BARRY GLASSMAN
HARFORD COUNTY EXECUTIVE

BILLY BONIFACE
DIRECTOR OF ADMINISTRATION

KAREN D. MYERS
DIRECTOR OF PROCUREMENT

DEPARTMENT OF PROCUREMENT
BYNUM RUN INTERCEPTOR SEWER - PHASE 7
CONTRACT NO. 6703
BID NO. 15-154

ADDENDUM NO. 1

January 15, 2016

Ladies and Gentlemen:

The purpose of this addendum is to provide clarification(s) to all prospective proposers.

There is a Site Visit Meeting scheduled for Thursday, January 21, 2016 at 10:30 at 280 Patterson Mill Road. This "Tour" will also visit two locations on Mac Phail Road.

PLEASE REPLACE BF-1 THROUGH BF-15 WITH REVISED BF-1 THROUGH REVISED BF-15.

Bidders are advised of the following revisions, clarifications or corrections to the Bid Documents for the above project:

The Harford County grading permit found in the Appendix expired on December 2, 2015. A new grading permit will be issued by the County prior to the start of construction of this project. The conditions of the new grading permit are not expected to be different from that of the expired permit.

Drawings:

1. Replace Sheet 5 in its entirety with revised Sheet 5, revision date January 12, 2016, attached. The easement and property line locations were corrected, property owner information added and/or corrected, and invert elevation in the upper left profile corrected.

2. Replace Sheet 6 in its entirety with revised Sheet 6, revision date January 12, 2016, attached. Property owner information added and/or corrected.

3. On Sheet 7, remove the reference to "Test Pit #20" near Junction Box JB-8. Test Pit #20 had not been performed during the design. The Contractor shall perform a test pit to confirm and locate, horizontally and vertically, the existing MD-American Water 12-inch water main at the proposed sewer location within 90 days of the Notice-to-Proceed Date. The cost of this test pit shall be included in Bid Item A-7.

4. On Sheet 8, near SMH-60, revise the notation "Test Pit #21" to read "Test Pit #20". Also, above the notation for SMH-61, remove the complete property owner reference "John S. & Dana Gonzalez, Jr." In the jack and bore Data Table, in the Carrier Pipe column, revise the contents to be handled to "Sewage", and revise the carrier pipe material to "Ductile Iron, Class 56".

5. On Sheet 10, for each of the six Junction Boxes, furnish and install two cast-in-place stainless steel wall hangers 12" below the top slab near each slide gate for temporary hanging of stop plates when they are removed from the flow channel. The wall hangers shall consist of ½" diameter 316 SS rod bent to form a rectangular hanger 6" wide and 3" off the interior wall. The hangers shall be embedded 4" and have 6" embedment hooks on each end. For each stop gate, provide ¼-inch diameter stainless steel wire rope cables between the wall hangers and each stop plate handle, complete with SS loop thimbles, aluminum swages and 316 SS swivel eye snaps on each end. The cable shall be 316 stainless steel, 7X19 wire rope. The cables shall be of sufficient length to insert the stop plates in their channel frames and to easily remove the stop plates and store them on the wall hangers.

Specifications:

1. On page M&P-3, Paragraph A-3 to A-8, a. Description, add "; removal and restoration of temporary golf cart paths using sod turf by a certified landscaper".

2. On page SC-61, Paragraph SC.100, add after the second paragraph "The Contractor shall restore all disturbed areas between SMH 41 and SMH 48 with sod, including at SMH 41A, C.O. at Ex SMH 1, temporary cart paths, removed trees, and all other disturbed areas using a certified landscaper."

3. On page SC-62, Paragraph b., revise "removing snow..." to "removing snow and treating ice..." In the same paragraph, replace "...free of ruts..." with "...free of ruts and mud..."

4. In Section 02700 – Gravity Sanitary Sewer, add the following paragraph after paragraph 2.0.C.1.d:

   "e. The gravity sewer between Manholes SMH-62 and SMH-63 shall be ductile iron in conformance to ANSI/AWWA C150/A21.50 in matters of design and ANSI/AWWA C151/A21.51 for materials. Joints within the casing pipe shall be restrained and those outside of the casing may be push-on. Pipe thickness shall conform to Special Thickness Class 56. The outside surface of the pipe shall be bituminous coated. The interior lining of the pipe shall be cement lined in accordance with AWWA C104, double thickness. This lining shall be sealed with a bituminous seal coat. The Contractor shall be cognizant of the differing pipe outside diameters when ordering manholes."

5. In Section 02700 – Gravity Sanitary Sewer, replace paragraph 2.0.C.2.b. with:

   "b. Ductile iron pipe, ductile iron fittings and cast iron fittings shall be cement lined in accordance with AWWA C104, double thickness. This lining shall be sealed with a bituminous seal coat. The outside surfaces shall be bituminous coated."

6. Add to the Appendix the attached geotechnical report by ECS Mid-Atlantic, LLC, dated September 6, 2011. The report covers soil borings and test pits not contained in the existing geotechnical report in the Appendix prepared by ECS, and dated February 19, 2013. Bidders are advised that Borings B-1 to B-4, and Test Pits TP-1 to TP-5 are not within the project area and may be disregarded.

Bidder Questions:

1. Q: *What is the existing pipe material?*

   A: Refer to Appendix H, Exhibit A. Also, add to Appendix H the attached photograph depicting an exposed section of the subject sewer near existing MH #49067.

2. Q: *Can the excavated trench material be reused?*

   A: Refer to Specification Section 02250.

3. Q: *What is the sub-base and materials required for construction of the temporary and permanent golf cart path?*

   A: Full-depth trench backfill with aggregate material beneath a golf cart path is not a project requirement.

4. Q: *Is there a requirement matting or stabilization for the construction of the construction access road so that all bidders are proposing equally?*

   A: Refer to the contract documents and MDE/Corps permits for any matting requirements

5. Q: *Can the working and County inspector's hours be modified based on seasonal daylight hour restrictions?*

   A: There will be no modification in working and inspector's hours for this project.

6. Q: *Can photographs of the exposed pipe be issued in addendum (re: Sheet 5)?*

   A: Add to Appendix H the attached photograph depicting an exposed section of the subject sewer near existing MH #49067.

7. Q: *How and who will be responsible for test pits and how will they be compensated (re: SC.95)?*

   A: Refer to Paragraph SC.95. Test pitting costs shall be included in the price of pipe, manholes, junction boxes, jack & bore, etc. as described in the contract documents.

8. Q: *Does the 9:00 am to 3:00 pm road restriction apply to the Jack and Bore operation on MacPhail Road (re: Sheet 8)?*

   A: If the construction means and methods will cause an impact to a roadway beyond the scope or time originally approved, the Contractor may submit a revised traffic control plan to the County for consideration in advance of the work being performed.

9. Q: *Does Maryland Country Club have different restoration requirements that than what is shown on Sheets 18-23?*

   A: Refer to the Contract Documents including the Maryland Country Club, Inc. Memorandum of Understanding (MOU). The tree plantings shown on Sheets 18-23 include the tree species and quantities listed in the MOU

10. Q: *Does Maryland Country Club have a different seeding requirement that the Harford County standard?*

    A: Refer to Paragraph 16 of the Maryland Country Club, Inc. Memorandum of Understanding for the grass component of the required sod turf.

11. Q: *Harford County Standard Detail G-9 calls for restrained joint ductile iron for carrier pipe material while the Jack & Bore Data Table on Sheet 8 calls for "Fiberglass Resin" pipe. Which pipe material shall be used?*

    A. Please refer to Item #4 and #9, above.

12. Q: *Can a single pass pipe installation be used at the MacPhail Road crossing in lieu of a double pass (i.e: Casing/Carrier pipe)*

    A: The contract documents require separate casing and carrier pipes.

13. *Q: I looked through the IFB15154 document and found that the geotechnical report in Appendix A only stated "Boring Logs B-11 through B-16" on page 318 of the IFB spec. Could you please release boring log information on B-10 for the next addendum release and inform me as soon as it is out?*

    A: Additional boring information is included in this Addendum.

14. *Q: Is there a specification for the 36" Ductile Iron Sewer Pipe that is referenced in Bid Item A-15 and A-16? The specification in the IFB Packet (Page 220 of the PDF) only refers to the Inverted Siphons and 30" Special Type "B" Drop Connections and makes no reference to 36" DIP.*

    A: Please review all information included in this Addendum.

15. *Q: Plan sheet 8 of 23 makes no reference to the use of 36" DIP. It is only from the Bid Items that one can assume that from Manhole 63 to 62 will be Ductile Iron Pipe. Can the County confirm that they would like 36" DIP From Manhole 63 to 62? If yes, I'm calculating a different quantity for Bid Item A-6 (approximately 294' instead of the 409' listed), would that be adjusted?*

    A: Refer to documents included in this Addendum.

16. *Q: Since Harford County will receive filament wound FRP regardless of manufacturer, can the terminology "centrifugally cast" be removed from the specification via addendum?*

    A: Bid 15-154 includes polyvinyl chloride plastic (PVC) pipe material from four Listed manufacturers, and the HOBAS manufacturer, so there is competition for pipe products. For

consideration on future bids, product manufacturers are welcome to follow the procedure established in the County's Rules and Regulations described below.

PART 27 APPROVED LIST OF SUPPLIERS AND MATERIALS FOR WATER AND SEWER CONSTRUCTION

The Chief of Facilities shall maintain the approved materials list. The amendment of the list shall be the result of an evaluation and recommendation of a committee of operations, maintenance, and engineering staff of the Water & Sewer Division periodically designated by the Deputy Director of the Water & Sewer Division. The list shall be utilized by contractors, suppliers, designers, and County staff when identifying materials which have been approved for use in the County water and sewer systems. This list of approved materials shall be utilized in construction or maintenance when the project specifications do not contain enough detail to identify every item. This list of approved materials is to be used or referenced in designs unless a material not contained in the list is otherwise approved for use in a specification package.

The supplier of a material not on the list may request inclusion of a product by pursuing the following evaluation procedures:

1. Materials must be presented with a request for inclusion in the approved materials list. The request may initially be for an individual or limited number of projects.

2. Five (5) copies of fact sheets, specifications, laboratory test results, drawing and significant information on applicability of use of the product must be presented before a request will be considered.

3. Documentation of approval for use for the proposed application by other local, state or federal water and sewer operations and construction agencies must be presented.

4. Depending on the nature of the product, factory visits and on-site visits to locations where the material or product is being utilized in construction and/or operation may be required as part of the evaluation process.

5. If evaluation of the aforementioned information is acceptable, the product may be approved for use on a trial basis in a developer-funded or County capital project. NOTE: Large quantities or extensive use in the trial installation will normally not be allowed.

6. The County reserves the right to have the product tested by an independent agency to assure that it meets the minimum requirements established in the Standard Specifications. In the event that the product does not meet the minimum requirements, the manufacturer will be responsible for all associated cost including, but not limited to, the test performed and any additional testing by Harford County. Should the product not pass a retest, the product will be removed from the Approved Material List.

7. If the trial installation produces satisfactory results, then after an appropriate time for observation, the material or product may be utilized on a limited basis.

8. Pending continued satisfactory performance and evaluation during the trial installation and limited use periods, the material or product may be added to the list of approved suppliers.

Sincerely,

Daniel J. Guthrie, CPPB
Chief, Department of Procurement

SUBMIT ORIGINAL AND ONE DUPLICATE SET OF BID FORMS

BID FORM

BID NO. 15-154

TO: Director of Procurement
Harford County, Maryland
220 South Main Street
Bel Air, Maryland 21014

From: _____

_____

_____

Basis of Award:

1. Contract award will be based on the lowest responsive and responsible bidder, totaling Part "A" and Part "B" of the bid form and in accordance with Section 41-26 of the Harford County Procurement Code. Prices are to be held firm for one hundred twenty (120) calendar days.

2. All bidders **must be** prequalified in all areas specified if applicable.

3. All bidders **must be** registered to do business in the State of Maryland in accordance with the Annotated Code of Maryland Corporations and Associations Sec. 2-102 Formation generally, Sec. 7-202 Registration to do interstate and foreign* business, and/or Sec. 7-203 Qualification to do intrastate. For information on registering or qualifying a corporation, LLC, LLP or LP call the Maryland Department of Assessments and Taxation (SDAT) at (410) 767-1340.
Sole Proprietors and General Partnerships may call (410) 767-4991 or you may download the SDAT forms at: www.dat.state.md.us/sdatweb/sdatforms.html - entity or by calling at (410) 767-1340 or Toll Free (888) 246-5941.

*"a corporation, association, or joint-stock company organized under the laws of the United States, another state of the United States, a territory, possession, or district of the United States, or a foreign country." Sec. 1-101 Annotated Code of Maryland Corporations and Associations.

4. All bidders **must be** in good standing with Harford County, Maryland. Bidders must resolve any outstanding taxes, fees or accounts with Harford County.

5. **Award will only be made to the lowest responsive and responsible bidder who meets all requirements as specified in Numbers 1-4 above at time of award.**

6. Bid Checklist – Failure to meet requirements A-C below, will result in your bid being rejected as non-responsive:

   A. We are in good standing with State and Local Governments. Yes__ No__

   Dept. ID as recorded by Maryland Dept. of Assessments and Taxation: _____

   B. We are pre-qualified with Harford County in all stated areas (if applicable)? Yes__ No__ N/A__

   Date of Certificate Expiration:_____

   C. We are submitting the Bid Bond (If Applicable) Yes__ No__ N/A__

   D. We acknowledge all addenda (If Applicable). Yes__ No__ N/A__

   E. We are submitting one Original & one Duplicate Copy of the Bid Forms. Yes__ No__

BID NO. 15-154
BYNUM RUN INTERCEPTOR SEWER REPLACEMENT PHASE 7

Item No.	Description	Unit	Approx. Qty	Unit Price	Total Price
A-1	Mobilization & Demobilization *(not to exceed 5% of Total Bid Price)*	LS	1	$	$
A-2	Furnish, Install, Maintain and Remove Erosion & Sediment Control Measures	LS	1	$	$
A-3	Furnish & install 8" diameter sanitary sewer pipe, complete-in-place, including unclassified excavation, compacted backfill, paving and surface restoration	LF	87	$	$
A-4	Furnish & install 12" diameter sanitary sewer pipe, complete-in-place, including unclassified excavation, compacted backfill, paving and surface restoration	LF	31	$	$
A-5	Furnish & install 24" diameter sanitary sewer pipe, complete-in-place, including unclassified excavation, compacted backfill, paving and surface restoration	LF	15	$	$
A-6	Furnish & install 36" diameter sanitary sewer pipe, complete-in-place including unclassified excavation, compacted backfill, paving and surface restoration	LF	304	$	$
A-7	Furnish & install 42" diameter sanitary sewer pipe, complete-in-place including unclassified excavation, compacted backfill, paving and surface restoration	LF	6,627	$	$
A-8	Furnish, install new 6" sanitary house connections (SHC), complete-in-place including unclassified excavation, backfill and compaction, paving/concrete & surface restoration	LF	49	$	$

A-9	Furnish all material, labor, and equipment to install & remove temporary culvert stream crossing	EA	3	$	$
A-10	Furnish all material, labor, and equipment to construct 30-inch Ductile Iron Pipe inverted siphon stream crossing, including pipe, fittings and concrete encasement	LF	332	$	$
A-11	Furnish all material, labor, and equipment to install 96-inch diameter precast sanitary manhole, including frame and cover, complete-in-place.	VLF	77	$	$
A-12	Furnish all material, labor, and equipment to install 72-inch diameter precast sanitary manhole, including frame and cover, complete-in-place.	VLF	444	$	$
A-13	Furnish all material, labor, and equipment to install 48-inch diameter precast sanitary manhole, including frame and cover, complete-in-place	VLF	12	$	$
A-14	Furnish all material, labor, and equipment to construct Junction Boxes JB3, JB4, JB5, JB6, JB7, and JB8	EA	6	$	$
A-15	Furnish all material, labor, and equipment to install 60-inch diameter Jack and Bore steel sleeve casing pipe including 36-inch diameter Class 56 Ductile Iron restrained joint carrier pipe, complete-in-place	LF	75	$	$
A-16	Furnish & install 36" diameter Class 56 Ductile Iron Restrained Joint sanitary sewer pipe, complete-in-place including unclassified excavation, compacted backfill	LF	50	$	$
A-17	Furnish all material, labor and equipment to abandon and remove existing 30-inch sewer pipe and concrete encasement in and across Bynum Run Stream, top of bank to top of bank	LF	500	$	$
A-18	Furnish all material, labor and equipment to relocate existing 20" water main, including all fittings, valve, buttresses, anchors, encasement, and rip rap	LS	1	$	$

A-19	Furnish all material, labor and equipment to install imbricated rip rap stream bank protection at locations shown	LF	550	$	$
A-20	Furnish and install temporary golf cart paths, remove and restore permanent golf cart paths.	LF	1,100	$	$
A-21	Furnish all material, rootstock, labor and equipment to install trees in accordance with the approved FSD/FCP. Includes survival rate and extended warranty	LS	1	$	$
A-22	Remove trees and stumps on Maryland Golf and Country Club property and turf repair of residual holes	LS	1	$	$
A-23	Furnish all material, labor and equipment to protect, remove trees, improve and maintain driveway for automobile traffic, overlay pave, and reconstruct driveway at 280 Patterson Mill Road including installing a stabilized construction entrance road as described by the MOU and contract documents	LS	1	$	$
			Total Price – Part A		$

SUBTOTAL BID SUBMITTED FOR BASE BID ITEMS A-1 THROUGH A-23: $_____

_____

TOTAL CONTRACT AMOUNT BID FOR PART A WRITTEN WORDS (IF NO CENTS, WRITE NO CENTS)

PART B – CONTINGENT ITEMS*

The following contingent items shall be applied in computing the value of changes, additions, deletion, substitutions and cash allowances which may be made in the work in accordance with the specifications and as directed by Harford County. Each contingent item bid price shall include costs for all labor, material, tools, equipment, overhead, profit and commission necessary to complete the item.

The "upset limit unit price" listed below is the maximum allowable cost that the Owner will accept for these items. Each Bidder may submit their proposed cost for each unit price, but it shall not exceed the upset limit. The total cost for all unit prices shall be included in the lump sum bid.

The Contract amount shall be adjusted in accordance with the provisions of the "General Conditions" when and if additions or deletions are made. A deduct change order will be issued upon completion of the work to credit the Owner with any balance remaining from the contingency item subtotal listed below.

Item No.	Description	Unit	Approx. Qty	Upset Unit Price	Unit Price	Total Price
B-1	Furnish and install super silt fence	LF	1,000	$15.00	$	$
B-2	Furnish and install orange plastic mesh fence	LF	500	$5.00	$	$
B-3	Furnish and place calcium chloride	TON	1	$500.00	$	$
B-4	Furnish and place concrete encasement on 42" pipe	CY	250	$300.00	$	$
B-5	Furnish and place #2 Aggregate Stone	TON	1,000	$21.00	$	$
B-6	Furnish and place Crusher Run Stone (CR-6)	CY	500	$30.00	$	$
B-7	Furnish and place ASSHTO M43, Size 57	CY	200	$30.00	$	$
B-8	Furnish and place Class III Rip Rap	CY	200	$25.00	$	$
B-9	Furnish and place suitable material as backfill as directed	CY	3,000	$30.00	$	$
B-10	Furnish all material, labor & equipment for unclassified excavation and refill 0 to 3 feet below subgrade with No. 2 Stone with geotextile filter fabric wrap	CY	1,000	$65.00	$	$

B-11	Furnish and place cement stabilized sand backfill as directed	CY	500	$25.00	$	$
B-12	Sheeting and shoring, left in place	SF	2,000	$25.00	$	$
B-13	Perform test pits and restore	CY	100	$150.00	$	$
B-14	Furnish all material, labor & equipment to repair existing manhole infiltration leaks	EA	10	$1,800.00	$	$
B-15	Pavement repair of County roads and private driveways	SY	400	$70.00	$	$
B-16	Furnish and place permanent macadam paving, complete in place	TON	50	$150.00	$	$
B-17	Furnish and install temporary cold mix asphalt paving, complete in place	TON	50	$150.00	$	$
B-18	Furnish and place sod turf	SF	3,000	$2.00	$	$
B-19	Furnish, install, remove, and restore 8' wide macadam temporary golf cart path	LF	500	$30.00	$	$
B-20	Furnish, install, remove, and restore 8' wide aggregate temporary golf cart path	LF	500	$20.00	$	$
			Total Price – Part B			$

*Contingent Bid Items sheet shall be completed by Bidder

SUBTOTAL BID SUBMITTED FOR BASE BID ITEMS B1 THROUGH B-20: $_____

_____

TOTAL CONTRACT AMOUNT BID FOR PART B WRITTEN WORDS (IF NO CENTS, WRITE NO CENTS)

TOTAL BID SUBMITTED FOR PART A AND PART B ITEMS: $_____

_____

TOTAL CONTRACT AMOUNT BID FOR PART A AND PART B WRITTEN WORDS (IF NO CENTS, WRITE NO CENTS)

This bidder, in compliance with the above-captioned Invitation for Bids has examined the plans, specifications and related documents, and the site of the proposed work (as applicable), is familiar with all the conditions surrounding the proposed project including materials, supplies and services to complete the project in accordance with the contract documents.

Bidder agrees to perform all work described in this Invitation for Bids, for the prices set forth on the Bid Form.

Within 10 days after receiving notice of acceptance of this bid, Bidder will execute the formal contract and deliver it to the Harford County Department of Procurement, with the bonds (if applicable) as required by the General Instructions.

The Bid Deposit attached (if applicable) in the sum of five percent (5%) of the total bid amount becomes the property of the County in the event the contract and bonds are not executed and delivered within the time set forth above, as liquidated damages for the delay and additional expense to the County caused thereby.

BID/PROPOSAL AFFIDAVIT

A. AUTHORIZED REPRESENTATIVE

I HEREBY AFFIRM THAT:

I am the (title) _____ and the duly authorized representative of (name of business) _____ and that I possess the legal authority to make this Affidavit on behalf of myself and the business for which I am acting.

B. CERTIFICATION REGARDING COMMERCIAL NONDISCRIMINATION

The undersigned bidder or proposer hereby certifies and agrees that the following information is correct:

In preparing its bid or proposal on this project, the bidder or proposer has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not engaged in "discrimination" as defined in the State Finance and Procurement Article of the Annotated Code of Maryland. "Discrimination" means any disadvantage, difference, distinction, or preference in the solicitation, selection, hiring, or commercial treatment of a vendor, subcontractor, or commercial customer on the basis of race, color, religion, ancestry, or national origin, sex, age, marital status, sexual orientation, or on the basis of disability or any otherwise unlawful use of characteristics regarding the vendors, supplier's or commercial customer's employees or owners. "Discrimination" also includes retaliating against any person or other entity for reporting any incident of "discrimination". Without limiting any other provision of the solicitation on this project, it is understood that, if the certification is false, such false certification constitutes grounds for the State to reject the bid or proposal submitted by the bidder or proposer on this project, and terminate any contract awarded based on the bid or proposal. As part of its bid or proposal, the bidder or proposer herewith submits a list of all instances within the past 4 years where there has been a final adjudicated determination in a legal or administrative proceeding in the state of Maryland that the bidder or proposer discriminated against subcontractors, vendors, suppliers, or commercial customers, and a description of the status or resolution of that determination, including any remedial action taken. Bidder or Proposer agrees to comply in all respects with the State's Commercial Nondiscrimination Policy as described under the State Finance and Procurement Article of the Annotated Code of Maryland.

C. AFFIRMATION REGARDING BRIBERY CONVICTIONS

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business (as is defined in the State Finance and Procurement Article of the Annotated Code of Maryland), or any of its officers, directors, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies (as is defined in the State Finance and Procurement Article of the Annotated Code of Maryland), has been convicted of, or has had probation before judgment imposed pursuant to the Annotated Code of Maryland, or has pleaded *nolo contendere* to a charge of, bribery, attempted bribery, or conspiracy to bribe in violation of Maryland law, or of the law of any other state or federal law, except as follows:

(Indicate the reasons why the affirmation cannot be given and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of person(s) involved, and their current positions and responsibilities with the business):

_____

_____

D. AFFIRMATION REGARDING DEBARMENT

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business, or any of its officers, directors, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies, has ever been suspended or debarred (including being issued a limited denial of participation) by any public entity, except as follows:

(List each debarment or suspension providing the dates of the suspension or debarment, the name of the public entity and the status of the proceedings, the name(s) of the person(s) involved and their current positions and responsibilities with the business, the grounds of the debarment or suspension, and the details of each person's involvement in any activity that formed the grounds of the debarment or suspension)

_____

_____

E. AFFIRMATION REGARDING DEBARMENT OF RELATED ENTITIES

I FURTHER AFFIRM THAT:

(1) The above business was not established and it does not operate in a manner designed to evade the application of or defeat the purpose of debarment pursuant to Sections 16-101, et seq., of the State Finance and Procurement Article of the Annotated Code of Maryland; and

(2) The business is not a successor, assignee, subsidiary, or affiliate of a suspended or debarred business, except as follows: (Indicate the reasons why the affirmation cannot be given without qualification):

_____

_____

F. AFFIRMATION REGARDING COLLUSION

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the agents, servants and/or employees of the above business have:

(1) Agreed, conspired, connived, or colluded to produce a deceptive show of competition in the compilation of the accompanying bid or proposal that is being submitted;

(2) In any manner, directly or indirectly, entered into any agreement of any kind to fix the bid price or proposal price of the bidder or proposer or contractor or of any competitor, or otherwise taken any action in restraint of free competition in connection with the contract for which the accompanying bid or proposal is submitted.

G. FINANCIAL DISCLOSURE AFFIRMATION

I FURTHER AFFIRM THAT:

I am aware of, and the above business will comply with, the provisions of the State Finance and Procurement Article of the Annotated Code of Maryland, which require that every business that enters into contracts, leases, or other agreements with the State of Maryland or its agencies during a calendar year under which the business is to receive in the

aggregate $100,000 or more shall, within 30 days of the time when the aggregate value of the contracts, leases, or other agreements reaches $100,000, file with the Secretary of State of Maryland certain specified information to include disclosure of beneficial ownership of the business.

H. POLITICAL CONTRIBUTION DISCLOSURE AFFIRMATION

I FURTHER AFFIRM THAT:

I am aware of, and the above business will comply with the provisions of Article 33, Sections 30-1 through 30-4 *et seq.* of the Annotated Code of Maryland, which require that every person that enters into contracts, leases, or other agreements with the State of Maryland, including its agencies or a political subdivision of the State, during a calendar year under which the person receives in the aggregate $100,000 or more shall, on or before February 1, of the following year, file with the Secretary of State of Maryland certain specified information to include disclosure of political contributions in excess of $500 to a candidate for elective office in any primary or general election.

I. CERTIFICATION OF CORPORATION REGISTRATION AND TAX PAYMENT

I FURTHER AFFIRM THAT:

(1) The business named above is a (Check one) ____ Maryland (domestic) corporation
____ foreign (non-Maryland) corporation

registered in accordance with the Corporations and Associations Article, Annotated Code of Maryland, and that it is in good standing and has filed all of its annual reports, together with filing fees, with the Maryland State Department of Assessments and Taxation, and that the name and address of its resident agent filed with the State Department of Assessments and Taxation is:

Name: _____

Address: _____

(If not applicable, so state).

(2) Except as validly contested, the business has paid, or has arranged for payment of, all taxes due the State of Maryland and has filed all required returns and reports with the Comptroller of the Treasury, the State Department of Assessments and Taxation, and the Employment Security Administration, as applicable, and will have paid all withholding taxes due the State of Maryland prior to final settlement.

J. CONTINGENT FEES

I FURTHER AFFIRM THAT:

The business has not employed or retained any person, partnership, corporation, or other entity, other than a bona fide employee or agent working for the business, to solicit or secure the Contract, and that the business has not paid or agreed to pay any person, partnership, corporation, or other entity, other than a bona fide employee or agent, any fee or any other consideration contingent on the making of the Contract.

K. TROPICAL HARDWOOD AND TROPICAL HARDWOOD PRODUCTS

Acknowledging §41-19.1 of the Harford County Code, which prohibits the County from making or renewing a contract that requires the use of the tropical hardwoods and tropical hardwood products except in cases where the Director of Procurement determines (1) that there is no acceptable non-tropical hardwood equivalent; or (2) tropical hardwood is required for restoration of a structure designated as historic under federal, state or county law, and requires that any bid or proposal that does not contain this certification be rejected,

I FURTHER AFFIRM THAT:

No tropical hardwoods or tropical hardwood products (Acapu, Afrormosia, Almon, Amaranth, Amazaque, Aningeria Apitong, Blasa, Banak, Bella Rosa, Benge, Boire, Bubinga, Cativor, Chenchen, Concobolo, Cordia, Ebony, Gaboon, Iroko, Koa, Koto, Red Lauan, White Lauan, Tanguile, Limba, Louro, Africa Mahogany, American Mahogany, Makore, Movingui, African Padauk, Angola Padauk, Peroba, Purpleheart, Ramin, Rosewook, Sapele, Sonora, Teak, Tigerwood, Wenge, or Zebrawood) shall be supplied to the County or used in connection with the Contract, except as specifically approved by the Director of Procurement.

L. ACKNOWLEDGEMENT

I ACKNOWLEDGE THAT this Affidavit is furnished to the Purchasing Agent and that nothing in this Affidavit or in any contract arising from this bid or proposal shall be construed to supersede, amend, modify or waive the exercise of any statutory right or remedy with respect to any misrepresentation made or any violation of the obligations, terms and covenants undertaken by the above business with respect to (1) this Affidavit, (2) the contract, and (3) other Affidavits comprising part of the contract.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF.

Date: _____ By_____

(Authorized Representative and Affiant)

Federal Employer Identification Number (FEIN): _____

The undersigned acknowledges they have read the Invitation for Bids and all addenda including those posted on the County's website and herby submits the above Bid.

BID SUBMITTED BY:

ENTITY NAME (Must be entity name as registered with Maryland State Department of Assessments & Taxation)	TELEPHONE NUMBER
REPRESENTATIVE & TITLE (TYPE OR PRINT)	FAX NUMBER
REPRESENTATIVE & TITLE (SIGNATURE)	E-MAIL ADDRESS
ADDRESS	MD. CONTRACTOR'S LICENSE NO.
DATE	DATE AND PLACE OF ISSUE

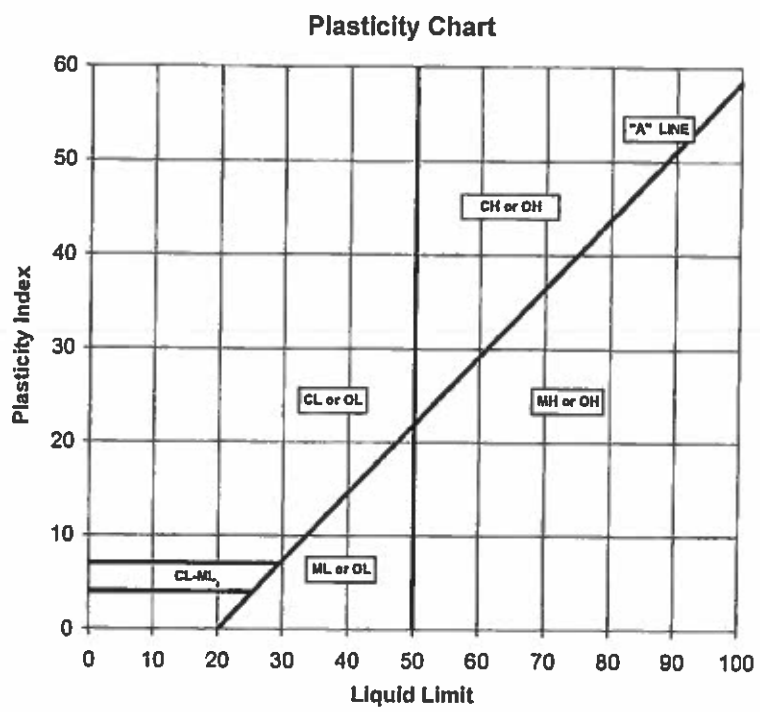
Per Section 1(h) of the General Instructions, if company is unincorporated, list below the names and addresses of individuals composing the firm.

Name _____ Address _____

Name _____ Address _____

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

Major Divisions			Group Symbols	Typical Names	Laboratory Classifications Criteria		
Coarse-grained soils (More than half of material is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean Gravels (Little or no fines)	GW	Well-graded Gravels, gravel-sand mixtures, little or no fines	Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than 5 percent GW, GP, SW, SP; More than 12 percent GM, GC, SM, SC; 5 to 12 percent Borderline cases requiring dual symbols	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})}{D_{10} \times D_{60}}$ between 1 and 3	
			GP	Poorly graded Gravels, gravel-sand mixtures, little or no fines		Not meeting all gradation requirements for GW	
		Gravels with fines (Appreciable amount of fines)	GM	Silty Gravels, grave-sand-silt mixtures		Atterberg limits below "A" line or P.I. Less than 4	Above "A" line with P.I. Between 4 and 7 are borderline cases requiring use of dual symbols
			GC	Clayey Gravels, gravel-sand-clay mixtures		Atterberg limits below "A" line with P.I. greater than 7	
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines		$Cu = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3	
			SP	Poorly graded sands, gravelly sands, little or no fines		Not meeting all gradation requirements for SW	
		Sands with fines (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures		Atterberg limits below "A" line or P.I. less than 4	Limits plotting in hatched zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
			SC	Clayey sands, sand-clay mixtures		Atterberg limits above "A" line with P.I. greater than 7	
Fine-grained soils (More than half material is smaller than No. 200 sieve)	Silts and Clays (Liquid limit less than 50)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity			
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays			
			OL	Organic silts and organic silty clays of low plasticity			
	Silts and Clays (Liquid limit greater than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts			
			CH	Inorganic clays of high plasticity, fat clays			
			OH	Organic clays of medium to high plasticity, organic silts			
	Highly organic soils		Pt	Peat and other highly organic soils			



REFERENCE NOTES FOR BORING LOGS

I. Drilling Sampling Symbols

SS	Split Spoon Sampler	ST	Shelby Tube Sampler
RC	Rock Core, NX, BX, AX	PM	Pressuremeter
DC	Dutch Cone Penetrometer	RD	Rock Bit Drilling
BS	Bulk Sample of Cuttings	PA	Power Auger (no sample)
HSA	Hollow Stem Auger	WS	Wash sample
REC	Rock Sample Recovery %	RQD	Rock Quality Designation %

II. Correlation of Penetration Resistances to Soil Properties

Standard Penetration (blows/ft) refers to the blows per foot of a 140 lb. hammer falling 30 inches on a 2-inch OD split-spoon sampler, as specified in ASTM D 1586. The blow count is commonly referred to as the N-value.

A. Non-Cohesive Soils (Silt, Sand, Gravel and Combinations)

Density		*Relative Properties*	
Under 4 blows/ft	Very Loose	Adjective Form	12% to 49%
5 to 10 blows/ft	Loose	With	5% to 12%
11 to 30 blows/ft	Medium Dense		
31 to 50 blows/ft	Dense		
Over 51 blows/ft	Very Dense		

Particle Size Identification		
Boulders		8 inches or larger
Cobbles		3 to 8 inches
Gravel	Coarse	1 to 3 inches
	Medium	½ to 1 inch
	Fine	¼ to ½ inch
Sand	Coarse	2.00 mm to ¼ inch (dia. of lead pencil)
	Medium	0.42 to 2.00 mm (dia. of broom straw)
	Fine	0.074 to 0.42 mm (dia. of human hair)
Silt and Clay		0.0 to 0.074 mm (particles cannot be seen)

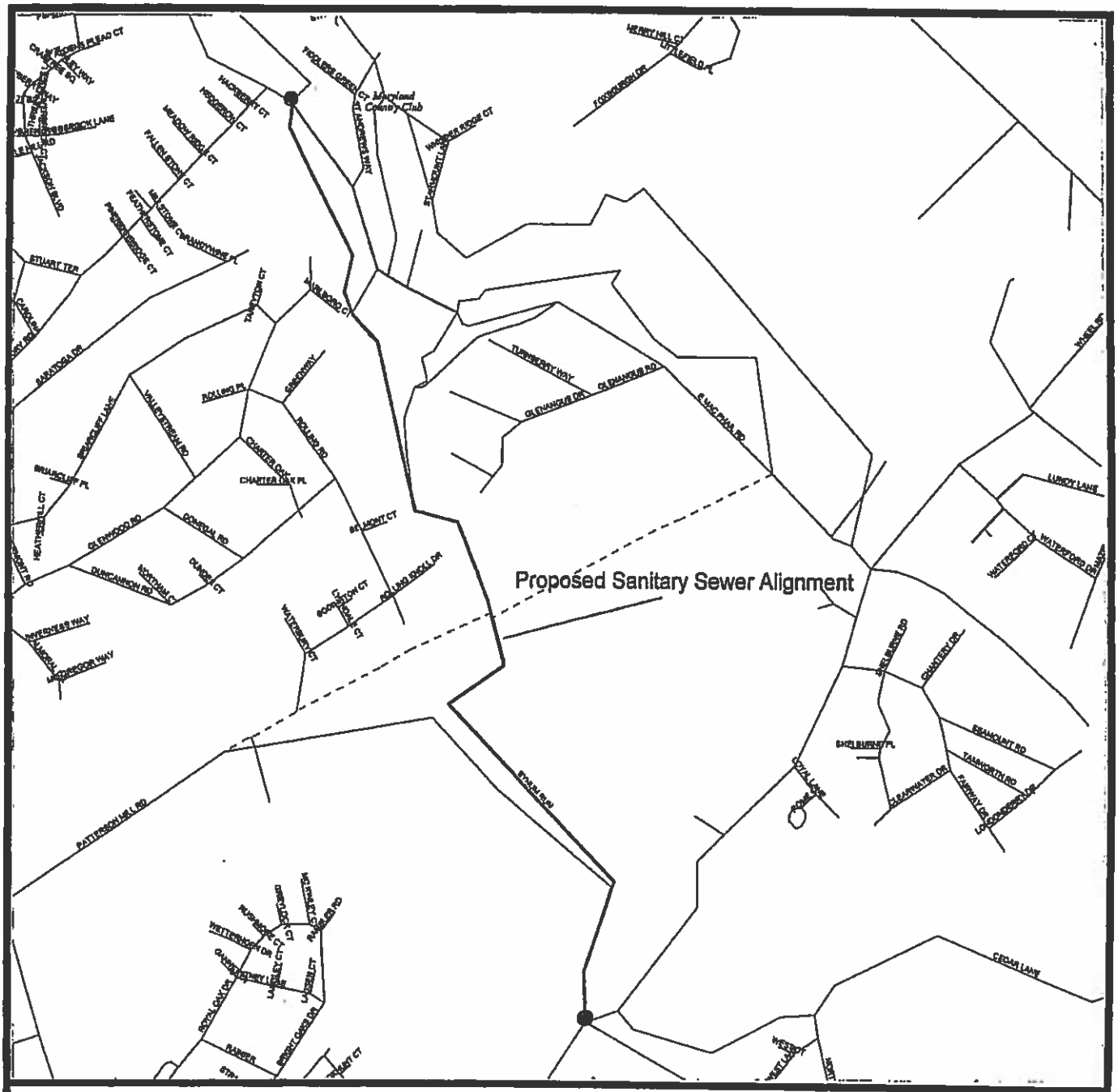
B. Cohesive Soils (Clay, Silt, and Combinations)

Blows/ft	*Consistency*	*Unconfined Comp. Strength Q_p (tsf)*	*Degree of Plasticity*	*Plasticity Index*
Under 2	Very Soft	Under 0.25	None to slight	0 – 4
3 to 4	Soft	0.25-0.49	Slight	5 – 7
5 to 8	Medium Stiff	0.50-0.99	Medium	8 – 22
9 to 15	Stiff	1.00-1.99	High to Very High	Over 22
16 to 30	Very Stiff	2.00-3.00		
31 to 50	Hard	4.00–8.00		
Over 51	Very Hard	Over 8.00		

III. Water Level Measurement Symbols

WL	Water Level	BCR	Before Casing Removal	DCI	Dry Cave-In
WS	While Sampling	ACR	After Casing Removal	WCI	Wet Cave-In
WD	While Drilling	▽	Est. Groundwater Level	▼	Est. Seasonal High GWT

The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in a granular soil. In clay and plastic silts, the accurate determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally applied.



N

Bynum Run Interceptor Sewer Parallel Phases 6 & 7 Preliminary Design and Environmental Permitting Contract No. 6703 Harford County, Maryland	**ECS** **Mid-Atlantic, LLC** 1202 Technology Drive, Suite D Aberdeen, Maryland 21001 410.297.8108 ph 410.297.8151 fx	Figure 1 **Site Location Plan** ECS Project No. 15-2083 September 2011 No Scale

CLIENT	JOB #	BORING #	SHEET
Frederick Ward Assoc., Inc.	2083	B-1	1 OF 1

PROJECT NAME: Bynum Run Interceptor Sewer Replacement/Parallel Phase 6-7

ARCHITECT-ENGINEER:

SITE LOCATION: McPhail to Wheel Road, Bel Air, MD 21015

CALIBRATED PENETROMETER TONS/FT.^{2} (1, 2, 3, 4, 5+)

PLASTIC LIMIT X — WATER CONTENT ● — LIQUID LIMIT △

ROCK QUALITY DESIGNATION & RECOVERY: RQD% — — — REC.% ——— (20%, 40%, 60%, 80%, 100%)

⊗ STANDARD PENETRATION BLOWS/FT. (10, 20, 30, 40, 50+)

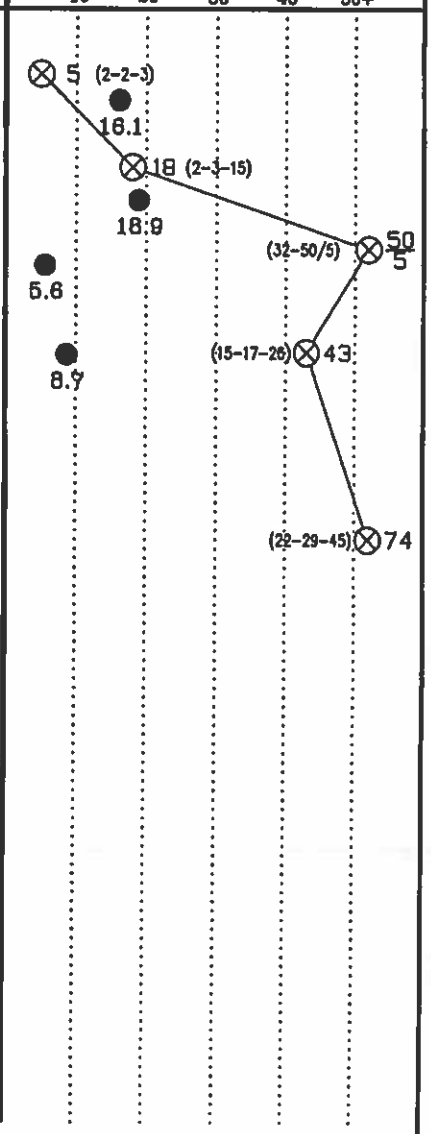
DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▶ — LOSS OF CIRCULATION 100%

SURFACE ELEVATION 123.44

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ELEVATION (FT)
0					Topsoil Depth 2"	
	1	SS	18	16	Fine SAND, Some Silt, Trace Clay, Greenish Brown, Moist, Loose to Medium Dense, (SM)	
	2	SS	18	18		120
5					Fine to Medium SAND, With Fine Medium Rock Fragments/Gravel, Some Silt, Dark Brown, Moist to Saturated, Medium Dense to Extremely Dense to Dense, (SM)	
	3	SS	11	6		
	4	SS	18	10		115
10						
	5	SS	18	10	Fine to Medium SAND, Some Fine to Coarse Rock Fragments, Some Silt, Grayish Green, Saturated, Very Dense, (SM)	110
15					END OF BORING @ 15.0'	
20						105
25						100
30					Planned Invert Level EL 108.8	95

WATER LEVELS



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽WL 8.00 (WS) OR WD	BORING STARTED 07/19/11	DRILLER: D&S Drilling, Inc.
▽WL(BCR) ▽WL(ACR) 8.60	BORING COMPLETED 07/19/11	CAVE IN DEPTH ● 8.3'
▽WL 8.20	RIG 750 ATV FOREMAN Dale Price	DRILLING METHOD HSA

RUN (09-01-11) RUN (09-02-11) RUN (09-05-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11)

CLIENT	JOB #	BORING #	SHEET
Frederick Ward Assoc., Inc.	2083	B-2	1 OF 1

PROJECT NAME: Bynum Run Interceptor Sewer Replacement/Parallel Phase 6-7

ARCHITECT-ENGINEER:

SITE LOCATION: McPhail to Wheel Road, Bel Air, MD 21015

CALIBRATED PENETROMETER TONS/FT.^{2} (1, 2, 3, 4, 5+)

PLASTIC LIMIT % X — WATER CONTENT % ● — LIQUID LIMIT % △

ROCK QUALITY DESIGNATION & RECOVERY: RQD% — — — REC.% ——— (20%, 40%, 60%, 80%, 100%)

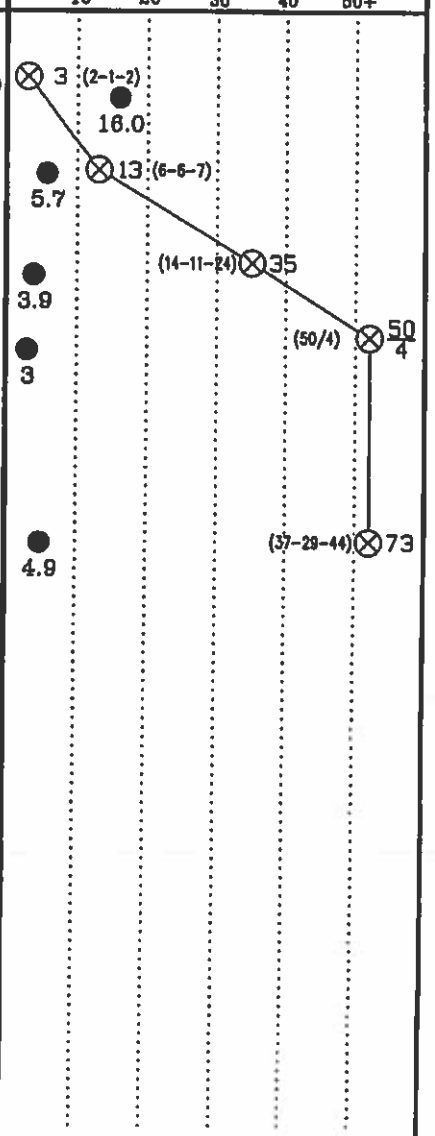
⊗ STANDARD PENETRATION BLOWS/FT. (10, 20, 30, 40, 50+)

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING — LOSS OF CIRCULATION 100%

SURFACE ELEVATION 132.08

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ELEVATION (FT)
0					Topsoil Depth 2"	
	1	SS	18	14	Fine SAND, Some Silt, Grayish Brown, Moist, Very Loose, (SM)	130
5	2	SS	18	12	Fine to Coarse SAND, With Fine to Coarse Rock Fragments, Some Silt, Orangish Brown, Moist to Saturated, Medium Dense to Dense, (SM)	
	3	SS	18	10		125
	4	SS	4	3	Fine to Coarse QUARTZ FRAGMENTS With Fine to Coarse Sand, Some Silt, Grayish Brown, Saturated, Extremely Dense, (GM)	
10						120
15	5	SS	18	12	Fine Sandy SILT, Some Fine to Medium Rock Fragments, Brownish Green, Moist, Very Hard, (ML) Saprolite	
					END OF BORING @ 15.0'	115
20						110
25						105
30					Planned Invert Level EL 120.0	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WL 8.00	WS OR WD	BORING STARTED 07/19/11	DRILLER: D&S Drilling, Inc.
WL(BCR)	WL(ACR) 7.90	BORING COMPLETED 07/19/11	CAVE IN DEPTH @ 5.6'
WL 4.10		RIG 750 ATV FOREMAN Dale Price	DRILLING METHOD HSA

RUN (03-01-11) RUN (03-02-11) RUN (03-03-11) RUN (03-05-11) RUN (03-06-11) RUN (03-05-11) RUN (03-06-11)

(08/24/2011)

RMajewicz

CLIENT	JOB #	BORING #	SHEET
Frederick Ward Assoc., Inc.	2083	B-3	1 OF 1

PROJECT NAME: Bynum Run Interceptor Sewer Replacement/Parallel Phase 6-7

ARCHITECT-ENGINEER:

SITE LOCATION: McPhail to Wheel Road, Bel Air, MD 21015

CALIBRATED PENETROMETER TONS/FT.^{2} 1 2 3 4 5+

PLASTIC LIMIT % X — WATER CONTENT % ● — LIQUID LIMIT % Δ

ROCK QUALITY DESIGNATION & RECOVERY
RQD% — — — REC.% ——
20% 40% 60% 80% 100%

⊗ STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50+

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▶ — LOSS OF CIRCULATION 100%

SURFACE ELEVATION 144.10

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	STANDARD PENETRATION BLOWS/FT.
0					ABC Stone Depth 6"			
	1	SS	10	5	Fine to Coarse QUARTZ FRAGMENTS Some Fine to Coarse Sand, Some Silt, Brown, Moist, Extremely Dense, (GM)			● 2.0; (39-50/4) 50/4
	2	SS	0	0				(50/0) 50/0
					AUGER REFUSAL @ 3.5'		140	
5								
					Boring off-site 8 feet west of staked location and encountered auger refusal at 2.5 ft. at two locations.		135	
10								
							130	
15								
							125	
20								
							120	
25								
					Planned Invert Level EL 133.7		115	
30								

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽WL (WS) OR WD	BORING STARTED 07/19/11	DRILLER: D&S Drilling, Inc.
▽WL(BCR) ▽WL(ACR) DRY	BORING COMPLETED 07/19/11	CAVE IN DEPTH @ 3.0'
▽WL	RIG 750 ATV FOREMAN Dale Price	DRILLING METHOD HSA

RUN (09-01-11) RUN (09-02-11) RUN (09-05-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11)

(08/24/2011)

RNejmitz

CLIENT	JOB #	BORING #	SHEET
Frederick Ward Assoc., Inc.	2083	B-3-A	1 OF 1

PROJECT NAME: Bynum Run Interceptor Sewer Replacement/Parallel Phase 6-7

ARCHITECT-ENGINEER:

SITE LOCATION: McPhail to Wheel Road, Bel Air, MD 21015

CALIBRATED PENETROMETER TONS/FT.^{2} 1 2 3 4 5+

PLASTIC LIMIT % X — WATER CONTENT % ● — LIQUID LIMIT % Δ

ROCK QUALITY DESIGNATION & RECOVERY
RQD% — — — REC.%
20% 40% 60% 80% 100%

⊗ STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50+

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▶ — LOSS OF CIRCULATION 100%

SURFACE ELEVATION

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	STANDARD PENETRATION BLOWS/FT.
0	1	SS	0	0				(50/0) ⊗ 50/0
					AUGER REFUSAL @ 2.5'			
5								
10								
15								
20								
25								
30								

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽WL ⊗WS OR WD	BORING STARTED 07/19/11	DRILLER: D&S Drilling, Inc.
▽WL(BCR) ▽WL(ACR)	BORING COMPLETED 07/19/11	CAVE IN DEPTH @ 3.1'
▽WL	RIG 750 ATV FOREMAN Dale Price	DRILLING METHOD HSA

RUN (03-01-11) RUN (03-02-11) RUN (03-05-11) RUN (03-05-11) RUN (03-05-11) RUN (03-05-11) RUN (03-05-11)

CLIENT	JOB #	BORING #	SHEET
Frederick Ward Assoc., Inc.	2083	B-4	1 OF 1

PROJECT NAME: Bynum Run Interceptor Sewer Replacement/Parallel Phase 6-7

ARCHITECT-ENGINEER:

SITE LOCATION: McPhail to Wheel Road, Bel Air, MD 21015

CALIBRATED PENETROMETER TONS/FT.^{2}: 1 2 3 4 5+

PLASTIC LIMIT % X — WATER CONTENT % ● — LIQUID LIMIT % Δ

ROCK QUALITY DESIGNATION & RECOVERY: RQD% — — — REC.% — 20% 40% 60% 80% 100%

⊗ STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50+

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▶ — LOSS OF CIRCULATION 100%

SURFACE ELEVATION 148.00

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	STANDARD PENETRATION BLOWS/FT.
0					Topsoil Depth 2"			
	1	SS	18	12	Fine to Coarse SAND, With Fine to Coarse Rock Fragments, Some Silt, Gray to Orangish Brown, Moist, Medium Dense to Extremely Dense, (SM)		145	22 (21-12-10)
5	2	SS	18	12				25 (6-14-11)
	3	SS	0	0				(50/0) 50
					AUGER REFUSAL @ 6.0'		140	
10					Off-set staked boring 10 ft. north (toward B-5). Encountered auger refusal at 4.5 ft. Off-site staked boring 20 ft. (toward B-5). Encountered auger refusal at 4 ft.		135	
15							130	
20							125	
25							120	
30					Planned Invert Level EL 137.3			

.9 ● 6.4 ●

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽WL ⊗WS OR WD	BORING STARTED 07/19/11	DRILLER: D&S Drilling, Inc.
▽WL(BCR) ▽WL(ACR) DRY	BORING COMPLETED 07/19/11	CAVE IN DEPTH @ 3.1'
▽WL	RIG 750 ATV FOREMAN Dale Price	DRILLING METHOD HSA

RUN (09-01-11) RUN (09-02-11) RUN (09-05-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11)

(07/19/2011)

RMajewicz

CLIENT	JOB #	BORING #	SHEET
Frederick Ward Assoc., Inc.	2083	B-5	1 OF 1

PROJECT NAME: Bynum Run Interceptor Sewer Replacement/Parallel Phase 6-7

ARCHITECT-ENGINEER:

SITE LOCATION: McPhail to Wheel Road, Bel Air, MD 21015

CALIBRATED PENETROMETER TONS/FT. # (1, 2, 3, 4, 5+)

PLASTIC LIMIT % X — WATER CONTENT % ● — LIQUID LIMIT % △

ROCK QUALITY DESIGNATION & RECOVERY: RQD% — — — REC.% ——— (20%, 40%, 60%, 80%, 100%)

STANDARD PENETRATION BLOWS/FT. (10, 20, 30, 40, 50+)

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▶ — LOSS OF CIRCULATION 100%

SURFACE ELEVATION 174.14

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	PENETROMETER	STANDARD PENETRATION BLOWS/FT.
0					Topsoil Depth 3"				
	1	SS	15	8	Fine to Coarse SAND, Some Fine to Medium Rock Fragments, Trace Silt, Brown, Extremely Dense, (SM-SP)			8.3	(19-18-50/3) 68/9
	2	SS	2	2			170		(50/2) 50/2
5	3	SS	0	0					(50/0) 50/0
					AUGER REFUSAL @ 6.0'		165		
10					Off-set staked boring 10 ft. south (toward B-4). Encountered auger refusal at 4.5 ft. Off-site staked boring 10 north (toward B-6). Encountered auger refusal at 5.5 ft.		160		
15							155		
20							150		
25					Planned Invert Level EL 165.5		145		
30									

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽WL WS OR WD	BORING STARTED 07/19/11	DRILLER: D&S Drilling, Inc.
▽WL(BCR) ▽WL(ACR) DRY	BORING COMPLETED 07/19/11	CAVE IN DEPTH @ 3.4'
▽WL	RIG 750 ATV FOREMAN Dale Price	DRILLING METHOD HSA

RUN (09-01-11) RUN (09-02-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11)

(08/24/2011)

RHoJenkz

CLIENT	JOB #	BORING #	SHEET
Frederick Ward Assoc., Inc.	2083	B-6	1 OF 1

PROJECT NAME: Bynum Run Interceptor Sewer Replacement/Parallel Phase 6-7

ARCHITECT-ENGINEER:

SITE LOCATION: McPhail to Wheel Road, Bel Air, MD 21015

CALIBRATED PENETROMETER TONS/FT.^{2} (1, 2, 3, 4, 5+)

PLASTIC LIMIT % X — WATER CONTENT % ● — LIQUID LIMIT % Δ

ROCK QUALITY DESIGNATION & RECOVERY: RQD% — — — REC.% ——— (20%, 40%, 60%, 80%, 100%)

⊗ STANDARD PENETRATION BLOWS/FT. (10, 20, 30, 40, 50+)

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▶ — LOSS OF CIRCULATION 100%

SURFACE ELEVATION 183.09

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ELEVATION (FT)
0					Topsoil Depth 6"	
	1	SS	18	18	Fine SAND, Some Silt, Trace Clay, Grayish Brown to Gray, Moist, Medium Dense, (SM)	180
5	2	SS	18	12	Fine to Coarse SAND, Some Fine to Medium Gravel, Some Silt, Grayish Brown, Moist to Saturated, Medium Dense, (SM-SP)	
	3	SS	18	14	Fine to Coarse SAND, With Fine to Coarse Gravel, Some Silt, Dark Orangish Brown, Saturated, Extremely Dense to Very Dense to Dense, (SM)	175
10	4	SS	18	8		
	5	SS	0	0	AUGER REFUSAL @ 13.5'	170
15						165
20						160
25						155
30					Planned Invert Level EL 173.5	

Penetrometer points: 13.9, 12.1, 9.4

Blow counts: 16 (8-10-6); 23 (3-5-18); 84 (12-35-49); 36 (14-19-17); 50/0 (50/0)

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▼WL 5.00 (WD) OR WD	BORING STARTED 07/19/11	DRILLER: D&S Drilling, Inc.
▼WL(BCR) ▼WL(ACR) 6.10	BORING COMPLETED 07/19/11	CAVE IN DEPTH @ 6.6'
▼WL 4.90	RIG 750 ATV FOREMAN Dale Price	DRILLING METHOD HSA

RAN (09-01-11) RAN (09-02-11) RAN (09-05-11) RAN (09-06-11) RAN (09-06-11) RAN (09-06-11) RAN (09-06-11)

(08/24/2011)

RNojenkz

CLIENT	JOB #	BORING #	SHEET
Frederick Ward Assoc., Inc.	2083	B-8	1 OF 1

PROJECT NAME: Bynum Run Interceptor Sewer Replacement/Parallel Phase 6-7

ARCHITECT-ENGINEER:

SITE LOCATION: McPhail to Wheel Road, Bel Air, MD 21015

CALIBRATED PENETROMETER TONS/FT.^{2} 1 2 3 4 5+

PLASTIC LIMIT % X — WATER CONTENT % ● — LIQUID LIMIT % Δ

ROCK QUALITY DESIGNATION & RECOVERY: RQD% — — — REC.% ——— 20% 40% 60% 80% 100%

⊗ STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50+

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▶ — LOSS OF CIRCULATION 100%

SURFACE ELEVATION 192.52

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ELEVATION (FT)	STANDARD PENETRATION BLOWS/FT.
0					Topsoil Depth 3"		
	1	SS	18	18	SILT, Some Clay, Trace Fine Sand, Grayish Brown, Moist, Soft, (ML)	190	5 (2-2-3)
					SILT, Some Fine Sand, Trace Clay, Gray, Moist, Very Stiff, (ML)		
5	2	SS	18	18			19 (5-8-11)
	3	SS	18	12	Fine to Coarse SAND, With Fine to Medium Rock Fragments/Gravel, Trace Silt and Clay, Grayish Brown, Saturated, Medium Dense, (SM)	185	21 (9-8-13)
	4	SS	18	16			17 (5-7-10)
10					Micaceous Fine to Medium SAND, Some Silt, Trace Fine Rock Fragments, Orangish Brown, Saturated, Medium Dense to Extremely Dense, (SM) Saprolite	180	
	5	SS	3	3			(50/3) 50/3
15						175	
	6	SS	4	4			(50/4) 50/4
20					SPOON REFUSAL @ 18.8'	170	
25						165	
30					Planned Invert Level EL 180.0,		

Water levels: 23.1, 16.9

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽WL 7.00 (WS) OR WD	BORING STARTED 07/19/11	DRILLER: D&S Drilling, Inc.
▽WL(BCR) ▽WL(ACR) 7.20	BORING COMPLETED 07/19/11	CAVE IN DEPTH ● 12.8'
▽WL	RIG 750 ATV FOREMAN Dale Price	DRILLING METHOD HSA

RUN (09-07-11) RUN (09-02-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11)

(06/24/2011)

RMajewski

CLIENT	JOB #	BORING #	SHEET
Frederick Ward Assoc., Inc.	2083	B-9	1 OF 1

PROJECT NAME: Bynum Run Interceptor Sewer Replacement/Parallel Phase 6-7

ARCHITECT-ENGINEER:

SITE LOCATION: McPhail to Wheel Road, Bel Air, MD 21015

CALIBRATED PENETROMETER TONS/FT.^{2} (1, 2, 3, 4, 5+)

PLASTIC LIMIT % X — WATER CONTENT % ● — LIQUID LIMIT % Δ

ROCK QUALITY DESIGNATION & RECOVERY: RQD% — — — REC.% (20%, 40%, 60%, 80%, 100%)

STANDARD PENETRATION BLOWS/FT. (10, 20, 30, 40, 50+)

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING — LOSS OF CIRCULATION 100%

SURFACE ELEVATION 196.42

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ELEVATION (FT)	STANDARD PENETRATION BLOWS/FT.	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %
0					Topsoil Depth 4"					
	1	SS	18	18	SILT, Some Fine to Medium Sand, Trace Clay, Brownish Gray, Moist, Medium Stiff, (ML)	195	7 (3-3-4)		25.8	
5	2	SS	18	16	Fine SAND, With Silt, Trace Clay, Gray, Moist, Very Loose, (SM)		3 (2-1-2)		18.8	
	3	SS	18	10	Fine to Coarse SAND, With Fine to Coarse Rock Fragments/Gravel, Some Silt, Brown, Moist to Saturated, Medium Dense to Dense (SM)	190	21 (8-12-9)		5.3	
	4	SS	18	10			49 (14-18-31)			
10						185				
	5	SS	18	12			38 (17-15-23)		10.6	
15					END OF BORING @ 15.0'	180				
20						175				
25						170				
30					Planned Invert Level EL 188.0					

WATER LEVELS

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WL 7.00	WS OR WD	BORING STARTED 07/19/11	DRILLER: D&S Drilling, Inc.
WL(BCR)	WL(ACR) 6.90	BORING COMPLETED 07/19/11	CAVE IN DEPTH @ 8.0'
WL 6.80		RIG 750 ATV FOREMAN Dale Price	DRILLING METHOD HSA

RUN (09-01-11) RUN (09-02-11) RUN (09-05-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11) RUN (09-06-11)

(08/24/2011)

Rlejeskz

CLIENT	JOB #	BORING #	SHEET
Frederick Ward Assoc., Inc.	2083	B-10	1 OF 1

PROJECT NAME: Bynum Run Interceptor Sewer Replacement/Parallel Phase 6-7

ARCHITECT-ENGINEER:

SITE LOCATION: McPhail to Wheel Road, Bel Air, MD 21015

CALIBRATED PENETROMETER TONS/FT.^{2} (1, 2, 3, 4, 5+)

PLASTIC LIMIT % X — WATER CONTENT % ● — LIQUID LIMIT % △

ROCK QUALITY DESIGNATION & RECOVERY: RQD% — — — REC.% — 20% 40% 60% 80% 100%

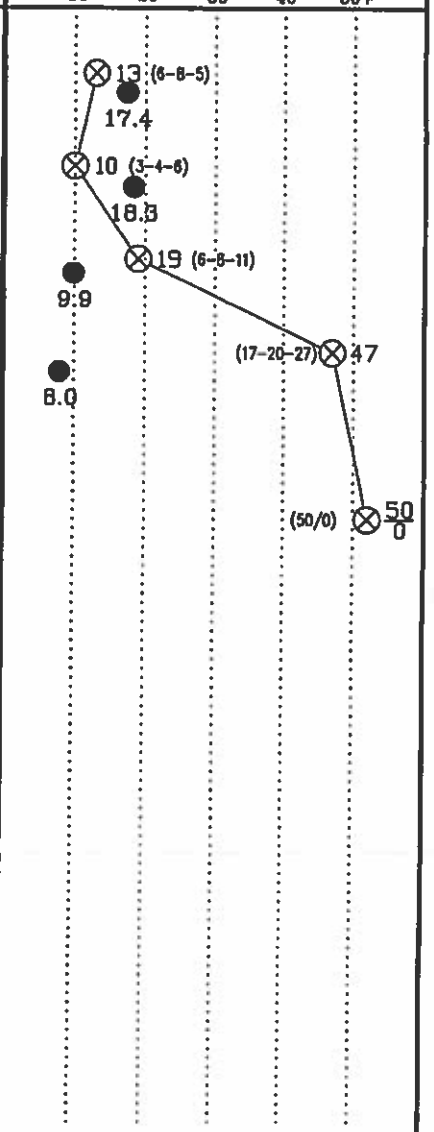
STANDARD PENETRATION BLOWS/FT. (10, 20, 30, 40, 50+)

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▶ — LOSS OF CIRCULATION 100%

SURFACE ELEVATION 200

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ELEVATION (FT)
0					Topsoil Depth 4"	
	1	SS	18	18	Silty Fine SAND, With Trace Clay and Roots, Trace Fine Gravel, Grayish Brown to Orangish Brown, Medium Dense to Firm, (SM)	
5	2	SS	18	18		195
	3	SS	18	14	Fine to Coarse SAND, With Fine to Coarse Rock Fragments, Some Silt, Trace Clay, Orangish Brown to Greenish Brown, Moist to Saturated, Medium Dense to Extremely Dense, (SM)	
10	4	SS	18	14		190
	5	SS	0	0	AUGER REFUSAL @ 13.5'	
15						185
20						180
25						175
30					Planned Invert Level EL 190+/-	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽WL 7.00	WS OR WD	BORING STARTED 07/19/11	DRILLER: D&S Drilling, Inc.
▽WL(BCR)	▽WL(ACR) 7.20	BORING COMPLETED 07/19/11	CAVE IN DEPTH @ 7.6'
▽WL 7.10		RIG 750 ATV FOREMAN Dale Price	DRILLING METHOD HSA

RUN (09-01-11) RUN (09-02-11) RUN (09-05-11) RUN (09-05-11) RUN (09-05-11) RUN (09-05-11) RUN (09-05-11)

(08/24/2011)

Rhojnka

TP-1
Surface Elevation: 122.50
Invert Elevation: 108.80

Depth below Existing Ground Surface (ft.)	Sample Description
0-0.17	Topsoil
0.17 – 1.5	Brown, moist, Silty SAND with roots, trace rock fragments (SM)
1.5 – 6.0	Brown, moist, Silty SAND, some rock fragments (SM)
6.0 – 7.0	Tannish Brown, wet, Fine to Coarse SAND, some silt and rock fragments (SM)
7.0 – 8.0	Brown, saturated, Fine to Coarse SAND with rock fragments, some silt (SM)
	Groundwater encountered at 6.5 feet below the existing ground surface Hard digging at 7 feet below the existing ground surface and rock causing excavation refusal at 8 feet below the existing ground surface Excavation was caving in at 6 to 8 feet below the existing ground surface due to groundwater

TP-2
Surface Elevation: 149.21
Invert Elevation: 136.00

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 0.5	Crushed Stone
0.5 – 7.5	Tan to Orange, moist, Sandy SILT with large rock fragments (ML)
	Groundwater not encountered during or at the completion of excavation Rock causing excavation refusal at 7.5 feet below the existing ground surface

TP-3
Surface Elevation: 147.02
Invert Elevation: 138.00

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 4.0	Brown, saturated, Silty SAND with medium to large rock fragments (SM)
4.0 – 8.0	Reddish Brown, wet, Silty SAND with large rock fragments (SM)
	Groundwater encountered at 2.5 feet below the existing ground surface Medium to Large rock fragments and rock at the surface Rock causing excavation refusal at 8.0 feet below the existing ground surface

TP-4
Surface Elevation: 156.87
Invert Elevation: 138.80

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 0.5	Topsoil
0.5 – 2.5	Brown, moist, Sandy SILT with large rock fragments, trace clay, (ML)
2.5 – 8.5	Tannish Brown, moist to wet, Silty SAND, some medium rock fragments, trace clay (SM)
	Groundwater not encountered during or at the completion of excavation Rock causing excavation refusal at 8.5 feet below the existing ground surface

TP-5
Surface Elevation: 165.18
Invert Elevation: 154.00

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 0.33	Topsoil
0.33 – 1.33	Tan, moist, Clayey SAND, trace rock fragments (SC)
1.33 – 7.0	Reddish Brown, moist, Sandy SILT with medium to large rock fragments (ML)
	Groundwater not encountered during or at the completion of excavation Rock causing excavation refusal at 7.0 feet below the existing ground surface

TP-6
Surface Elevation: 174.19
Invert Elevation: 155.00

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 0.75	Topsoil/Roots
0.75 – 5.0	Brown, moist, SILT with clay, trace sand and large rock fragments (ML)
5.0 – 7.0	Tan, moist, Sandy SILT with medium to large rock fragments, trace clay (ML)
	Groundwater not encountered during or at the completion of excavation Rock causing excavation refusal at 7.0 feet below the existing ground surface

TP-7
Surface Elevation: 175.84
Invert Elevation: 166.00

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 1.0	Topsoil/Rootmat
1.0 – 4.5	Brown, moist to wet, SILT, some sand and medium to large rock fragments (ML)
	Groundwater not encountered during or at the completion of excavation Rock causing excavation refusal at 4.5 feet below the existing ground surface

TP-8
Surface Elevation: 181.37
Invert Elevation: 171.50

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 0.75	Topsoil
0.75 – 4.0	Reddish Brown, moist, SILT, some sand, trace medium rock fragments (ML)
4.0 – 11.0	Brownish Tan, moist, Sandy SILT with medium to large rock fragments, trace clay (ML)
11.0 – 13.0	Grayish Brown, wet SILT with large rock fragments, trace sand (ML)
	Groundwater was encountered at 11.0 feet below the existing ground surface Hard digging at depths of 11.0 to 13.0 feet below the existing ground surface Rock causing excavation refusal at 13.0 feet below the existing ground surface

TP-9
Surface Elevation: 180.81
Invert Elevation: 172.00

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 5.5	Black/Gray, moist to wet, SILT with organics, wood, and medium rock fragments (ML/Fill)
5.5 – 7.5	Gray, saturated, Silty ROCK FRAGMENTS, trace sand (GM)
	Groundwater was encountered at 6.5 feet below the existing ground surface Rock causing excavation refusal at 7.5 feet below the existing ground surface

TP-10
Surface Elevation: 186.91
Invert Elevation: 174.00

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 0.75	Topsoil
0.75 – 2.0	Tan, moist, Silty SAND, trace medium rock fragments (SM)
2.0 – 6.5	Brownish Tan, moist, Silty SAND with medium to large rock fragments (SM)
	Groundwater not encountered during or at the completion of excavation Rock causing excavation refusal at 6.5 feet below the existing ground surface

TP-11
Surface Elevation: 185.45
Invert Elevation: 174.50

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 0.5	Topsoil
0.5 – 4.0	Reddish Brown, moist, Silty SAND, some medium rock fragments (SM)
4.0 – 7.0	Brown, saturated, Silty ROCK FRAGMENTS, some sand (GM)
	Groundwater was encountered at 4.0 feet below the existing ground surface Excavation was caving in and significantly widening the test pit at 4 to 5 feet below the existing ground surface due to groundwater. Due to caving of the excavation, test pit terminated at 7.0 feet below the existing ground surface

TP-12
Surface Elevation: 186.89
Invert Elevation: 175.00

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 1.0	Topsoil
1.0 – 5.0	Brown, moist, SILT, some sand, trace medium rock fragments (ML)
5.0 – 9.0	Brown, saturated, Silty SAND with medium to large rock fragments (SM)
	Groundwater was encountered at 6.0 feet below the existing ground surface Excavation was caving in and significantly widening the test pit at at 5 to 6 feet below the existing ground surface due to groundwater. Due to caving of the excavation, test pit terminated at 9.0 feet below the existing ground surface

TP-18
Surface Elevation: 195.05
Invert Elevation: 185.50

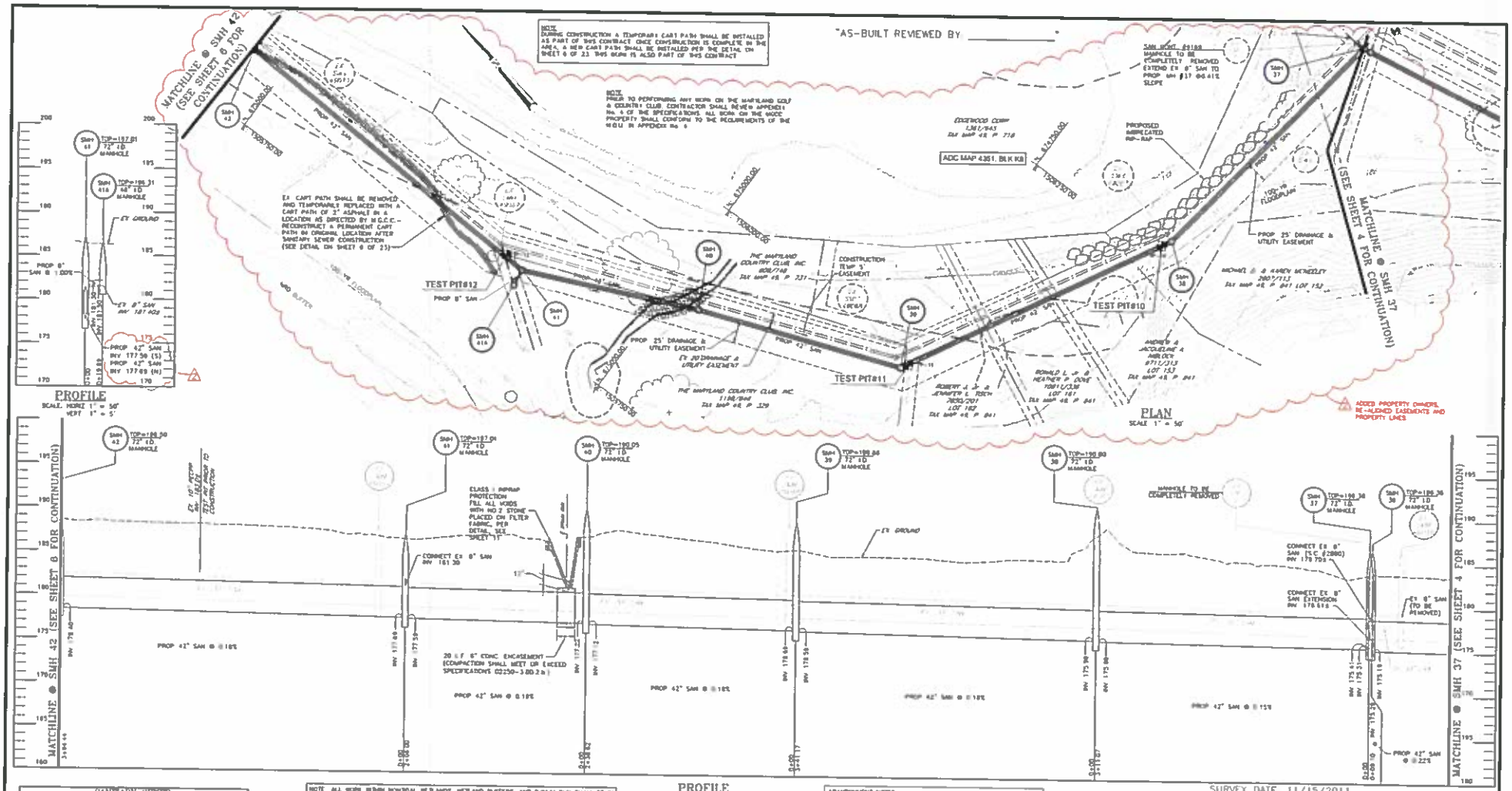
Depth below Existing Ground Surface (ft.)	Sample Description
0 – 0.75	Topsoil
0.75 – 6.0	Brown, moist, Silty SAND, trace medium rock fragments (SM)
6.0 – 10.0	Gray, wet, Silty SAND with medium to large rock fragments (SM)
10.0 – 11.0	Brown, wet, Sandy SILT with medium to large rock fragments (ML)
	Groundwater was encountered at 6.0 feet below the existing ground surface Hard digging at 10 feet below the existing ground surface and rock causing excavation refusal at 11 feet below the existing ground surface Excavation was caving in at 6 to 8 feet below the existing ground surface due to groundwater

TP-19
Surface Elevation: 195.65
Invert Elevation: 183.00

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 0.75	Topsoil
0.75 – 3.0	Brown, moist, Sandy SILT, trace medium rock fragments (ML)
3.0 – 6.0	Gray, moist to wet, SILT with sand, trace medium rock fragments (ML)
6.0 – 11.0	Gray to Tannish Brown, saturated, Fine to Coarse SAND with medium to large rock fragments, some silt (SM)
	Groundwater was encountered at 6.0 feet below the existing ground surface Hard digging at 10 feet below the existing ground surface and rock causing excavation refusal at 11 feet below the existing ground surface Excavation was caving in at 6 to 8 feet below the existing ground surface due to groundwater

TP-20
Surface Elevation: 199.42
Invert Elevation: 189.00

Depth below Existing Ground Surface (ft.)	Sample Description
0 – 0.67	Topsoil/Rootmat
0.67 – 2.0	Brown, moist, Silty SAND, trace medium rock fragments (SM)
2.0 – 5.0	Tannish Brown, moist, Sandy SILT, trace medium to large rock fragments (ML)
5.0 – 7.0	Dark Brown, wet, Silty SAND with medium to large rock fragments (SM)
7.0 – 10.0	Grayish Brown, wet, Silty SAND with medium to large rock fragments (SM)
	Groundwater was encountered at 7.0 feet below the existing ground surface Hard digging at 9 feet below the existing ground surface and rock causing excavation refusal at 10 feet below the existing ground surface Excavation was caving in at 7 to 8 feet below the existing ground surface due to groundwater



SANITARY SEWER STRUCTURE SCHEDULE

SMH 36 TO SMH 42			AS BUILT	
NO	NORTHING	EASTING	NORTHING	EASTING
37	N 674529.83	E.1506579.15		
36	N 674574.57	E.1506271.32		
39	N 674735.96	E.1505870.74		
40	N 674858.53	E.1505687.34		
41	N 675147.99	E.1505804.18		
41A	N 675145.02	E.1505784.71		
42	N 675541.95	E.1505828.38		

NOTE: ALL MANHOLES SHALL RECEIVE WATER TIGHT FRAME AND COVER (MA CO. PLATE S-17) TOPS OF ALL MANHOLES SHALL BE 3'-6" ABOVE FINISHED GRADE, EXCEPT SMH-41, WHICH SHALL BE FLUSH WITH GRADE.

NOTE: ALL WORK WITHIN NONTIDAL WETLANDS, WETLAND BUFFERS, AND BYNUM RUN SHALL BE IN ACCORDANCE WITH THE "CONDITIONS AND MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS AND BUFFERS" AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, WATER RESOURCES ADMINISTRATION WETLANDS & WATERWAY CONSTRUCTION PERMIT

PROFILE NOTE:
THE CONTRACTOR SHALL ASSURE THAT THE MINIMUM SLOPE OF EACH RUN OF 42" SEWER IS GREATER THAN OR EQUAL TO 0.14%. THE SLOPE SHALL BE COMPUTED BY USING THE ACTUAL DISTANCES BETWEEN MANHOLES AND ELEVATION DIFFERENCES OF THE MANHOLE INVERTS. THE CONTRACTOR SHALL HAVE EACH MANHOLE AND ALL RUNS OF SEWER SURVEYED BY A REGISTERED LAND SURVEYOR OR A PROFESSIONAL ENGINEER OR HIS DULY AUTHORIZED AGENT AND THE RESULTS SUBMITTED IN WRITING TO AND VERIFIED BY THE COUNTY INSPECTOR TO VERIFY THE SEWER SLOPES BEFORE CONSTRUCTING SUBSEQUENT MANHOLE RUNS. SEWER RUNS NOT MEETING THE MINIMUM SLOPE MUST BE RECONSTRUCTED AT THIS SLOPE BEFORE EACH SUBSEQUENT MANHOLE RUN OF SEWER IS CONSTRUCTED. AS EACH MANHOLE RUN IS SURVEYED, BOTH MANHOLES SHALL BE SURVEYED REGARDLESS OF WHETHER OR NOT THEY WERE PREVIOUSLY SURVEYED. IF THE INVERT ELEVATION OF A PREVIOUSLY SURVEYED MANHOLE HAS CHANGED, THE SLOPE OF THE DOWNSTREAM MANHOLE RUN SHALL BE RE-COMPUTED WITH THE REVISED SURVEY DATA AND SUBMITTED FOR REVIEW AND APPROVAL.

EXCEPT WHERE SHOWN, COMPACTION SHALL MEET OR EXCEED SPECIFICATION 02250-3.03 IN ALL PIPE RUNS THIS SHEET

PROFILE
SCALE: HORIZ 1" = 50'
VERT 1" = 5'

ABANDONMENT NOTES:
1. ALL EXISTING MANHOLES ON 30" INTERCEPTOR WITHIN THE LIMITS OF THE WORK (UNLESS OTHERWISE NOTED) SHALL BE ABANDONED IN ACCORDANCE WITH DETAIL S-32
2. THE EXISTING SEWER PIPE SHOWN WITHIN THE LIMITS OF THE WORK (UNLESS OTHERWISE NOTED) SHALL BE ABANDONED AS PART OF THIS CONTRACT IN ACCORDANCE WITH DETAIL S-31

MANHOLE NOTES:
1. FOR ALL NEW CONSTRUCTION, SEWER BRICK SHALL BE PLACED ON EDGE FOR ALL SURFACES UNDER THE FLOW LINE
2. PUMP AROUND METHODS SHALL BE EMPLOYED FOR ALL SEWER BRICK INSTALLATION UNDER THE FLOW LINE IN EXISTING AND PROPOSED STRUCTURES. NEW BRICK WORK MUST CURE FOR AT LEAST 48 HOURS MIN PRIOR TO CONTACT WITH SEWAGE
3. WHERE EXISTING MANHOLES ARE TO BE REMOVED EXISTING SEWER SHALL BE REHUNG IN THE SAME DIRECTION AND AT THE SAME SLOPE TO PROPOSED MANHOLE.

SURVEY DATE 11/15/2011

APPROVED	REV No	DATE	REVISION	BY
	1	10-11-14	ADDENDUM No. 1	

AS BUILT PER INSPECTOR
TRANS BY
DATE
RESIDENT INSPECTOR

HARFORD COUNTY MARYLAND

DEPUTY DIRECTOR, DIVISION OF WATER AND SEWER

3RD ELECTION DISTRICT

SANITARY SEWER PLAN AND PROFILE

BYNUM RUN INTERCEPTOR SEWER

PHASE 7

HARFORD COUNTY, MARYLAND

SEWER CONTRACT NO. 6703

ENGINEER

DESIGNED LDN/RTB
DRAWN LDN/RTB
CHECKED RTB

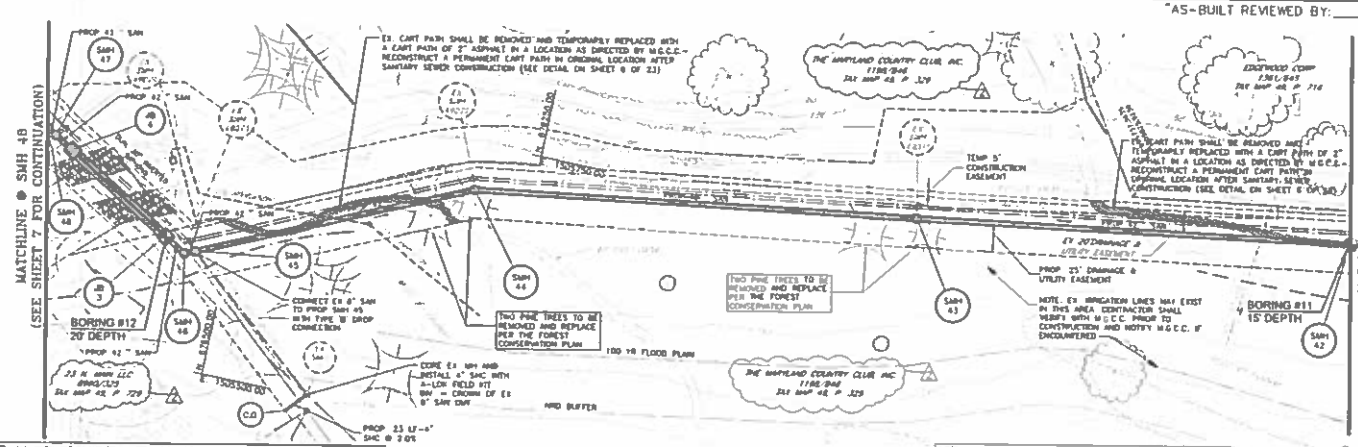
SCALE HORIZ 1"=50' VERT 1"=5'

TAX MAP 66 & 68
ADC MAP No. 4351
GRID 4B & 4BZ
TS 67, F8 A & B 68

SHEET No. 5 OF 23

JOB No. 2141161.00

"AS-BUILT REVIEWED BY: _____"



NOTE: ALL WORK WITHIN NONTIDAL WETLANDS, WETLAND BUFFERS, AND BYNUM RUN SHALL BE IN ACCORDANCE WITH THE "CONDITIONS AND MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS AND BUFFERS" AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES WATER RESOURCES ADMINISTRATION WETLANDS & WATERWAY CONSTRUCTION PERMIT.

PLAN

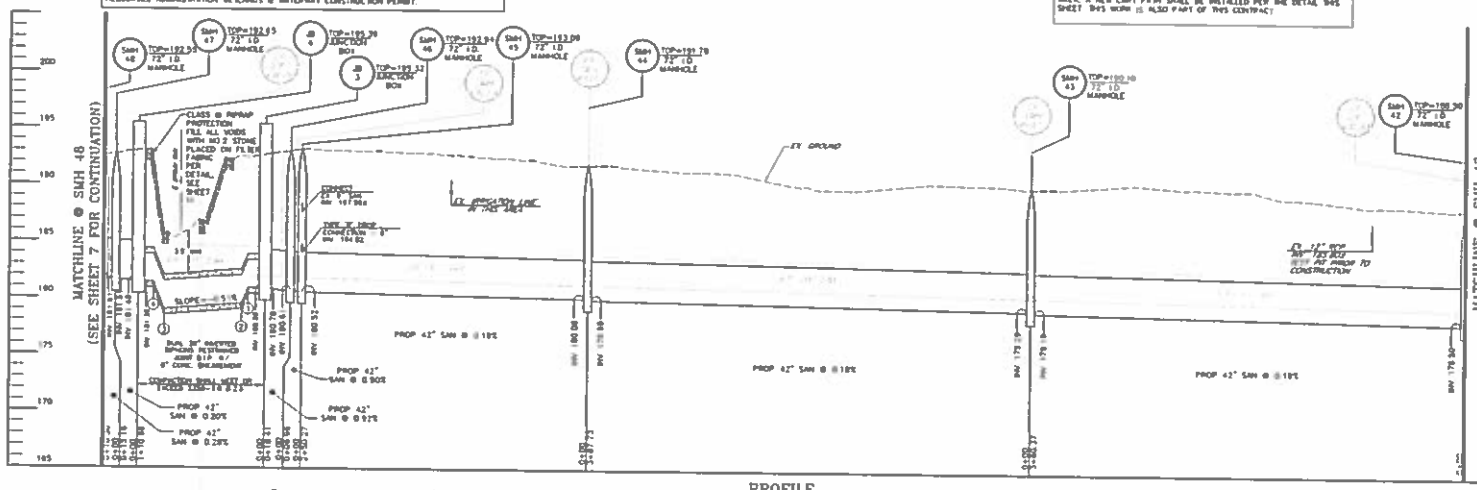
SCALE: 1" = 50'

NOTE: DURING CONSTRUCTION A TEMPORARY CART PATH SHALL BE INSTALLED AS PART OF THIS CONTRACT. ONCE CONSTRUCTION IS COMPLETE IN THE AREA, A NEW CART PATH SHALL BE INSTALLED PER THE DETAIL THIS SHEET. THIS WORK IS ALSO PART OF THIS CONTRACT.

SANITARY SEWER STRUCTURE SCHEDULE

SMH 42 TO SMH 48			AS BUILT		
NO.	NORTHING	EASTING	NO.	NORTHING	EASTING
42	N 679541.95	E 1505826.30	42		
43	N 679017.65	E 1505764.96	43		
44	N 678301.06	E 1505709.22	44		
45	N 678528.30	E 1505604.35	45		
46	N 678537.34	E 1505600.18	46		
47	N 678649.03	E 1505678.03	47		
48	N 6744[illegible]89	E 1505683.37	48		
JB 3	N 678558.28	E 1505611.37	JB 3		
JB 4	N 678651.81	E 1505647.85	JB 4		

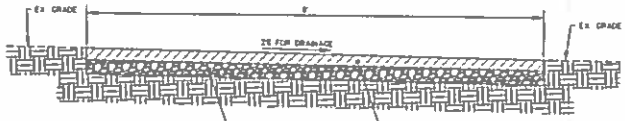
NOTE: ALL MANHOLES SHALL RECEIVE WATER TIGHT FRAME AND COVER PER CO. PLATE S-111. TOPS OF ALL MANHOLES SHALL BE 3" ABOVE FINISHED GRADE, EXCEPT SMH#42 TO SMH#7



PROFILE

SCALE: HORZ 1" = 50'
VERT 1" = 5'

SURVEY DATE: 11/15/2011



NEW CART PATH DETAIL

NOT TO SCALE

PROFILE NOTE:
THE CONTRACTOR SHALL ASSURE THAT THE MINIMUM SLOPE OF EACH RUN OF 42" SEWER IS GREATER THAN OR EQUAL TO 0.14%. THE SLOPE SHALL BE COMPUTED BY USING THE ACTUAL DISTANCES BETWEEN MANHOLES AND ELEVATION DIFFERENCES OF THE MANHOLE INVERTS. THE CONTRACTOR SHALL HAVE EACH MANHOLE AND ALL RUNS OF SEWER SURVEYED BY A REGISTERED LAND SURVEYOR OR A PROFESSIONAL ENGINEER OR HIS DULY AUTHORIZED AGENT AND THE RESULTS SUBMITTED IN WRITING TO AND VERIFIED BY THE COUNTY INSPECTOR TO VERIFY THE SEWER SLOPES BEFORE CONSTRUCTING SUBSEQUENT MANHOLE RUNS. SEWER RUNS NOT MEETING THE MINIMUM SLOPE MUST BE RECONSTRUCTED AT THIS SLOPE BEFORE EACH SUBSEQUENT MANHOLE RUN OF SEWER IS CONSTRUCTED. AS EACH MANHOLE RUN IS SURVEYED, BOTH MANHOLES SHALL BE SURVEYED REGARDLESS OF WHETHER OR NOT THEY WERE PREVIOUSLY SURVEYED. IF THE INVERT ELEVATION OF A PREVIOUSLY SURVEYED MANHOLE HAS CHANGED, THE SLOPE OF THE DOWNSTREAM MANHOLE RUN SHALL BE RE-COMPUTED WITH THE REVISED SURVEY DATA AND SUBMITTED FOR REVIEW AND APPROVAL.

EXCEPT WHERE SHOWN, COMPACTION SHALL MEET OR EXCEED SPECIFICATION 02250-3.8.B.1 IN ALL PIPE RUNS THIS SHEET

ABANDONMENT NOTES:
1. ALL EXISTING MANHOLES ON 36" INTERCEPTOR WITHIN THE LIMITS OF THE WORK (UNLESS OTHERWISE NOTED) SHALL BE ABANDONED IN ACCORDANCE WITH DETAIL S-32.
2. THE EXISTING SEWER PIPE SHOWN WITHIN THE LIMITS OF THE WORK (UNLESS OTHERWISE NOTED) SHALL BE ABANDONED AS PART OF THIS CONTRACT IN ACCORDANCE WITH DETAIL S-31.

MANHOLE NOTES:
1. FOR ALL NEW CONSTRUCTION, SEWER BRICK SHALL BE PLACED ON EDGE FOR ALL SURFACES UNDER THE FLOW LINE OF THE WORK (UNLESS OTHERWISE NOTED) SHALL BE ABANDONED AS PART OF THIS CONTRACT IN ACCORDANCE WITH DETAIL S-31.
2. PUMP AROUND METHODS SHALL BE EMPLOYED FOR ALL SEWER BRICK INSTALLATION UNDER THE FLOW LINE IN EXISTING AND PROPOSED STRUCTURES. NEW BRICK WORK MUST CURE FOR AT LEAST 48 HOURS (MIN PRIOR TO CONTACT WITH SEWAGE.
3. WHERE EXISTING MANHOLES ARE TO BE REMOVED (EXISTING SEWER) SHALL BE EXTENDED IN THE SAME DIRECTION AND AT THE SAME SLOPE TO PROPOSED MANHOLE.

REV. No.	DATE	REVISION	BY
1	01-12-14	ADDENDUM No. 1	BTB

APPROVED

PROJECT MANAGER: RAJ 3-31-14
OPERATIONS CHIEF: 4-1-14
PROPERTY MANAGEMENT: RLD 3-31-14
CONTRACT ADMINISTRATOR: 4-1-15
PROJECT MANAGER: 4-1-14
CHIEF ENGINEER: 4-1-14

AS BUILT
PER INSPECTOR
FIELD BY
DATE
RESIDENT INSPECTOR

HARFORD COUNTY MARYLAND

DEPUTY DIRECTOR, DIVISION OF WATER AND SEWER

3RD ELECTION DISTRICT

SANITARY SEWER PLAN AND PROFILE

BYNUM RUN INTERCEPTOR SEWER

PHASE 7

HARFORD COUNTY, MARYLAND

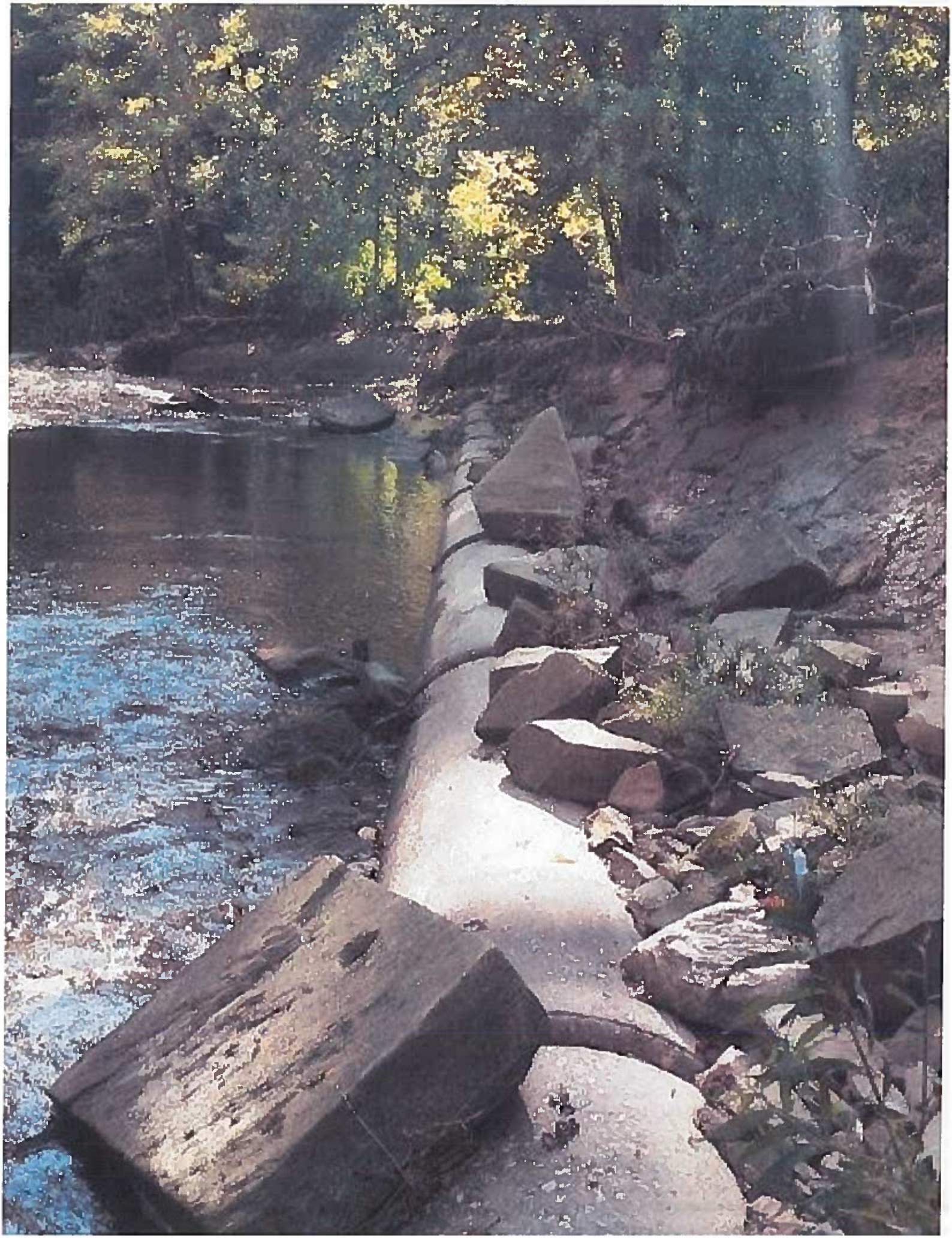
SEWER CONTRACT NO. 670

ENGINEER: RMA

DESIGNED: LDD/BTB
DRAWN: LDD/MPB
CHECKED: BTB

SCALE: HORZ 1"=50' VERT 1"=5'

TAX MAP: 48 & 56
ADC MAP No.: 4931 & 4932
ADC GRID: H5, K1, K2, M1 & M2

SHEET No. 8 OF 23

JOB No.: 2009004.00