's construction schedule must be approved by the COUNTY prior to the start of work.

The CONTRACTOR shall closely coordinate the construction schedule with each of the sub-contractors and the COUNTY to avoid delays in moving from one phase of the project to another. Any delay caused by the failure of the CONTRACTOR to execute the coordination of the project shall not be cause to relieve the CONTRACTOR from meeting the time schedules stipulated in the Contract documents.

As the project progresses, the initial construction schedule shall be revised and include specific details and dates of completed work, updates to task duration, and projections of percent complete for each active task. If projections indicate that the CONTRACTOR may not achieve the contract completion date, the CONTRACTOR shall propose corrective action that will be taken to bring the project back on schedule to meet project milestones. A revised project schedule shall be provided by the CONTRACTOR at each progress meeting.

1.05 SEQUENCE OF CONSTRUCTION

The CONTRACTOR may sequence construction activities in a manner that allows for efficient completion of the project within the required contract completion date, within the schedule constraints defined in Special Provisions, and meeting the sequence of construction outlined in the Stormwater Management and Erosion and Sediment Control Plan. The contractor shall coordinate closely with the COUNTY to facilitate construction activities and inspection testing.

1.06 PROGRESS MEETINGS

Regular progress meetings will be scheduled to ensure communications and coordination between all parties are maintained. The CONTRACTOR shall schedule monthly progress meetings and at other times as needed or as requested by the COUNTY. Progress meetings will be conducted onsite at Cecil Arena or at the County Administration Building. The proceedings of these meetings will be documented by the COUNTY and each required representative at the meeting will be furnished one copy via e-mail. To assist the COUNTY in maintaining accuracy in the minutes, the meetings may be tape recorded. Participation in project meetings will be considered incidental to the cost of the Contract.

1.07 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

The CONTRACTOR shall furnish, install and maintain required construction aids and barriers as required to protect the Work and prevent public entry, and to protect existing facilities from construction operations. All temporary controls will be considered incidental to the cost of the Contract.

Maryland Route 272 – North East Road will be open to traffic during construction. The CONTRACTOR shall be responsible for all necessary traffic controls on MD Route 272 to allow the safe passage of construction equipment and construction material deliveries off the construction entrance on MD Route 272. Limited access is anticipated to occur from Rising Sun

High School in order tie the new access road to the school's existing access road. Any work and access by the CONTRACTOR occurring at Rising Sun High School shall be scheduled and approved by the COUNTY in advance of occurrence.

The CONTRACTOR shall provide and maintain methods, equipment and temporary construction, as necessary to provide accommodations for logistical support such as communications, sanitary facilities, parking, etc. for employees of the CONTRACTOR and CONTRACTOR's Sub-Contractor employees at locations designated by the COUNTY.

The CONTRACTOR shall remove all temporary facilities at completion of Work or when no longer necessary.

1.08 SAFETY REQUIREMENTS

The CONTRACTOR shall be solely responsible for performing the construction in a safe manner. The CONTRACTOR shall comply with the safety requirements for the facility, County, applicable statutes and regulations of the State of Maryland (including MOSH), and the Occupational Safety and Health Administration (OSHA) pertaining to the safe performance of the work. Should charges of violations of any of the above mentioned statutes or regulations be issued in the course of the work, a copy of each charge is to immediately be forwarded to the COUNTY. The CONTRACTOR shall perform the work in a manner that does not endanger personnel employed thereon, or public and private property. There shall be no smoking or open flames on the site unless approved by the COUNTY at designated areas.

At a minimum, the CONTRACTOR shall comply with the Maryland Department of Transportation Standard Specifications for Construction and Materials, Section GP-7.05, "Construction Safety and Health Standards", and Section GP-7.06 "Public Convenience and Safety".

1.09 LEGAL NOTIFICATION

The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, permits and regulations bearing on the conduct of the work as specified. If the CONTRACTOR performs any work contrary to such laws, ordinances, permits, rules, and regulations, he shall bear all costs arising there from.

The CONTRACTOR shall immediately notify the COUNTY of the arrival of any regulatory inspectors. The CONTRACTOR's employees and sub-contractors shall cooperate with these representatives and provide information as requested. The CONTRACTOR shall notify the COUNTY of any such requests.

1.10 SPECIAL SITE CONSIDERATIONS

CONTRACTOR is responsible for litter/dust/odor/and noise control due to Contract operations. CONTRACTOR shall provide all equipment necessary to maintain control of dust and clean roadways at all times. Should the CONTRACTOR fail to maintain dust or clean roadways, and it becomes necessary for County forces to be deployed, as determined by the COUNTY, the CONTRACTOR shall bear all costs associated with the deployed County manpower and equipment in accordance with the general conditions. Water required for dust control may be obtained from sediment traps, if available, or it shall be the responsibility of the CONTRACTOR to provide water from other approved and permitted offsite sources.

If work is stopped by the MDE erosion control inspector, or other regulatory inspectors, due to the CONTRACTOR's failure to control nuisances, any time lost during that shutdown shall not be cause to extend the project completion date or receive compensation for downtime.

PART II- PRODUCTS

Construction materials shall be as specified on the Contract Drawings and/or in the Maryland Department of Transportation Standard Specifications for Construction and Materials.

Within 10 working days after Award of Contract, the Contractor shall provide material submittals to the County for approval to use on the project. Submittals shall identify the project bid number, product name, name of manufacturer or supplier, and model or gradation number. Submittals shall be number sequentially (e.g., Submittal #1, Submittal #2, etc.). If a resubmittal for the same material is required, it should have the same number as the original submittal with a "R" designating a resubmittal (e.g., Submittal #1R).

Material submittals shall contain sufficient supporting information documenting compliance with the project specifications. If the Contractor is proposing an alternate material, document each request with complete data substantiating that a proposed substitution is equivalent to a specified item and in compliance with the Contract Documents.

The CONTRACTOR shall be responsible for the transportation and handling of materials to the project. Transport products by methods that prevent product damage; deliver in undamaged, dry condition in manufacturer's unopened containers or packing. Provide equipment and personnel to handle and store products by methods which prevent soiling or damage.

The CONTRACTOR takes full responsibility for the proper storage of materials. The CONTRACTOR shall retain ownership of the materials until installed and paid for by the County. No payment will be given for stored materials.

PART III – EXECUTION

3.01 EROSION AND SEDIMENTATION CONTROL

The CONTRACTOR is responsible for erosion and sedimentation control and stormwater runoff water quality associated with construction activities at all times. This includes periodic inspection as required by stormwater permitting for the project and repair or replacement of damaged controls for the duration of the project. The CONTRACTOR shall follow the construction sequence specified on the contract drawings for erosion and sedimentation control.

Also, the CONTRACTOR shall install sediment controls as shown on the Drawings and any additional measures that circumstances may warrant to control offsite migration of sediment as directed by the COUNTY or MDE Stormwater Inspectors. Temporary diversion channels or berms constructed to divert stormwater from work areas to expedite construction are the responsibility of the CONTRACTOR. Diversion channels or berms required by the CONTRACTOR to control stormwater, other than those shown on the drawings, shall be considered incidental to the cost of this Contract.

The CONTRACTOR shall be responsible for purchase, delivery, and placement of materials to stabilize areas that will be disturbed, in accordance with the Erosion and Sediment Control Notes on the Contract Drawings.

3.02 CLEARING AND GRUBBING

Perimeter erosion controls shall be established prior to any site clearing and grubbing activities and must be maintained throughout the duration of the construction. Erosion control measures shall be installed as specified in the approved Erosion and Sediment Control Plan.

The CONTRACTOR shall clear and grub the work area, as necessary to facilitate construction, within the Limits of Disturbance (LOD) as approved by the COUNTY. Clearing and grubbing shall be limited to only that which is necessary to perform the work regardless if the defined LOD boundary covers a larger area. The CONTRACTOR shall protect trees, shrubs, lawns, rock outcroppings and other features outside the limit of disturbance.

Clearing shall be defined as removing all surface brush, down timber, rubbish and other vegetation and objectionable material, but only involving minimal disturbance, leaving root systems, stumps and soil in place. Grubbing shall be defined as the removal of stumps & root systems, and stripping, hauling and stockpiling of all topsoil and organic material, to a depth of at least 6-inches below existing grade in work areas.

Topsoil shall be stockpiled in designated areas for re-use within the project. Left over topsoil shall be relocated to an area designated by the COUNTY and remain onsite for future use by the COUNTY.

In the course of performing clearing and grubbing activities, the CONTRACTOR shall be responsible for the demolition and/or removal of an existing concrete watering trough, corn crib, and existing drain tile, where encountered.

Clearing, grubbing, and demolition materials shall be hauled by the CONTRACTOR from work areas to an approved offsite disposal location.

3.03 EARTHWORK

Earthwork includes the excavation, transport, and stockpile of existing material, and placement, grading, and compaction of backfill, to the lines, grades and elevations shown on the Drawings and in accordance with the Maryland Department of Transportation Standard Specifications for Construction and Materials.

The CONTRACTOR is responsible to field verify subgrade elevations as indicated on the Contract Drawings for all athletic fields, parking areas, and drainage swales. Subgrade elevations shall be approved by the County prior to advancement of work.

Existing materials and soils that are below subgrade elevations and classified as unsuitable soils, shall be excavated, hauled, and stockpiled in designated areas onsite as directed by the COUNTY.

The CONTRACTOR shall undercut and replace subgrade conditions that are soft, unstable, and/or saturated, as directed by the County, with onsite fill material that meets the requirements of the project specifications.

Upon achieving a stable, undercut-subgrade approved by the COUNTY, the CONTRACTOR shall place fill within the required limits to achieve subgrade elevations. The fill shall be placed, compacted and tested as specified.

Fill necessary to complete subgrade preparation shall be clean borrow material from onsite within the project area. Materials excavated to meet subgrade elevations may be used as fill if the material meets the specifications for Common Borrow per the Maryland Department of Transportation Standard Specifications for Construction and Materials. If needed, the CONTRACTOR shall screen (or process), dry or wet fill materials as required to achieve particle size and moisture content specified.

3.04 SOD INSTALLATION

Upon approval by the COUNTY of the established top of subgrade elevations and slopes per the contract drawings, the CONTRACTOR shall place a minimum of 4-inch thickness of lightly compacted onsite topsoil in areas with proposed sod surfaces. Prior to installing sod, the CONTRACTOR shall use a Rockhound®, or other approved means, to remove all rocks from the subgrade to the satisfaction of the County. The CONTRACTOR shall be responsible for the condition of the subgrade until installation of the sod is complete.

Sod will be provided by the County and delivered to the site in 90' rolls (42 inch width) for installation by the CONTRACTOR. The CONTRACTOR shall give the COUNTY a minimum one (1) week notice before the desired delivery date. The CONTRACTOR shall have appropriate equipment available to safely and properly unload, transport, and install rolls of the dimension provided. Contractor shall only use tracked or smooth wheeled rolled-sod installer. Tractors with cleated farm tires are not permitted on the sod surface.

The CONTRACTOR shall provide all labor, equipment, tools and supervision required for the installation of sod. Sod shall be installed in accordance with the specifications provided on Sheet F-ESD-32 of the Contract Drawings. Accordingly, joints at the ends and between adjacent rolls shall be butted tight with no gaps allowed. Joints at the ends of rolls shall be staggered.

The CONTRACTOR shall be responsible for the condition of sod until rooting has occurred as determined by the COUNTY. Any sod that perishes prior to rooting shall be replaced by the CONTRACTOR at no cost to the COUNTY. The CONTRACTOR shall be responsible for watering sod immediately upon placement (i.e. same day as installation) and daily thereafter, in accordance with the specifications provided on the Contract Drawings, until sod is rooted as determined by the COUNTY. The COUNTY will supply water to the CONTRACTOR. The CONTRACTOR shall be responsible for providing all labor, equipment, and tools necessary to perform watering including but not limited to pumps, hoses, sprinklers, attachments and fittings.

3.05 GEOTEXTILE UNDER RIPRAP AND AGGREGATE SURFACES

The CONTRACTOR shall place an approved non-woven geotextile, as specified, under all areas requiring riprap or aggregate. The geotextile material shall meet specifications for non-woven geotextile provided in Table H-1 of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control. Geotextile shall be overlapped a minimum of 24 inches when width or length will not cover the entire subgrade. The Geotextile shall not be exposed to the open elements for a period longer than 15-days.

3.06 RIPRAP AND AGGREGATE

Upon approval by the COUNTY of the placement of geotextile, the CONTRACTOR shall place approved riprap/aggregate material. The riprap/aggregate material shall meet specifications of the Maryland Department of Transportation Standard Specifications for Construction and Materials Section 901.01 and 901.02. Riprap and aggregate shall be placed and spread to the thickness specified on the Contract Drawings.

3.07 CONCRETE WORK

CONTRACTOR shall furnish all labor, materials, tools, and supervision necessary to construct the forms required for cast-in-place concrete construction, placement of aggregate subbase material, placement of concrete reinforcement to the requirements indicated on the Drawings and in the Specifications, and pouring and finishing concrete. All Work shall be performed in accordance with ACI 318 and ACI 301.

Concrete placement practices shall comply with ACI 304. Concrete shall not be placed without consent of COUNTY when the temperature is 50°F or less, or when there is reason to expect a drop-in temperature to below 50°F within 12 hours of the conclusion of the pour. Concrete placed at air temperature below 40°F shall have a minimum temperature of 60°F. When the air temperature is below 40°F or near 40°F and falling, the water and aggregates shall be heated before mixing. Accelerating chemicals shall not be used to prevent freezing.

Curing procedures shall begin immediately after placement in accordance with ACI 308 procedures to provide continuous moist curing above 50°F for at least seven days.

3.08 GRADED AGGREGATE BASE (GAB) MATERIAL

Upon approval by the COUNTY of the established top of subgrade elevations per the contract drawings, the CONTRACTOR shall place approved GAB material in areas with proposed asphalt paved surfaces.

The GAB material shall meet specifications of the Maryland Department of Transportation Standard Specifications for Construction and Materials Section 901.01. The material shall be placed, and uniformly compacted. The compacted base shall have sufficient stability to support construction equipment without pumping or rutting.

3.09 ASPHALT PAVING COURSE MATERIAL

Upon approval by the COUNTY of the established top of GAB elevations per the contract drawings, the CONTRACTOR shall place base paving course and surface paving course per the asphalt paving detail. Asphalt paving shall be in accordance with Section 504 of the Maryland State Highway Administration Standard Specifications for Construction and Materials. The CONTRACTOR shall comply with the weather restrictions established in Section 504.03.02 of the

Maryland State Highway Administration Standard Specifications for Construction and Materials when placing hot mix asphalt materials.

Hot mix asphalt shall meet the requirements of 904 of the Maryland State Highway Administration Standard Specifications for Construction and Materials. There will be no price adjustment for asphalt binder.

3.10 STORM DRAIN CONSTRUCTION

The CONTRACTOR shall supply all labor, materials, and equipment required to construct the storm drainage systems included in the scope of work and as shown on the Contract Drawings. This work shall include excavation to the pipe inverts and profiles as shown on the Contract Drawings, installation of pipe bedding materials, storm drain pipes, haunching and backfill as specified. Storm Drain pipes shall be as specified on the Contract Drawings and shall be in accordance with the material specification of Section 905 of the Maryland State Highway Administration Standard Specifications for Construction and Materials. Pipe trench excavation, compaction, pipe bedding materials and placement, and pipe installation shall be in accordance with the applicable portions of Section 303 of the Maryland State Highway Administration Standard Specifications for Construction and Materials. Storm Drainage structures shall be in accordance with the standard reference details as indicated on the Contract Drawings.

3.11 STORMWATER MANAGEMENT CONSTRUCTION

The CONTRACTOR shall supply all labor, materials, and equipment required to construct the Stormwater Management facilities included in the scope of work (i.e. submerged gravel wetlands ESD M-2) and as shown on the Stormwater Management Plans. This work shall include excavation to the lines and grades show on the Contract Drawings, and installation of geotextile, underdrain gravel and piping and topsoil as specified. The completed Stormwater Management Facilities shall be landscaped according to the planting schedule included on the Contract Drawings.

3.12 PROTECTION OF WORK

The CONTRACTOR shall use all means necessary to protect completed work until Contract Closeout. At the end of each day, the CONTRACTOR shall verify that the entire work area was left in a state that promotes surface drainage off and away from the area to established erosion and sediment control practices and from finished work. In the event of damage, the CONTRACTOR shall immediately make all repairs and replacements necessary to the approval of the COUNTY at no additional cost to the COUNTY.

3.13 SITE RESTORATION

The CONTRACTOR is responsible for the complete restoration/stabilization of any area of the site impacted/disturbed/damaged during the course of performing the work including, onsite stockpiles, haul roads, laydown and staging areas, drainage swales, and grassed areas. Permanent vegetative stabilization shall include 4 inches of loosely compacted topsoil, seed and mulch as specified on the Contract Drawings. Topsoil shall be either topsoil salvaged from the project or meet the requirements of the vegetative stabilization notes on the Contract Drawings and the specifications of the Maryland Department of Transportation Standard Specifications for Construction and Materials.

3.14 SURVEY

The CONTRACTOR shall engage and compensate a Professional Land Surveyor (PLS) licensed in the State of Maryland to perform survey work and prepare as-built drawings required for this project.

Prior to starting any earthwork activity, a survey of the existing conditions within the limit of work shall be performed by the designated PLS. The PLS will perform subsequent as-built surveys as described in these Specifications to be used to prepare as-built drawings, and to provide the means for calculating the quantity of the various construction materials installed for Pay Items associated with the project. The required surveys shall be provided to the OWNER with the CONTRACTOR'S monthly invoicing. All as-built surveys shall bear the seal and signature of the designated PLS.

The COUNTY will furnish survey control points based on the facility's horizontal grid and vertical datum. The CONTRACTOR's Surveyor shall verify the coordinates and elevation of the control points and assumes all responsibility for their use. All control points given shall be carefully preserved and, if destroyed or removed without authority, they shall be reset, if necessary, by a Professional Land Surveyor at the expense of the CONTRACTOR. Using the provided control points, the CONTRACTOR shall stake out all work for the project and shall set necessary grade stakes for construction.

All subgrade surface elevations shall not deviate from the design grades by more than $\pm$ ½ inch and all minimum slopes shall be achieved. The minimum acceptable tolerance for horizontal control shall not deviate by more than $\pm$0.1 feet.

3.15 AS-BUILT SURVEY AND STORMWATER AS-BUILT PLANS

The CONTRACTOR shall provide an as-built survey drawing of the completed project. The scale of the as-built drawing shall be the same as the contract drawings. All as-built surveys shall bear the seal and signature of the designated PLS.

During construction, the Contractor shall maintain a set of redline drawings documenting any changes or deviations from the Construction Plans. Upon completion of the construction project, a stormwater management as-built survey shall be submitted to the Engineer, in AutoCAD format, for approval. The redline drawing and as-built survey shall include all required information in accordance with the most current as-built plan review checklist. The redline drawing and survey will be used by the Engineer to develop a Stormwater Management Asbuilt Plan for submittal to the Cecil County Department of Land Use and Development Services, Division of Development Plans Review for approval.

3.16 PROJECT RECORD DOCUMENTS

The CONTRACTOR shall maintain on-site, one set of the following project record documents and record actual revisions to the Work as they are performed:

1. Contract Drawings;
2. Technical Specifications;
3. Addenda;
4. Change Orders and other Modifications to the contract; and,
5. Reviewed/approved shop drawings, product data, and samples.

Project record documents shall be stored separately from construction documents and kept current throughout the construction period. The CONTRACTOR shall not permanently cover any Work until required information has been recorded.

At contract closeout, the CONTRACTOR shall submit record documents with a transmittal letter containing date, project title, CONTRACTOR's name and address, list of documents, and signature of CONTRACTOR.

3.17 CONTRACT CLOSEOUT

When the Contractor believes Substantial Completion has been reached (i.e. full completion of athletic fields, parking areas, and stormwater management facilities), the CONTRACTOR shall submit written notice that Contract Documents have been reviewed, Work has been inspected, and that Work is complete, in accordance with Contract Documents, and is ready for the COUNTY'S inspection.

Upon receipt of the CONTRACTOR's notice of Substantial Completion, the COUNTY shall inspect the Work. The COUNTY shall notify the CONTRACTOR that either (i) Substantial Completion has been reached; or (ii) the status of the Work does not qualify as Substantially Complete based on deficiencies noted.

If the COUNTY agrees that Substantial Completion has been reached, a "punch list" identifying outstanding minor work items shall be provided to the CONTRACTOR. The CONTRACTOR shall address the items on the punch list to the satisfaction of the COUNTY.

Notice of Final Completion shall be given to the CONTRACTOR only after all punch list items are complete, the CONTRACTOR has removed all equipment, construction facilities, materials, tools, and trash, and submitted project record documents.

The County's opinion regarding the status of Substantial Completion and Final Completion shall be considered final without dispute.

+END OF SECTION 01000+

CECIL COUNTY DEPARTMENT OF PARKS & RECREATION

CALVERT REGIONAL PARK

PHASE 3

BID NO. 20-18-56016

TECHNICAL SPECIFICATIONS

SECTION 01025: MEASUREMENT AND PAYMENT

PART I – GENERAL

1.01 SECTION INCLUDES

A. Procedures for measurement of quantities and payment of Work.

B. Conditions for nonconformance assessment and nonpayment for rejected products or work.

1.02 AUTHORITY

A. Units and methods delineated in this Section are intended to complement the criteria of the Technical Specifications and the Proposal Form.

B. In the event of conflict, the unit price (not estimated quantity) bid on the Proposal Form shall govern.

C. Measurements and quantities submitted by the CONTRACTOR will be verified by the OWNER.

1.03 UNIT QUANTITIES SPECIFIED

A. Quantity and measurement estimates stated in the Proposal Form of the Contract Documents are for contract purposes only. Actual quantities and measurements of the work authorized, installed and verified by OWNER shall determine payment.

B. If the actual Work requires greater or lesser quantities than those quantities indicated in the Proposal Form, the required quantities shall be provided by the CONTRACTOR at the unit prices contracted.

1.04 MEASUREMENT OF QUANTITIES

A. Standard Pay Items

Pay Item 3A-1/3B-1 – Mobilization/Demobilization

The unit of payment for Mobilizaton/Demobilization, shall be **Lump Sum**, including, labor, equipment and materials required to perform the work, including but not limited to the cost of the Bid Bond, project meetings, construction facilities and temporary controls, special controls, safety equipment and measures, etc. Payment of 50% of the lump sum amount shall be paid in the first monthly pay request upon completion of mobilization of all necessary equipment, tools, personnel, and project facilities needed to perform the work and contingent on the submittal of a project schedule and all required material submittals. The remaining 50% will be prorated in equal amounts over the remaining monthly pay requests.

Pay Item 3A-2/3B-2 – Erosion & Sediment Control

The unit of payment for Erosion & Sediment (E&S) Control shall be **by Lump Sum**. Work shall be inclusive of all labor, equipment and materials required to install all erosion and sediment control measures related to the work as specified in the Contract Drawings including: stabilized construction entrances, filter log, super silt fence, earth dikes, sediment traps, gabion inlet protection, riprap inlet/outlet protection, soil stabilization matting, and dewatering controls. Work shall include the routine inspection and maintenance of all required E&S Controls. Payment will be made monthly based on the percentage of work complete.

Pay Item 3A-3/3B-3 – Clearing/Grubbing and Site Preparation

The unit of payment for Clearing and Site Preparation shall be **by Square Yard of cleared area**. Work shall be inclusive of all labor, equipment and materials required to clear and grub designated project areas, as described in Summary of Work and depicted on the Contract Drawings, including hauling cleared and grubbed materials offsite for disposal. The removal of existing designated structures (e.g., fencing, field tile drain, etc.) if encountered, shall be incidental to the scope of work.

Pay Items 3A-4/3B-4 – Strip/Stockpile Topsoil Onsite for Re-use

The unit of payment for the removal and stockpiling of topsoil shall be **Cubic Yard excavated**. Measurement shall be based on a topographic survey performed by the Contractor upon the completion of clearing and grubbing compared to a topographic survey performed upon completion of topsoil removal. Work shall be inclusive of all labor, equipment and materials required to perform the work.

Pay Items 3A-5/3B-5 – Earthwork

The unit of payment for Earthwork shall be **Lump Sum**. No measurement shall be made for this work. Work shall be inclusive of all labor, equipment and materials required to perform cut and fill to achieve subgrade of proposed athletic fields, parking areas, and drainage swales per the Contract Drawings. Earthwork shall include the placement of 4" of topsoil on prepared subgrade in preparation for sod installation. All grading to achieve required grades shall be considered incidental to the bid item. Earthwork does not include earthwork necessary to install stormwater management facilities. The earthwork for stormwater management facilities will be considered incidental to the various stormwater facility pay items.

Pay Item 3A-6/3B-6 – Supply and Install 8" GAB for ALL Roadways and Parking Lots

The unit of payment for the Supply and Installation of Graded Aggregate Base shall be **by Square Yards in place** for the specified thickness of 8 inches. This work will include ALL Roadways and Parking Lots proposed for the Phase 3A/3B project areas. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3A-7– Supply and Install 1.5" Surface Course Asphalt Paving for Access Road and Parking Adjacent to Cecil Arena

The unit of payment for the Supply and Installation of Surface Couse Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 1.5 inches. This work will include the entire length of access road, extending from MD Route 272 to the connection at the existing road at Rising Sun High School, and 7 parking spaces adjacent to Cecil Arena as shown on the Contract Drawings. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3A-8 – Supply and Install 3" Base Course Asphalt Paving for Access Road and Parking Adjacent to Cecil Arena

The unit of payment for the Supply and Installation of Base Course Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 3 inches. This work will include the entire length of access road, extending from MD Route 272 to the connection at the existing road at Rising Sun High School, and 7 parking spaces adjacent to Cecil Arena as shown on the Contract Drawings. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3B-9 – Supply and Install 1.5" Surface Course Asphalt Paving for Access Road

The unit of payment for the Supply and Installation of Surface Couse Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 1.5 inches. This work will include the entire length of access road, extending from MD Route 272 the existing parking lot north of the Phase 3B project area as shown on the Contract Drawings. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3B-10 – Supply and Install 3" Base Course Asphalt Paving for Access Road

The unit of payment for the Supply and Installation of Base Course Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 3 inches. This work will include the entire length of access road, extending from MD Route 272 the existing parking lot north of the Phase 3B project area as shown on the Contract Drawings. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3A-11/3B-11 – Supply and Install 6" GAB for Trail/Walk

The unit of payment for the Supply and Installation of Graded Aggregate Base shall be **by Square Yards in place** for the specified thickness of 6 inches. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3A-12/3B-12 – Supply and Install 2.5" Asphalt Paving for Trail/Walk

The unit of payment for the Supply and Installation of Asphalt Pavement shall be **by Square Yards in place** for the specified thickness of 2.5 inches. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3A-13/3B-13 – Supply and Install 4" GAB for Concrete Walk

The unit of payment for the Supply and Installation of Graded Aggregate Base shall be **by Square Yards in place** for the specified thickness of 4 inches. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3A-14/3B-14– Supply and Install 5" Concrete Walk

The unit of payment for the Supply and Installation of Concrete Walk shall be **by Square Yards in place** for the specified thickness of 5 inches. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings. Concrete walks include pedestrian walk ramps as depicted on the Contract Drawings.

Pay Item 3A-15/3B-15 – Supply and Install Concrete Curb & Gutter ALL Roadways and Parking Lots

The unit of payment for the Supply and Installation of Concrete Curb & Gutter shall be **Linear Foot installed**. This work will include ALL Roadways and Parking Lots proposed for the Phase 3A/3B project areas. Work shall be inclusive of all labor, equipment and materials required to install the concrete curbing as depicted and shown on the Contract Drawings inclusive of 4-inches of crushed stone subbase (i.e., AASHTO #57 stone).

Pay Item 3A-16 – Supply and Install Concrete Stairs with Handrail

The unit for payment for the supply and installation of concrete stairs with handrails shall be **by Each installed,** including, labor, equipment and materials required to perform the work as shown on the Contract Drawings.

Pay Item 3B-17 – Construct SWM Facility #1 (ESD M-2)

The unit of payment for the construction of Stormwater Management (SWM) Facility #1 shall be **Lump Sum**. Work shall include construction of all components shown in the profile and details depicted in the Contract Drawings for SWM Facility #1. The Submerged Gravel Wetland includes installation of geotextile, underdrain piping and cleanouts, gravel media, and top soil within the filter area shown. Any excavation required to install these components shall be considered incidental to the work. Work shall be inclusive of all labor, equipment and materials required to install SWM Facility #1 as described in Summary of Work and depicted on the Contract Drawings. Permanent seed & mulch and landscape plantings will be paid under a separate pay item.

Pay Item 3A-18 – Construct SWM Facility #2 (ESD M-2)

The unit of payment for the construction of Stormwater Management (SWM) Facility #2 shall be **Lump Sum**. Work shall include construction of all components shown in the profile and details depicted in the Contract Drawings for SWM Facility #2. The Submerged Gravel Wetland includes installation of geotextile, underdrain piping and cleanouts, gravel media, and top soil within the filter area shown. Any excavation required to install these components shall be considered incidental to the work. Work shall be inclusive of all labor, equipment and materials required to install SWM Facility #2 as described in Summary of Work and depicted on the Contract Drawings. Permanent seed & mulch and landscape plantings will be paid under a separate pay item.

Pay Item 3A-19 – Construct SWM Facility #3 (ESD M-2)

The unit of payment for the construction of Stormwater Management (SWM) Facility #3 shall be **Lump Sum**. Work shall include construction of all components shown in the profile and details depicted in the Contract Drawings for SWM Facility #3. The Submerged Gravel Wetland includes installation of geotextile, underdrain piping and cleanouts, gravel media, and top soil within the filter area shown. Any excavation required to install these components shall be considered incidental to the work. Work shall be inclusive of all labor, equipment and materials required to install SWM Facility #3 as described in Summary of Work and depicted on the Contract Drawings. Topsoil, permanent seed & mulch will be paid under a separate pay item. Permanent seed & mulch and landscape plantings will be paid under a separate pay item.

Pay Item 3A-20 – Construct SWM Facility #4 (ESD M-2)

The unit of payment for the construction of Stormwater Management (SWM) Facility #4 shall be **Lump Sum**. Work shall include construction of all components shown in the profile and details depicted in the Contract Drawings for SWM Facility #4. The Submerged Gravel Wetland includes installation of geotextile, underdrain piping and cleanouts, gravel media, and top soil within the filter area shown. Any excavation required to install these components shall be considered incidental to the work. Work shall be inclusive of all labor, equipment and materials required to install SWM Facility #4 as described in Summary of Work and depicted on the Contract Drawings. Permanent seed & mulch and landscape plantings will be paid under a separate pay item.

Pay Item 3A-21 – Construct SWM Facility #5 (ESD M-2)

The unit of payment for the construction of Stormwater Management (SWM) Facility #5 shall be **Lump Sum**. Work shall include construction of all components shown in the profile and details depicted in the Contract Drawings for SWM Facility #5. The Submerged Gravel Wetland includes installation of geotextile, underdrain piping and cleanouts, gravel media, and top soil within the filter area shown. Any excavation required to install these components shall be considered incidental to the work. Work shall be inclusive of all labor, equipment and materials required to install SWM Facility #5 as described in Summary of Work and depicted on the Contract Drawings. Permanent seed & mulch and landscape plantings will be paid under a separate pay item.

Pay Item 3A-22/3B-22 – Supply & Install 15" HPDE Storm Drain

The unit of payment for the Supply & Installation of 15" HPDE Storm Drain shall be **Linear Foot installed** and shall include installation of new CMP with end sections. Work shall be inclusive of all labor, equipment and materials required to perform the work as described in Summary of Work and depicted on the Contract Drawings. Excavation and backfill for storm drain installation shall be considered incidental to the work.

Pay Item 3A-23/3B-23 – Supply & Install 18" HPDE Storm Drain

The unit of payment for the Supply & Installation of 18" HPDE Storm Drain shall be **Linear Foot installed** and shall include installation of new CMP with end sections. Work shall be inclusive of all labor, equipment and materials required to perform the work as described in Summary of Work and depicted on the Contract Drawings. Excavation and backfill for storm drain installation shall be considered incidental to the work.

Pay Item 3A-24 – Supply & Install 24" HPDE Storm Drain

The unit of payment for the Supply & Installation of 24" HPDE Storm Drain shall be **Linear Foot installed** and shall include installation of new CMP with end sections. Work shall be inclusive of all labor, equipment and materials required to perform the work as described in Summary of Work and depicted on the Contract Drawings. Excavation and backfill for storm drain installation shall be considered incidental to the work.

Pay Item 3A-25/3B-25 – Supply & Install 30" HPDE Storm Drain

The unit of payment for the Supply & Installation of 30" HPDE Storm Drain shall be **Linear Foot installed** and shall include installation of new CMP with end sections. Work shall be inclusive of all labor, equipment and materials required to perform the work as described in Summary of Work and depicted on the Contract Drawings. Excavation and backfill for storm drain installation shall be considered incidental to the work.

Pay Item 3B-26 – Supply & Install 36" HPDE Storm Drain

The unit of payment for the Supply & Installation of 36" HPDE Storm Drain shall be **Linear Foot installed** and shall include installation of new CMP with end sections. Work shall be inclusive of all labor, equipment and materials required to perform the work as described in Summary of Work and depicted on the Contract Drawings. Excavation and backfill for storm drain installation shall be considered incidental to the work.

Pay Item 3A-27/3B-27 – Supply and Install Storm Drain End Sections

The unit for payment for the supply and installation of Storm Drain End Sections shall be **by Each installed,** including, labor, equipment and materials required to perform the work as shown on the Contract Drawings. Stone bedding shall be incidental to the work.

Pay Item 3A-28/3B-28 – Supply and Install Storm Drain Inlets

The unit for payment for the supply and installation of Storm Drain Inlets shall be **by Each installed,** including, labor, equipment and materials required to perform the work as shown on the Contract Drawings. Stone bedding shall be considered incidental to the work.

Pay Item 3A-29/3B-29 – Supply and Install Cleanouts

The unit for payment for the supply and installation of Cleanouts shall be **by Each installed,** including, labor, equipment and materials required to perform the work as shown on the Contract Drawings. Stone bedding shall be considered incidental to the work.

Pay Item 3A-30/3B-30 – Supply and Install Headwalls

The unit for payment for the supply and installation of Headwalls shall be **by Each installed,** including, labor, equipment and materials required to perform the work as shown on the Contract Drawings. Stone bedding shall be considered incidental to the work.

Pay Item 3A-31/3B-31 – Supply and Install Storm Drain Manholes

The unit for payment for the supply and installation of Storm Drain Manholes shall be **by Each installed,** including, labor, equipment and materials required to perform the work as shown on the Contract Drawings.

Pay Item 3A-32/3B-32 – Turf Establishment (non-sod areas)

The unit of payment for Turf Establishment, including placement of 4 inches of topsoil from onsite and application of soil amendments, shall be by **Square Yards installed**. The work shall be inclusive of all labor, equipment and materials required to perform the work as described in Summary of Work and shown on the Contract Drawings. This work covers all non-athletic field turf and lawn areas depicted on the Contract Drawings to receive grass, including placement of any mulch as part of permanent seeding. The retainage for this bid item shall be held until 95% coverage of the stabilized areas is achieved.

Pay Item 3A-33/3B-33 – Soil Stabilization Matting

The unit of payment for Soil Stabilization Matting shall be by **Square Yards installed**. The work shall be inclusive of all labor, equipment and materials required to perform the work as described in Summary of Work and shown on the Contract Drawings.

Pay Item 3A-34/3B-34 – Stormwater Management Facility Shrub Plantings

The unit for payment for the supply and planting of shrubs within stormwater management facilities shall be **by Each installed,** including, labor, equipment and materials required to perform the work as shown on the Contract Drawings. This work includes all shrub plantings for all four separate stormwater management facilities, trees and strormwater management facilities plug plantings will be paid under separate pay items.

Pay Item 3A-35/3B-35 – Stormwater Management Facility Plug Plantings

The unit for payment for the supply and planting of plugs within stormwater management facilities shall be **by Each installed,** including, labor, equipment and materials required to perform the work as shown on the Contract Drawings. This work includes all plug plantings for all four separate stormwater management facilities, trees and strormwater management facilities shrub plantings will be paid under separate pay items.

Pay Item 3A-36/3B-36 – Supply and Install Removable Locking Steel Bollard

The unit of payment for the Supply and Installation of Removable Locking Steel Bollards shall be **by Each installed**. Work shall be inclusive of all labor, equipment and materials required to install the bollards as depicted on the Contract Drawings.

Pay Item 3A-37/3B-37 – Supply and Install Split Rail Fencing

The unit of payment for the Supply and Installation of Split Rail Fencing shall be **Linear Foot installed**. Work shall be inclusive of all labor, equipment and materials required to install split rail fencing as depicted on the Contract Drawings.

Pay Item 3A-38 – Supply and Install Vinyl Privacy Fencing

The unit of payment for the Supply and Installation of Vinyl Privacy Fencing shall be **Linear Foot installed**. Work shall be inclusive of all labor, equipment and materials required to install privacy fencing as depicted on the Contract Drawings.

Pay Item 3A-39/3B-39 – Supply and Install Wooden Guide Rail

The unit of payment for the Supply and Installation of Wooden Guide Rail shall be **Linear Foot installed**. Work shall be inclusive of all labor, equipment and materials required to install wooden guide rail as depicted on the Contract Drawings.

Pay Item 3A-40/3B-40 – Construction Stakeout

The unit of payment for Construction Stakeout shall be **Lump Sum** including all labor, equipment, tools and materials required to provide construction stakeout, establishment and protection of necessary survey control, and re-establishment of stakeout or survey control, as needed, for the duration of the project. Payment will be made in even monthly increments spread over the duration of the entire project.

Pay Item 3A-41/3B-41 – As-built Survey

The unit of payment for maintaining redline drawings and conducting as-built survey shall be **Lump Sum**. 75% of the bid amount will be paid in even monthly increments spread over the duration of the entire project. The remaining 25% will be paid upon receipt of the redline drawings and asbuilt survey. To complete the project, contractor will be required to complete all required as-built documentation. Information must completely document the asbuilt condition of the entire project. Drawings must be submitted and accepted by the County and the Engineer before retainage will be released to the Contractor for this pay item.

B. Add Alternate Pay Items

Pay items which are identified in the Proposal Form as "Add Alternate Bid Items" are additional items of work that may be awarded as part of the contract if the base bid is below the approved Capital Improvement Project budget. The County shall have sole discretion in determining whether and to what extent such items will be incorporated into the project.

Pay Item 3A-A-1 – Supply and Install 1.5" Surface Course Asphalt Paving for Parking Lot in Front of Cecil Arena

The unit of payment for the Supply and Installation of Surface Couse Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 1.5 inches. This work will include the two parking lots, consisting a total of 159 parking spaces, to the west of Cecil Arena. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3A-A-2 – Supply and Install 3" Base Course Asphalt Paving for Parking Lot in Front of Cecil Arena

The unit of payment for the Supply and Installation of Base Course Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 3 inches. This work will include the two parking lots, consisting a total of 159 parking spaces, to the west of Cecil Arena. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3A-A-3 – Supply and Install 1.5" Surface Course Asphalt Paving for Athletic Field Parking Lots

The unit of payment for the Supply and Installation of Surface Couse Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 1.5 inches. This work will include the two parking lots, consisting a total of 315 parking spaces, to the east of Athletic Field #1 and west of Athletic Field #2. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3A-A-4 – Supply and Install 3" Base Course Asphalt Paving for Athletic Field Parking Lots

The unit of payment for the Supply and Installation of Base Course Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 3 inches. This work will include the two parking lots, consisting a total of 315 parking spaces, to the east of Athletic Field #1 and west of Athletic Field #2. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3A-A-5 – Supply and Install 1.5" Surface Course Asphalt Paving for Rising Sun High School Parking Lots

The unit of payment for the Supply and Installation of Surface Couse Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 1.5 inches. This work will include the two parking lots, consisting a total of 234 parking spaces, to

the south of Athletic Field #3. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3A-A-6 – Supply and Install 3" Base Course Asphalt Paving for Rising Sun High School Parking Lots

The unit of payment for the Supply and Installation of Base Course Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 3 inches. This work will include the two parking lots, consisting a total of 234 parking spaces, to the south of Athletic Field #3. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3B-A-7 – Supply and Install 1.5" Surface Course Asphalt Paving for Western Parking Lot

The unit of payment for the Supply and Installation of Surface Couse Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 1.5 inches. This work will include the two parking lots, consisting a total of 234 parking spaces, on the western portion of the Phase 3B project area. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3B-A-8 – Supply and Install 3" Base Course Asphalt Paving for Western Parking Lot

The unit of payment for the Supply and Installation of Base Course Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 3 inches. This work will include the two parking lots, consisting a total of 234 parking spaces, on the western portion of the Phase 3B project area. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3B-A-9 – Supply and Install 1.5" Surface Course Asphalt Paving for Eastern Parking Lot

The unit of payment for the Supply and Installation of Surface Couse Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 1.5 inches. This work will include the parking lot, consisting a total of 163 parking spaces, on the eastern portion of the Phase 3B project area. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3B-A-10 – Supply and Install 3" Base Course Asphalt Paving for Eastern Parking Lot

The unit of payment for the Supply and Installation of Base Course Asphalt Paving shall be **by Square Yards in place** for the specified thickness of 3 inches. This work will include the parking lot, consisting a total of 163 parking spaces, on the eastern portion of the Phase 3B project area. Work shall be inclusive of all labor, equipment and materials required to transport, condition and place the material as described in Technical Specifications and depicted on the Contract Drawings.

Pay Item 3A-A-11/3B-A-11 – Install Pavement Markings

The unit of payment for the installation of all Pavement Markings shall be **Lump Sum**. Work shall be inclusive of all labor, equipment and materials required to perform the work as described in the Maryland Department of Transportation Standard Specifications for Construction and Materials and as depicted on the Contract Drawings.

Pay Item 3A-A-12/3B-A-12 – Supply and Install Concrete Wheel Stops

The unit of payment for the Supply and Installation of Concrete Wheel Stops shall be **by Each installed**. Work shall be inclusive of all labor, equipment and materials required to install the concrete wheel stops as depicted on the Contract Drawings. Wheel stops are not required where concrete curbing is proposed.

Pay Item 3A-A-13/3B-A-13 – Supply and Install ADA Parking Signage

The unit of payment for the Supply and Installation of ADA Parking Signage shall be **by Each installed**. Work shall be inclusive of all labor, equipment and materials required to install the parking signage as depicted on the Contract Drawings.

Pay Item 3A-A-14/3B-A-14 – Supply and Install On-Site Traffic Signage

The unit of payment for the Supply and Installation of On-Site Traffic Signage shall be **by Each installed**. Work shall be inclusive of all labor, equipment and materials required to install the traffic signage as depicted on the Contract Drawings.

Pay Item 3A-A-15/3B-A-15 – Supply and Install Ball Stop Posts and Netting System

The unit of payment for the Supply and Installation of Ball Stop Netting shall be **Linear Foot installed**. Work shall be inclusive of all labor, equipment and materials required to install ball stop posts and netting system as depicted on the Contract Drawings.

Pay Item 3A-A-16/3B-A-16 – Supply and Install 24' Double Swing Arm Gate

The unit for payment for the supply and installation of 24' Double Swing Gate shall be **by Each installed,** including, labor, equipment and materials required to perform the work as shown on the Contract Drawings.

Pay Item 3A-A-17/3B-A-17 – Supply and Install 12' Single Swing Arm Gate

The unit for payment for the supply and installation of 12' Single Swing Gate shall be **by Each installed,** including, labor, equipment and materials required to perform the work as shown on the Contract Drawings.

Pay Item 3A-A-18/3B-A-18 – Bermuda Sod on Athletic Fields (Install Only)

The unit of payment for installation of Bermuda sod on Athletic Fields shall be by **Square Yards installed**. The work shall be inclusive of all labor and equipment required to perform the work as described in Summary of Work and shown on the Contract Drawings. Sod will be sourced by the County.

Pay Item 3A-A-19/3B-A-19 – Miscellaneous Fescue Sod (Install Only)

The unit of payment for installation of Miscellaneous Fescue Sod shall be by **Square Yards installed**. The work shall be inclusive of all labor and equipment required to perform the work as described in Summary of Work and shown on the Contract Drawings. Sod will be sourced by the County. The locations of the miscellaneous sod will be as directed by the County in the field; with locations anticipated to include drainage swales and steep slopes.

Pay Item 3A-A-20/3B-A-20 – Supply & Install Bermuda Sod on Athletic Fields

The unit of payment for supply and installation of Bermuda sod on Athletic Fields shall be by **Square Yards installed**. The work shall be inclusive of all labor, equipment, and materials required to perform the work as described in Summary of Work and shown on the Contract Drawings. All sod must be State of Maryland Certified and supplied by Central Sod Farms, Inc. of Centerville, Maryland.

Pay Item 3A-A-21/3B-A-21 – Supply & Install Miscellaneous Fescue Sod

The unit of payment for supply and installation of Miscellaneous Fescue Sod, shall be by **Square Yards installed**. The work shall be inclusive of all labor, equipment, and materials required to perform the work as described in Summary of Work and shown on the Contract Drawings. The locations of the miscellaneous sod will be as directed by the County in the field; with locations anticipated to include drainage swales and steep slopes. All sod must be State of Maryland Certified and supplied by Central Sod Farms, Inc. of Centerville, Maryland.

Pay Item 3A-A-22/3B-A-22 – Supply Water for Sod Establishment

The unit of payment for the supply of Water for Sod Establishment, shall be **per 1000 gallons delivered** to the project site. The work shall be inclusive of all labor and equipment required to deliver water to the project site including tanker rental.

Pay Item 3A-A-23/3B-A-23 – Supply and Install Route 272 Signs and Pavement Markings

The unit of payment for the Supply and Installation of Signs and Pavement Markings shall be **Lump Sum**. Work shall be inclusive of all labor, equipment and materials required to install signs and pavement markings as depicted on Contract Drawings MSP-21 (Phase 3A) and MSP-22 (Phase 3B) excluding all signage and pavement markings for Brick Meeting House Road.

Pay Item 3A-A-24/3B-A-24 – Supply and Install Guide Signs

The unit of payment for the Supply and Installation of Guide Signs shall be **by Each installed**. Work shall be inclusive of all labor, equipment and materials required to install all signage as depicted on Contract Drawing MSP-19.

Pay Item 3A-A-27/3B-A-27 – Tree Plantings

The unit for payment for the supply and planting of landscape Tree plantings shall be **by Each installed,** including, labor, equipment and materials required to perform the work as shown on the Contract Drawings. This work includes all the plantings included on the landscape plans in the Contract Drawings, landscape planting associated with the stormwater management facilities will be paid under a separate pay item.

Pay Item 3A-A-28 – Strip/Load/Haul/Stockpile Topsoil Onsite from RSHS Football Field to Designated Onsite Location

The unit of payment for the removal, loading, hauling and stockpiling of topsoil shall be **Cubic Yard excavated**. Measurement shall be based on a topographic survey of initial conditions performed by the Contractor compared to a topographic survey performed upon completion of topsoil removal. Work shall be inclusive of all labor, equipment and materials required to perform the work.

C. Contingent Pay Items

Pay items which are identified in the "Proposal Form" as "Contingent Bid Items" are established for the sole purpose of obtaining unit costs on pay items that may be incorporated into the project. The OWNER shall have sole discretion in determining whether and to what extent such items will be incorporated into the project. The OWNER may order incorporation of such items at any location within the Contract and at anytime during the work. Neither the CONTRACTOR, SUBCONTRACTORS or the OWNER shall make claims for additional compensation because of any increase, de-crease or elimination of such items.

Pay Item 3A-C-1/3B-C-1– Class 1-A Excavation – Replace Unsuitable Material with CR-6 Backfill

The unit of payment for excavation of unsuitable soil/material below the design subgrade elevations, as directed by the County, shall **be Cubic Yards of soil/material removed.** Work shall be inclusive of all labor, equipment and materials required to remove unsuitable soil/material and backfill with CR-6 to the design subgrade elevations. The Contractor will not be compensated for the removable of unsuitable soil/material that has not been approved by the County for removal.

Pay Item 3A-C-2/3B-C-2 – Supply and Install Athletic Field Underdrain

The unit of payment for the Supply and Installation of Athletic Field Underdrains shall be **Linear Foot installed**. Athletic field underdrain(s) shall be installed by the Contractor as directed by the County, if field conditions warrant during subgrade preparation. Work shall include excavation, and installation of all underdrain components shown in the details depicted in the Contract Drawings including geotextile, 6-inch perforated and solid underdrain piping, and two-foot wide by 16-inch depth No. 2 stone trench. Work shall be inclusive of all labor, equipment, and materials required to install the additional underdrain.

Pay Item 3A-C-3/3B-C-3 – Supply and Install Soil Cement Subbase – 12" Depth

The unit of payment for the Supply and Installation of Soil Cement Subbase, to a depth of 12", shall be **Square Yards installed**. Soil Cement Subbase shall be installed by the Contractor using 6% portland cement as directed by the County. Work shall be inclusive of all labor, equipment, and materials required to prepare the 12" soil cement subbase.

1.05 PAYMENT

A. Payment includes full compensation for all required supervision, labor, products, tools, equipment, transportation, services, and incidentals; application or installation of the Work; and overhead and profit. The price bid shall include the total cost for required Work. Claims for payment of unit price Work not specifically covered in this Section will not be accepted without a duly executed Change Order. Payments to the Contractor shall be made in accordance with the General Provisions Section of the Contract Documents. The Contractor is not exempt from paying sales tax.

B. Unless otherwise specified, pay items shall be paid based on the percentage of work complete at the time the Contractor submits the monthly pay request.

1.06 NONCONFORMANCE ASSESSMENT

A. The authority of the County or their representative to assess nonconforming Work and identify payment adjustment is final.

B. The Contractor shall remove and replace any nonconforming work as identified by the County or their representative at no additional cost to the County.

1.07 NONPAYMENT FOR REJECTED PRODUCTS

A. Payment will not be made for any of the following:
   1. Products determined as nonconforming before or after placement.
   2. Products placed beyond the lines and grades of the required Work.
   3. Products remaining on hand after completion of the Work,
   4. Loading, hauling, and disposing of rejected products or leftover materials.

+ END OF SECTION 01025+


CECIL COUNTY
1674

1/7/2020

Cecil County Department of Public Works
200 Chesapeake Blvd.
Suite 2400A
Elkton, Maryland 21921

RE: Registration of Application Number: MDRCH04OS

Dear Mr. Craig Marker:

This letter confirms your authorization for coverage under the 2014 General Permit for Stormwater Associated with Construction Activity (MDRC) for discharges into:
Northeast River (02130608)
In signing the eNOI, providing Certification of an approved Erosion and Sediment Control (E&SC) plan and paying the permit fee, you have certified your agreement to comply with the terms of this permit for:

Calvert Region Park
Issued to
Cecil County Department of Public Works
for
31.63 acres
at property located at
211 Brick Meetinghouse Rd North East, Maryland 21901

The permit coverage is identified by the Registration Number MDRCH04OS. This coverage will continue under the terms of the General Permit until the permit is renewed by MDE (Part VI.B).

You should print the full permit text by going to MDE's website or from this link "mdewwp.page.link/CGP". You must become thoroughly familiar with the content of the permit and post a copy onsite. A summary of the permit requirements and provision are provided below:

In addition to stormwater associated with construction activity, Per Part III.A.4 of the permit, non-stormwater discharges from: dewatering from construction excavations, which must be managed by controls in accordance with the 2011 Standards and Specifications for Soil Erosion and Sediment Control (ES&C); fire fighting activities; air conditioning condensate; uncontaminated spring water; and foundation or footing drains where flows are not causing an erosive condition or contaminated with process materials such as solvents are permissible. Any discharges not authorized by the General Permit may require additional permit coverage (Part III.A.3).

The permit requirements include:

- (Part III.C) Notification requirements in the event of a hazardous substances or oil spill on-site.
- (Part III.D) Training requirements of all site personnel to understand aspects of permit and plan compliance relevant to their specific duties.
- (Part IV.A) Effluent Limitations, including selecting, installing, implementing and maintaining control measures (i.e., BMPs, controls, practices, etc.) at the construction site that minimize pollutants in the discharge, as well as requirements to modify controls or ceasing those discharges as required.
- (Part IV.B) Prevention of the discharge of sediment to surface waters, or conveyance systems leading to surface waters, including required corrective actions and on-site documentation.
- (Part IV.C.1) Mandatory inspection and frequency requirements.
  (Part IV.C.2) Requirements for posting information regarding this registration.
- (Part IV.C.3) Onsite record maintenance, including that the approved E&SC plan, the
- approved stormwater management plan, a copy of the general permit, the eNOI and a copy of this registration letter.
- (Part IV.C.3.b) Written report requirements including use of the form as provided by MDE (available on MDE's website "mdewwp.page.link/CGP" as a fillable Microsoft Word from and as an Adobe Acrobat file.
- (Part IV.D) Upon request, reporting requirements that may apply to you.

Remember to contact the compliance program to schedule a preconstruction meeting 2 weeks prior to starting construction. If the current E&SC plan approval covers only part of the entire site, be advised that this registration does not authorize discharges from the other portions for the site until the appropriate E&SC approval authority approves the E&SC plan for those portions. The responsible party is required to submit any Modifications to this coverage, Transfers of Authorization, or Notices of Termination via the ePermits portal. If your contact information changes, update it through the ePermits portal.

If you have any questions, please call the administrative team for the General Permit at (410) 537-3019.

Sincerely,

Paul Hlavinka

Industrial and General Permits Division

Wastewater Permits Program

MARYLAND DEPARTMENT OF THE ENVIRONMENT
GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY
General NPDES Permit Number MDRC
State Discharge Permit Number 14GP

EFFECTIVE DATE: January 1, 2015 EXPIRATION DATE: December 31, 2019

TABLE OF CONTENTS

PART I. COVERAGE UNDER THIS PERMIT

A. Permit Applicability to Areas in Maryland

This permit covers all areas of the State of Maryland.

B. Eligibility

1. What this permit covers:

   This permit covers all new and existing stormwater discharges that are composed in whole or in part of discharges associated with construction activity [as defined by 40 Code of Federal Regulations (40 CFR), Section 122.26 (b)(14)(x) and Section 122.26(b)(15)(i); see Part IX.3 for further definition of "construction activity"]. This permit is not an alternative for and does not take the place of any local permits or ordinances required by Maryland law or regulation or by the county or municipality that has jurisdiction where the construction activity occurs, including but not limited to a grading permit, erosion and sediment control plan approval, or stormwater management plan approval.

2. Persons eligible for coverage:

   To be eligible for coverage under this general permit, a person, alone or with other persons who are also permittees, must have control of the permitted activities on the site. Such control of permitted activities includes, but is not limited to, authority to direct those working on the site to take actions to comply with the permit, correct violations (including repair or installation of erosion and sediment controls), and/or halt construction activity until violations of the permit are corrected.

3. Facilities with a permit for a non-stormwater discharge:

   a. Stormwater discharges associated with construction activity at facilities which have a permit for a discharge other than stormwater can be covered by this general permit, an alternative general permit, or, at the discretion of the Director, an existing individual permit may be amended to cover stormwater discharges associated with construction activities.

   b. Earth disturbance for the purposes of preparation of sites for mineral mining or coal mining is not eligible for coverage under this General Permit. Such sites may require coverage under other General Permits or individual permits specifically designated for discharges from mineral mining and coal mining activities. Mining sites where construction of structures or other non-mining related development will occur as part of reclamation, or any non-mining earth disturbance following completion of mining reclamation (unless otherwise ineligible for coverage), must obtain coverage under this General Permit if earth disturbance of one acre or more will occur.

   c. Earth disturbance of one acre or more for the purposes of construction of landfill cells or other structures, roads, and appurtenances to landfill operation must be covered under this General Permit unless the Director has authorized coverage under a different permit or general permit. For areas such as the interior of landfill cells where stabilization does not occur, the permittee may terminate coverage once the landfill cell begins operating as a landfill and accepting wastes.

C. Requiring an Individual Permit or an Alternative General Permit

1. The Director may require any person authorized by this permit to apply for and obtain either an individual permit or coverage under an alternative general permit. Any interested person may petition the Director to take action under this paragraph. The Director may require any person authorized to discharge under this permit to apply for an individual permit or obtain coverage under an alternative general permit only if that person has been notified in writing that such a change is required. This notice shall include:
   a. A brief statement of the reasons for this decision;
   b. A statement setting a deadline for the notified person to file an application for an individual permit or file a NOI in accordance with the terms of the alternative general permit;

c. A permit application if applicable; and
d. For existing permittees, a statement that on the effective date of the individual permit or the alternative general permit as it applies to the individual permittee, coverage under this general permit shall automatically terminate.

2. The Director may grant additional time to submit the application or NOI upon request of the applicant. If the person so notified fails to submit in a timely manner an individual permit application or an NOI for coverage under an alternative general permit as required by the Director under this paragraph, then the individual permittee's coverage under this permit is automatically terminated at the end of the day specified in the Director's notification.
3. Any person authorized by this permit may request to be excluded from the coverage of this permit by applying for an individual permit or filing an NOI for coverage under an alternative general permit. The person seeking an individual permit shall submit an individual application in accordance with the United States Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) regulations at 40 C.F.R. Part 122, with reasons supporting the request to the Director. The person seeking coverage under an alternative general permit shall file an NOI in accordance with the terms of the alternative general permit. A request for an individual permit shall be granted if the Director determines that the reasons cited by the applicant are adequate to support the request. If the applicant seeks coverage under an alternative general permit, the terms of that permit will determine whether coverage under the alternative general permit is obtained.
4. When an individual permit is issued to a person otherwise covered by this permit, the applicability of this permit to the individual permittee is automatically terminated on the effective date of the individual permit. Similarly, when a person subject to this permit obtains coverage under an alternative general permit, the applicability of this permit is terminated on the effective date of the alternative general permit. When an individual permit is denied to an applicant otherwise covered by this permit, or the applicant is denied coverage under the terms of an alternative general permit, the applicability of this general permit to the permittee may be terminated by MDE.

D. <u>Authorization.</u>

1. A person planning construction activity must have submitted an NOI and received from the Administration documentation of general permit coverage to be authorized to discharge stormwater under this general permit.
2. Emergency Authorization: A person who must conduct earth-disturbing activities prior to obtaining general permit coverage in response to a public emergency (e.g., natural disaster, widespread disruption in essential public services), and the related work requires immediate authorization to avoid imminent endangerment to human health, public safety, or the environment, or to reestablish essential public services, must obtain emergency authorization from the Director within 24 hours after initiating earth-disturbing activities. The person must obtain such emergency authorization in writing or via electronic mail. If the Director denies emergency authorization, the person must immediately stabilize earth disturbance and complete the authorization process under Part I.D.1 above before resuming earth disturbance. Where circumstances allow, it is recommended that a person obtain emergency authorization prior to initiating earth-disturbing activities. A person with emergency authorization is authorized to discharge on the condition that a complete and accurate NOI is submitted within 7 calendar days after commencing earth-disturbing activities, and must ultimately complete all requirements to obtain regular coverage under the general permit. The person must provide a copy of the emergency authorization with the NOI.

E. <u>Transfer of Authorization.</u>

1. Transfer of control of permitted activities at the site. A person submitting an NOI or holding general permit coverage who does not intend to control the permitted activities on the site shall, prior to relinquishing control, transfer authorization under this permit to a duly authorized person who will control the permitted activities. The transfer shall become effective upon receipt by the Administration of a completed Transfer of Authorization form, signed by both the transferor and transferee. Persons may also submit a Transfer of

Authorization through the electronic system designated by the Administration. The Transfer of Authorization form shall include a specific statement that the transferree will abide by all conditions of the erosion and sediment control plan and stormwater management plan.

2. Obligations of the permittee. The permittee ("transferor") must familiarize the person who is assuming control of the permitted activities ("transferee") with the program and provide the transferee/new owner with copies of: this general permit; the documentation from the Administration that the site has coverage under the general permit; and the NOI submitted for the site. All conditions and obligations outlined in this general permit shall apply to the new permittee/owner upon transfer. See Part IV.C.5 for recordkeeping requirements applicable to the transferor following transfer.

Part II. NOTICE OF INTENT REQUIREMENTS

A. Deadlines for Notification.

1. For construction activity beginning on or after January 1, 2015:

   Persons who intend to obtain coverage for a stormwater discharge associated with construction activity under this general permit shall submit an NOI in accordance with the requirements of this Part and shall not perform any land disturbing activities prior to receiving from MDE documentation of coverage under the general permit, except in emergency situations as authorized by MDE under Part I.D.2.

2. For construction activity beginning prior to and continuing on or after January 1, 2015, and holding valid coverage under a previous version of this general permit:

   Permittees whose projects are currently covered under a previous version of the general permit must submit a complete NOI (and fee, if applicable) for coverage under this general permit by December 31, 2014. Projects meeting this deadline are not subject to the conditions of Part II.B.2 and 3. Permittees who submit an NOI by the deadline are considered covered by this General Permit while MDE reviews the NOI. After review, MDE will provide documentation granting coverage under this general permit or provide notice of denial of coverage.

   Projects for which the permittee does not submit a complete NOI (and fee, if applicable) by December 31, 2014, do not have permit coverage as of January 1, 2015, and must reapply for coverage as a new project.

3. For construction activity beginning prior to and continuing on or after January 1, 2015, and holding valid coverage under an individual permit, MDE will determine the eligibility of the project for coverage under this permit. If the project is eligible, the permittee shall submit an NOI by the deadline issued by MDE. Projects meeting this deadline are not subject to the conditions of Part II.B.2 and 3. Projects not meeting the deadline do not have permit coverage as of the expiration date of the individual permit, and must reapply for coverage as a new project.

4. Persons who intend to increase the number of acres that will be disturbed at the site beyond that stated in the documentation of coverage under the general permit must contact the Administration to request a modification to the permit coverage. For increases of one acre or more, the process to modify the permit coverage shall be the same as for an initial NOI. The permittee must have general permit coverage for the increased acreage before beginning earth disturbance on it.

B. NOI Approval Process and Public Review Period

1. *Certification of Erosion and Sediment Control Submission to Approval Authority.* Maryland Department of the Environment (MDE) will begin processing a Notice of Intent (NOI) to be covered under this general permit when the applicant provides certification that a final erosion and sediment control plan (ESC plan) was submitted to the appropriate approval authority in accordance with COMAR 26.17.02.09 E(4) and 26.17.01.07. If an NOI is submitted before the

ESC plan is submitted to the approval authority, MDE will not accept it for processing and will send notice to the applicant that the NOI is incomplete and will not be processed until the required information is provided. MDE will regularly post NOI information on the NOI system website to include all NOIs submitted during the previous week.

2. *Public Notification Period*. In order to provide opportunity for public review of plans for sites to be covered by this permit, MDE will not act on NOIs for construction sites during a minimum 14-day period that begins on the date the NOI information is posted on the NOI system website. After 14 days have elapsed and following MDE's receipt of notification from the applicant demonstrating that the ESC plan for the project has been approved by the appropriate approval authority MDE will make every reasonable effort, within 48 hours of said 14-day period, to issue notification that the site is covered under the general permit for stormwater associated with construction activities, with the exception described in paragraph 3 of this section. If an NOI is submitted to MDE after the appropriate approval authority has already approved an ESC plan, MDE will provide for public notification of the submission of the NOI, but will not act on the NOI for 14 days. If no adverse comments are received during the 14 days, then the NOI will be processed like all other NOIs.

3. *Exception to NOI Approval Process*. If MDE receives, prior to issuance of General Permit coverage, a request from any person that the site be required to obtain an individual permit with a detailed, written explanation as to why the ESC plan fails to meet State erosion and sediment control or stormwater management standards, MDE will do the following: (i) notify the general permit applicant that a request that an individual permit be required has been received, (ii) evaluate the information, and (iii) make a decision and send notification of that decision to the NOI applicant and the person requesting that an individual permit be required as described in Section I.C.

4. Persons who obtain coverage under this general permit shall, prior to commencing construction, develop and obtain approval from appropriate approval authority of: (i) erosion and sediment control plans in accordance with the requirements established in Title 4, Subtitle 1 of the Environment Article, Annotated Code of Maryland (Sediment Control); and in Code of Maryland Regulations (COMAR) 26.17.01 (Erosion and Sediment Control); and (ii) stormwater management plans (unless exempted by the following law or regulation or obtaining a proper waiver from the approval authority) in accordance with the requirements established in Title 4, Subtitle 2 of the Environment Article, Annotated Code of Maryland (Stormwater Management); and in COMAR 26.17.02 (Stormwater Management). As described in Section VI.A., permittees must comply with the requirements of the erosion and sediment control plans and stormwater management plans.

C. **Notice of Intent.** The applicant shall submit to the Administration an NOI to be covered under this general permit. The NOI must be accompanied by the appropriate fee required by the Administration and established in State regulations to be considered complete. The applicant shall submit the NOI in either the electronic or paper format designated by the Administration. An applicant may submit an NOI form in accordance with the requirements of this Part after the applicable deadline. In such instances, an enforcement action for any stormwater discharges associated with the construction activity occurring prior to notification may be taken.

D. **Failure to Notify.** Persons who disturb earth as part of a construction activity, fail to obtain coverage under an NPDES stormwater discharge permit as required herein, and discharge pollutants to waters of the United States without a permit, are in violation of the Clean Water Act (CWA). Persons who disturb one acre or more of earth, fail to obtain coverage under an NPDES stormwater discharge permit as required herein, and discharge pollutants to waters of the State are in violation of Section 4-413 and 9-322 of the Environment Article, Annotated Code of Maryland.

E. **Contents of Notice of Intent.** The NOI shall include, but not be limited to, the following:

1. The site's name, mailing address, and general location;

2. The site's latitude and longitude (to the nearest 15 seconds);
3. A map of the site;
4. The permittee's name and signature, address, telephone number, and principal contact;
5. A brief project description, including existing and proposed land uses;
6. Standard Industrial Classification (SIC);
7. The name of the closest named receiving waters (if the discharge is to a municipal separate storm sewer system, the name of the municipal system and the receiving waters shall be supplied);
8. A confirmation that the permittee has compared the eventual receiving waters with the Maryland 303(d) list, the date on which the comparison took place, and a statement as to whether the eventual receiving waters are listed on the 303(d) list as impaired for sediment. Indicate the name and location of the impaired waters;
9. The total site area, the total proposed disturbed area, the type(s) of stormwater management best management practice(s) (BMP) proposed, and the total drainage area to be controlled by each type of BMP; and
10. Permit number of any other NPDES Permit related to this site.

F. **Fees.** An NOI fee is required with the submission of the NOI, unless the applicant obtained coverage under the previous General Permit on or after January 1, 2013, and that coverage is in effect on December 31, 2014. The fee schedule is based on the size of the total planned disturbance. The applicant must determine the appropriate fee to be paid from the fee schedule set in State regulations.

G. **Where to Submit.** Applicants shall submit NOIs for coverage under this general permit either through the electronic system designated by the Administration or via mail to the Administration at the following address:

The Maryland Department of the Environment
Water Management Administration
P.O. Box 2057
Baltimore, Maryland 21203-2057

Persons intending to discharge stormwater associated with construction activity must submit erosion and sediment control and stormwater management plans in accordance with procedures established in, and to the approving authorities identified in, the laws and regulations cited in Part II.B.4 of this general permit.

H. **Effective Date of Coverage**. Coverage under this general permit is effective as described in Part II. A. The effective date for Transfer of Authorization shall be in accordance with Part I.E. Coverage under this general permit will expire when the General Permit is reissued or expires, when a Notice of Termination form has been completed and received by the Administration, or when the Administration administratively terminates coverage for a site, whichever occurs first.

I. **Notice of Termination.** When all portions of a site have been permanently stabilized as defined herein, and all stormwater discharges from construction sites that are authorized by this permit are eliminated, the authorized permittee of the facility must submit a Notice of Termination form, which may be obtained through the electronic system designated by the Administration, on MDE's website, or upon request to MDE.

1. The Notice of Termination shall include, but not be limited to, the following:
   a. The mailing address and location of the construction site for which notification is submitted. Where a mailing address is not available, the location can be described in terms of the latitude and longitude (to the nearest 15 seconds) and Maryland Grid Coordinates of the approximate center of the facility;
   b. The permittee's name, address, and telephone number;
   c The name, address, and telephone number of the general contractor(s);
   d. The NOI identification number;
   e. The following certification statement, signed as required by section VI.L. herein:

"I certify under penalty of law that disturbed soils at the identified site have been permanently stabilized in accordance with approved erosion and sediment control plans; that temporary erosion and sediment controls have been removed or will be removed at an appropriate time; and that all stormwater discharges associated with construction activity from this site that are authorized by this general permit have been eliminated. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge stormwater associated with construction activity by the general permit and that discharging pollutants in stormwater associated with construction activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by an NPDES permit. I understand that I must maintain the records described in Part IV.C.4 of the General Permit for three years from the date of this Notice of Termination. I understand that I have the duty to provide information in Part VI.I. during this record retention period. I also understand that the submittal of this Notice of Termination does not release the permittee from liability for any violations of this permit or the Clean Water Act which may have occurred at this site."

2. The permittee shall transmit the completed Notice of Termination form through the electronic system designated by the Administration or via mail to the following address:

The Maryland Department of the Environment
Compliance Program
Water Management Administration
1800 Washington Blvd., Suite 420
Baltimore, MDE 21230-1708

Part III. SPECIAL CONDITIONS

A. <u>Prohibition against Non-Stormwater Discharges.</u>

1. All discharges covered by this permit shall be composed entirely of stormwater, except as provided below in paragraph 4.
2. Discharge of material other than stormwater must be in accordance with erosion and sediment control and stormwater management plans approved in accordance with the laws and regulations cited in Part II. B.4. above.
3. Discharges of material other than stormwater not listed in paragraph 4 below must be in compliance with an NPDES permit (other than this permit) issued for the discharge. Stormwater or process water discharges from concrete and asphalt plants, including batch plants, are not authorized under this permit and must have coverage under the General Permit for Discharges from Mineral Mines, Quarries, Borrow Pits and Concrete and Asphalt Plants or other individual permit. Discharges of stormwater which has contacted disturbed areas with known contamination by pollutants other than sediment are not authorized under this permit. The following discharges are also prohibited:
   a. Wastewater from the washout of concrete, unless managed by an appropriate control in accordance with the 2011 Standards and Specifications for Soil Erosion and Sediment Control, Section H-6.
   b. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials.
   c. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
   d. Soaps or solvents used in vehicle and equipment washing.

4. The following non-stormwater discharges may be authorized by this permit provided the non-stormwater component is a discharge from: dewatering from construction excavations, which must be managed by controls in accordance with the 2011 Standards and Specifications for Soil Erosion and Sediment Control or any updated standards issued by MDE (after their effective date); fire fighting activities; air conditioning condensate; uncontaminated spring water; and foundation or footing drains where flows are not causing an erosive condition or contaminated with process materials such as solvents.

B. Other Requirements for Erosion and Sediment Control and Stormwater Management Plans.

1. All plans for construction activity and any reports prepared pursuant to this permit, including self-inspection information, shall be available to the public under Section 308(b) of the CWA.
2. Upon request by the public, the permittee or person covered by this general permit shall make such documents available. However, the permittee may claim applicable portions of these documents as confidential in accordance with 40 Code of Federal Regulations (CFR) Part 2.

3. The permittee shall consider State listed rare, threatened, and endangered species habitat in the design of the erosion and sediment control plan in accordance with the 2011 Standards and Specifications for Soil Erosion and Sediment Control, Section A-4. If rare, threatened, and endangered species habitat is identified, the permittee shall contact the appropriate approval authority to determine additional regulatory requirements.

C. Releases in Excess of Reportable Quantities. In the event of a discharge of hazardous substances or oil from a construction site, such discharge shall be minimized and/or contained in accordance with the approved erosion and sediment control and stormwater management plans.

1. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reporting quantity established under either 40 CFR 110, 40 CFR 117, or 40 CFR 302, occurs during a 24 hour period:
   a. The permittee shall notify the National Response Center (NRC) as soon as he or she has knowledge of the discharge at 1-800-424-8802 or 202-267-2675 (in the Washington, DC metropolitan area), in accordance with the requirements of 40 CFR 110, 40 CFR 117, and 40 CFR 302;
   b. The permittee shall notify the Maryland Department of the Environment as soon as he or she has knowledge of the discharge. The contact numbers are 410-537-3510 between 8AM - 5PM or after hours at (866) 633-4686
   c. The permittee shall submit within 7 calendar days of knowledge of the release an application for individual permit coverage in accordance with the requirements of 40 CFR 122.26(c)(1)(ii), with a written description of the release, the circumstances leading to the release, the nature and date of the release, and steps taken to control and respond to the release. This application should be sent to the Maryland Department of the Environment, Water Management Administration;
   d. The permittee shall, within 14 days of knowledge of the release, modify the existing erosion and sediment control and stormwater management plans to identify and provide for the implementation of steps to prevent and control the recurrence of such releases or similar releases in the future, and to respond to such releases. The permittee shall also provide notification to the Maryland Department of the Environment that the erosion and sediment control plan and stormwater management plan modifications have been completed and approved by the appropriate approval authority.
2. Discharges of hazardous substances and oil resulting from on-site spills are not authorized by this permit.
3. No condition of this general permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

D. Training of Personnel. The permittee must ensure that responsible personnel holding a valid certificate of attendance at training program in accordance with Environment Article § 4-104 are on site as required by the approved Erosion and Sediment Control Plan. The permittee must ensure that all site personnel are trained to understand aspects of permit and plan compliance relevant to their specific duties, including but not limited to BMP installation/maintenance and preventing and reporting spills and damaged BMPs.

E. Compliance with Other Laws. The permittee is advised that the application of fertilizer at the site must comply with Agriculture Article § 8-803.4.

Part IV. EFFLUENT LIMITATIONS, PREVENTION OF THE DISCHARGE OF SIGNIFICANT AMOUNTS OF SEDIMENT, MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Effluent Limitations.

1. The permittee must select, install, implement and maintain control measures (i.e., BMPs, controls, practices, etc.) at the construction site that minimize pollutants in the discharge as necessary to meet applicable water quality standards. The permittee must implement the control measures from commencement of construction activity until permanent stabilization is complete. In general, the stormwater controls developed, implemented, and updated consistent with the laws and regulations cited in Part II.B.4. of this general permit are considered as stringent as necessary to ensure that discharges covered by this permit do not cause or contribute to an excursion above any applicable water quality standard. As cited in Part VI.A, the permittee must comply with approved erosion and sediment control and stormwater management plans as a condition of compliance with this permit, as well as with federal effluent limitations at 40 CFR 450.21. Federal effluent limitations also require the following:

    a. The permittee must minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, pavement wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
    b. The permittee must minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use). The permittee must ensure that waste, garbage, and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged.
    c. The permittee must minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

2. At any time after authorization, MDE may determine that the permittee's stormwater discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard, or are causing or contributing to an impairment of a waterbody [i.e., waterbodies listed as impaired on the Integrated Report for Section 303(d)]. If such a determination is made, MDE will require the permittee to:

    a. Modify the stormwater controls to adequately address, achieve and document the identified water quality concerns;
    b. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; and/or
    c. Cease discharges of pollutants from construction activity and submit an individual permit application according to Part I.C.

B. Prevention of the Discharge of Significant Amounts of Sediment. In addition to Part IV.A. above, the permittee must take all reasonable measures to prevent the discharge of significant amounts of sediment to surface waters, or conveyance systems leading to surface waters, particularly in the Chesapeake Bay watershed or impaired waterways.

1. Conditions indicating discharge of significant amounts of sediment include, but are not limited to, the following:
    a. Earth slides or mud flows;

b. Concentrated flows of stormwater such as rills, rivulets or channels that cause erosion when such flows are not filtered, settled or otherwise treated to remove sediment;
c. Turbid flows of stormwater that are not filtered, settled or otherwise treated to reduce turbidity;
d. Deposits of sediment at the construction site in areas that drain to unprotected stormwater inlets or catch basins that discharge directly to surface waters;
e. Deposits of sediment from the construction site on public or private streets outside of the permitted construction activity;
f. Deposits of sediment from the construction site on any adjacent property outside of the permitted construction activity; or
g. Discharges from the construction site to municipal conveyances, curbs and gutters, or streams running through or along the site where visual observations show that the discharges differ from ambient conditions in terms of turbidity so as to indicate significant amounts of sediment present in them.

2. If the permittee observes any of the triggering events described in Section IV.B, above, or if any person informs the enforcement authority or MDE of a triggering event and the enforcement authority or MDE informs the permittee that one or more of the triggering events was verified, the permittee must undertake the following actions and record the dates and results of these actions in an onsite logbook.
   a. Within one day the permittee shall inspect erosion and sediment control practices to verify compliance with its approved Plans. Any deficiencies, including, but not limited to, failure to follow the approved sequence of construction, failure to maintain approved buffers, grading beyond the limit of disturbance, or any approved sediment and erosion controls found to be missing, improperly installed or in need of maintenance must be corrected immediately and may be considered to be a violation of this permit until such time that they are corrected.
   b. If the site is found to be in compliance with its approved Plans, the permittee shall, by the next business day, contact the Compliance Program of the Water Management Administration in MDE, the enforcement authority for the site (if it is not MDE), and the appropriate approval authority for Erosion and Sediment Control and inform the authorities about the conditions observed during the inspection cited above. In addition to any requirements imposed by the delegated enforcement authority or MDE, the permittee shall, after notifying the enforcement authority, implement any of the following that are determined to be appropriate towards the prevention of further triggering events:
      (1) Any change that may be approved in the field by the inspector for the enforcement authority for the site;
      (2) Modifications to the Plans allowed as field modifications by the approval authority;
      (3) Performing temporary or permanent seeding of disturbed areas more frequently than required by the approved Plan or regulation; or
      (4) Increasing buffer distances.

      The permittee shall implement any changes needed based on the above review within four days after the triggering event is observed.
3. If additional triggering events are observed, the permittee shall, through its site engineer, determine if the Erosion and Sediment Control Plan and Stormwater Management Plan are adequate, or whether additional on-site practices or plan modifications are required. Within three days of the second observation of a triggering event, the permittee shall contact the Compliance Program of the Water Management Administration in MDE, the enforcement authority for the site (if it is not MDE), and the approval authority for the Plans and advise them that:
   a. The permittee observed a triggering event;
   b. The event happened despite the fact that erosion and sediment controls were properly installed and maintained; and

c. The permittee is reviewing plans and will afford the approval authority the opportunity to concurrently review them.

The permittee's review of plans shall begin within three days of the triggering event. The permittee must submit revised plans to the approval authority no later than 14 days after the second observation of a triggering event. The permittee must obtain approval of the revised Plans from the approval authority and begin implementation of the changes immediately upon approval.

C. <u>Monitoring and Records</u>.

1. After the first earth disturbance occurs on the site, and thenceforth during the entire period of permit coverage whether the site is active or inactive, the permittee shall conduct inspections of the permitted area. The person(s) inspecting the site may be a person on the permittee's staff or a third party hired or arranged to conduct inspections. The person conducting the inspection must hold a valid certificate of attendance at training program for responsible personnel as required by Section 4-104(b) of the Environment Article, unless the erosion and sediment control plan approval authority has waived the requirement for a Certificate of Training in accordance with Section 4-104(c) of the Environment Article. The permittee shall conduct inspections at the following intervals:
   a. Once each calendar week (Sunday to Saturday), except as in c;
   b. The next day after a rainfall event resulting in runoff, except as in c;
   c. For areas meeting stabilization requirements of COMAR 26.17.01.07.B.6(f) and the erosion and sediment control plan, once per month (if construction activity resumes in such a portion of the site at a later date, the inspection frequency immediately increases to that required in a and b; the permittee must document the beginning and ending dates of the period of stabilization in its inspection records); and
   d. As required in Part IV.B.

2. After the first earth disturbance occurs on the site, and thenceforth during the entire period of permit coverage whether the site is active or inactive, the permittee shall post, at a safe, publicly accessible location in close proximity to the project site, a notice of permit coverage, including the project name as listed on the permit, the permittee, the words "General Permit for Stormwater Associated with Construction Activity", and the permit number.

3. During the entire period of permit coverage, the permittee shall maintain the following records, which shall be on-site and available when the site is active::

   a. The approved erosion and sediment control plan, the approved stormwater management plan, a copy of this General Permit, a copy of the NOI, a copy of the general permit coverage document from the Administration, and a copy of transfer of authorization documents (if applicable).
   b. Written reports of all inspections conducted by the permittee. The permittee shall use the standard written report form as provided by MDE. The permittee shall complete all applicable portions of the form, and may attach additional information to the form. The permittee shall ensure that the report includes:
      (1) the date and time of the inspection;
      (2) the name(s) of the individual(s) who performed the inspection;
      (3) whether significant amounts of sediment were observed as described in Part IV.B, Prevention of the Discharge of Significant Amounts of Sediment, above;
      (4) an assessment of the condition of erosion and sediment controls and how any deficiencies were or are being addressed;
      (5) a description and date of any erosion and sediment control implementation and maintenance performed, including identification of any controls that have not been installed as required; and
      (6) a description of the site's present phase of construction.

4. For a period of three (3) years from the date that general permit coverage for the site is terminated, the permittee shall maintain the following records:
   a. the NOI and records of all data used to complete the NOI;
   b. self-inspection reports;
   c. all inspection reports and enforcement actions issued to the permittee from any appropriate enforcement or approval authority, including MDE, the delegated enforcement authority, or the U.S. Environmental Protection Agency; and
   d. a copy of the Notice of Termination (after it is prepared).
5. When a permit is transferred, the original permittee must maintain the records in Part IV.C.4 above that document the permit activity up to the date of transfer. The original permittee must maintain those records for three (3) years from the date of transfer. Both the original permittee and the new permittee must maintain a copy of the Transfer of Authorization document.

6. The permittee shall ensure that samples and measurements taken for the purpose of monitoring are representative of the monitored activity. If the director requires monitoring at a site covered by this permit, the permittee shall use monitoring procedures that are sufficiently sensitive to meet an imposed limit, in accordance with federal regulations at 40 CFR 122.44(i)(1)(iv). Records of monitoring information must include:
   a. the date, exact place, and time of sampling or measurements;
   b. the individual(s) who performed the sampling or measurements;
   c. the date(s) analyses were performed;
   d. the individual(s) who performed the analyses;
   e. the analytical techniques or methods used;
   f. the results of such analyses; and
   g. all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation.

D. Reporting Requirements. The permittee shall submit, upon request by MDE, the information maintained in accordance with Part IV.C. to:

The Maryland Department of the Environment
Water Management Administration
Compliance Program
1800 Washington Blvd, Ste 420
Baltimore, Maryland 21230-1708

Part V. CONSISTENCY WITH TOTAL MAXIMUM DAILY LOADS

If the discharge covered by this permit enters a water with an established or approved Total Maximum Daily Load (TMDL), including the Chesapeake Bay TMDL and the Maryland Watershed Implementation Plan, the permittee must implement measures to ensure that the discharge of pollutants from the site is consistent with the assumptions and meets the requirements of the approved TMDL, including any specific wasteload allocation that has been established that would apply to the discharge.

Part VI. STANDARD PERMIT CONDITIONS

A. Duty to Comply. It is a condition of this permit that the permittee comply with erosion and sediment control and stormwater management plans approved in accordance with the laws and regulations cited in Part II.B.4, above, and with all conditions of this general permit. If MDE adopts applicable requirements after the effective date of this permit, including but not limited to revised Standards and Specifications for Soil Erosion and Sediment Control, the permittee must comply with those requirements by the deadline set forth in those requirements. Violations of plans for construction activity, including applicable Erosion and Sediment Control and Stormwater Management Plans, constitute violations of this permit, State law, and the CWA. Violations of this permit are grounds for enforcement action; for permit termination, revocation, reissuance, or modification; or for denial of a permit renewal.

B. **Continuation of Coverage under This General Permit.** Once construction has commenced, it is a condition of this permit that erosion and sediment control and stormwater management plan approvals be kept in effect. Construction activity may not continue if these plans have expired, but may resume once plans are renewed without payment of an additional fee as long as coverage under this General Permit is still in effect.

C. **Continuation of the Expired General Permit.** An expired general permit continues in force and effect until a new general permit is issued.

D. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this general permit.

E. **Duty to Mitigate.** The permittee shall take all reasonable steps to prevent or minimize the environmental or human health impact caused by any discharge allowed by this general permit.

F. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the installation and operation of backup, auxiliary, or similar systems or controls, by a permittee when necessary to achieve compliance with the conditions of the permit.

G. Bypass

1. Definitions.
   a. Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
   b. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
2. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation.
3. Notice–
   a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, the permittee must submit prior notice, if possible at least ten days before the date of the bypass.
   b. Unanticipated bypass. The permittee must submit notice of an unanticipated bypass as soon as possible to the time when it is known, but in no case longer than 24-hours after learning of the event.
4. Prohibition of bypass.
   a. Bypass is prohibited, and MDE or EPA may take enforcement action against the permittee for bypass, unless:
      (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
      (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
      (3) The permittee submitted notices as required.
   b. MDE or EPA may approve an anticipated bypass, after considering its adverse effects, if MDE or EPA determines that the bypass meets the three conditions listed above.

H. Upset

1. Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the permittee's reasonable control. An upset does not include noncompliance

to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Part VI.H.3, below, are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
3. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
   a. An upset occurred and that the permittee can identify the cause(s) of the upset;
   b. The permitted facility was at the time being properly operated;
   c. The permittee submitted notice of the upset as required; and
   d. The permittee complied with any required remedial measures.
4. Burden of proof. In any enforcement proceeding, the permittee, as the one seeking to establish the occurrence of an upset, has the burden of proof.

I. **Duty to Provide Information.** The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request copies of records required to be kept by this permit, State law, or the CWA.

J. **Other Information.** When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the NOI or in plans approved in accordance with the laws and regulations cited in Part II. B.4, he or she shall promptly submit such facts or information to the Director or the appropriate plan review authority.

K. **Certification.** Any person signing documents under this section shall provide certification in accordance with the laws and regulations identified in Part VI. L below.

L. **Signatory Requirements.** All submissions of reports, certifications or information shall be signed in accordance with requirements established in Title 4, Subtitle 1 of the Environment Article, Annotated Code of Maryland (Sediment Control); COMAR 26.17.01 (Erosion and Sediment Control); Title 4, Subtitle 2 of the Environment Article, Annotated Code of Maryland (Stormwater Management); and COMAR 26.17.02 (Stormwater Management). All Notices of Intent shall be signed as follows:

For a corporation: by a responsible corporate officer;
For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;
For a municipality, State, federal, or other public agency: by either a principal executive officer or a duly authorized official.

M. **Liabilities under Other Laws.** Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 309 of the CWA, any applicable State or Federal law, or regulation under authority preserved by section 510 of the CWA.

N. **Property Rights.** The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

O. **Severability.** The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

P. **Transfers.** This permit is not transferable to any person except after notice to the Director in accordance with Part I. E. above. As part of such transfer, the Director may require separate application for an individual permit as stated in Part I. C.

Q. **Inspection and Entry.** The permittee shall allow the Director or an authorized representative of EPA or the State who is assigned responsibilities in the laws and regulations cited in Part II. B.4., upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated activity is located or conducted or where records must be kept under the conditions of this permit;
2. Have access to and obtain copies at reasonable times of any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times, without prior notice, any construction site, facility, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

R. **Civil Penalties for Violations of Permit Conditions**. In addition to civil penalties for violations of State water pollution control laws set forth in Section 9-342 of the Environment Article, Annotated Code of Maryland, the Clean Water Act and EPA regulations at 40 C.F.R. Part 19 provide that any person who violates Section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under Section 402 of the Act or in a permit issued under Section 404 of the Act, is subject to a civil penalty not to exceed $37,500 per day for each violation. In the event that the sovereign immunity of the United States and its agencies does not apply, such penalties may be assessed for violations.

S. **Criminal Penalties for Violations of Permit Conditions.**

In addition to the criminal penalties for violations of State water pollution control laws set forth in Section 9-343 of the Environment Article, Annotated Code of Maryland, the Clean Water Act provides that:

1. Any person who negligently violates Section 301, 302, 306, 307, 308, 311(b)(3), 318, or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, or in a permit issued under Section 404 of the Act, is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both; In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to a fine of not more than $50,000 per day of violation or by imprisonment of not more than two years, or both;
2. Any person who knowingly violates Section 301, 302, 306, 307, 308, 311(b)(3), 318, or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, or in a permit issued under Section 404 of the Act, is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than three years, or both; in the case of a second or subsequent conviction for a knowing violation, a person shall be subject to a fine of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both;
3. Any person who knowingly violates Sections 301, 302, 306, 307, 308, 311(b)(3), 318, or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, or in a permit issued under Section 404 of the Act, and who knows at that time that he is placing another person in imminent danger of death or serious bodily injury, is subject to a fine of not more than $250,000 or imprisonment for not more than 15 years, or both; in the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both; an organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision be subject to a fine of not more than $1,000,000 for a first violation and up to $2,000,000 for second or subsequent convictions;
4. Any person who: falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit, or knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance, shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this

paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

T. **Administrative Penalties for Violations of Permit Conditions.** In addition to administrative penalties for violations of State water pollution control laws set forth in Section 9-342 of the Environment Article, Annotated Code of Maryland, the Clean Water Act provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty, as follows:

1. Class I Penalty. Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $16,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $37,500).
2. Class II Penalty. Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $16,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $187,500).

U. **Permit Actions.** This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation, reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Part VII. REOPENER CLAUSE

At any time at the discretion of MDE or the U.S. Environmental Protection Agency, or if there is evidence indicating that stormwater discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, MDE may require the owner or operator of such discharge to obtain an individual permit or alternative general permit coverage in accordance with Part I. C. of this permit. Alternatively, MDE may revoke this permit or modify this permit to include different limitations and requirements, in accordance with the procedures contained in COMAR 26.08.04.10 and 40 C.F.R. §§ 122.62, 122.63, 122.64 and 124.5.

Part VIII. AUTHORITY TO ISSUE GENERAL NPDES PERMITS

On September 5, 1974, the Administrator of the EPA approved the proposal submitted by the State of Maryland for the operation of a permit program for discharges into navigable waters under Section 402 of the federal Clean Water Act, 33 U.S.C. Section 1342. On May 15, 1989, EPA and Maryland entered into a superseding Memorandum of Agreement for such discharges. On September 30, 1990, the Administrator of the EPA approved the proposal submitted by the State of Maryland for the operation of a general permit program. Under the approvals described above, this general discharge permit is both a State of Maryland general discharge permit and an NPDES general discharge permit.

Part IX. DEFINITIONS

The following words and terms used in this chapter have the following meanings unless the context clearly indicates otherwise. Terms used in this permit and not otherwise defined herein shall have the meaning attributed to them in 40 C.F.R. Part 122.

1. "Administration" means the Maryland Department of the Environment, Water Management Administration.

2. “Appropriate approval authority” means the state or local government agency that has authority to review and approve Erosion and Sediment Control Plans and Stormwater Management Plans.

3. "Construction Activity" means clearing, grading, excavating, or other earth disturbing activities that result in a land disturbance equal to or greater than one acre, including the disturbance of less than one acre of land that is part of a larger common plan of development or sale that will ultimately disturb more than one acre. Construction activity includes construction-related activities that specifically support the construction activity and involve earth disturbance or pollutant-generating activities of their own, and can include activities associated with equipment staging yards, materials storage areas, excavated material disposal areas, and borrow areas. Construction activity does not include earth disturbance for agricultural and silvicultural production activities such as for orchards, cultivated crops, pastures, range lands, and forest lands, unless those activities involve construction of structures, roads, or other appurtenances.

4. "CWA" means the federal Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*, or the Federal Water Pollution Control Act or the Amendments to the Clean Water Act, and regulations promulgated thereunder.

5. "Director" means the Regional Administrator, the Secretary of the Maryland Department of the Environment, or an authorized representative.

6. “Larger common plan of development or sale” means an area where multiple separate and distinct construction activities are occurring under one plan. The “plan” in a common plan of development or sale is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that construction activities may occur on a specific plot.

7. “Permanent stabilization” means that all soil disturbing activities at the site have been completed and the following criteria are met, whichever is most stringent:
    a. The site meets the stabilization requirements in the approved plans;
    b. The site meets stabilization requirements in COMAR 26.17.01.07.B.6(f), even if approved plans have a less stringent requirement (see COMAR 26.17.01.08.G), and in the 2011 Standards and Specifications for Soil Erosion and Sediment Control or any updated standards issued by MDE (after their effective date); or
    c. Either of the two following criteria are met:
        (1) A uniform (e.g,, evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or
        (2) Equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.
        (3) When background native vegetation will cover less than 100 percent of the ground (e.g., arid areas, beaches), the 70 percent coverage criteria is adjusted as follows: if the native vegetation covers 50 percent of the ground, 70 percent of 50 percent (0.70 X 0.50 = 0.35) would require 35 percent total cover for final stabilization. On a beach with no natural vegetation, no stabilization is required.
    d. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land, staging areas for highway construction, etc.), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to ‘‘water of the United States,’’ and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization criteria (a), (b), or (c) above.

8. "Person" is as defined in COMAR 26.17.01 (Erosion and Sediment Control) and COMAR 26.17.02 (Stormwater Management).

9. “Plans” means a permittee’s Erosion and Sediment Control Plan and Stormwater Management Plan, collectively.

10. "Project" means the total area upon which construction activity will occur through stages or phases over time.

11. “Site” means any area where Permittee engages in Construction Activity and where coverage under an applicable permit is required.

12. "Stormwater" means precipitation runoff, snowmelt runoff, and surface runoff and drainage.

13. "Stormwater Associated with Construction Activity" means the discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to clearing, grading, and/or excavation activities.

Jay Sakai, Director
Water Management Administration

STANDARD INSPECTION FORM FOR MARYLAND DEPARTMENT OF THE ENVIRONMENT GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY

General Information			
Project Name			
Permittee			
Permit Number		**Date of Inspection**	
Start Time		**End Time**	
Inspector's Name(s)			
Responsible Personnel Certification # (required under Part IV.C.1)			
Inspector's Contact Information			
Date Earth Disturbance Began			
Describe present phase of construction	☐ Clearing/Grubbing ☐ Rough Grading ☐ Infrastructure ☐ Demolition ☐ Building Construction ☐ Final Grading ☐ Final Stabilization Notes:		
Type of Inspection (check all that apply): ☐ Weekly routine ☐ Pre-storm event ☐ During storm event ☐ Post-storm event ☐ Due to a discharge of significant amounts of sediment ☐ Monthly for stabilized areas; list phases/lots stabilized:			
Has there been a storm event since the last inspection? ☐ Yes ☐ No **If yes, provide:** Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):			

Permit Coverage and Plans				
	Subject	**Status**	**Corrective Action Needed and Notes**	**Date Corrected**
1	Was an NOI submitted for all disturbed acres?	❑Yes ❑No		
2	Is the permittee listed above still in control of permitted activities at the site? (If no, submit a Transfer of Authorization form to MDE via ePermits)	❑Yes ❑No		
3	Do the approved plans reflect current site conditions?	❑Yes ❑No		
4	Are the approved E&S and SWM plans maintained at the site?	❑Yes ❑No		
5	Have the E&S or SWM plan approvals expired?	❑Yes ❑No		
5	Are the NOI, permit documents, and all inspection reports and enforcement actions on file at the site, and a notice of permit coverage posted?	❑Yes ❑No		
6	Is the site permanently stabilized, temporary erosion and sediment controls are removed or set to be removed, and stormwater discharges from construction activity are eliminated?	❑Yes ❑No		
7	If #6 is Yes, has a Notice of Termination been submitted to MDE?	❑Yes ❑No		

Permit Coverage and Plans				
	Subject	**Status**	**Corrective Action Needed and Notes**	**Date Corrected**
8	Are all discharges composed entirely of stormwater or as authorized by the permit?	❑Yes ❑No		
Discharge of significant amounts of sediment				
Subject		**Status**	**Notes**	
Is there evidence of the discharge of significant amounts of sediment to surface waters, or conveyance systems leading to surface waters?		❑Yes ❑No		
If "yes" is checked above, have all applicable notification requirements in Part IV.B of the General Permit been met?		❑Yes ❑No		
A discharge of significant amounts of sediment may be indicated by (but is not limited to) observations of the following. Note whether any are observed during this inspection:				
1	Earth slides or mud flows	❑Yes ❑No		
2	Concentrated flows of stormwater such as rills, rivulets or channels that cause erosion when such flows are not filtered, settled or otherwise treated to remove sediment	❑Yes ❑No		
3	Turbid flows of stormwater that are not filtered, settled or otherwise treated to reduce turbidity	❑Yes ❑No		
4	Deposits of sediment at the construction site in areas that drain to unprotected stormwater inlets or catch basins that discharge directly to surface waters	❑Yes ❑No		
5	Deposits of sediment from the construction site on public or private streets outside of the permitted construction activity	❑Yes ❑No		
6	Deposits of sediment from the construction site on any adjacent property outside of the permitted construction activity	❑Yes ❑No		
7	Discharges from the construction site to municipal conveyances, curbs and gutters, or streams running through or along the site where visual observations show that the discharges differ from ambient conditions in terms of turbidity so as to indicate significant amounts of sediment present in them	❑Yes ❑No		

BMPs						
	BMP/activity (some recommended items to check included below)	**Installed/Implemented?**	**Maintenance Required?**	**Location**	**Corrective Action Needed and Notes (note any BMPs required by plans but not yet installed)**	**Date Correction Completed**
1	Temporary stabilization - in accordance with 26.17.01.07(B)(6)(f)	❑Yes ❑No	❑Yes ❑No			
2	Permanent stabilization - in accordance with 26.17.01.07(B)(6)(f)	❑Yes ❑No	❑Yes ❑No			
3	Stockpile protection - check for stabilization, silt fence or other controls	❑Yes ❑No ❑Not Used	❑Yes ❑No			
4	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	❑Yes ❑No	❑Yes ❑No			
5	Silt fence - check for proper installation including toeing in, stakes and supports, gaps and tears, and sediment buildup	❑Yes ❑No ❑Not Used	❑Yes ❑No			
6	Check dams, dikes, and diversion ditches	❑Yes ❑No ❑Not Used	❑Yes ❑No			
7	Storm drain inlet protection - check for gaps, tears, sediment buildup	❑Yes ❑No ❑Not Used	❑Yes ❑No			
8	Construction entrance - check for trackout, soil buildup on entrance	❑Yes ❑No	❑Yes ❑No			

BMPs						
	BMP/activity (some recommended items to check included below)	**Installed/Implemented?**	**Maintenance Required?**	**Location**	**Corrective Action Needed and Notes (note any BMPs required by plans but not yet installed)**	**Date Correction Completed**
9	Sediment basins/traps - check for sediment buildup, erosion, proper outlet structures	❑Yes ❑No ❑Not Used	❑Yes ❑No			
10	Outfall protection - check for erosion, sediment	❑Yes ❑No ❑Not Used	❑Yes ❑No			
11	Is trash/litter from work areas contained to prevent discharge to surface waters?	❑Yes ❑No	❑Yes ❑No			
12	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑No	❑Yes ❑No			
13	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No	❑Yes ❑No			
14	Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No	❑Yes ❑No			
15	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	❑Yes ❑No	❑Yes ❑No			
16	(Other)	❑Yes ❑No	❑Yes ❑No			

Cecil County Development Services Division
As-Built Stormwater Management
Plans Review Checklist

Project Name: _____

Tax Map: _____ Parcel: _____ Lot: _____ Plat: _____ ADC Map & Grid _____

Owner's Name: _____

Address: _____

Engineer/Surveyor: _____

For additional contact: _____

Name: _____

Any major change or deviation from the original plan must be redesigned and revised plans submitted to the Cecil County Department of Public Works, Development Services Division, prior to the performance of the work.

LEGEND FOR REVIEW CHECKLIST:

✓	Accepted	X	Not Accepted	Inc.	Incomplete
NA	Not Applicable	R	Required, not submitted	NC	Not Checked

SUBMITTALS/METHODS

A. Submittals (1st Review):

___ 1. Two (2) Folded Redlined Stormwater Management plan copy sets.
___ 2. Two (2) Sealed Geotech Reports, and Two (2) Compaction Reports.
___ 3. Two (2) Sealed copies of Stormwater Management Computations. (If computations changed due to construction.)

B. Submittals (Final Approval):

___1. One (1) Rolled Redlined Mylar set signed and sealed by both Professional Engineer in charge and Professional Geotechnical Engineer.
___2. Two (2) folded Redlined Stormwater Management plan copy sets.
___3. One (1) CD of Scanned Redlined Stormwater Management Plans. PDF format with a minimum of three NAD 83m x, y
___4. One (1) CDof scanned, signed and sealed Stormwater Management Computations. PDF format (if computations changed due to construction)

C. Method:

___ 1. The minimum information shall be shown in Red on the print copy and final mylar with "As-Built" in the lower right corner or each sheet.

___2. A check mark (✓) may be made beside planned values if they were actually constructed values. For changed values, line out the planned value and enter the actual value.

___3. Elevations to the nearest 0.1' are sufficient.

___4. There must be the proper relation between the elevations of the principal spillway crest, the emergency/token spillway crest, and the top of the dam. All of these elevations should meet SCS-MD378 criteria.

D. Minimum Information Required:

___1. A signed certification statement and seal by a Professional Engineer

___2. A signed certification statement and seal by a Geotechnical

___3. Plan View:

- ___a. Show the length, width, and depth, or contours of the pool area in red so that As-Built volume can be verified.
- ___b. Trees, shrubs, other woody vegetation- show in green, not allowed within 15 feet of any portion of the embankment.
- ___c. A minimum of three (3) NAD 83m x, y coordinates

___4. Profile along Centerline of Dam

- ___a. Profile of the top of Dam – elevation at stations (the top of fill elevation plus the allowance for settlement)
- ___b. Approximate original ground line
- ___c. Top of impervious core embankment (10 Year DHW minimum, Unified Soil Classification GC, SC, CH, or CL). Compaction meets SCS-MD378 specifications.
- ___d. Approximate bottom of cut off trench (4 feet minimum or deeper if required, Unified Soil Classifications GC, SC, CH, or CL). Compaction meets SCS-MD378 Specifications
- ___ e. Principal Spillway location (station and elevation)
- ___ f. Emergency or token spillway – location, bottom, width and side slopes (in un-disturbed earth only)

___5. Profile – Principal Spillway

- ___a. Top of dam width and side slopes – must be equal to or flatter than design
- ___b. Emergency or token spillway crest elevation
- ___c. Top of impervious core embankment (10 year DHW minimum)
- ___d. Cut-off trench bottom width, slopes, depth
- ___e. High Water Elevations (As-Built) WQv, CPv, 2,10, and Ultimate 100 year storms
- ___f. Riser (Reinforced concrete or metal) – Size, type, riser crest elevation, corrugation size, gauge
- ___g. Low flow stage orifice – size, material, invert elevation
- ___h. Low flow stage trash rack – size, material, dimensions
- ___i. Low flow stage drain pipe – size, type, length, invert elevation, corrugation size, gauge
- ___j Barrel (Reinforced concrete or metal) – size, corrugation size, gauge, invert elevations, length, concrete pipe classification.
- ___k. Concrete bedding
- ___l. Phreatic Line (from 10 year DHW minimum)

___m. Sand Diaphragm or Anti-seep Collars – size, spacing, material
___n. Outfall – type, material size, dimensions, filter cloth.

___6. Profile – Emergency or Token Spillway
- ___a. Twenty – five (25) feet minimum level section and elevation
- ___b. Slope protection – type, material size, dimensions, filter cloth
- ___c. Slope of exit section – may be 1-2 % steeper, but no flatter than the design and no narrower than the design.

___7. Section – Emergency or Token Spillway (may be shown on Dam profiles)
- ___a. Width of level Section
- ___b. Dimensions, side slopes, material size

___8. Sand Diaphragm and Anti – Seep Collars
- ___a. Type, material, dimensions
- ___b. Detail and Construction Specifications

___9. Anti – Vortex and Trash Rack Device
- ___a. Size, type, material and its elevations in relation to the principal spillway riser crest, corrugation size, gauge, dimensions
- ___b. Detailed construction specifications,
- ___c. Detail

___10. Infiltration and sand filter BMP's
- ___a. Type, dimensions, filter material, filter cloth, pipe, detail

___11. Elevation/Storage Chart with design elevations and volumes with as-built elevations and volumes for comparison.

___12. Notice of Completion Form filled out, signed, and sealed by engineer.

___13. Submit photos showing the complete view of facility verifying readiness for As-Built Inspection


CECIL COUNTY
1674

GEOTECHNICAL ENGINEERING REPORT

Calvert Regional Park Phase – 3
Cecil County, Maryland

Schnabel Reference No. 19C14008.00
April 19, 2019

Cecil County MARYLAND

WBCM

Schnabel ENGINEERING

Schnabel ENGINEERING

April 19, 2019

Mr. Randall Hughes, PLA, ACIP, LEED AP
Whitney, Baily, Cox & Magnani, LLC
300 East Joppa Road
Suite 200
Baltimore, Maryland 21286

Subject: **Geotechnical Engineering Report for the Calvert Park Phase 3, Cecil County, Maryland (Schnabel Reference 19C14008.00)**

Dear Mr. Hughes:

SCHNABEL ENGINEERING, LLC is pleased to submit our geotechnical engineering report for this project. This study was performed in accordance with our proposal dated January 3, 2019. The objective of this study was to evaluate the subsurface conditions of the site and provide recommendations for earthwork, and design of the pavements and stormwater management structures.

SCOPE OF SERVICES

The scope of services includes the following:

- A subsurface exploration program consisting of 8 test borings drilled for new parking lots, 6 test borings for athletic fields and 4 test borings drilled for new stormwater management structures.
- Field services, including project coordination, boring inspection, and field infiltration testing
- Laboratory testing on collected samples
- Geotechnical engineering analysis and this report, including:
    - Estimated subsurface conditions and groundwater levels within the area explored based on data collected in the subsurface exploration
    - Earthwork recommendations for construction of load-bearing fill including an assessment of on-site soils for use as fill, subgrade preparation, and compaction criteria.
    - Estimated infiltration rates based on USDA soil classification and field infiltration tests, for use in the design of stormwater management devices
    - Recommended hot mix asphalt pavement sections, based on assumed traffic data for the access roads and parking lots.
    - Construction considerations related to the implementation of our recommendations.

PROJECT DESCRIPTION

Site Description

The project site is located next to Cecil Parks and Recreation Arena on North East Road, MD 272, in Cecil County, Maryland. The site is located within the grassy fields and lightly wooded areas. A Site Vicinity Map is included as **Figure 1**.

Proposed Construction

Calvert County is expanding Calvert Park to include 4 additional multi-use athletic fields, improve interconnectivity between the park areas, and provide additional parking spaces in 6 new parking lots. Three new stormwater management facilities are also planned.

The athletic fields will be developed into 365 feet by 225 feet multi-use athletic field, with about 2% cross slopes. The fields will be natural turf. Cuts of up to about 6 feet and fills of up to about 9 feet will be required to construct the new fields and parking lots. New slopes will be constructed on the edges of some of the fields. The fill slopes will be up to about 11 feet high and sloped at 3H:1V. Cut slopes will be up to about 7 feet high and will be sloped at 4H:1V.

The above information was based on the *Grading and Utility Plans*, Sheets C301 to C303, prepared by WBCM and dated March 25, 2019.

Regional Geology

We reviewed existing geologic data and information in our files. Based on this review, the geologic stratigraphy consists of residual soils derived from the weathering of Pelitic Gneiss, a meta-sedimentary rock of the lower to upper precambrian age.

SUBSURFACE EXPLORATION AND LABORATORY TESTING PROGRAM

We performed a subsurface exploration and field testing program to identify the subsurface stratigraphy underlying the site and to evaluate the geotechnical properties of the materials encountered. This program included test borings, infiltration testing, asphalt coring, and laboratory testing. Exploration methods used are discussed below. The appendices contain the results of our exploration.

Subsurface Exploration Methods

Test Borings

Schnabel's subcontractor, Connelly & Associates, Inc., drilled 21 test borings under our observation on March 26 and 27, 2019. Eight of the borings were in planned parking lots (designated as PK-1 through PK-8). Six of the borings were in planned athletic fields (designated AF-1 through AF-6). These were drilled to 10 feet depths each. Four of the borings (designated as SWM-1 through SWM-4) were also drilled to 10 feet in planned stormwater management areas. Three asphalt borings (designated as C-1 through C-3) were performed in the shoulder of MD 272 to depths of 3 to 4.4 feet, each.

The Standard Penetration Test (SPT) was performed at selected depths in the borings. **Appendix A** includes specific observations, remarks, and logs for the borings; classification criteria; drilling methods; and sampling protocols. **Figures 2, 3, and 4** included at the end of this report indicates the approximate test boring locations. We will retain soil samples up to 90 days beyond the issuance of this report, unless you request other disposition.

The SPT samples were obtained using a hydraulically driven automatic trip hammer (ATH). Most correlations with SPT data are based on N-values collected with a safety hammer. The energy applied to the split-spoon sampler using the ATH is about 33 percent greater than that applied using the safety hammer, resulting in lower N-values. The hammer blows shown on the boring logs are uncorrected for the higher energy. However, we correct SPT N values for the higher energy when using N values in our analyses.

Infiltration Testing

Schnabel personnel performed two (2) infiltration tests on March 27, 2019 at boring locations SWM-2 and SWM-3. Appendix C includes observations, remarks, and results for the infiltration tests. **Figures 2, 3, and 4,** included at the end of this report, indications the approximate location of the infiltration tests.

Soil Laboratory Testing

Our laboratory performed tests on selected samples collected during the subsurface exploration. The testing aided in the classification of materials encountered in the subsurface exploration and provided data for use in the development of recommendations for design of foundations, earthwork, below-grade walls, and pavements. The results of the laboratory tests are included in **Appendix B** and are summarized (for each stratum) in the Site Geology and Subsurface Condition section of this report. Selected test results are also shown on the boring logs in **Appendix A**.

Index Testing

We performed index testing on samples collected as part of the exploration to provide soil classifications and to provide parameters for use with published correlations with soil properties. Index testing included performing natural moisture content, Atterberg Limit, and gradation tests on jar samples and USDA soil classification testing on 2 jar samples of soil representing the natural residual soils.

Compaction and CBR Testing

We performed one Modified Proctor compaction and CBR test to evaluate compaction characteristics and to provide soil parameters for pavement design. The tests was performed on a sample of the natural residual soils.

SITE GEOLOGY AND SUBSURFACE CONDITIONS

Site Geology

During our exploration, we encountered the following stratigraphy:

- Stratum A: Existing Fill Soils
- Stratum B: Residual Soils

Generalized Subsurface Stratigraphy

We characterized the following generalized subsurface stratigraphy based on the exploration and laboratory test data included in the appendices.

Ground Cover

Three borings (C-1 to C-3), were drilled through the existing northbound asphalt shoulder of MD 272. The borings encountered between 8 to 9 inches of asphalt at the ground surface. Aggregate base materials, 1 to 20 inches thick, were found below the asphalt.

The remaining eighteen boreholes (PK-1 through PK-8, SWM-1 through SWM-4 and AF-1 through AF-6) were drilled in existing grassed areas, and encountered between 4 and 9 inches depth of topsoil at the ground surface. The asphalt and topsoil depths were measured to the nearest inch and were identified based on our visual identification procedures.

Stratum A: Existing Fill Soils

We believe that we encountered existing fill soils below the pavement sections in borings C-2 and C-3. The soils were visually classified as Clayey Sands. These materials were loose in density. The Standard Penetration Test N-values in Stratum A varied from 3 to 5 blows per foot (bpf).

Stratum B: Residual Soils

Natural residual soils were encountered in all the test borings (except C-2, C-3) from below the surface topsoil the termination depths of the borings. The residual soils generally consisted of LEAN CLAY (CL), SILT (ML), Clayey SAND (SC), and Silty SAND (SM), containing varying amounts of rock fragments. Some of the samples contained small amounts of mica. The SPT N-values for the residual soils ranged from 2 to 28 bpf. The N-values resulting from the SPT's performed in this stratum generally indicate soft to stiff consistencies.

Two samples were tested to determine their USDA textural classification for infiltration purposes. The samples classified as SANDY LOAM.

Laboratory testing performed on seven (7) jar samples had the following properties:

- Moisture Content = 20.5% to 46.0%
- Liquid Limit = 36 to 55

- Plastic Limit = 18 to 49
- % Passing No. 200 sieve: 36.1% to 82.1%

We conducted a Modified Proctor Compaction test and a California Bearing Ratio (CBR) test on a bulk sample collected from 0.5 to 2 feet depth in boring PK-8 representing Stratum B. The sample consisted of LEAN CLAY with sand (CL) classified in accordance with ASTM classification systems. The compaction test resulted in a maximum dry density of 117.1 pcf at an optimum moisture content of 12.4 percent. We obtained a laboratory CBR value of 3.4 with a swell value of 3.6 percent for this sample. We consider these results reasonable for the material types tested.

Groundwater

None of the borings encountered water during drilling. However, water was observed in some of the boreholes after drilling. One day later water readings indicate that most of the boreholes caved at depths of 5 to 8 feet, and were dry. Water was found in the following boreholes:

Table 1: Groundwater Readings

Boring	Time	Water Depth (ft)	Hole Caved Depth
PK-4	One day	5.5	6.0
AF-6	One day	4.5	5.0
SWM-1	One day	3.5	4.5
SWM-3	One day	5.0	6.0
SWM-4	2 hour	0.0	4.0

The test boring, logs in **Appendix A** include groundwater observations obtained during our subsurface exploration. These data include depths to groundwater encountered during drilling, upon drilling completion, and following completion of the borings.

The groundwater levels on the logs indicate our estimate of the hydrostatic water table at the time of our subsurface exploration. The final design should anticipate the fluctuation of the hydrostatic water table depending on variations in precipitation, surface runoff, pumping, evaporation, leaking utilities, stream levels, and similar factors.

GEOTECHNICAL ENGINEERING RECOMMENDATIONS

We based our geotechnical engineering analysis on the information developed from our subsurface exploration and soil laboratory testing, along with the project development plans, site plans, and structural loading furnished by your office. The following sections of the report provide our detailed recommendations.

Site Grading and Earthwork

Proposed site grades will require placement of up to about 9 feet of compacted fill. Cuts of up to about 6 feet are also anticipated. Recommendations for compacted fill subgrade preparation, fill soil requirements, placement and compaction criteria, are presented in subsequent sections.

Compacted Fill Subgrades

Subgrades to receive compacted structural fill for pavement support, athletic fields, and below the new fill slopes should be stripped of vegetation, topsoil, and organic matter. Schnabel's subsurface exploration indicated topsoil to depths of 4 to 9, inches below the ground surface.

The compacted structural fill subgrades should consist of suitable medium to stiff soils of Stratum B. These soils are expected to be encountered at varying depths beneath the topsoil. Some localized soft, wet soils were encountered in the top 3 feet of the borings across the site. These near-surface soils are not considered suitable for support of the proposed compacted fills below the pavements and below the new fill slopes. Unsuitable soils are defined as any existing fill soils that contain debris/organics or are observed to pump or rut during proofrolling. These soils, when found, should be excavated from the areas to receive compacted structural fill. Removal of unsuitable soils should extend at least 3 feet horizontally beyond the proposed limits of new fills. Some removal of soft surface and near surface soils should be expected.

The soft or loose near-surface non organic soils may possibly be compacted in-place if earthwork is performed during warm, dry weather. However, the Contractor will need to scarify and dry these soils to achieve adequate compaction. Alternatively, lime may be used to dry the soils to achieve proper compaction. Lime is discussed below.

Our representative should evaluate the suitability of all of the fill subgrades during construction. The stripped subgrades should be proofrolled with a loaded dump truck to evaluate the subgrade suitability for support of the compacted fill prior to any undercutting or initiation of fill placement. Areas that exhibit excessive pumping, weaving, or rutting should be scarified, dried and recompacted, or undercut and replaced with compacted fill as recommended by the Geotechnical Engineer. Subgrade evaluation techniques complementary to proofrolling could include a combination of probing with a penetrometer, drilling hand augers, or observing test pits.

When removal of unsuitable materials is required, the excavation should be performed in a manner to limit disturbance of the underlying suitable material. The excavation should be performed under the observation of our representative to evaluate the required excavation depths.

All subgrades should be kept free of ponded water. If springs or other flowing water is present at the subgrade level, the Contractor should direct water to discharge beyond the fill limits. Recommendations for collecting and discharging springs should be provided by the Geotechnical Engineer.

Compacted structural fill subgrades should be free of snow, ice, and frozen soils. If snow, ice, or frozen soils are present at subgrade levels, these materials should be removed as recommended by the Geotechnical Engineer.

Compacted structural fill subgrades should not be steeper than about 4H:1V. If steeper slopes are present, subgrades should be benched to permit placement of horizontal lifts of new fill.

Compacted Fill

Compacted structural fill and backfill below the pavements and within new fill slopes should consist of non-organic on-site soils or off site borrows classifying as CL, ML, SC, SM, SP, SW, GC, GM, GP or GW according to ASTM D2487. In addition, structural fill materials should exhibit Liquid Limit and Plasticity Index values of less than 50 and 25, respectively. Fill materials should not contain particles larger than 3 inches.

Compacted fills should be placed in maximum 8-inch thick horizontal, loose lifts. Fill should be compacted to at least 92 percent of the maximum dry density per AASHTO T180 (Modified Proctor).

Backfill placed in excavations, trenches, and other areas that large compaction equipment cannot access should be placed in maximum 6-inch thick lifts. Backfill should meet the material, placement, and compaction requirements outlined above.

Successful re-use of the excavated, on-site soils as compacted structural fill will depend on their natural moisture contents during excavation. Laboratory test results indicate soils encountered in proposed borrow areas are quite wet of the optimum moisture content. Scarifying and drying of these soils must be anticipated to achieve the recommended compaction. We strongly recommend that the earthwork be performed during the warmer, drier times of the year. Time to scarify and dry the soils should be included in the construction schedule. Drying will not be possible during cooler, wetter weather

Depending on the time of year of the earthwork operations, the construction schedule, and the contractor's willingness to attempt to scarify and dry the on-site soils, drying the on-site soils with lime maybe a cost effective alternative to scarifying and drying in order to achieve proper compacted fills. Lime would be added dry or as a slurry and completely mixed (tilled) into the onsite excavated soils. The type and amount of lime required to sufficiently lower the soils moisture contents will depend on the soils moisture content, weather conditions, and the actual soils at the time of construction. Thus, it must be determined from batch trial mixes during construction. The batch mix study is usually performed by the contractor and submitted for review and approval. Typically, 3 to 10 percent hydrated lime, by weight, is necessary to achieve a suitable soil mixture. We recommend that unit costs and allowances be included in the construction budget for lime. Alternatively, the construction documents could specify that the construction of the fills is solely the responsibility of the contractor, and allow them to decide how to dry and place the fills.

Pavement Recommendations

Pavement Subgrades

Soil laboratory testing on a bulk sample of the onsite soils indicated a CBR value of 3.4. The material tested classified as Lean Clay with sand per ASTM D-2487. The sample swelled about 3.6 percent after being submerged in water for 4 days. Thus, the test indicates the soils are susceptible to softening and swelling when wet. We recommend the pavements and site grading include drainage to protect the

pavement subgrades. We developed the recommended pavement sections according to the AASHTO 1993 design method for flexible pavements based on a design CBR value of 3.0.

These subgrade soils will be highly susceptible to softening when exposed to moisture and construction traffic. Therefore, we recommend that the areas were these weak subgrade soils are present be identified during construction by proofrolling. These areas may be dried by scarifying or lime, and compacted, or may be undercut and replaced with a stronger subgrade material. Our firm can provide detailed recommendations for pavement subgrade improvements during construction.

The Contractor should prepare pavement subgrades and place compacted structural fill for pavement support as described in the *Compacted Fill Subgrades* and *Compacted Fill* sections of this report. Dense-graded aggregate base placed as pavement base course should be compacted to at least 95 percent of maximum dry density according to ASTM T-180, Modified Proctor. Graded aggregate base should be placed in maximum 8-inch thick lifts.

Final pavement subgrades should be proofrolled under the observation of the Geotechnical Engineer immediately prior to placing subbase or base course aggregate to evaluate their suitability to support the pavements.

Flexible Asphalt Pavements

The traffic volumes provided to us indicate maximum of 1,087 total vehicles during Saturday on the most demanded parking area; and a maximum of 2,850 total vehicles on the driveways on the same day. Therefore, we assumed this amount of vehicles during the weekends and 25% of this traffic during weekdays. A maximum of 1,323 vehicles per day was assumed for the driveways and 505 vehicles per day was assumed for the parking areas. No data was provided regarding the proportion of trucks in these traffic counts, therefore, we have assumed 5% total truck traffic for driveways (medium duty) and 3% total truck traffic for parking areas (light duty), with none of those being tractor trailers.

Our analysis considers that proper grading will be maintained to provide surface water runoff from the pavement surface and beyond the limits of paved areas.

The following design assumptions were used in our design of the flexible pavement following recommendations from the Cecil County Road Code and Standard Specifications:

Design Life = 20 years	Subgrade Resilient Modulus = 4,500 psi
Layer Coefficients:	Initial Serviceability Index = 4.2
HMA surface = 0.40	Final Serviceability Index = 2.5
HMA Base = 0.40	Reliability Level = 70%
Graded Aggregate Base = 0.14	Overall Standard Deviation = 0.49

Based on our assumptions and our design, we recommend the following pavement sections for new pavements.

Table 2: Recommended Pavement Sections

Type Section	Depth of Layer (inch)
Automobile Parking Areas (Light Duty) – Type 1 Section	
Asphalt Concrete Surface Course, HMA-9.5mm	1.5
Asphalt Concrete Base Course, HMA-19mm	2.0
Graded Aggregate Base Course, GAB	8.0
Access Roads (Medium Duty) – Type II Section (Cecil Co. Minor Road)	
Asphalt Concrete Surface Course, HMA-9.5mm	1.5
Asphalt Concrete Base Course, HMA-19mm	3.0
Graded Aggregate Base Course, GAB	10.0

The Type I Section should be used only in automobile parking areas. The Type II Section should be used where truck traffic or high traffic volumes are anticipated at the entrances, access roads, and areas where dumpsters will be placed.

Adequate control of surface drainage is a key consideration for the overall performance of the pavements. The area surrounding pavements should be graded to direct surface water away from paved areas. Utility excavations within pavement areas should be properly backfilled with compacted structural fill. Drainage ditches should be installed in cut areas where grades slope toward the pavement to keep the water away from the pavement areas. The invert grade of ditches should be at least one foot below the pavement subgrade level. In low elevation areas, pavement subdrains may be required to adequately convey water away from the pavement subgrades.

Elevated water levels may develop at this site, especially if traffic islands and other landscaped areas are irrigated or surface runoff is allowed to empty into the islands. If this is the case, subdrains should be considered below traffic islands and other heavily irrigated areas next to the pavements to control water that has infiltrated and accumulated.

Stormwater Management

Three new stormwater management (SWM) facilities are planned. The facilities will be submerged gravel wetlands. The facility locations are shown on our boring locations plans, Figures 2, 3, and 4 in Appendix A at the end of this report. Based on the contours on the plans, the facilities will be surrounded by small embankment slopes, each about 1 foot high. Cuts of about 1 foot and fills of up to about 4 feet will be required to reach the design grades.

The Maryland Department of the Environment (MDE) has set particular standards and specifications for the design and construction of stormwater management devices with infiltration. These regulations include parameters on soil textures, depth of limiting zones, topographic conditions, and other considerations.

Depth to Limiting Zone

The 2000 MDE Maryland Stormwater Design Manual (revised 2009) recommends that a 2 to 4-foot distance be provided between the bottom of the infiltration system and any limiting zone. Limiting zones are defined as a seasonably high water table or bedrock. Bedrock was not encountered in any of the test borings. Groundwater was encountered in borings as follows:

Table 3: Groundwater Observations

Boring Number	Ground Surface Elev (feet)	SWM Base EL Elev (feet)	Groundwater Encountered During Drilling		Groundwater Encountered at the End of Drilling (After Pulling Casing)		Boring Caved		24 – hr Readings (Water level reading)		24 – hr Readings (Caved depth)	
			Depth (feet)	Elev (feet)	Depth (feet)	Elev (feet)	Depth (feet)	Elev (feet)	Depth (feet)	Elev (feet)	Depth (feet)	Elev (feet)
SWM-1	394.5		Dry	-	Dry	-	5.5	389	3.5	391	4.5	390
SWM-2	388	389	Dry	-	Dry	-	6	382	Dry	-	6	382
SWM-3	391	391	Dry	-	Dry	-	6	385	5	386	6	385
SWM-4	393.5	393	7.0	386.5	Dry	-	6.5	387	0	393.5	4	389.5

The bottom of the SWM facilities should be placed 4-feet above the water level readings. Therefore, we believe that groundwater is considered a limiting factor for the SWM-4 location. We are not aware of a SWM facility planned at the SWM-1 location, but water would be a limiting factor there as well.

Soils Textures

The 2000 MDE Maryland Stormwater Design Manual requires United States Department of Agriculture (USDA) Soil Textural Classifications for each type of soil at the infiltration device. These classifications are used to correlate the material with typical minimum infiltration rates.

Soil samples from the test borings collected at or below the infiltration test depths were classified based on soil laboratory testing in accordance with the USDA Soil Textural Classification System. The 2000 MDE Maryland Stormwater Design Manual recommends the following minimum infiltration rates be assigned to the tested soils:

Table 4: USDA Minimum Infiltration Rates

Boring ID	Test Depth and Elevation (feet)	USDA Textural Classification	Infiltration Rate (inches/hour)
SWM-2	0.4- 2.5 / 387.6 -385.5	SANDY LOAM	1.02
SWM-3	7.0-8.0 / 384.0- 383.0	SANDY LOAM	1.02

In-Situ Infiltration Rates

In order to confirm the infiltration rates from the soil textural classification, in-situ infiltration tests are required. Infiltration tests were performed adjacent to the SWM-1 through SWM-4 test borings. The tests were performed in general accordance with **Appendix D.1** of the 2000 MDE Stormwater Design Manual guidelines. The test procedure is described in **Appendix C.**

The results of the infiltration tests are summarized in Table 5 below. The results of the tests are also included in **Appendix C**.

Table 5: Field Infiltration Rates

Boring ID	Test Depth and Elevation (feet)		USDA Textural Classification	Infiltration Rate (inches/hour)
SWM-2	6.5	EL 388.0	SANDY LOAM	0.25
SWM-3	7.0	EL 384.0	SANDY LOAM	0.25

It should be noted that the recorded infiltration rates from the field infiltration testing is only an approximation of the in-situ soil permeability at the locations tested, and variations of the actual permeability of the facility should be expected.

There is a possibility that the soils at the planned SWM facility subgrades may differ from what was encountered in our borings. Should this occur, the bottom of the facility may have to be raised or lowered to soils that are considered suitable for infiltration. We recommend that the SWM facility subgrade be observed by a Schnabel Engineering representative during construction to visually evaluate its suitability for infiltration. Where the infiltration device bottom/basin is raised or lowered, the subgrade soils should also be visually evaluated for suitability for infiltration by a Schnabel Engineering representative.

CONSTRUCTION CONSIDERATIONS

Site Grading and Earthwork

The test boring data indicate the approximate depth of topsoil based on our visual identification procedures. The depth of stripping needed to provide a suitable base for placement of earthwork or pavements may include topsoil and other softer surficial layers. Soft surface soils were found in our test borings. Stripping depths in wooded or previously cultivated areas will be greater, particularly during periods of wet weather. The depth of required stripping should be determined by the excavation Contractor prior to construction using test pits, probes, or other means that the Contractor wishes to employ, and this determination should be the excavation Contractor's responsibility.

The on-site soils will soften when wetted, will be easily disturbed, and will be difficult to compact under wet weather conditions. Drying and reworking of the soils are likely to be difficult during the wet and cold months. We strongly recommend that the earthwork phases of this project be performed during the warmer, drier times of the year to limit the potential for disturbance of on-site soils.

The earthwork operations should include time for scarifying and drying of the individual lifts of fills before compaction. We expect the site is large enough to allow time for the soils to be scarified (disced) and dried during the summer months. Longer delays and additional costs should be expected in the wetter months. Adding lime to dry the soils maybe required as discussed in the *Compacted Fill* section of this report.

Traffic on stripped or undercut subgrades should be limited to reduce disturbance of underlying soils. Also, using lightweight, track-mounted dozer equipment for stripping will limit the disturbance of underlying soils, and may reduce the undercut volume needed. The Contractor must provide site drainage to maintain subgrades free of water and to avoid saturation and disturbance of the subgrade soils before placing compacted structural fill or the pavement base course. This site drainage will be important during all phases of the construction work. The Contractor should be responsible for reworking of subgrades and compacted structural fill that were initially considered suitable but were later disturbed by equipment and/or weather.

Engineering Services During Construction

The engineering recommendations provided in this report are based on the information obtained from the subsurface exploration and laboratory testing. However, conditions on the site may vary between the discrete locations observed at the time of our subsurface exploration. The nature and extent of variations between borings may not become evident until during construction.

To account for this variability, it is imperative that Schnabel provide professional observation and testing of subsurface conditions revealed during construction as an extension of our engineering services. These services will also help in evaluating the contractor's conformance with the plans and specifications in accordance with building code requirements. Because of our unique position to understand the intent of the geotechnical engineering recommendations, retaining Schnabel for these services will allow the owner to receive consistent service throughout the project construction.

Our firm can provide complete inspection and testing services during construction.

General Specification Recommendations

An allowance should be established to account for possible additional costs that may be required to construct earthwork and foundations as recommended in this report. Additional costs may be incurred for a variety of reasons including variation of soil between borings, greater than anticipated unsuitable soils, need for borrow fill material, drying of on-site soils by scarifying and/or lime, obstructions, temporary dewatering, etc.

The project specifications should indicate the Contractor's responsibility for providing adequate site drainage during construction. Inadequate drainage will most likely lead to disturbance of soils by construction traffic and increased volume of undercut.

This report may be made available to prospective bidders for informational purposes. We recommend that the project specifications contain the following statement:

> *Schnabel Engineering, LLC, has prepared this geotechnical engineering report for this project. This report is for informational purposes only and is not part of the contract documents. The opinions expressed represent the Geotechnical Engineer's interpretation of the subsurface conditions, tests, and the results of analyses performed. Should the data contained in this report not be adequate for the Contractor's purposes, the Contractor may make, before bidding, independent exploration, tests and analyses. This report may be examined by bidders at the office of the Owner, or copies may be obtained from the Owner at nominal charge.*

Additional data and reports prepared by others that could have an impact upon the Contractor's bid should also be made available to prospective bidders for informational purposes.

LIMITATIONS

We based the analyses and recommendations submitted in this report on the information revealed by our exploration. We attempted to provide for normal contingencies, but the possibility remains that unexpected conditions may be encountered during construction.

This report has been prepared to aid in the evaluation of this site and to assist in the design of the project. It is intended for use concerning this specific project. We based our recommendations on information on the site and proposed construction as described in this report. Substantial changes in loads, locations, or grades should be brought to our attention so we can modify our recommendations as needed. We would appreciate an opportunity to review the plans and specifications as they pertain to the recommendations contained in this report, and to submit our comments to you based on this review.

We have endeavored to complete the services identified herein in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions as this project. No other representation, express or implied, is included or intended, and no warranty or guarantee is included or intended in this report, or other instrument of service.

We appreciate the opportunity to be of service for this project. Please call us if you have any questions regarding this report.

Sincerely,

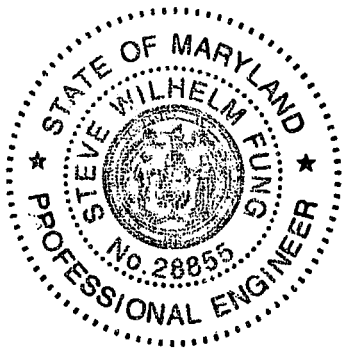
SCHNABEL ENGINEERING, LLC

Kenneth E. Derrenbacher, PE
Principal

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 16495, Expiration Date: 5/18/19

Steve W. Fung, PE
Senior Associate



FIGURES

Figure 1: Site Vicinity Map
Figures 2, 3, 4: Test Boring Location Plans

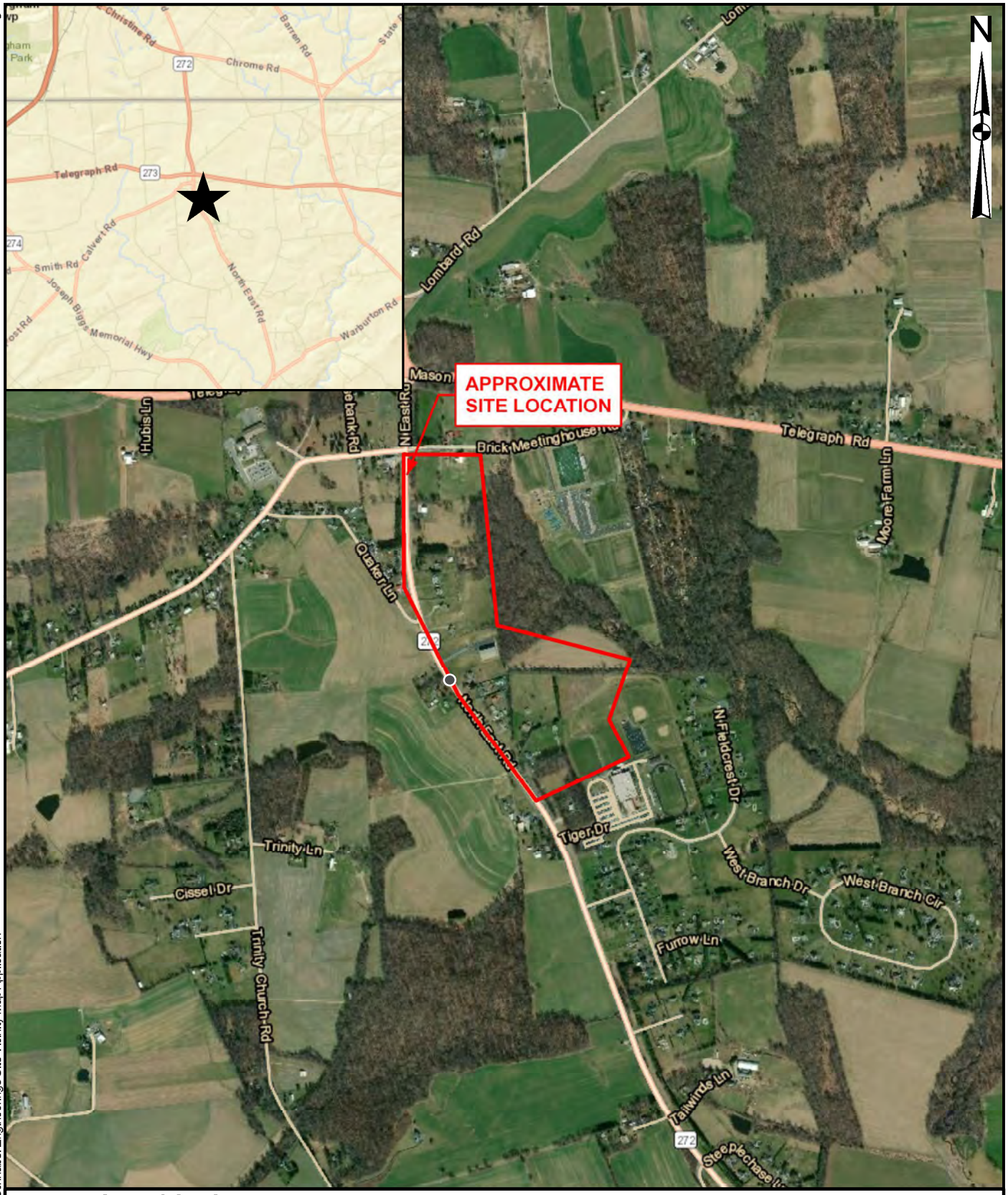
APPENDICES

Appendix A: Subsurface Exploration Data
Appendix B: Soil Laboratory Test Data
Appendix C: Infiltration Test Data

G:\2019 Projects\Baltimore\19C14008.00 Calvert Park Phase 3\03-SE Products\03-Reports\Calvert Park Geotechnical Eng Report.docx

FIGURES

Figure 1:	Site Vicinity Map
Figures 2A, 2B, 2C:	Test Boring Location Plans



Esri, HERE, Garmin, © OpenStreetMap contributors
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

NOT TO SCALE

Schnabel ENGINEERING

19C14008.00

PROJECT NO.

SITE VICINITY MAP

FIGURE 1

N

C-3

PK-8

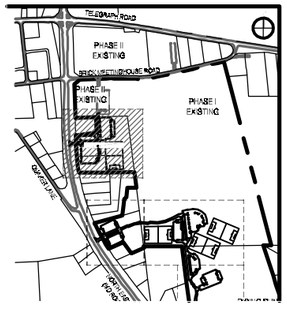
SWM-4

C-1

AF-1

PK-7

AF-2



CAUTION:
IF THIS DRAWING IS A REDUCTION,
USE THE GRAPHIC SCALES

REFERENCE: WBCM base plan dated 3/25/2019

LEGEND

– APPROXIMATE TEST BORING LOCATION

SCALE: 1"=100'

0 100' 200'

Schnabel ENGINEERING

CALVERT REGIONAL PARK PHASE 3
304 BRICK MEETING HOUSE ROAD
NORTH EAST, MARYLAND
PROJECT 19C14008.00

TEST BORING LOCATION PLAN

FIGURE 2

N

SWM-2

SWM-3

PK-4

PK-3

AF-3

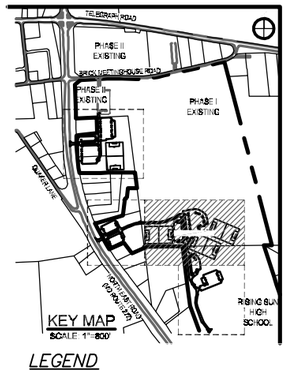
AF-6

AF-5

AF-4

PK-2

SWM-1



REFERENCE: WBCM base plan dated 3/25/2019

LEGEND

– APPROXIMATE TEST BORING LOCATION

SCALE: 1"=100'

0 100' 200'

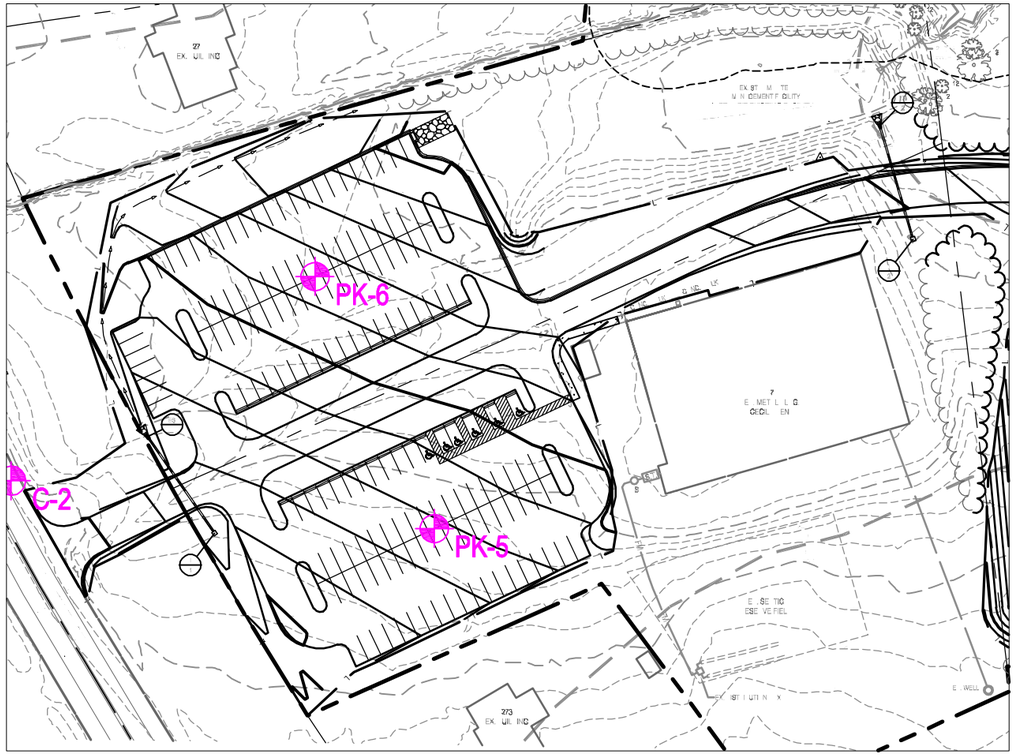
Schnabel ENGINEERING

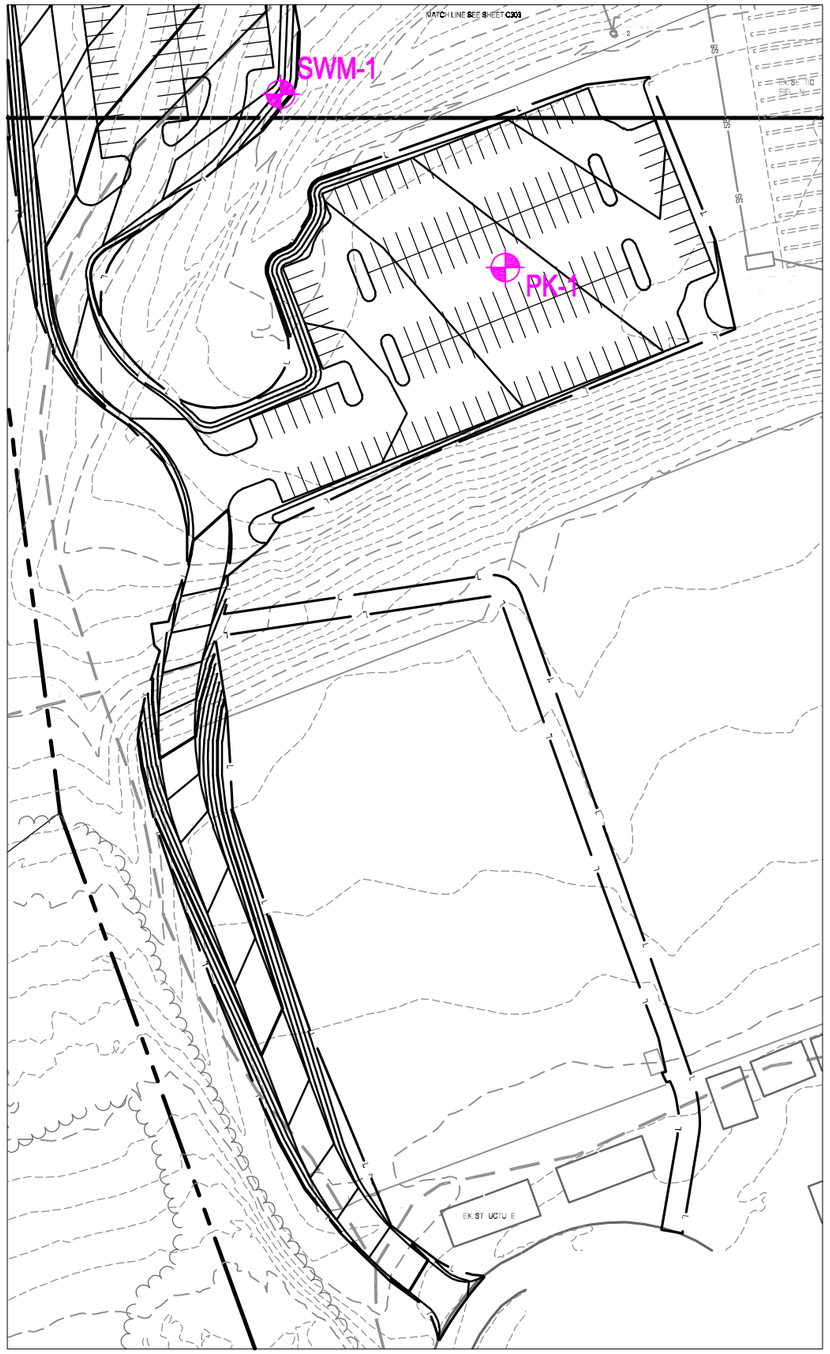
CALVERT REGIONAL PARK PHASE 3
304 BRICK MEETING HOUSE ROAD
NORTH EAST, MARYLAND
PROJECT 19C14008.00

TEST BORING LOCATION PLAN

FIGURE 3

N





REFERENCE: WBCM base plan dated 3/25/2019

LEGEND

– APPROXIMATE TEST BORING LOCATION

SCALE: 1"=100'

0 100' 200'

Schnabel ENGINEERING

CALVERT REGIONAL PARK PHASE 3
304 BRICK MEETING HOUSE ROAD
NORTH EAST, MARYLAND
PROJECT 19C14008.00

TEST BORING LOCATION PLAN

FIGURE 4

APPENDIX A

SUBSURFACE EXPLORATION DATA

Subsurface Exploration Procedures
General Notes for Subsurface Exploration Logs
Identification of Soil
Test Boring Logs, PK-1 through PK-8; SWM-1 through SWM-4; AF-1 through AF-6; and C1 through C-3

SUBSURFACE EXPLORATION PROCEDURES

Test Borings – Hollow Stem Augers

The borings are advanced by turning a continuous flight auger with a center opening of 2¼ or 3¼ inches. A plug device blocks off the center opening while augers are advanced. Cuttings are brought to the surface by the auger flights. Sampling is performed through the center opening in the hollow stem auger, by standard methods, after removal of the plug. Usually, no water is introduced into the boring using this procedure.

Standard Penetration Test Results

The numbers in the Sampling Data column of the boring logs represent Standard Penetration Test (SPT) results. Each number represents the blows needed to drive a 2-inch O.D., 1⅜-inch I.D. split-spoon sampler 6 inches, using a 140-pound hammer falling 30 inches. The sampler is typically driven a total of 18 or 24 inches. The first 6 inches are considered a seating interval. The total of the number of blows for the second and third 6-inch intervals is the SPT "N value." The SPT is performed according to ASTM D1586.

The SPT samples were obtained using a hydraulically driven automatic trip hammer (ATH). Most correlations with SPT data are based on N-values collected with a safety hammer. The energy applied to the split-spoon sampler using the ATH is about 33 percent greater than that applied using the safety hammer, resulting in lower N-values. The hammer blows shown on the boring logs are uncorrected for the higher energy. However, we correct SPT N values for the higher energy when using N values in our analyses.

Soil Classification Criteria

The group symbols on the logs represent the Unified Soil Classification System Group Symbols (ASTM D2487) based on visual observation and limited laboratory testing of the samples. Criteria for visual identification of soil samples are included in this appendix. Some variation can be expected between samples visually classified and samples classified in the laboratory.

Pocket Penetrometer Results

The values following "PP=" in the sampling data column of the logs represent pocket penetrometer readings. Pocket penetrometer readings provide an estimate of the unconfined compressive strength of fine-grained soils.

Boring Locations and Elevations

Boring locations were staked by Schnabel Engineering personnel by using a hand held GPS unit, accurate to about 3 meters. The approximate boring locations are shown on **Figures 2A, 2B, 2C**. Ground surface elevations at the boring locations were estimated from the Existing Conditions Plan provided by WBCM, and are indicated on the boring logs. Locations and elevations should be considered no more accurate than the methods used to determine them.

GENERAL NOTES FOR SUBSURFACE EXPLORATION LOGS

1. Numbers in sampling data column next to Standard Penetration Test (SPT) symbols indicate blows required to drive a 2-inch O.D., 1⅜-inch I.D. sampling spoon 6 inches using a 140 pound hammer falling 30 inches. The Standard Penetration Test (SPT) N value is the number of blows required to drive the sampler 12 inches, after a 6 inch seating interval. The Standard Penetration Test is performed in general accordance with ASTM D1586.
2. Visual classification of soil is in accordance with terminology set forth in "Identification of Soil." The ASTM D2487 group symbols (e.g., CL) shown in the classification column are based on visual observations.
3. Estimated water levels indicated on the logs are only estimates from available data and may vary with precipitation, porosity of the soil, site topography, and other factors.
4. Refusal at the surface of rock, boulder, or other obstruction is defined as an SPT resistance of 50 blows for 1 inch or less of penetration.
5. The logs and related information depict subsurface conditions only at the specific locations and at the particular time when drilled or excavated. Soil conditions at other locations may differ from conditions occurring at these locations. Also, the passage of time may result in a change in the subsurface soil and water level conditions at the subsurface exploration location.
6. The stratification lines represent the approximate boundary between soil and rock types as obtained from the subsurface exploration. Some variation may also be expected vertically between samples taken. The soil profile, water level observations and penetration resistances presented on these logs have been made with reasonable care and accuracy and must be considered only an approximate representation of subsurface conditions to be encountered at the particular location.
7. Key to symbols and abbreviations:

S-1, SPT	Sample No., Standard Penetration Test
5+10+1	Number of blows in each 6-inch increment

LL	Liquid Limit
MC	Moisture Content (percent)
PL	Plastic Limit
PP	Pocket Penetrometer Reading (tsf)
%Passing#200	Percent by weight passing a No. 200 Sieve

IDENTIFICATION OF SOIL

I. DEFINITION OF SOIL GROUP NAMES (ASTM D2487)

			SYMBOL	GROUP NAME
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels – More than 50% of coarse fraction retained on No. 4 sieve Coarse, ¾" to 3" Fine, No. 4 to ¾"	Clean Gravels Less than 5% fines	GW	WELL GRADED GRAVEL
			GP	POORLY GRADED GRAVEL
		Gravels with fines More than 12% fines	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	Sands – 50% or more of coarse Fraction passes No. 4 sieve Coarse, No. 10 to No. 4 Medium, No. 40 to No. 10 Fine, No. 200 to No. 40	Clean Sands Less than 5% fines	SW	WELL GRADED SAND
			SP	POORLY GRADED SAND
		Sands with fines More than 12% fines	SM	SILTY SAND
			SC	CLAYEY SAND
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays – Liquid Limit less than 50 Low to medium plasticity	Inorganic	CL	LEAN CLAY
			ML	SILT
		Organic	OL	ORGANIC CLAY
				ORGANIC SILT
	Silts and Clays – Liquid Limit 50 or more Medium to high plasticity	Inorganic	CH	FAT CLAY
			MH	ELASTIC SILT
		Organic	OH	ORGANIC CLAY
				ORGANIC SILT
Highly Organic Soils	Primarily organic matter, dark in color and organic odor		PT	PEAT

II. DEFINITION OF SOIL COMPONENT PROPORTIONS (ASTM D2487)

			Examples
Adjective Form	GRAVELLY SANDY	>30% to <50% coarse grained component in a fine-grained soil	GRAVELLY LEAN CLAY
	CLAYEY SILTY	>12% to <50% fine grained component in a coarse-grained soil	SILTY SAND
"With"	WITH GRAVEL WITH SAND	>15% to <30% coarse grained component in a fine-grained soil	FAT CLAY WITH GRAVEL
	WITH GRAVEL WITH SAND	>15% to <50% coarse grained component in a coarse-grained soil	POORLY GRADED GRAVEL WITH SAND
	WITH SILT WITH CLAY	>5% to <12% fine grained component in a coarse-grained soil	POORLY GRADED SAND WITH SILT

III. GLOSSARY OF MISCELLANEOUS TERMS

SYMBOLS ..... Unified Soil Classification Symbols are shown above as group symbols. A dual symbol "-" indicates the soil belongs to two groups. A borderline symbol "/" indicates the soil belongs to two possible groups.

FILL ..... Man-made deposit containing soil, rock and often foreign matter.

PROBABLE FILL ..... Soils which contain no visually detected foreign matter but which are suspect with regard to origin.

DISINTEGRATED ROCK (DR) ..... Residual materials with a standard penetration resistance (SPT) between 60 blows per foot and refusal. Refusal is defined as an SPT of 100 blows for 2" or less penetration.

PARTIALLY WEATHERED ROCI (PWR) ..... Residual materials with a standard penetration resistance (SPT) between 100 blows per foot and refusal. Refusal is defined as an SPT of 100 blows for 2" or less penetration.

BOULDERS & COBBLES ..... Boulders are considered rounded pieces of rock larger than 12 inches, while cobbles range from 3 to 12-inch size.

LENSES ..... 0 to ½-inch seam within a material in a test pit.

LAYERS ..... ½ to 12-inch seam within a material in a test pit.

POCKET ..... Discontinuous body within a material in a test pit.

MOISTURE CONDITIONS ..... Wet, moist or dry to indicate visual appearance of specimen.

COLOR ..... Overall color, with modifiers such as light to dark or variation in coloration.

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **C-1**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/25/19 **Finished:** 3/25/19
Location: See Location Plan

Ground Surface Elevation: 418.0 (ft) **Total Depth:** 4.4 ft

Groundwater Observations

Date	Time	Depth	Casing	Caved
3/25	---	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.7	Asphalt=8-inches		417.3	B		S-1, SPT 1+2+3+5 REC=24", 100%	PP = 2.50 tsf	Residual
	Sub-base Aggregate=20-inches							
1.7	LEAN CLAY WITH ROCK FRAGMENTS; moist, gray and light brown	CL	416.3					
4.4			413.6					

Bottom of Boring at 4.4 ft.
Backfilled at completion

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **C-2**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/25/19 **Finished:** 3/25/19
Location: See Location Plan

Ground Surface Elevation: 410.5 (ft) **Total Depth:** 3.1 ft

Groundwater Observations

Date	Time	Depth	Casing	Caved
3/25	---	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.7	Asphalt=8-inches		409.8					Fill
1.1	Sub-base Aggregate=5-inches		409.4					
	FILL, sampled as clayey sand with rock fragments; moist, light brown	FILL		A		S-1, SPT 6+6+3+2 REC=18", 75%		
3.1			407.4					

Bottom of Boring at 3.1 ft.
Backfilled at completion

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **C-3**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/25/19 **Finished:** 3/25/19
Location: See Location Plan

Ground Surface Elevation: 410.5 (ft) **Total Depth:** 3.9 ft

Groundwater Observations

Date	Time	Depth	Casing	Caved
3/25	---	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.9	Asphalt=9-inches		409.6					Fill
	Sub-base Aggregate=1-inch							
1.9	FILL, sampled as clayey sand with rock fragments; moist, light brown and gray	FILL	408.6	A		S-1, SPT 1+2+2+1 REC=24", 100%	PP = 0.50 tsf	
3.9			406.6					

Bottom of Boring at 3.9 ft.
Backfilled at completion

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **PK-1**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 396.5 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	8.0'
24 Hour Reading	3/27	---	Dry	---	8.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.8	Topsoil=9-inches							
	LEAN CLAY WITH SAND; moist, brown	CL	395.7			S-1, SPT 2+2+4+8 REC=27", 113%	MC = 20.5%	Residual
2.0	SANDY SILT; moist, light brown		394.5			S-2, SPT 6+6+7 REC=18", 100%		
				B	5	S-3, SPT 7+7+8 REC=18", 100%		
		ML						
	Change: brown and white, contains mica							
						S-4, SPT 12+13+15 REC=18", 100%		
10.0			386.5		10			

Bottom of Boring at 10.0 ft.

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **PK-2**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 402.0 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	5.5'
24 Hour Reading	3/27	---	Dry	---	5.5'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.8	Topsoil=9-inches							
	SILTY SAND; moist, dark brown	SM	401.2			S-1, SPT WOH+1+2+3 REC=24", 100%	LL = 43 PI = 5 MC = 25.6% % Passing #200 = 36.1	Residual
4.0			398.0			S-2, SPT 2+2+3 REC=18", 100%	LL = 55 PI = 6 MC = 34.7% % Passing #200 = 39.6	
	SILT; moist, mulicolored, contains mica			B	5	S-3, SPT 2+3+4 REC=18", 100%		
	Change: dark brown	ML						
10.0			392.0		10	S-4, SPT 2+3+5 REC=18", 100%		

Bottom of Boring at 10.0 ft.

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **PK-3**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 401.0 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	6.0'
24 Hour Reading	3/27	---	Dry	---	5.5'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.7	Topsoil=8-inches		400.3					
	SANDY SILT; moist, light brown	ML		B		S-1, SPT 2+2+3+3 REC=18", 75%	MC = 27.5%	Residual
						S-2, SPT 4+3+5 REC=18", 100%	MC = 41.5%	
	Change: contains mica				5	S-3, SPT 3+5+5 REC=18", 100%		
	Change: brown and green							
8.5	SILTY SAND; moist, brown and white	SM	392.5			S-4, SPT 3+4+5 REC=18", 100%		
10.0			391.0		10			

Bottom of Boring at 10.0 ft.

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **PK-4**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 391.0 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	6.0'
24 Hour Reading	3/27	---	5.5'	---	6.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.0	Topsoil=10-inches							Residual
0.9	SANDY SILT; moist, light brown	ML	390.1			S-1, SPT WOH+2+2+1 REC=24", 100%		
2.0	SILTY SAND; moist, light brown and white		389.0			S-2, SPT 2+3+2 REC=18", 100%		
	Change: estimated <5% mica			B	5	S-3, SPT 2+3+3 REC=16", 89%		
		SM						
						S-4, SPT 2+2+3 REC=18", 100%		
10.0	Bottom of Boring at 10.0 ft.		381.0		10			

TEST BORING LOG; P:19C14008.00 CALVERT REGIONAL PARK.GPJ; D: L:GINT LIBRARY_2018_06_018(BALTIMORE).GLB; Print:4/18/19

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **PK-5**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 407.5 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	5.5'
24 Hour Reading	3/27	---	Dry	---	5.5'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.1	Topsoil=2-inches		407.4					
	SANDY LEAN CLAY; moist, light brown	CL				S-1, SPT WOH+2+3+5 REC=24", 100%	PP = 4.50 tsf	Residual
2.0			405.5					
	SANDY SILT; moist, dark brown, contains mica					S-2, SPT 3+6+6 REC=18", 100%	PP = 1.50 tsf	
	Change: contains rock fragments			B	5	S-3, SPT 3+3+4 REC=18", 100%		
		ML						
						S-4, SPT 3+5+6		
10.0			397.5		10			

Bottom of Boring at 10.0 ft.

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **PK-6**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 402.0 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	5.5'
24 Hour Reading	3/27	---	Dry	---	5.5'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.8	Topsoil=9-inches		401.2			S-1, SPT WOH+2+3+4 REC=24", 100%	PP = 2.00 tsf	Residual
2.0	SANDY LEAN CLAY; moist, light brown	CL	400.0			S-2, SPT 3+5+7 REC=6", 33%	PP = 1.00 tsf	
	SANDY SILT; moist, light brown and gray, contains mica	ML		B	5	S-3, SPT 4+4+4 REC=18", 100%		
10.0			392.0		10	S-4, SPT 4+4+4 REC=18", 100%		

Bottom of Boring at 10.0 ft.

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **PK-7**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/27/19 **Finished:** 3/27/19
Location: See Location Plan

Ground Surface Elevation: 403.0 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/27	---	Dry	---	---
Completion ▼	3/27	---	Dry	---	---
Casing Pulled ▼	3/27	---	Dry	---	6.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.0	Topsoil=7-inches		402.4			S-1, SPT 2+1+5+6 REC=24", 100%	PP = 3.00 tsf	Residual
0.6	SANDY LEAN CLAY; moist, light brown	CL				S-2, SPT 8+7+8 REC=18", 100%	PP = 2.00 tsf	
	Change: contains rock fragments			B	5	S-3, SPT 3+4+7 REC=18", 100%	PP = 2.00 tsf	
6.5	SANDY SILT; moist, mulicolored	ML	396.5					
					10	S-4, SPT 4+4+6 REC=18", 100%		
10.0			393.0					

Bottom of Boring at 10.0 ft.
Backfilled at completion

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **PK-8**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/27/19 **Finished:** 3/27/19
Location: See Location Plan

Ground Surface Elevation: 398.5 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/27	---	Dry	---	---
Completion ▼	3/27	---	Dry	---	---
Casing Pulled ▼	3/27	---	Dry	---	6.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.4	Topsoil=5-inches		398.1					
	LEAN CLAY WITH SAND; moist, light brown and gray	CL				S-1, SPT WOH/12"+2+3 REC=24", 100%	PP = 2.00 tsf LL = 36 PI = 18 MC = 26.8% % Passing #200 = 75.0	Residual
2.0	SILT; moist, mulicolored		396.5			S-2, SPT 5+5+7 REC=18", 100%	PP = 3.00 tsf	
				B	5	S-3, SPT 3+5+7 REC=12", 67%	PP = 2.50 tsf	
	Change: contains rock fragments	ML						
					10	S-4, SPT 5+5+5 REC=18", 100%		
10.0			388.5					

Bottom of Boring at 10.0 ft.
Backfilled at completion

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **AF-1**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/27/19 **Finished:** 3/27/19
Location: See Location Plan

Ground Surface Elevation: 393.5 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/27	---	Dry	---	---
Completion ▼	3/27	---	Dry	---	---
Casing Pulled ▼	3/27	---	Dry	---	8.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.5	Topsoil=6-inches		393.0					
	SANDY LEAN CLAY; moist, light brown	CL		B		S-1, SPT 1+2+2+2 REC=24", 100%	PP = 1.00 tsf	Residual
						S-2, SPT 6+8+11 REC=18", 100%	PP = 3.50 tsf	
					5	S-3, SPT 6+6+7 REC=18", 100%	PP = 2.00 tsf	
	Change: light gray							
8.5	SANDY LEAN CLAY; moist, mulicolored, contains rock fragments	CL	385.0			S-4, SPT 12+5+4 REC=10", 56%	PP = 2.00 tsf	
10.0			383.5		10			

Bottom of Boring at 10.0 ft.
Backfilled at completion

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **AF-2**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/27/19 **Finished:** 3/27/19
Location: See Location Plan

Ground Surface Elevation: 396.0 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/27	---	Dry	---	---
Completion ▼	3/27	---	Dry	---	---
Casing Pulled ▼	3/27	---	Dry	---	6.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.0	Topsoil=10-inches							Residual
0.9	SILTY SAND; moist, light brown	SM	395.1			S-1, SPT WOH+2+2+3 REC=10", 42%		
2.0	SANDY LEAN CLAY; moist, tan and light brown	CL	394.0			S-2, SPT 3+3+4 REC=18", 100%		
	Change: mulicolored			B	5	S-3, SPT 3+4+3 REC=16", 89%	PP = 0.50 tsf	
6.5	SANDY SILT; moist, mulicolored	ML	389.5					
					10	S-4, SPT 4+4+4 REC=14", 78%		
10.0			386.0					

Bottom of Boring at 10.0 ft.
Backfilled at completion

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **AF-3**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 403.0 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	5.0'
24 Hour Reading	3/27	---	Dry	---	5.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.1	Topsoil=1-inch		402.9					
	SILT; moist, light brown	ML		B		S-1, SPT 1+3+3+4 REC=7", 29%	MC = 32.7%	Residual
						S-2, SPT 4+4+5 REC=18", 100%	MC = 27.0%	
					5	S-3, SPT 2+3+4 REC=18", 100%		
						S-4, SPT 4+4+3 REC=18", 100%		
10.0	Bottom of Boring at 10.0 ft.		393.0		10			

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **AF-4**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 407.0 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	5.5'
24 Hour Reading	3/27	---	Dry	---	5.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.9	Topsoil=10-inches		406.1			S-1, SPT 1+2+2+3 REC=24", 100%	LL = 49 PI = 29 MC = 27.9% % Passing #200 = 82.1 PP = 1.00 tsf	Residual
2.0	LEAN CLAY WITH SAND; moist, light brown	CL	405.0			S-2, SPT 3+3+5 REC=18", 100%	LL = 47 PI = 3 MC = 31.7% % Passing #200 = 38.4	
4.0	SILTY SAND; moist, dark brown	SM	403.0					
	SILTY SAND; moist, light brown and green	SM		B	5	S-3, SPT 3+3+3 REC=18", 100%		
					10	S-4, SPT 5+5+5 REC=18", 100%		
10.0			397.0					

Bottom of Boring at 10.0 ft.
Offset 10 feet southeast

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **AF-5**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 393.0 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	5.0'
24 Hour Reading	3/27	---	Dry	---	5.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.0	Topsoil=9-inches							Residual
0.8	SANDY SILT; moist, light brown	ML	392.2			S-1, SPT 2+2+2+3 REC=24", 100%		
2.0	SILTY SAND; moist, light brown		391.0			S-2, SPT 3+4+3 REC=18", 100%		
				B	5	S-3, SPT 2+3+3 REC=18", 100%		
	Change: light brown and whitish black	SM						
10.0	Bottom of Boring at 10.0 ft.		383.0		10	S-4, SPT 3+4+4 REC=18", 100%		

TEST BORING LOG; P:19C14008.00 CALVERT REGIONAL PARK.GPJ; D: L:GINT LIBRARY_2018_06_018(BALTIMORE).GLB; Print:4/18/19

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **AF-6**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 380.5 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	6.0'
24 Hour Reading	3/27	---	4.5'	---	5.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
	Topsoil=15-inches							
1.3			379.2			S-1, SPT 2+2+3+3 REC=24", 100%	PP = 1.00 tsf	Residual
	SANDY LEAN CLAY; moist, light brown	CL						
2.0			378.5					
	SANDY SILT; moist, light brown, contains rock fragments	ML				S-2, SPT 6+5+5 REC=18", 100%	MC = 22.7%	
4.0			376.5					
	SILTY SAND; moist, light brown			B	5	S-3, SPT 5+6+6 REC=18", 100%		
		SM						
	Change: gray and light brown							
10.0			370.5		10	S-4, SPT 5+6+6 REC=18", 100%		

Bottom of Boring at 10.0 ft.

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **SWM-1**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 394.5 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	5.5'
24 Hour Reading	3/27	---	3.5'	---	4.5'
Infil Pipe	3/27	---	4.3'	6.5'	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.0	Topsoil=10-inches					S-1, SPT 2+2+3+6 REC=24", 100%	PP = 1.50 tsf	Residual
0.9	SANDY LEAN CLAY; moist, light brown	CL	393.6					
2.0	SILTY SAND; moist, light brown	SM	392.5			S-2, SPT 6+6+10+10 REC=24", 100%		
4.0	SANDY SILT WITH ROCK FRAGMENTS; moist, light brown	ML	390.5	B	5	S-3, SPT 5+5+7+10 REC=24", 100%		
6.0	SANDY SILT; moist, mulicolored	ML	388.5			S-4, SPT 4+4+8+7 REC=24", 100%		
10.0			384.5		10	S-5, SPT 4+5+6+7 REC=24", 100%		

Bottom of Boring at 10.0 ft.
Boring offset 5 feet north of staked location
Infiltration pipe installed to 7 feet depth, 5 feet northwest of boring

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **SWM-2**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 388.0 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	6.0'
24 Hour Reading	3/27	---	Dry	---	6.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.5	Topsoil=6-inches		387.5					
	CLAYEY SAND; moist, light brown	SC				S-1, SPT 2+2+2+4 REC=24", 100%	PP = 1.50 tsf MC = 46.0% % Passing #200 = 45.8	Residual
2.0	SILT WITH SAND; moist, light brown		386.0			S-2, SPT 3+3+4+5 REC=18", 75%		
				B	5	S-3, SPT 5+5+4+4 REC=10", 42%		
	Change: WITH ROCK FRAGMENTS	ML				S-4, SPT 2+3+5+6 REC=14", 58%		
	Change: estimated <5% mica					S-5, SPT 2+2+2+2 REC=24", 100%		
10.0			378.0		10			

Bottom of Boring at 10.0 ft.
Infiltration hole offset 5 feet southeast, pipe installed to 6.5 feet depth

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **SWM-3**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/26/19 **Finished:** 3/26/19
Location: See Location Plan

Ground Surface Elevation: 391.0 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/26	---	Dry	---	---
Completion ▼	3/26	---	Dry	---	---
Casing Pulled ▼	3/26	---	Dry	---	6.0'
24 Hour Reading	3/27	---	5.0'	---	6.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
	Topsoil=18-inches					S-1, SPT WOH/12"+1+1 REC=18", 75%		Residual
1.5			389.5					
2.0	LEAN CLAY; moist, light brown	CL	389.0			S-2, SPT 2+2+3+3 REC=24", 100%	PP = 2.50 tsf	
	SANDY LEAN CLAY; moist, light brown	CL						
4.0			387.0					
	SILTY SAND; moist, light brown			B	5	S-3, SPT 3+4+6+7 REC=18", 75%	PP = 2.50 tsf	
		SM				S-4, SPT 5+7+9+9 REC=24", 100%	MC = 24.0% % Passing #200 = 39.5	
						S-5, SPT 5+5+6+8 REC=24", 100%		
10.0			381.0		10			

Bottom of Boring at 10.0 ft.
Infiltration hole offset 5 feet south, pipe installed to 7 feet depth

Schnabel ENGINEERING **TEST BORING LOG**

Project: Calvert Regional Park
Phase 3
Cecil County, Maryland

Boring Number: **SWM-4**
Contract Number: 19C14008.00
Sheet: 1 of 1

Contractor: Connelly and Associates, Inc.
Frederick, Maryland
Contractor Foreman: Nick H.
Schnabel Representative: S. Bhattarai
Equipment: Diedrich D-50 (ATC)
Method: 3-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 3/27/19 **Finished:** 3/27/19
Location: See Location Plan

Ground Surface Elevation: 393.5 (ft) **Total Depth:** 10.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	3/27	---	Dry	---	---
Completion ▼	3/27	---	Dry	---	---
Casing Pulled ▼	3/27	---	Dry	---	6.5'
2 Hour Reading	3/27	---	0.0'	---	4.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.5	Topsoil=6-inches		393.0					Residual
	CLAYEY SAND; moist, light brown and gray	SC				S-1, SPT 1+1+1+1 REC=24", 100%		
2.0	SILTY SAND; moist, mulicolored, contains mica		391.5			S-2, SPT 3+3+3+3 REC=24", 100%		
				B	5	S-3, SPT 2+2+3+3 REC=24", 100%		
		SM				S-4, SPT 2+3+3+5 REC=24", 100%		
	Change: contains rock fragments					S-5, SPT 3+3+6+6 REC=24", 100%		
10.0			383.5		10			

Bottom of Boring at 10.0 ft.
Infiltration hole offset 5 feet south, pipe installed to 7 feet depth

APPENDIX B

SOIL LABORATORY TEST DATA

Summary of Laboratory Tests
Gradation Curves
Moisture Density Relation
California Bearing Ratio Test

Summary of Laboratory Tests

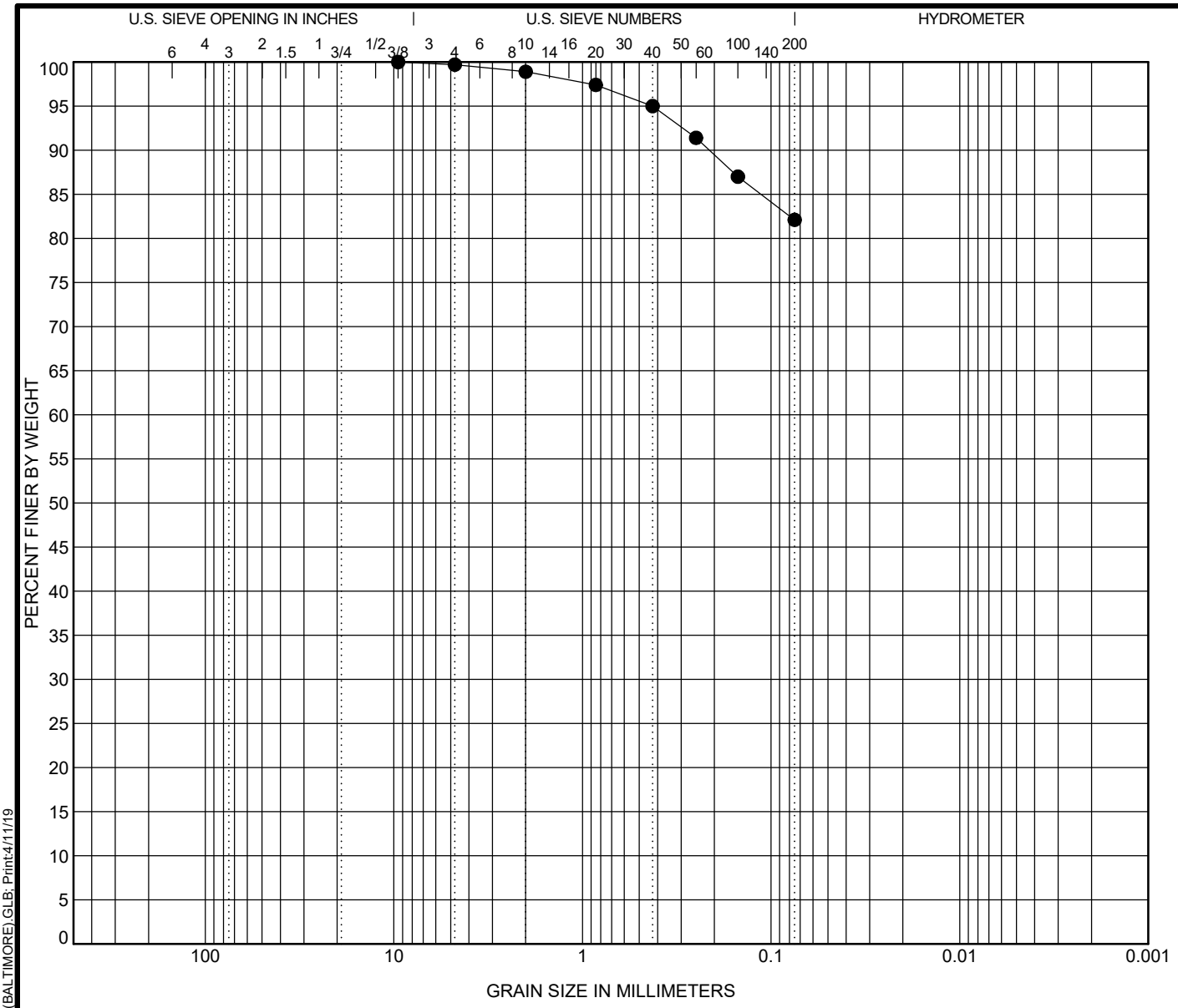
Project Number: 19C14008.00

Boring No.	Sample Depth ft / Elevation ft	Sample Type	Description of Soil Specimen	Natural Moisture (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	% Retained No. 4 Sieve	Proctor Test Method	Maximum Dry Density (pcf)	Optimum Moisture Content (%)	CBR Value
AF-4	0.0 - 2.0 / 407.0 - 405.0	Jar	LEAN CLAY WITH SAND (CL), dark brown	27.9	49	20	29	82.1	0.3	--	--	--	--
AF-4	2.5 - 4.0 / 404.5 - 403.0	Jar	SILTY SAND (SM), dark brown	31.7	47	44	3	38.4	--	--	--	--	--
PK-2	0.0 - 2.0 / 402.0 - 400.0	Jar	SILTY SAND (SM), dark brown	25.6	43	38	5	36.1	0.4	--	--	--	--
PK-2	2.5 - 4.0 / 399.5 - 398.0	Jar	SILTY SAND (SM), brown	34.7	55	49	6	39.6	0.0	--	--	--	--
PK-8	0.5 - 2.5 / 398.0 - 396.0	Jar	LEAN CLAY WITH SAND (CL), brown	26.8	36	18	18	75.0	6.5	ASHT180C	117.1	12.4	3.4
SWM-2	0.4 - 2.5 / 387.6 - 385.5	Jar	SANDY LOAM (USDA)	46.0	--	--	--	45.8	0.9	--	--	--	--
SWM-3	7.0 - 8.0 / 384.0 - 383.0	Jar	SANDY LOAM (USDA)	24.0	--	--	--	39.5	0.8	--	--	--	--

Notes:
1. Soil tests in general accordance with ASTM, ASTM standards.
2. Soil classifications are in general accordance with ASTM D2487, USDA(as applicable), based on testing indicated and visual classification.
3. Key to abbreviations: NP=Non-Plastic; ND=Not Detected; ; P=Present; T=Trace; -- indicates no test performed

Schnabel ENGINEERING

Project: Calvert Regional Park
Phase 3
Cecil County, MD



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen	Sample Description	LL	PL	PI		
● AF-4 0.0 ft	**LEAN CLAY WITH SAND (CL), dark brown**	**49**	**20**	**29**		

Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D6913	**9.5**				**0.3**	**17.6**	**82.1**	

Percent Finer

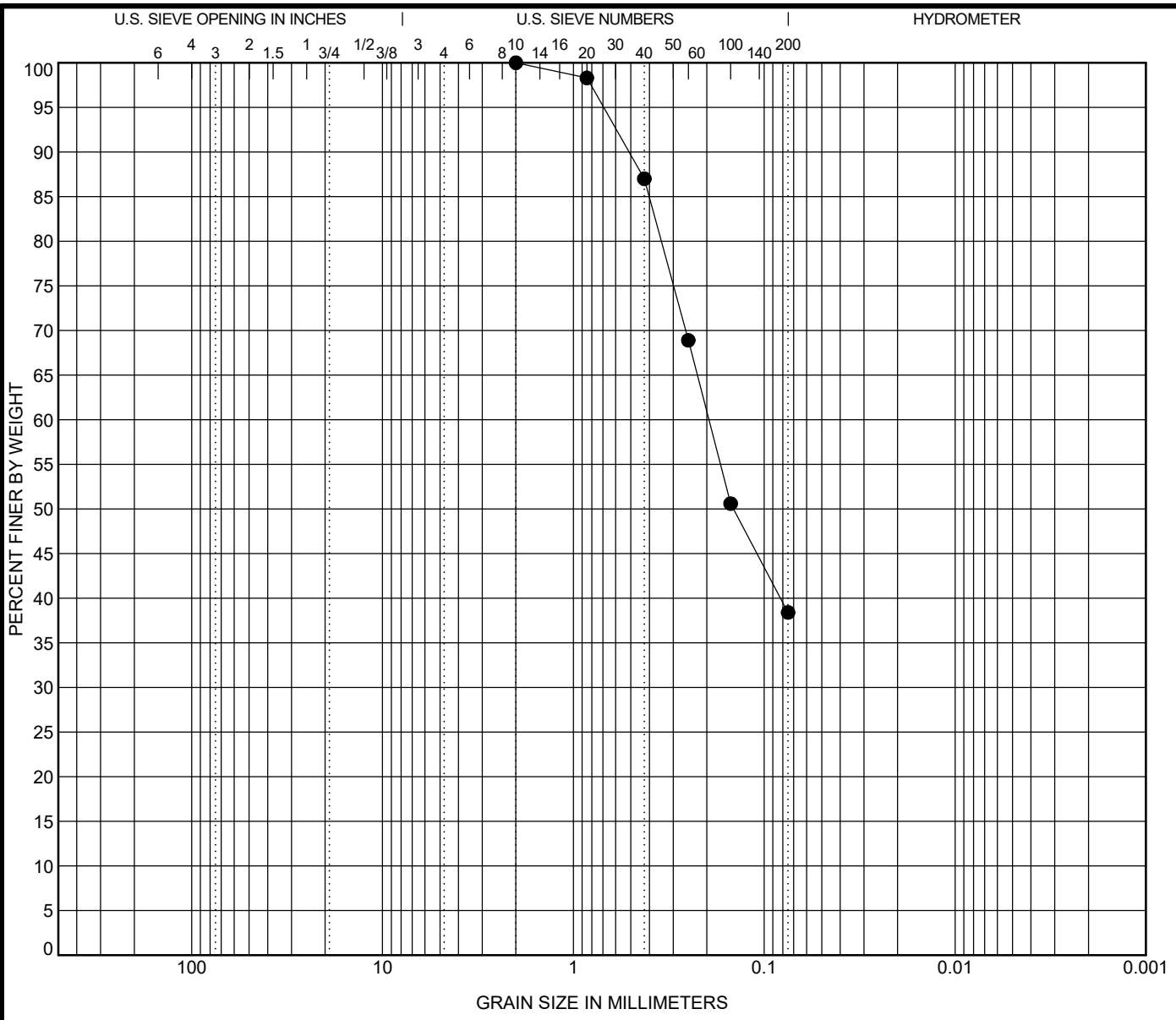
Sieve Size	No. 200	No. 100	No. 60	No. 40	No. 20	No. 10	No. 4	3/8 in.
% Finer	82.1	87.0	91.4	95.0	97.4	98.9	99.7	100.0

Schnabel ENGINEERING

GRADATION CURVE

Project: Calvert Regional Park
Phase 3
Cecil County, MD

Contract: 19C14008.00



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen	Sample Description	LL	PL	PI		
● AF-4 2.5 ft	**SILTY SAND (SM), dark brown**	**47**	**44**	**3**		

Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D6913	**2**	**0.195**					**38.4**	

Percent Finer

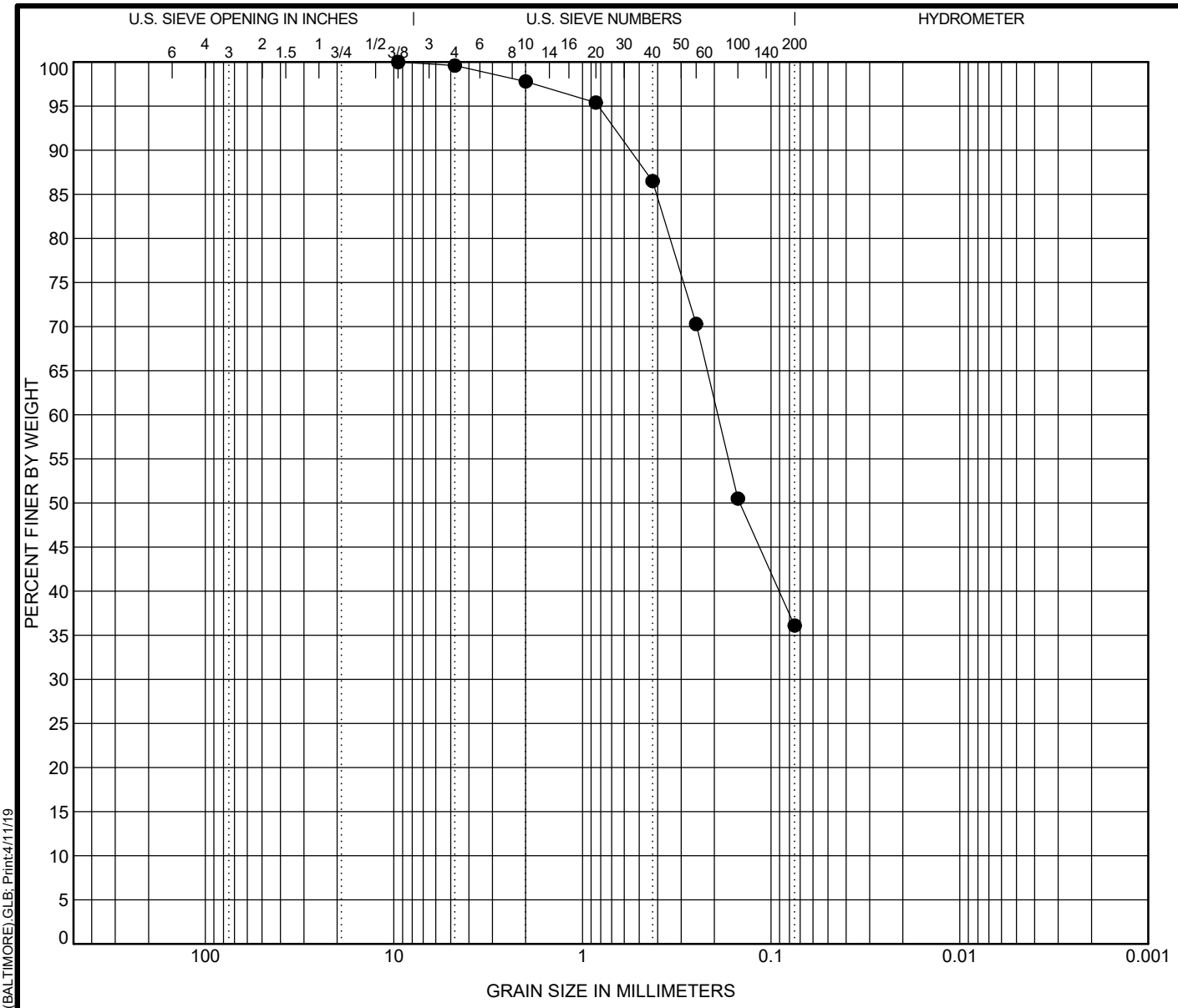
Sieve Size	No. 200	No. 100	No. 60	No. 40	No. 20	No. 10
% Finer	38.4	50.6	68.9	87.0	98.3	100.0

Schnabel ENGINEERING

GRADATION CURVE

Project: Calvert Regional Park
Phase 3
Cecil County, MD

Contract: 19C14008.00



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen	Sample Description	LL	PL	PI
● PK-2 0.0 ft	**SILTY SAND (SM), dark brown**	**43**	**38**	**5**

Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D6913	**9.5**	**0.192**			**0.4**	**63.5**	**36.1**	

Percent Finer

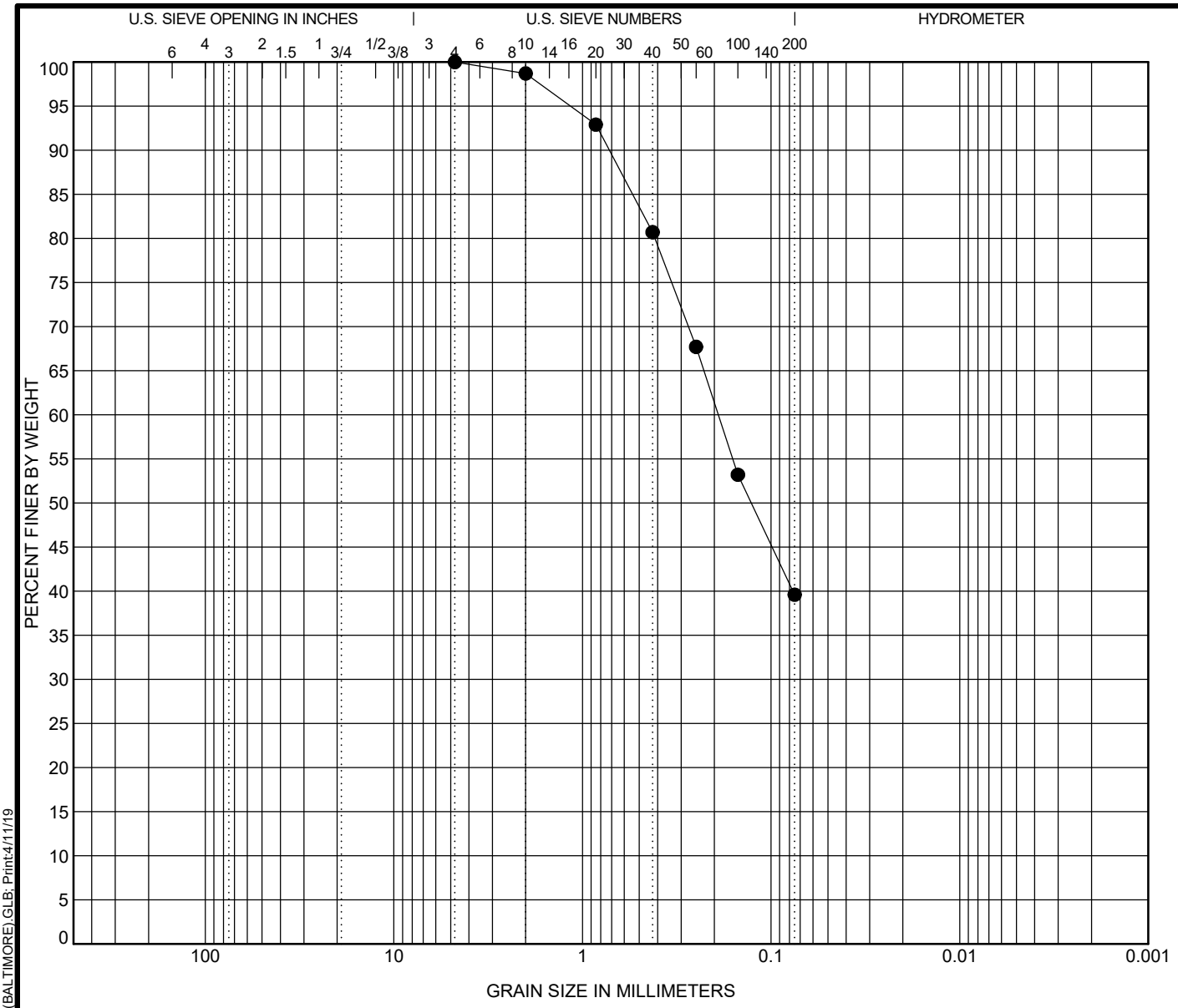
Sieve Size	No. 200	No. 100	No. 60	No. 40	No. 20	No. 10	No. 4	3/8 in.
% Finer	36.1	50.5	70.3	86.5	95.4	97.8	99.6	100.0

Schnabel ENGINEERING

GRADATION CURVE

Project: Calvert Regional Park
Phase 3
Cecil County, MD

Contract: 19C14008.00



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen	Sample Description	LL	PL	PI		
● PK-2 2.5 ft	**SILTY SAND (SM), brown**	**55**	**49**	**6**		

Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D6913	**4.75**	**0.191**			**0.0**	**60.4**	**39.6**	

Percent Finer

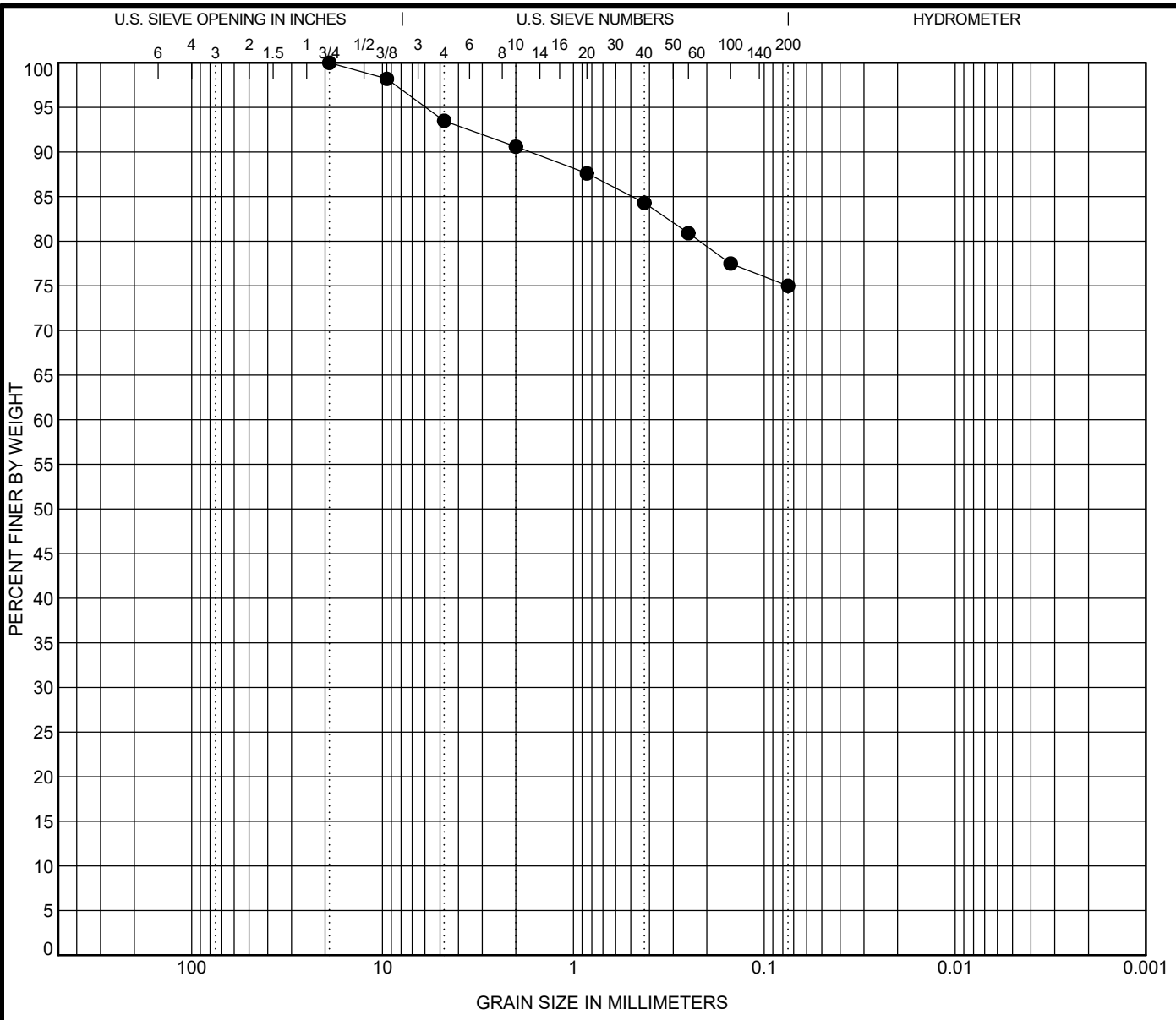
Sieve Size	No. 200	No. 100	No. 60	No. 40	No. 20	No. 10	No. 4
% Finer	39.6	53.2	67.7	80.7	92.9	98.7	100.0

Schnabel ENGINEERING

GRADATION CURVE

Project: Calvert Regional Park
Phase 3
Cecil County, MD

Contract: 19C14008.00



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen		Sample Description	LL	PL	PI		
● PK-8	0.5 ft	**LEAN CLAY WITH SAND (CL), brown**	**36**	**18**	**18**		

Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D6913	**19**				**6.5**	**18.5**	**75.0**	

Percent Finer

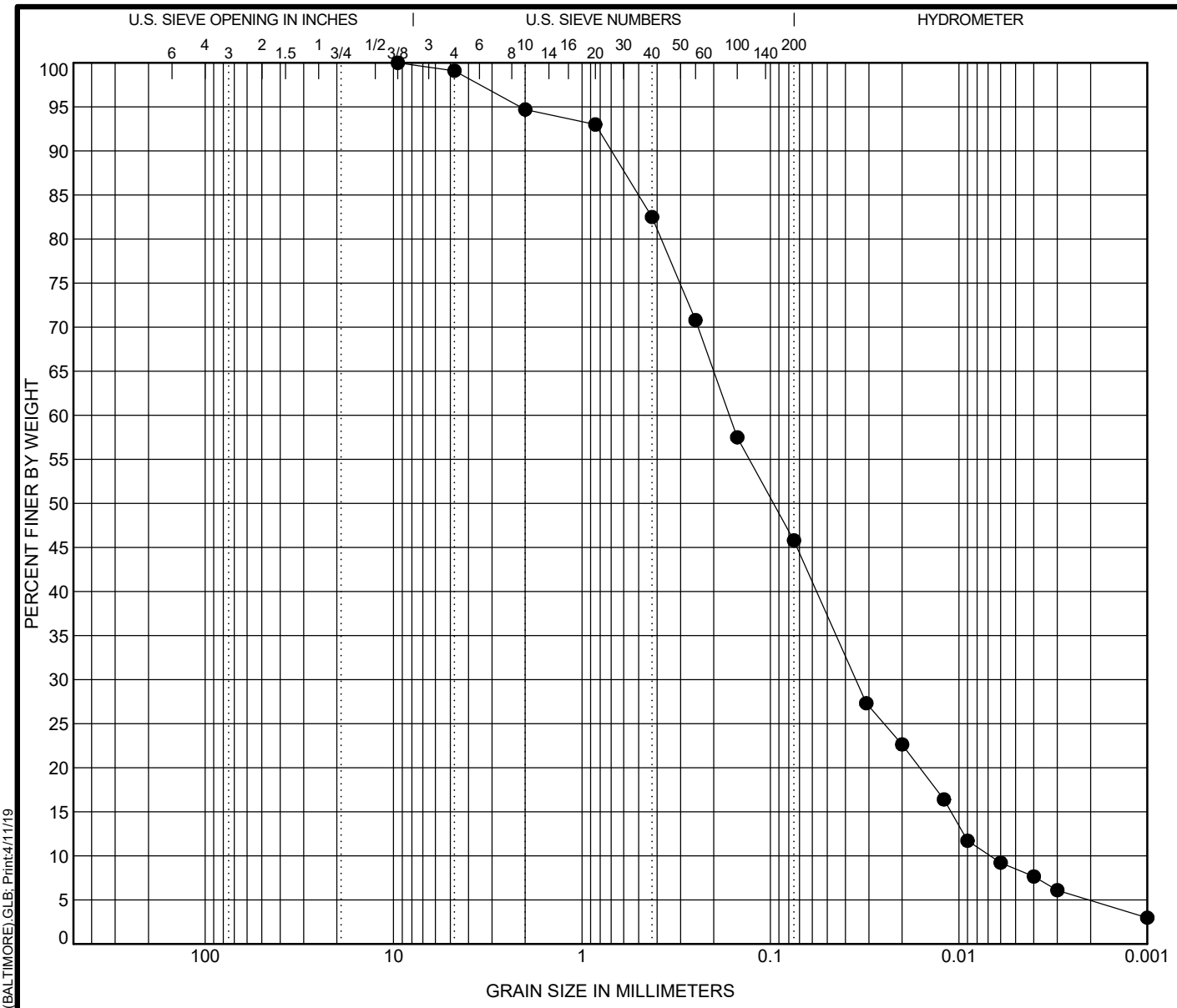
Sieve Size	No. 200	No. 100	No. 60	No. 40	No. 20	No. 10	No. 4	3/8 in.	3/4 in.
% Finer	75.0	77.5	80.9	84.3	87.6	90.6	93.5	98.2	100.0

Schnabel ENGINEERING

GRADATION CURVE

Project: Calvert Regional Park
Phase 3
Cecil County, MD

Contract: 19C14008.00



GRAVEL	SAND	SILT OR CLAY

Specimen	Sample Description	LL	PL	PI
● SWM-2 0.4 ft	**SANDY LOAM** (USDA)	--	--	--

Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D422	**9.5**	**0.165**	**0.035**	**0.007**	**5.3**	**57.4**	**32.4**	**4.9**
					Used in Classification	**60.6**	**34.2**	**5.2**

Percent Finer

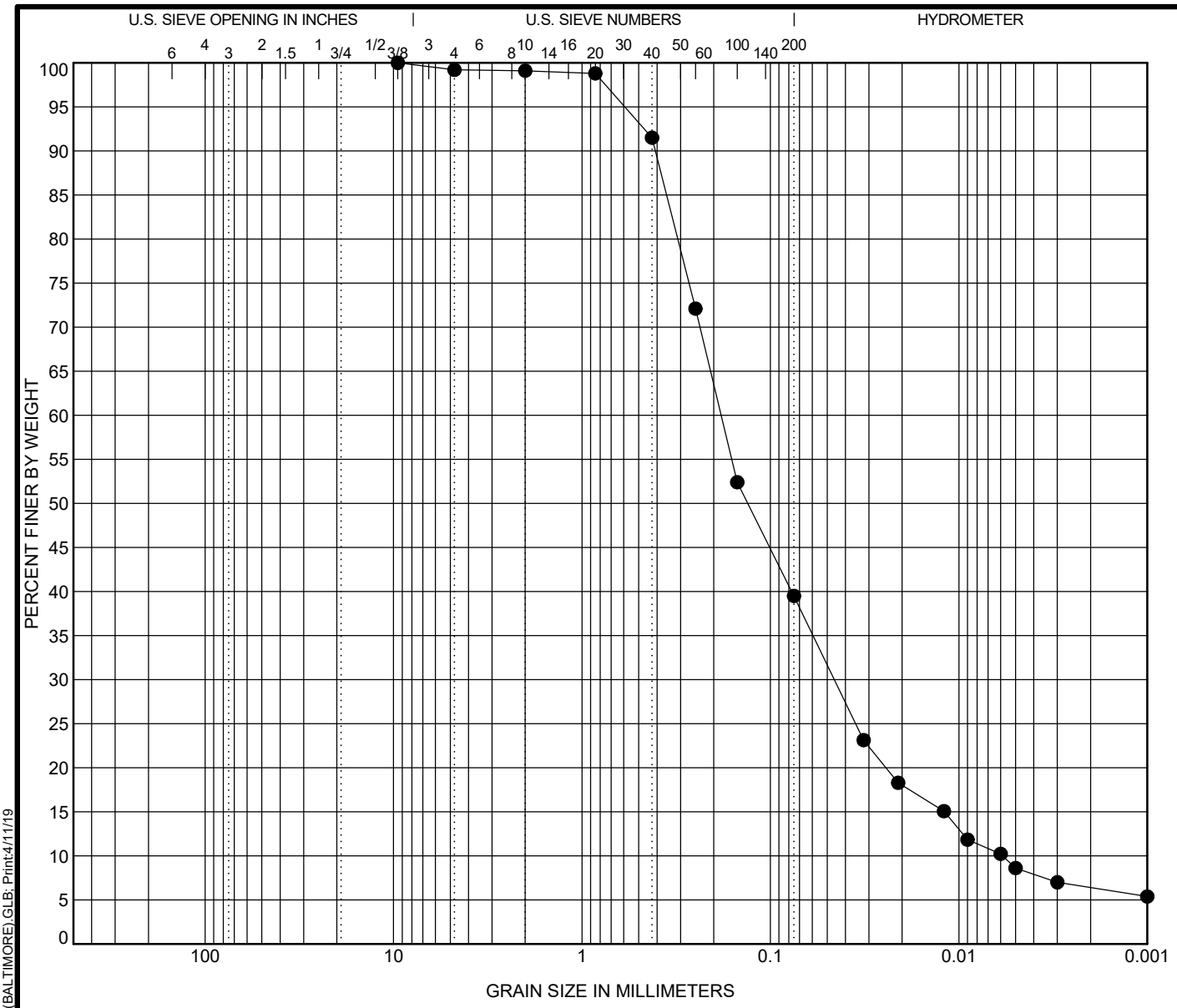
Sieve Size	No. 200	No. 100	No. 60	No. 40	No. 20	No. 10	No. 4	3/8 in.
% Finer	45.8	57.5	70.8	82.5	93.0	94.7	99.1	100.0

Schnabel ENGINEERING

GRADATION CURVE

Project: Calvert Regional Park
Phase 3
Cecil County, MD

Contract: 19C14008.00



Specimen	Sample Description	LL	PL	PI
● SWM-3 7.0 ft	**SANDY LOAM** (USDA)	--	--	--

Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D422	**9.5**	**0.183**	**0.046**	**0.006**	**0.9**	**67.4**	**25.3**	**6.4**
Used in Classification						**68.0**	**25.5**	**6.5**

Percent Finer

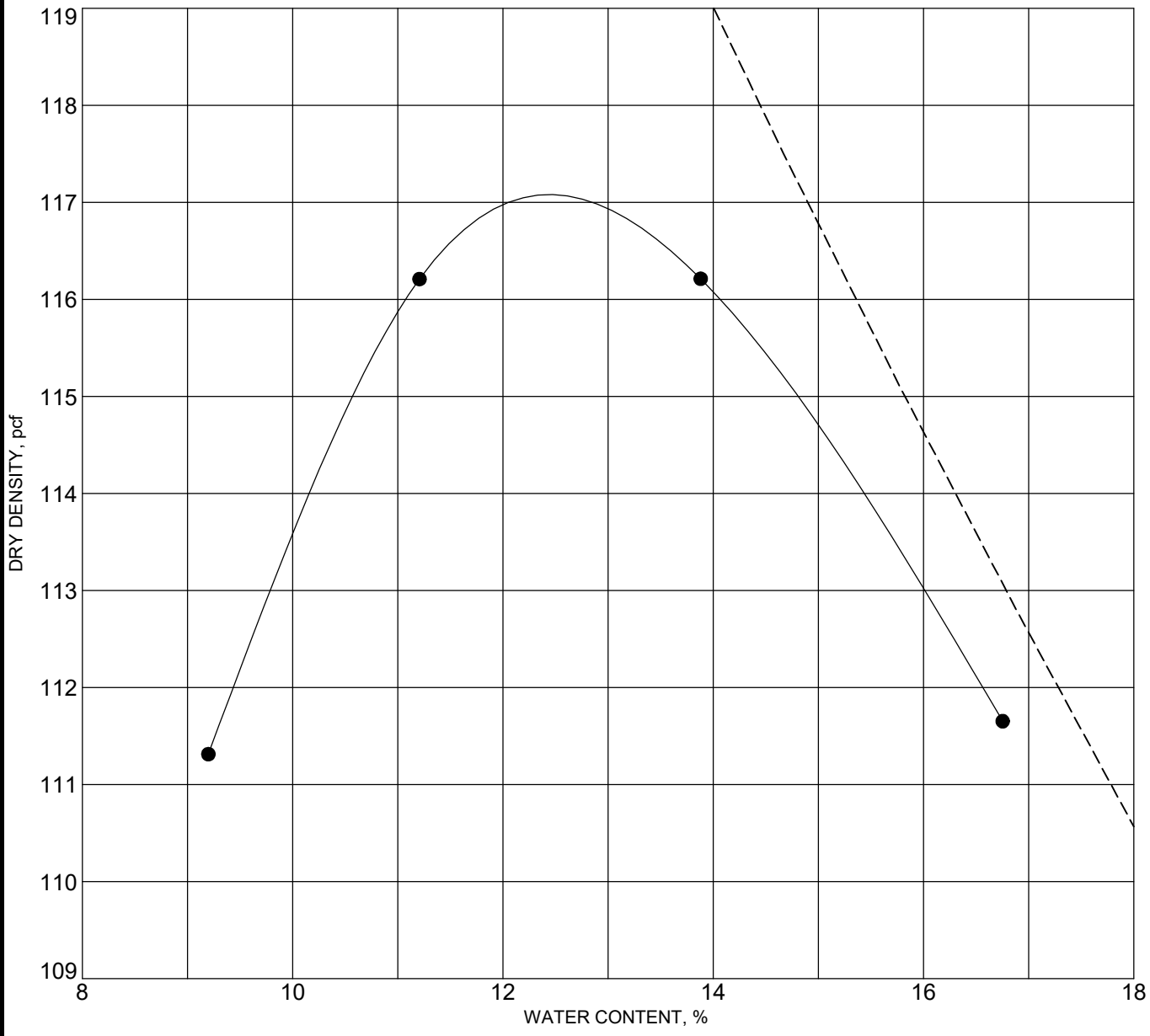
Sieve Size	No. 200	No. 100	No. 60	No. 40	No. 20	No. 10	No. 4	3/8 in.
% Finer	39.5	52.4	72.1	91.5	98.8	99.1	99.2	100.0

Schnabel ENGINEERING

GRADATION CURVE

Project: Calvert Regional Park
Phase 3
Cecil County, MD

Contract: 19C14008.00



Sample Description:	LEAN CLAY WITH SAND (CL), brown
Sample Source:	PK-8, 0.5 ft
Test Methods:	AASHTO T 180 Method C

Assumed Specific Gravity:	2.60
Max. Dry Density (pcf):	117.1
Opt. Moisture (%):	12.4

Liquid Limit (LL):	36
Plasticity Index (PI):	18
% Retained #4 Sieve:	6.5
% Passing # 200 Sieve:	75.0

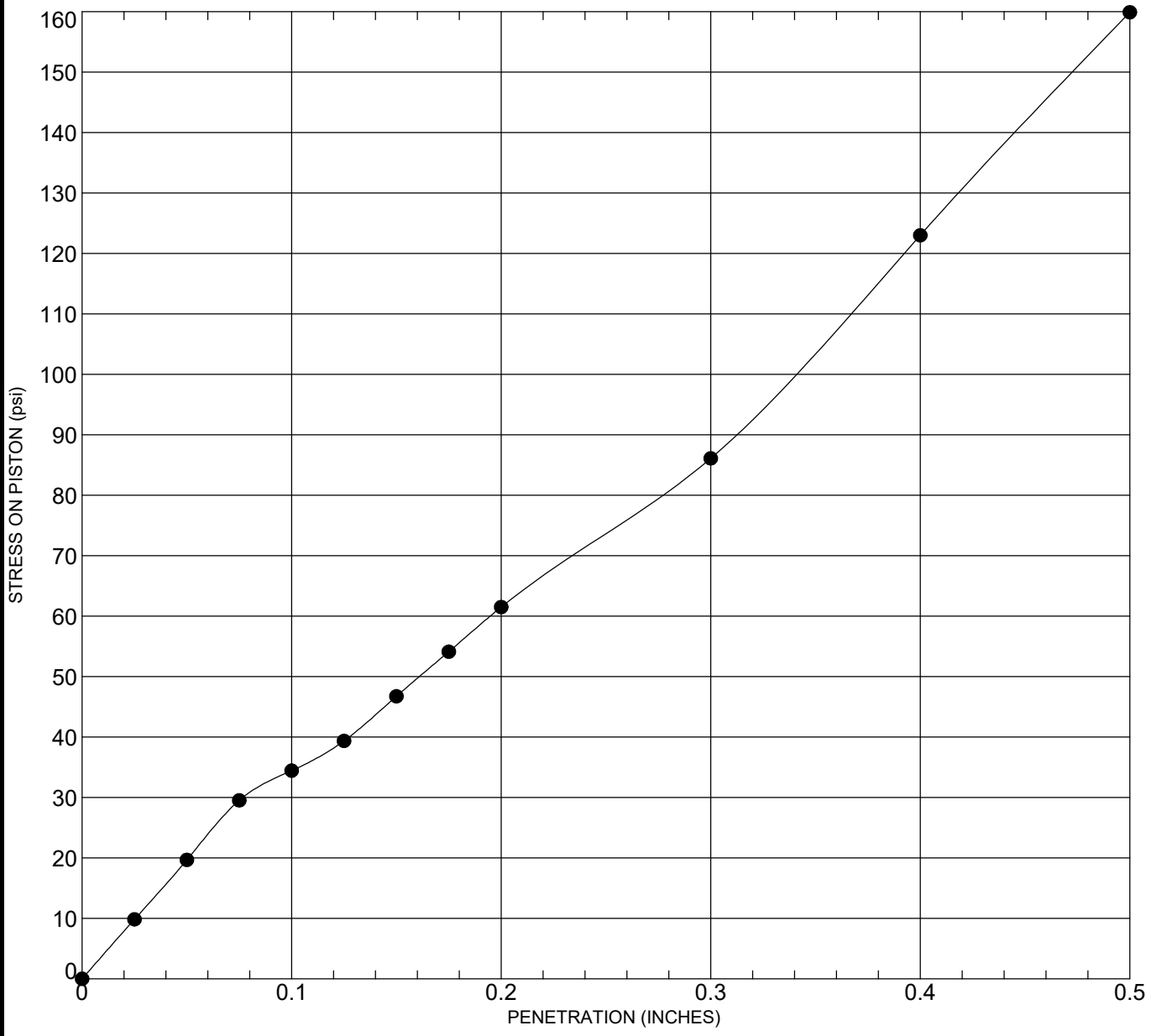
Comments:

Schnabel ENGINEERING

MOISTURE DENSITY RELATIONSHIP

Project: Calvert Regional Park
Phase 3
Cecil County, MD

Contract: 19C14008.00



Sample Description: LEAN CLAY WITH SAND (CL), brown

Sample Source: PK-8, 0.5 ft

Test Method: AASHTO T193

Comment

Dry Density Before Soaking (pcf):	111.3
Dry Density After Soaking (pcf):	107.5
Maximum Dry Density (pcf):	117.1
Moisture Content Before Soaking (%):	12.7
Moisture Content After Soaking (Avg) (%):	19.4
Moisture Content Top Inch After Soak (%):	
Optimum Moisture Content (%):	12.4

Liquid Limit (LL):	36
Plasticity Index (PI):	18
% Retained #4 Sieve:	6.5
% Passing # 200 Sieve:	75.0

CBR:	3.4, Soaked
Surcharge (psf):	50
Swell (%):	3.6

Schnabel ENGINEERING

CALIFORNIA BEARING RATIO TEST

Project: Calvert Regional Park
Phase 3
Cecil County, MD

Contract: 19C14008.00

APPENDIX C

INFILTRATION TEST DATA

We performed the infiltration test according to the methods described in **Appendix D** of the 2000 Maryland Stormwater Design Manual. Infiltration testing was performed by auguring a hole to the depth indicated. The auger was removed and a 5-inch diameter PVC pipe was installed. The pipe was seated using the drill rig. A 24-inches depth of water was poured into the pipe and the water was allowed to presoak the soils for approximately 24-hours. After the presoak was completed, water was added to the pipe to a 24-inch depth and the water level was measured at the beginning and end of a one hour period. This process was repeated three times and the test results were averaged.

Infiltration Test Data Sheets for SWM-2 and SWM-3

INFILTRATION TEST DATA SHEET

Project:	Calvert Regional Park, Phase 3	Project No:	19C14008.00
Test No:	SWM-2	Date:	3/26/2019
Location:	Cecil Park, Cecil County, Maryland	SE Rep.	S. Bhattarai
Test Depth:	6.5	Sfc EL:	394.5
Test EL:	388	Basin EL:	388

PRESOAK:

		24-Hour Reading
Date:	3/26/2019	3/27/2019
Time:	3:35 PM	12:05 PM
Depth of Water:	24"	14"
Soil Description:	Sandy LOAM	

TEST:

Run	Date	Begin		End		Infiltration Rate (in/hr)
		Time	Depth (in)	Time	Depth (in)	
1	3/27/19	12:05 PM	24	1:05 PM	24	0.00
2	3/27/19	1:05 PM	24	2:05 PM	24	0.00
3	3/27/19	2:05 PM	24	3:05 PM	23	1.00
4	3/27/19	3:05 PM	24	4:05 PM	24	0.00
Average Infiltration Rate (in/hr)						0.25

INFILTRATION TEST DATA SHEET

Project:	Calvert Regional Park, Phase 3	Project No:	19C14008.00
Test No:	SWM-3	Date:	3/26/2019
Location:	Cecil Park, Cecil County, Maryland	SE Rep.	S. Bhattarai
Test Depth:	7.0	Sfc EL:	391
Test EL:	384	Basin EL:	391

PRESOAK:

		24-Hour Reading
Date:	3/26/2019	3/27/2019
Time:	3:15 PM	12:00 PM
Depth of Water:	24"	24"
Soil Description:	Sandy LOAM	

TEST:

Run	Date	Begin		End		Infiltration Rate (in/hr)
		Time	Depth (in)	Time	Depth (in)	
1	3/27/19	12:00 PM	24	1:00 PM	23	1.00
2	3/27/19	1:00 PM	24	2:00 PM	24	0.00
3	3/27/19	2:00 PM	24	3:00 PM	24	0.00
4	3/27/19	3:00 PM	24	4:00 PM	24	0.00
Average Infiltration Rate (in/hr)						0.25