BID DOCUMENTS
IFB NUMBER: B36-134
VOLUME 3 DRAWINGS

CRABBS BRANCH STREAM VALLEY PARK
STORMWATER MANAGEMENT RETROFITS, ICC PROJECT RC-73/74

SOLICITATION RELEASE DATE: 4 DECEMBER 2015

COMMISSION PROJECT TEAM:

BRIAN LEWANDOWSKI, PROJECT MANAGER
BOB KANE, CONSTRUCTION MANAGER
NATALIE FRANCIA HIDA, CONTRACTS AND PROCUREMENT SUPERVISOR

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The Maryland National Capital Park and Planning Commission

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT
16135 CRABBS BRANCH WAY, ROCKVILLE, MD 20855

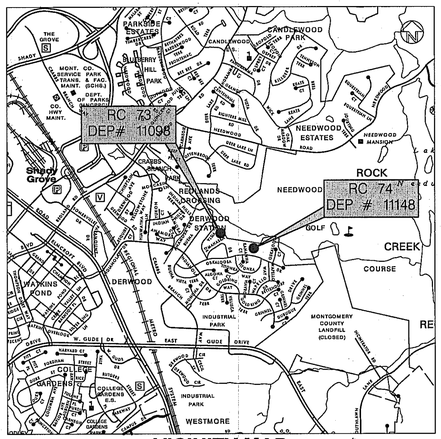
CONSTRUCTION PLANS
ICC Environmental Stewardship Project RC-73 & RC-74
SHA CONTRACT NO. AX3765360

GENERAL NOTES

1. Contractor shall visit the project site prior to submitting the bid to get familiar with the existing conditions, difficulties and restrictions associated in performing the work required under the contract.
2. Unless noted otherwise all work shall be new and M-NCPPC will not provide any equipment, material or labor for the work.
3. Errors and omissions in the bid documents shall be brought to the attention of M-NCPPC prior to submitting the bid. Failure to do so will not be considered as a reason for additional compensation.
4. All notes and details shown on the drawings are typical unless otherwise noted.
5. All work shall be performed in accorddance with the latest applicable codes, standards and specifications of M-NCPPC, Montgomery County, Maryland State and Federal requirements.
6. A pre-construction meeting will be scheduled and conducted by the Construction Manager. Prior to this meeting the contractor shall not perform any construction related activity at the project site, except limited clearance for stakeout and flagging of the LOD. The LOD shall be approved by the Construction Manager and permitting agencies. Construction Manager may require minor adjustments to the LOD to reduce impacts on existing infrastructure and natural resources that are to remain. This adjustment shall be perfomed at no additional cost to the M-NCPPC.
7. Contractor shall verify, in the field, all dimensions provided on drawings and specifications before starting construction activity. If they are different, Construction Manager shall be notified in writing, before proceeding further with the work.
8. All existing conditions to remain shall be verified, photographed and documented prior to construction. If they are different the Construction Manager shall be notified before proceeding with the work. All other damages shall be corrected and restoration work shall be performed in accordance with the M-NCPPC requirements and to the satisfaction of the Construction Manager at no additional cost.
9. Prior to start of construction, tree protection measures shall be installed and shall be maintained during construction.
10. If it is determined that the trees are damaged during construction, a certified arborist shall inspect them and submit a report recommending appropriate action either to repair or replace. If approved by the Construction Manager, corrective work shall be performed at no additional cost.
11. Location for Stabilized Construction Entrance and access routes shall be identified and adjusted in the field. Construction Manager shall provide the approval.
12. Staging and storage area shall be approved by Construction Manager and shall be secured by the contractor at no additional expense to M-NCPPC.
13. All the existing utilities at the project may not be shown on the drawings. Prior to the start of construction related activity, all utilities within the LOD shall be located and identified utilizing appropriate instruments. The location shall be staked and flagged.
14. The Construction Manager shall be notified immediately if existing utilities are found within the work area (during utility survey) that are not shown on the drawings and they impact the contract work.
15. Damages to existing utilities shall be corrected immediately in accordance with the requirements of the affected utility. Upon completion of the correction action a copy of the approval document from the utility shall be submitted to the Construction Manager.
16. All erosion and sediment control devices shall meet current Montgomery County Department of Permitting Services standards and directives. These shall be approved by the permitting authorities prior to the start of construction.
17. Before start of construction, on site representative of the contractor shall have a certificate of attendance at the MDE approved training program for the control of sediment and erosion.
18. Upon complying with all the applicable requirements stated above, construction of the project within the approved LOD may start.
19. No work shall be performed outside of the LOD. Areas disturbed outside approved LOD shall be restored immediately to the satisfaction of Construction Manager at no cost to M-NCPPC.
20. During construction, if the contractor finds that conflicts exist among various contract documents, the contractor shall comply withy the most stringent requirement.
21. Grading work shall be done to provide positive drainage unless otherwise shown.
22. Surfaced roadway and parking areas shall be maintained in a clean condition. Appropriate means shall be provided to clean mud and dust from these areas. Trucks and other equipment shall not track mud into nearby roadways.
23. All planting substitutions shall be approved by the Construction Manager. Plant materials and locations shall be inspected by the Construction Manager prior to installation. Construction Manager shall be notified at least three (3) working days in advance for inspection.
24. Prior to vegetative stabilization, topsoil shall be applied for all disturbed areas. This shall be in accordance with the MDE "Standards and Specifications for Topsoil". If on-site materials do not meet requirements of topsoil, tilling-in of certified compost to on-site soils to meet specifications shall be coordinated with the Construction Manager.
25. Topography Information is taken from Montgomery County GIS and survey data provided by The ICC Project Management Office dated between February 2007 and Present.
26. Field run topographic survey provided by the Inter-County Connector Project Management Office between February 2007, and December 2010. Survey is in State Plane Datum NAD83, NAVD88. Boundaries shown are derived from deed and plat information.
27. 100-Year Floodplain shown on drawings is FEMA NFHL digital data for Community/ Panel 24031C-0332D, Effective Date September 29, 2006.
28. Site is located in the Crabb's Branch Watershed within Montgomery County. Discharge from stormwater management facilities drain into Crabb's Branch tributary.
29. No instream work shall be performed by the contractor between March 1 and June 15, inclusive.
30. The Contractor is responsible for mowing during construction and needs to do so, at minimum, at the end of construction, before maintenance will be turned over to Parks.
31. Work within County ROW needs to comply with MC-DOT standards and specifications.

LEGEND:

410	EXISTING CONTOUR
	EXISTING TREE LINE
	EXISTING TREE
	EXISTING WETLAND BOUNDARY
B	25' WETLAND BUFFER
	CRITICAL ROOT ZONE
	EXISTING STORM DRAIN
SAN	EXISTING SANITARY
	EXISTING PROPERTY LINE
	SOIL BORING
410	PROPOSED CONTOUR
	PROPOSED PIPE
X	PROPOSED TREE REMOVAL
LOD	LIMIT OF DISTURBANCE
TPF	TREE PROTECTION FENCE
SF	SILT FENCE
P	TEMPORARY PUMP
FB	FILTER BAG
SP	SUMP PIT
DW	MODIFIED DEWATERING DEVICE
	SANDBAG FLOW BARRIER
	TEMPORARY COFFERDAM
SCE	STABILIZED CONSTRUCTION ENTRANCE
	100-YR FLOODPLAIN
WUS	WATERS OF THE US
SB	150' STREAM BUFFER
	PERMANENT POND ACCESS
	GRID PAVERS
	PARKS PROPERTY MARKERS



VICINITY MAP Approval pages 1 thru 49

Scale: 1"=2000'

MCPD APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED AND/OR DOES NOT CONTINUE ON SCHEDULE

APPROVED FOR POND(S) BY
MONTGOMERY SOIL CONSERVATION DISTRICT

DISTRICT PROGRAM COORDINATOR — DATE 6/23/15

INDEX OF DRAWINGS

RELATED REQUIRED PERMITS

IT IS THE RESPONSIBILITY OF PERMITTEE/OWNER OF THIS SITE TO OBTAIN ALL REQUIRED PERMITS PRIOR TO ISSUANCE OF THE APPROVED SEDIMENT CONTROL PERMIT

TYPE OF PERMIT	REQ'D	NOT REQ'D	PERMIT #	EXPIRATION DATE	WORK RESTRICTION DATES
MCDPS Floodplain District	X				
Waterway/Wetland(s)	X		04-NT-0408		
Corps of Engineers	X		CNAB-OP-RMS -05-6001-1-1		
MDE		X			
MDE Water Quality Certification	X		200560011		
MDE Dam Safety		X			
N.P.D.E.S. NOTICE OF INTENT	X				
Site Access Permit		X			
Others (list)					

MISS UTILITY
The Contractor shall call "Miss Utility" at 1-800-257-7777, 48 hours prior to the start of work. The Contractor is responsible for ensuring that all underground utilities in the area of proposed work are located prior to commencing construction work. The Contractor is responsible for compliance with requirements of Chapter 36A of the Montgomery County Code.

The Contractor is also responsible for locating all private utilities (not located by Miss Utility) within M-NCPPC property at their expense. All utilities shown on the plans are provided for information only and shall be considered approximate. M-NCPPC shall not be responsible for locating underground utilities. Any utilities or other underground facilities damaged during construction shall be repaired/replaced at the Contractor's expense.

UTILITY SURVEY & RELOCATION CERTIFICATION

UTILITY	DATE REQUESTED	DATE RECEIVED	SHOWN ON PLANS (Y/N)	RELOCATION REQ'D (Y/N)
PEPCO	02/02/10	N/A	N	N
WSSC	02/02/10	06/02/10	Y	N
AT&T	02/02/10	N/A	N	N
WG&L	02/02/10	04/03/10	N	N
VERIZON	02/02/10	02/20/10	N	N
COMCAST	02/02/10	N/A	N	N

UTILITY STATEMENT
THE ABOVE UTILITY COMPANIES HAVE BEEN CONTACTED REGARDING EXISTING UTILITIES WITHIN THIS PROJECT AREA AND INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM AVAILABLE RECORDS. HENCE, ANY UTILITY MODIFICATIONS REQUIRED BY THIS PROJECT HAVE BEEN COORDINATED WITH THE APPROPRIATE UTILITY COMPANIES. THIS STATEMENT DOES NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY FOR FIELD LOCATING AND VERIFYING ALL UNDERGROUND UTILITIES PRIOR TO STARTING CONSTRUCTION.

Name/Title — Date

- SEDIMENT CONTROL/STORMWATER MANAGEMENT CERTIFICATION -

OWNER'S/DEVELOPER'S CERTIFICATE

"I/We hereby certify that all clearing, grading, construction and/or development will be done pursuant to this plan and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources approved training program for the control of sediment and erosion before beginning this project."

Signature — Date 5/14/15

Brian Lewandowski, MNCPPC-Engineer
Printed Name and Title

CERTIFICATION OF THE QUANTITIES RC-73

"I hereby certify that the amount of excavation and fill as shown on these plans has been computed to 2000 cubic yards of excavation, 1000 cubic yards of fill and the total area to be disturbed as shown on these plans has been determined to be 160,795 square feet."

Signature — Date 5/11/15

SEYED A. SAADAT — MD 16493
Printed Name — Registration Number

Note: The earthwork cut and fill quantities and the area of disturbance indicated in this certificate are calculated for the purpose of plan Approval and should not be used for contractual obligations.

DESIGN CERTIFICATION

"I hereby certify that this plan has been prepared in accordance with the "2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control", Montgomery County Department of Permitting Services Executive Regulations 5-90, 7-02AM and 36-90, and Montgomery County Department of Public Works and Transportation "Storm Drain Design Criteria", dated August 1988."

Design Engineer Signature — Date 5/11/15

SEYED A. SAADAT — MD 16493
Printed Name — Registration Number

M-NCPPC SWM MAINTENANCE CERTIFICATION

I hereby certify that the M-NCPPC Montgomery County Department of Parks will assume non-structural maintenance responsibilities for all stormwater management (SWM) structures as listed and shown, hereon, in accordance with the Right of Entry between M-NCPPC and the Department of Environmental Protection dated 5/7/2007. If, for any reason, future improvements on Parkland are planned that would impact any of the SWM facilities included herein, M-NCPPC will notify the Department of Environmental Protection during the facility planning/ preliminary design stages for such improvements.

Montgomery County Department of Parks — Date 5/14/15

CERTIFICATION OF THE QUANTITIES RC-74

"I hereby certify that the amount of excavation and fill as shown on these plans has been computed to 6300 cubic yards of excavation, 560 cubic yards of fill and the total area to be disturbed as shown on these plans has been determined to be 163,718 square feet."

Signature — Date 5/11/15

SEYED A. SAADAT — MD 16493
Printed Name — Registration Number

Note: The earthwork cut and fill quantities and the area of disturbance indicated in this certificate are calculated for the purpose of plan Approval and should not be used for contractual obligations.

SEE SHEET 12 FOR SWM CONCEPT APPROVAL

APPROVED FOR PROCUREMENT

Approved By:_____ Date:_____
Michael Ma, RA, AICP
Acting Chief, Park Development Division

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed — Date 8/12/15
Approved — Date 8/13/2015
254973
S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed — Date 8/11/15
Approved — Date 8/13/2015

Administrative Requirements:
Reviewed — Date 8/12/15
258116
SEDIMENT CONTROL PERMIT NO.

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

TI-01

RK&K
Rummel, Klepper & Kahl, LLP
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PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By: DMH
MBM		
Engineer	Date	Checked By: DMH
DEA		
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND — SEYED ALI SAADAT — PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager — Date 5-14-15
Construction Manager — Date
Project Engineer

ISSUED FOR PROCUREMENT ON_____

REVISIONS

Rev. No.	Date	Description

Cover Sheet
CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT
RC-73: PARCEL A, BLOCK J, DERWOOD STATION;
PARCEL B, BLOCK J, DERWOOD STATION
RC-74: PARCEL G, BLOCK J, DERWOOD STATION;
PARCEL A, BLOCK M, DERWOOD STATION;
PARCEL 412 (Liber 0089/Folio 05862)
SCALE: N/A

SC/SWM
SHT. # 1 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:26 AM
FILE: \\bstervol\v2005\2005\05050_ico\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pGN-T000_Titlesheet.dgn

FINAL SCANNED:

PLAN SCANNED:

PARK CODE: C10

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

A. CONSTRUCTION INSPECTION BY DESIGNATED ENGINEER

THE CONSTRUCTION OF THE POND AND EMBANKMENT SHALL BE UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER. THE ENGINEER MUST SUBMIT WRITTEN CERTIFICATION THAT THE POND AND EMBANKMENT HAVE BEEN BUILT IN ACCORDANCE WITH THE APPROVED PLANS TO THE DEPARTMENT OF PERMITTING SERVICES (DPS) ALONG WITH A RECORD DRAWING, SOIL COMPACTION TESTS, CONCRETE TESTS, AND OTHER REQUIRED CONSTRUCTION DOCUMENTATION. THIS SHOULD BE DONE IMMEDIATELY FOLLOWING THE COMPLETION OF THE PROJECT, UNLESS OTHERWISE DESIGNATED ON THE PLANS. THE ENGINEER SHALL HAVE THE RESPONSIBILITY AND AUTHORITY TO MAKE MINOR CHANGES IN THE PLANS IN ORDER TO COMPENSATE FOR UNUSUAL SOIL CONDITIONS ENCOUNTERED DURING CONSTRUCTION AS LONG AS CHANGES DO NOT ADVERSELY AFFECT THE INTEGRITY OF THE DAM. MAJOR CHANGES TO THE DESIGN, WHICH MAY RESULT FROM SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION, MUST BE REVIEWED AND APPROVED BY THE DESIGN ENGINEERS, DPS, AND THE MONTGOMERY SOIL CONSERVATION DISTRICT PRIOR TO INITIATION OF CONSTRUCTION.

B. SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT , AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH, AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH, AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

C. EARTH FILL

MATERIAL – THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 4 INCHES, FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT, AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USED OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER. MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT – AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTION OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION – THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRE OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE CONTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL, IT WILL NOT CRUMBLE; YET, NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

THE DENSITY OF EACH LIFT SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +– 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR).

CUT OFF TRENCH – THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE CUTOFF TRENCH SHALL BE ONE TO ONE OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

EMBANKMENT CORE – THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10-YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

D. STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL MUST FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IN S A COMPACTED FILL OF 24 INCHES OR GREATER OVER THE STRUCTURE OR PIPE.

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28-DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM pH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF SIX INCHES (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7 INCHES TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACK FILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24 INCHES OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

E. PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE – ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

1. MATERIALS – (POLYMER COATED STEEL PIPE) – STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-245 & M-246 WITH WATERTIGHT COUPLING BANDS OR FLANGES.

MATERIALS – (ALUMINUM COATED STEEL PIPE) – THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

MATERIALS –(ALUMINUM PIPE) – THIS PIPE AND ITS APPURTANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M0190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE pH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

GENERAL SWM NOTES CONT'D:

3. CONNECTIONS – ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTIONS TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BAND WIDTH. PIPE ENDS MUST BE MATCHED AND NUMBERED BY THE MANUFACTURER. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER; FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PRE-PUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12-INCH WIDE STANDARD LAP TYPE BAND WITH 12-INCH WIDE BY 3/8 INCH THICK, CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12-INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF 1/2-INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24-INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4(FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END, PER CURRENT DPS BAND DETAIL. A 24-INCH WIDE BY 3/8 INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8-INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE.

HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING – THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURAL BACKFILL".

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE PIPE – ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS – RCP SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL MEET ASTM DESIGNATION C-361. PIPES MUST BE LABELED IN FULL ACCORDANCE WITH ASTM C-361, INCLUDING THE ASTM C-361 DESIGNATION ON THE INSIDE OF EACH SECTION OF PIPE, AND ALL PIPES MUST BE CLEARLY MARKED BY THE MANUFACTURER PRIOR TO DELIVERY TO THE JOB SITE. PIPES WITH MULTIPLE DESIGNATIONS WILL BE REJECTED.

2. BEDDING – REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING/CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6-INCHES. WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.

3. LAYING PIPE – BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISES TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN FOUR FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

PLASTIC PIPE – THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

1. MATERIALS – PVC PIPE SHALL BE PVC-1120 OR PVC 1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241. CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4-10 INCH PIPE SHALL MEET THE REQUIREMENT OF AASHTO M252 TYPE S, AND 12 THROUGH 24 INCH SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.
3. BEDDING – THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL"

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

F. DRAINAGE DIAPHRAGMS
WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

G. CONCRETE

CONCRETE DESIGN SHALL MEET THE REQUIREMENTS OF ACI 350, ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES, WITH FREEZING AND THAWING EXPOSURES. CONCRETE SHALL BE A TYPE II OR IIA CEMENT, WITH A 28-DAY COMPRESSIVE STRENGTH OF 4,500 PSI FOR CAST IN PLACE AND 5,000 PSI FOR PRE-CAST STRUCTURES. CONCRETE SHALL ALSO MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 420, MIX NO. 6.

H. ROCK RIP-RAP

ROCK RIP-RAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATION FOR CONSTRUCTION MATERIALS, SECTION 311.

GEOTEXTILE SHALL BE PLACED UNDER ALL RIP-RAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

I. CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM THE VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED, AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS, AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM OF REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

J. STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE MARYLAND SOIL CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

K. EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION PROCESS.

GENERAL NOTES

UTILITY NOTE:

EXISTING UTILITIES HAVE BEEN GENERALLY SHOWN ON THE PLANS BASED ON RECORD PLANS PROVIDED BY THE UTILITY COMPANIES. DESIGNATING AND TEST PITTING OF THE EXISTING UTILITIES WERE NOT PERFORMED. THE ADMINISTRATION ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THESE LOCATIONS. PRIOR TO ORDERING MATERIALS OR BEGINNING CONSTRUCTION FOR ANY PART OF THE PROJECT, THE CONTRACTOR SHALL CONTACT MISS UTILITY TO LOCATE AND MARK UTILITIES FOR THE ENTIRE PROJECT. THE CONTRACTOR SHALL LOCATE AND TEST PIT ANY UNDERGROUND FACILITIES THAT APPEAR TO BE IN CONFLICT IN ORDER TO DETERMINE IF CONFLICTS EXIST. IN THE EVENT THAT CONFLICTS MAY BE POSSIBLE, THIS INFORMATION SHALL IMMEDIATELY BE FORWARDED TO THE STATE'S REPRESENTATIVE FOR REVIEW AND RESOLUTION. MATERIAL ORDERED PRIOR TO OBTAINING TEST PIT INFORMATION WILL NOT BE CONSIDERED IN ANY REQUEST FROM THE CONTRACTOR FOR ANY EQUITABLE ADJUSTMENTS DUE TO EXISTING UTILITY CONFLICTS. UNDERGROUND SERVICE CONNECTIONS ARE TYPICALLY NOT SHOWN ON THE PLANS, THEREFORE, THE CONTRACTOR MUST COMMUNICATE WITH THE UTILITY COMPANIES AND THE STATE'S REPRESENTATIVE TO: DETERMINE WHERE SERVICES EXIST; IF THERE ARE CONFLICTS AND HOW THEY CAN BE RESOLVED. THIS NEEDS TO BE DONE AS A FIRST ORDER OF BUSINESS BEFORE ORDERING MATERIALS, NO COMPENSATION WILL BE CONSIDERED FOR REWORK AND/OR DELAYS DUE TO FAILURE TO FOLLOW THIS PROCEDURE.

CONSTRUCTION NOISE NOTE:

TO PROTECT PUBLIC HEALTH AND WELFARE, AND TO MINIMIZE THE POTENTIAL DISRUPTION OF DAILY HUMAN ACTIVITY FROM CONSTRUCTION RELATED NOISE YET FACILITATE A FLEXIBLE WORK SCHEDULE FOR THE CONSTRUCTION IN A NOISE-SENSITIVE CONTEXT, THE CONTRACTOR SHALL NOT CAUSE OR PERMIT NOISE LEVELS EMANATING FROM CONSTRUCTION OR DEMOLITION ACTIVITIES WHICH EXCEED THE LIMITS SPECIFIED IN COMAR TITLE 26. SPECIFICALLY THE PEAK NOISE LEVEL FROM CONSTRUCTION ACTIVITIES SHALL NOT EXCEED 90 DBA (LMAX) DURING DAYTIME HOURS AT NEARBY RESIDENCES, SCHOOLS, DAYCARE CENTERS, HOSPITALS AND OTHER SENSITIVE RECEPTORS. DAYTIME HOURS FOR THE PURPOSES OF THIS SPECIFICATION ARE CONSIDERED TO BE FROM 9:00 AM TO 4:00 PM, MONDAY THROUGH FRIDAY. CONSTRUCTION ACTIVITIES OUTSIDE THE TIME LIMITS SPECIFIED HEREIN WILL NOT BE PERMITTED. THE ABOVE CONSTRUCTION NOISE CRITERIA IS APPLICABLE TO ALL AREAS USED BY THE CONTRACTOR.

MAINTENANCE OF TRAFFIC NOTE:

ALL TEMPORARY TRAFFIC CONTROLS SHALL ADHERE TO THE LATEST EDITION OF THE MONTGOMERY COUNTY WORK ZONE TRAFFIC CONTROL STANDARDS BOOK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FULLY UNDERSTAND THE TRAFFIC CONTROL REQUIREMENTS AND IMPLEMENT THE TRAFFIC CONTROL STANDARDS LISTED IN THIS BOOK. THIS BOOK ADDRESSES VEHICULAR AND PEDESTRIAN TEMPORARY TRAFFIC CONTROLS THAT WILL BE REQUIRED FOR THIS PROJECT. DAILY CONTACT:
STELLA IGBINEDION (240)777-2165

SEDIMENT CONTROL NOTE:

"APPROVED SEDIMENT CONTROL DEVICES" NOTED IN THE SEQUENCES OF CONSTRUCTION REFER TO MDE APPROVED SEDIMENT CONTROL DEVICES.

GN-O1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:		NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.
Stormwater Management:	Sediment Control Technical Requirements	Administrative Requirements:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY	M Geer 8/12/15 Reviewed Date	M Geer 8/12/15 Reviewed Date
M Geer 8/12/15 Reviewed Date	8/13/2015 Approved Date	258116 SEDIMENT CONTROL PERMIT NO.
8/13/2015 Approved Date		
254973 S.M. FILE NO.		MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN		
Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL	
Project Manager	Date 5-14-15
Construction Manager	Date
Project Engineer	

ISSUED FOR PROCUREMENT ON

REVISIONS		
Rev. No.	Date	Description

GENERAL NOTES

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

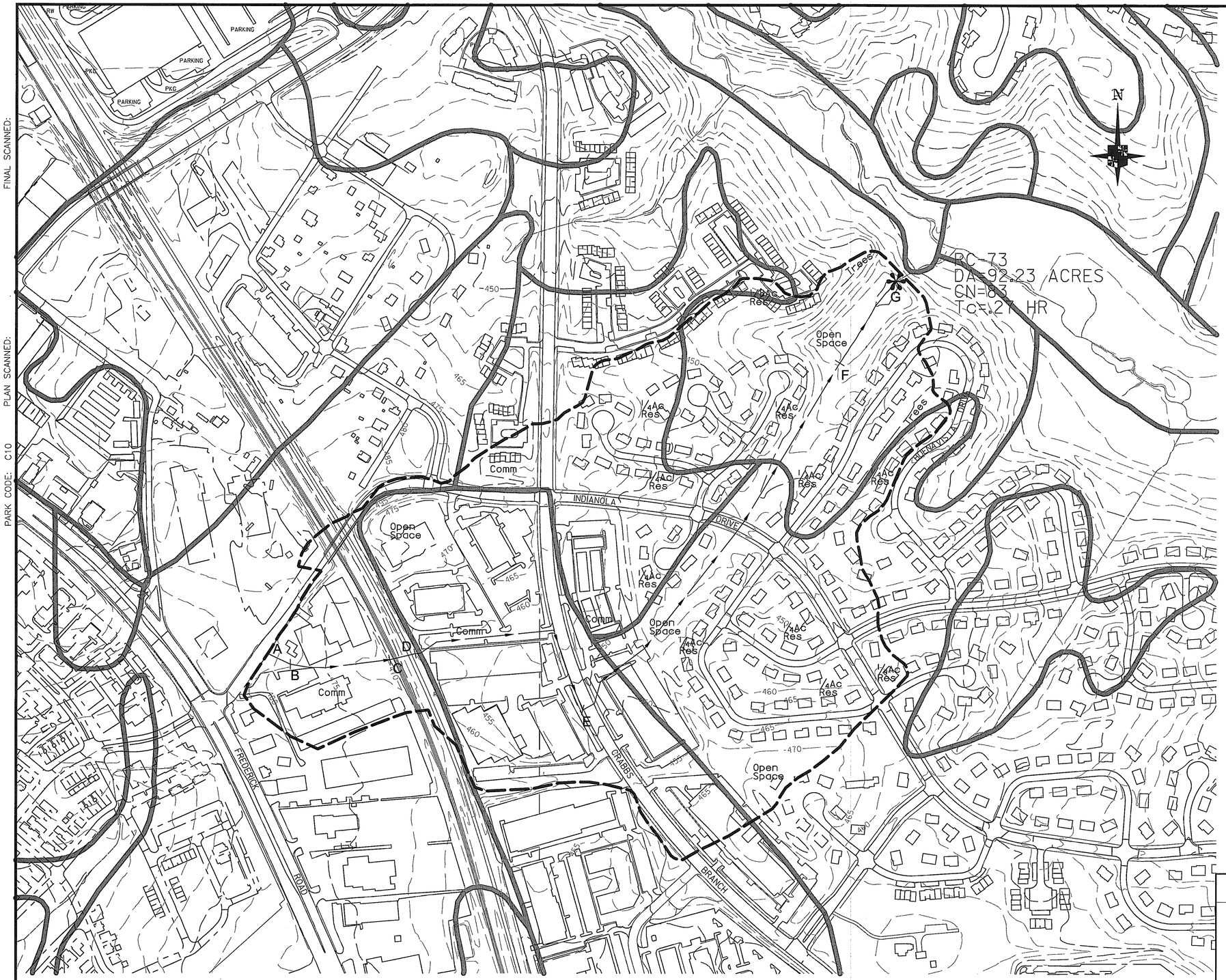
SCALE: 1 = 30'

SC/SWM
SHT. # 2 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:26 AM
FILE: \\balsrv04\v2005\2005\05050_icc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pDD-N000_RCC.dgn

FINAL SCANNED:
PLAN SCANNED:
PARK CODE: C10



LEGEND

- CONTOURS
- B — HYDROLOGIC SOILS GROUP
- DRAINAGE BOUNDARY
- 4Ac Res — LAND USE
- POINT OF STUDY

DA-73-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:

NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY

M Geer 8/12/15
Reviewed Date

8/13/2015
Approved Date

254973
S.M. FILE NO.

Sediment Control Technical Requirements

M Geer 8/12/15
Reviewed Date

8/13/2015
Approved Date

Administrative Requirements:

M Geer 8/12/15
Reviewed Date

258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

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PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN		
Landscape Architect	Date	Checked By:
Architect	Date	Checked By:
MBM		DMH
Engineer	Date	Checked By:
DEA		DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND — DAVID E. ANDERSON — No. 16493 — PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON _____

REVISIONS

Rev. No.	Date	Description

Drainage Area Map RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 400'

SC/SWM
SHT. # 3 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:27 AM
FILE: \\balsrv04\vj0003\2009\050502_bc\[SS-CM SWM Contract RC-C\RC-73\cadd\plans\pDA-E000_RC_73.dgn

FINAL SCANNED:
PLAN SCANNED:
PARK CODE: C10

TREE INVENTORY			
TREE NO.	SPECIES	DBH	COMMENTS
T-23	White Pine	13 "	REMOVE
T-24	White Pine	11 "	REMOVE
T-25	White Pine	13 "	REMOVE
T-27	Red Oak	10 "	REMOVE
T-28	Twin Dogwood	6 "	REMOVE
T-29	Dawn Redwood	15 "	REMOVE
T-30	White Pine	15 "	TREE PROTECTION
T-31	White Pine	8 "	
T-32	White Pine	8 "	
T-33	Sycamore	2 "	
T-34	Norway Spruce	8 "	
T-57	White Oak	39 "	
T-58	White Oak	38 "	
T-59	Silver Maple	31 "	
T-60	Willow Oak	24.5 "	
T-61	Red Maple	11 "	TREE PROTECTION
T-62	Black Cherry	13 "	TREE PROTECTION
T-63	White Pine	14 "	TREE PROTECTION
T-64	Twin Black Cherry	12.5	TREE PROTECTION
T-65	White Pine	20 "	
T-66	White Pine	15.5 "	
T-67	Red Maple	17.5 "	
T-68	Sawtooth Oak	10.5 "	
T-69	Black Cherry (Clump)	11 "	
T-70	White Pine	19.5 "	
T-71	Red Maple	13 "	
T-72	Baldcypress	20 "	REMOVE
T-73	Red Maple	23.5 "	TREE PROTECTION
T-74	Red Maple	16 "	REMOVE
T-75	Baldcypress	15 "	REMOVE
T-76	White Pine	8 "	
T-77	White Pine	15 "	
T-78	White Pine	17.5 "	
T-79	White Pine	21.5 "	
T-80	Honey Locust	7 "	TREE PROTECTION
T-81	White Pine	13 "	
T-82	White Pine	11 "	
T-83	White Pine	11 "	
T-84	White Pine	13 "	
T-85	Black Willow (Clump)	21 "	REMOVE
T-86	White Pine	17 "	
T-87	Red Maple	13.5 "	
T-88	Black Willow	24 "	
T-89	White Pine	15 "	
T-90	Willow Oak	24.5 "	
T-91	White Oak	45 "	
T-92	Black Cherry	10 "	REMOVE
T-93	White Oak	31 "	REMOVE

PARCEL 'E'

25' WETLAND BUFFER

DERWOOD STATION PLAT #13105

EX. WETLAND BOUNDARY

PLAT 21 DERWOOD STATION PLAT #13081

TOP SMH EL.=428.07'
8" INV.IN WEST=389.45'
8" INV.IN SOUTH=390.19'
8" INV.IN EAST=389.42'
12" INV.OUT=389.22'

EXISTING EMERGENCY SPILLWAY EL. 410.39 WIDTH=14.3'

EXISTING RISER STRUCTURE

EXISTING EMBANKMENT TO REMAIN TOP OF DAM EL. 413.5

EXISTING EMERGENCY SPILLWAY EL. 411.55 WIDTH=10.3'

100-YR FLOODPLAIN BOUNDARY

150' STREAM BUFFER

20' S.D. EASEMENT

18' S.D. EASEMENT

20' ACCESS EASEMENT TO STORMWATER MANAGEMENT BASIN

PARCEL 'B' STORM WATER MANAGEMENT BASIN EASEMENT

MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION L. HMS 5862, F. 89

15829 ANAMOSA DR
AN, RUI RAO & CAI PING YU
L 34005 F 0754
PLAT 13081 LOT 31

EX. 100YR WSEL = EL. 412.0

3YR WSEL = 408.5

100YR WSEL = 410.0

2YR WSEL = 408.3

EXISTING SANITARY MANHOLE TO REMAIN WITH ALL CONNECTING PIPES (TYP.)

TOP SMH EL.=412.68'
INV. SOUTH=406.76'
INV. NORTH=405.

15821 BUENA VISTA DR DUGAN, THOMAS F JR & S L L 08323 F 0213 PLAT 13563 LOT 8

15817 BUENA VISTA DR ARAMAYO, MIGUEL & SOLEDAD CALVO L 15135 F 0384 PLAT 13564 LOT 9

15813 BUENA VISTA DR ISEMAN, MICHAEL S L 34768 F 0245 PLAT 13564 LOT 10

15809 BUENA VISTA DR RAWSON, ARTHUR F & A G L 06015 F 0572 PLAT 13564 LOT 11

15805 BUENA VISTA DR LEE, ANDREW C C & MAGGIE S Y HO L 14843 F 0662 PLAT 13564 LOT 12

15801 BUENA VISTA DR CHANG, GEORGE M W & D C H L F PLAT 13564 LOT 13

BUENA VISTA DRIVE

N 528100
E 1259400

CONTRACTOR TO ID PROPERTY CORNERS WITH GREEN & WHITE PROPERTY MARKER (TYP) SEE DETAIL, SHT 12 OF 49

MATCH LINE, SEE SHEET EX-73-2

EX-73-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/13/2015 Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/13/2015 Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed 8/12/15 Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

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PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By: MBM
Engineer	Date	Checked By: DMH
DEA		
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND · JOSEPH M. SCHOTT · PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

Existing Conditions RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

SC/SWM
SHT. # 4 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:28 AM
FILE: \\balsrv04\vol008\2009\09059_lcc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pEX-0001_RC73.dgn

FINAL SCANNED:

PLAN SCANNED:

PARK CODE: C10

INDIANOLA DRIVE

ANAMOSA WAY

ANAMOSA COURT

ANANMOSA DRIVE

20' S.D. EASEMENT

N 527900

E 1268800

E 1268300

N 527300

15801 ANAMOSA DR
VINCENT, DUANE D & M N
L 07234 F 0033
PLAT 13080 LOT 38

15805 ANAMOSA DR
LIN, KELLY P LIVING TR
L 26249 F 0541
PLAT 13080 LOT 37

PLAT 20
DERWOOD STATION
PLAT #13080

15809 ANAMOSA DR
DIXON, DENNIS M & I J
L 10677 F 0692
PLAT 13801 LOT 36

PLAT 21
DERWOOD STATION
PLAT #13081

15813 ANAMOSA DR
CHUNG, WOO C & Y J
L 12923 F 0700
PLAT 13081 LOT 35

15817 ANAMOSA DR
FREEDMAN, MARK & P L
L 08317 F 0510
PLAT 13081 LOT 34

15821 ANAMOSA DR
BATTULA, NARYANA & R
L 05797 F 0308
PLAT 13081 LOT 33

15825 ANAMOSA DR
PACHIKARA, JOHNNY A &
MARY J L 33553 F 0684
PLAT 13081 LOT 32

DU

MATCH LINE, SEE SHEET EX-73-1

PARCEL 'A'

40' S.D. EASEMENT

20' ACCESS EASEMENT
TO STORM WATER
MANAGEMENT BASIN

15825 BUENA VISTA
KAENDERA, NANC
L F
PLAT 13563 LOT 7

15829 BUENA VISTA DR
SHIELDS, DENNIS P & R L
L 06665 F 0712
PLAT 13563 LOT 6

15833 BUENA VISTA DR
YU, YANLIN & DIANYA XU
L 28767 F 0496
PLAT 13563 LOT 5

15837 BUENA VISTA DR
ROSENDORF, ALVIN J & M F
L 05909 F 0678
PLAT 13563 LOT 4

15841 BUENA VISTA DR
BIASE, NICHOLAS & F
L 12577 F 0283
PLAT 13563 LOT 3

15845 BUENA VISTA DR
DIEM, ARTHUR F & AIMEE B
L 30099 F 0028
PLAT 13563 LOT 2

15849 BUENA VISTA DR
ST CLAIR, THOMAS A JR & L J S
L 07112 F 0096
PLAT 13563 LOT 1

BUENA VISTA DRIVE

N 527300
E 1268800

GRASS

TREE INVENTORY			
TREE NO.	SPECIES	DBH	COMMENTS
T-1	PIN OAK	20 "	
T-2	NORWAY SPRUCE	9.5 "	
T-3	NORWAY SPRUCE	12 "	TREE PROTECTION
T-4	NORWAY SPRUCE	16.5 "	REMOVE
T-5	WHITE PINE	19 "	REMOVE
T-6	WHITE PINE	18 "	REMOVE
T-7	WHITE PINE	17 "	REMOVE
T-8	WHITE PINE	19 "	REMOVE
T-9	WHITE PINE	17 "	REMOVE
T-10	WHITE PINE	16 "	REMOVE
T-11	WHITE PINE	15 "	REMOVE
T-12	WHITE PINE	11 "	REMOVE
T-13	WHITE PINE (DEAD)	11.5 "	REMOVE
T-14	WHITE PINE	13.5 "	REMOVE
T-15	WHITE PINE	13 "	REMOVE
T-16	WHITE PINE	16.5 "	REMOVE
T-17	WHITE PINE	13 "	REMOVE
T-18	WILLOW	34 "	REMOVE
T-19	WILLOW	28 "	REMOVE
T-20	WILLOW	29 "	REMOVE
T-21	WILLOW	33 "	REMOVE
T-22	WHITE PINE	15 "	REMOVE
T-26	WHITE PINE	11 "	REMOVE
T-35	WHITE PINE	17 "	
T-36	WHITE PINE	16 "	
T-37	NORWAY SPRUCE	11 "	
T-38	WHITE PINE	17.5 "	
T-39	WHITE PINE	19 "	
T-40	WHITE PINE	15 "	
T-41	SILVER MAPLE	41.5 "	
T-42	TWIN EUONYMUS	7 "	
T-43	EUONYMUS	5.5 "	
T-44	EUONYMUS	4 "	
T-45	NORWAY SPRUCE	13 "	TREE PROTECTION
T-46	WHITE PINE	18 "	
T-47	WHITE PINE	14 "	
T-48	TWIN SILVER MAPLE	13 "	
T-49	WHITE PINE	20 "	
T-50	WHITE PINE	19 "	
T-51	NORWAY SPRUCE	13 "	
T-52	NORWAY SPRUCE	12 "	
T-53	HONEY LOCUST	15 "	TREE PROTECTION
T-54	DOGWOOD	2 "	
T-55	DOGWOOD	2 "	
T-56	BRADFORD PEAR	9 "	

EX-73-2

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

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NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
M Green 8/12/15 Reviewed Date
8/13/2015 Approved Date
254973 E.M. FILE NO.

Sediment Control Technical Requirements
M Green 8/12/15 Reviewed Date
8/13/2015 Approved Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
M Green 8/12/15 Reviewed Date
258116 SEDIMENT CONTROL PERMIT NO.

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DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By: MBM
Engineer	Date	Checked By: DMH
DEA		
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND · STEVEN RAY KAHL · 16493 · REGISTERED PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

5-14-15
Project Manager Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

Existing Conditions RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

SC/SWM
SHT. # 5 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:28 AM
FILE: \\balsrv04\v2005\2005\05050_lcc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pEX-0009_RC73.dgn

RC-73 BASELINE OF MAINTENANCE/ACCESS PATH		
STATION	NORTHING	EASTING
POB – 100+00.00	527289.63	1268623.31
PC – 106+25.83	527808.40	1268973.38
PI – 106+60.15	527836.84	1268992.58
PT – 106+94.43	527863.90	1269013.67
PC – 107+70.27	527923.71	1269060.30
PI – 107+76.25	527928.42	1269063.99
PT – 107+81.89	527934.37	1269064.48
PC – 108+36.40	527988.70	1269068.98
PI – 108+53.25	528005.49	1269070.37
PT – 108+69.13	528018.72	1269080.80
PC – 109+67.12	528095.65	1269141.73
PI – 109+82.40	528107.63	1269151.22
PRC – 109+97.58	528121.23	1269158.20
PI – 110+15.30	528136.96	1269166.32
PCC – 110+32.83	528150.26	1269178.02
PI – 110+74.34	528181.43	1269205.44
PRC – 111+15.52	528205.91	1269238.96
PI – 111+37.83	528219.06	1269256.98
PCC – 111+52.40	528238.87	1269246.72
PI – 111+71.20	528255.56	1269238.06
PT – 111+89.99	528271.56	1269228.18
POE – 112+04.41	528283.83	1269220.61

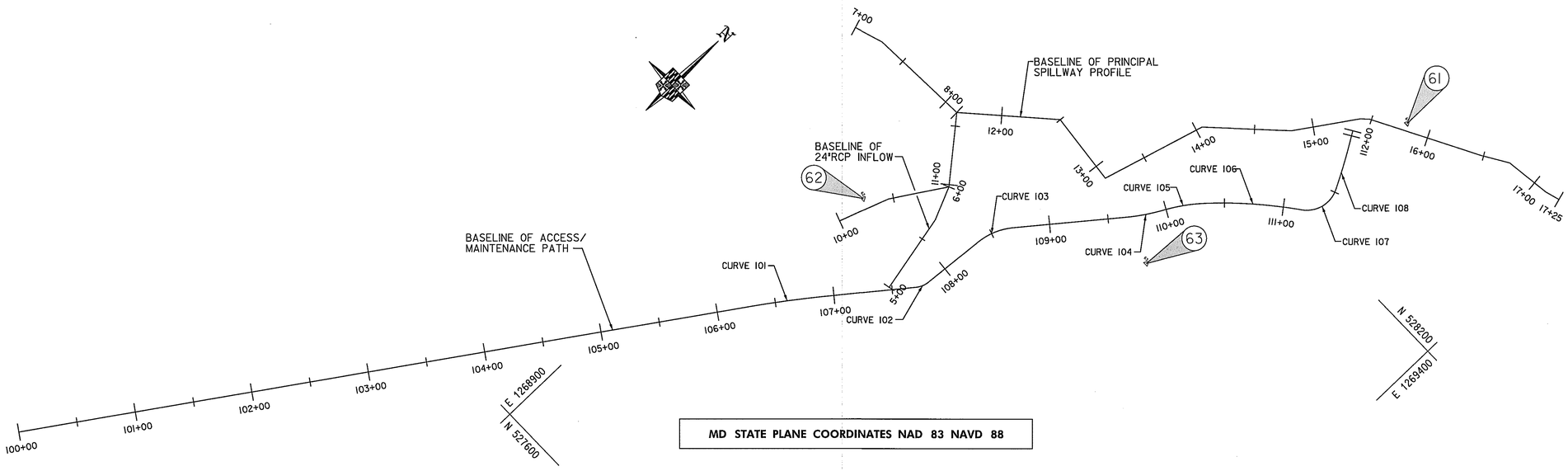
RC-73 BASELINE OF MAINTENANCE/ACCESS PATH: CURVE DATA			
CURVE	DELTA	RADIUS	LENGTH
CURVE-101	5°27'43.58"	394.00	37.5607
CURVE-102	16°16'39.82"	236.00	67.0476
CURVE-103	23°17'22.32"	104.00	42.2738
CURVE-104	6°10'46.21"	1606.00	173.2114
CURVE-105	22°14'09.66"	106.00	41.1377
CURVE-106	21°25'16.58"	106.00	39.6304
CURVE-107	33°28'21.69"	44.00	25.7052
CURVE-108	39°27'44.96"	56.00	38.57
CURVE-109	11°11'22.87"	156.00	30.4663
CURVE-110	14°01'31.09"	144.00	35.2494
CURVE-111	12°32'02.67"	378.00	82.6916
CURVE-112	80°00'53.89"	26.00	36.3096
CURVE-113	5°32'46.57"	94.00	9.0993

RC-73 TRAVERSE POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
TRAV 61	528321.3957	1269248.1350	413.60
TRAV 62	527943.5312	1268974.9348	411.25
TRAV 63	528079.5360	1269181.1533	412.60

RC-73 BASELINE OF PRINCIPAL SPILLWAY PROFILE		
STATION	NORTHING	EASTING
POB – 10+00.00	527915.80	1268974.52
PI – 10+45.83	527958.97	1268989.90
PI – 10+98.13	528003.15	1269017.89
PI – 11+61.67	528051.68	1268976.88
PI – 12+49.93	528111.10	1269042.15
PI – 13+12.62	528104.47	1269104.49
PI – 14+05.50	528193.79	1269129.93
PI – 14+81.26	528246.27	1269184.57
PI – 15+40.43	528295.37	1269217.60
PI – 15+48.62	528301.01	1269223.53
PI – 16+47.21	528347.48	1269310.48
PI – 16+73.05	528360.95	1269332.54
PI – 17+12.16	528365.82	1269371.34
POE – 17+25.16	528369.47	1269383.82

RC-73 BASELINE OF 18" CMP INFLOW		
STATION	NORTHING	EASTING
POB – 7+00.00	528039.06	1268865.26
PI – 7+25.84	528047.20	1268889.78
POE – 8+13.06	528051.68	1268976.88

RC-73 BASELINE OF 24" RCP INFLOW		
STATION	NORTHING	EASTING
POB – 5+00.00	527907.27	1269044.61
PI – 5+69.73	527975.47	1269030.12
POE – 5+99.99	528003.15	1269017.89



MD STATE PLANE COORDINATES NAD 83 NAVD 88

GE-73-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:

NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY

Reviewed 8/12/15 Date

Approved 8/13/2015 Date

254973
S.M. FILE NO.

Sediment Control Technical Requirements

Reviewed 8/12/15 Date

Approved 8/17/2015 Date

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Administrative Requirements:

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DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By:
MBM		DMH
Engineer	Date	Checked By:
DEA		DMH
Drawn by	Date	Checked By:

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Expiration Date 05/16/2015

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Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

Geometry Plan RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 50'

SC/SWM
SHT. # 6 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:28 AM
FILE: \\balrk04\v2005\2005\05050_loc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pGE-0001_RC73.dgn

EXTEND 18" RCP; CONTRACTOR SHALL CONNECT TO EX. CMP AND ESTABLISH WATER-TIGHT CONNECTION PER DOGHOUSE DETAIL, SHT 12 OF 49

RIPRAP SPILLWAY EL. 404.5

ROP I CLASS I RIPRAP 38'L x 34'W SEE SHT 13 OF 49

3' CUTOFF WALL

PROPOSED WETPOOL #1 0.21 AC-FT PERMANENT POOL

PROPOSED WETPOOL #2 0.50 AC-FT PERMANENT POOL

EXISTING EMERGENCY SPILLWAY EL. 410.39 WIDTH = 14.3'

MODIFY EX. RISER STRUCTURE PER SHT 10 OF 49

EXISTING EMBANKMENT TO REMAIN

SLIPLINE EX 48" CMP PER AASHTO M326 PR 42" HDPE SMOOTH LINED PIPE OUTSIDE DIAM.

PLUNGE POOL; CLASS I RIPRAP 21'L x 18'W SEE SHT 13 OF 49

PROPOSED FOREBAY 0.49 AC-FT PERMANENT POOL

ROP I CLASS I RIPRAP 42'L x 23'W

PROPOSED ACCESS PATH

RIPRAP SPILLWAY EL. 402.5

ROP I CLASS I RIPRAP 45'L x 20'W

8" LOW FLOW WITH 6-5/8" ORIFICE /8" POND DRAIN SEE DETAIL SHT 11 OF 49

3' CUTOFF WALL

EXISTING EMERGENCY SPILLWAY EL. 411.55 WIDTH = 10.3'

REPLACE EX. MANHOLE; REMOVE EX. 24" CMP INSTALL NEW 24" RCP AND PROVIDE WATERTIGHT SEALS FOR ALL MODIFICATIONS

PROPOSED SAFETY/AQUATIC BENCH (TYP)

BAMBOO REMOVAL AREA

MATCH LINE, SEE SHEET DD-73-2

BUENA VISTA DRIVE

LOT 9 LOT 10 LOT 12 LOT 13 LOT 14

NOTES:

1. FOR PROPOSED RISER MODIFICATION DETAILS, SEE SHEET 10 OF 49.
2. FOR LOW FLOW PIPE AND POND DRAIN DETAILS, SEE SHEET 11 OF 49.
3. DURING CONSTRUCTION OF ROCK OUTFALL PROTECTION AND INTERNAL SPILLWAYS, CONTRACTOR SHALL PLACE RIPRAP AND BACKFILL ALL VOID SPACE WITH PLANTING MEDIA UP TO TOP OF ROCKS SUCH AS TO INSURE STABILITY THROUGH A RANGE OF FLOW CONDITIONS. TOP OF ROCKS SHALL REMAIN EXPOSED.
4. FOR ROCK OUTFALL PROTECTION AND PLUNGE POOL DETAILS, SEE SHEET 13 OF 49.

DRAINAGE SCHEDULE

STRUCTURE TABLE

STRUCT. NO.	DESCRIPTION	TOP OF STRUCT. ELEVATION	INV. IN	INV. OUT	STATION	OFFSET
HW-1	MDSHA STANDARD B-72 HEADWALL (MD 352.02) MODIFIED*	TOP OF WALL ELEV. 411.78	-----	403.9	10+45	00.00
ES-1	MDSHA STANDARD CONCRETE END SECTION (MD 368.02)*	NA	404.5	404.5	5+51	00.00
ES-2	MDSHA STANDARD CONCRETE END SECTION (MD 368.02)*	NA	407.4	407.4	7+23	00.00
MH-1	BALTIMORE COUNTY TYPE C SHALLOW MANHOLE - MODIFIED FOR DOGHOUSE CONNECTION	411.65	406.7	405.4	5+00	00.00
MH-2	BALTIMORE COUTY TYPE B SHALLOW MANHOLE - MODIFIED FOR DOGHOUSE CONNECTION	410.83	407.6	407.6	7+10	00.00
EX-3	EXISTING RISER TO BE MODIFIED	410.42	399.5	397.7	15+44	00.00

•REFER TO MDSHA STANDARD DETAILS AND SPECIFICATIONS FOR MATERIALS, CONSTRUCTION, AND MEASUREMENT AND PAYMENT INFORMATION

DRAINAGE SCHEDULE

PIPE

FROM STRUCT. NO.	TO STRUCT. NO.	SIZE	TYPE	LENGTH
MH-1	ES-1	24"	RCP	54 LF
MH-2	ES-2	18"	RCP	13 LF
EX-3	EX-4	42"	HDPE SLIP LINE	110 LF•

•INSTALL ADDITIONAL SLIP LINE LENGTH ON EITHER END OF HOST PIPE; SEAL AND FINISH PER MANUFACTURER'S RECOMMENDATIONS/SHT 10 OF 49

DD-73-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

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Approved 8/13/2015 Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
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DESIGN

Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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License No. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND DAVID E. ANDERSON 16493 PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
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9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON _____

REVISIONS

Rev. No.	Date	Description

Site Plan RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

SC/SWM SHT. # 7 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:29 AM
FILE: \\balsrv04\v2009\20051\05050_lcc\ES-CM SWM Contract RC-C\RC-73\caddi\plans\plDD-D001_RC73.dgn

FINAL SCANNED:

PLAN SCANNED:

PARK CODE: C10

NOTES:

1. FOR PROPOSED SIDEWALK AND CONCRETE GRID PAVERS DETAILS, SEE SHEET 12 OF 48.

INSTALL CONCRETE GRID PAVERS

SAW-CUT EX. CURB AND GUTTER
INSTALL 1' NOSE DOWN WITH
DEPRESSED CURB

SAW-CUT EXISTING RESIDENTIAL SIDEWALK
INSTALL REINFORCED CONCRETE SIDEWALK

INDIANOLA DRIVE

ANAMOSA WAY

ANAMOSA COURT

ANAMOSA DRIVE

BUENA VISTA DRIVE

BUENA VISTA TERRACE

E 1268300
N 527300

N 527900
E 1268900

N 527300
E 1268600

LOT 1
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
LOT 30
LOT 31
LOT 32
LOT 33
LOT 34
LOT 35
LOT 36
LOT 37
LOT 38

T-1 T-2 T-3 T-4 T-5 T-6 T-7 T-8 T-9 T-10 T-11 T-12 T-13 T-14 T-15 T-16 T-17 T-18 T-19 T-20 T-21 T-22 T-26 T-35 T-36 T-37 T-38 T-39 T-40 T-41 T-42 T-43 T-44 T-45 T-46 T-47 T-48 T-49 T-50 T-51 T-52 T-53 T-54 T-55 T-56

100+00 101+00 102+00 103+00 104+00 105+00 106+00

425 440

GRASS

MATCH LINE, SEE SHEET DD-73-1

DD-73-2

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Project Manager 5-14-15 Date

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Site Plan RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

SC/SWM
SHT. # 8 of 49

BY: $USERNAME$

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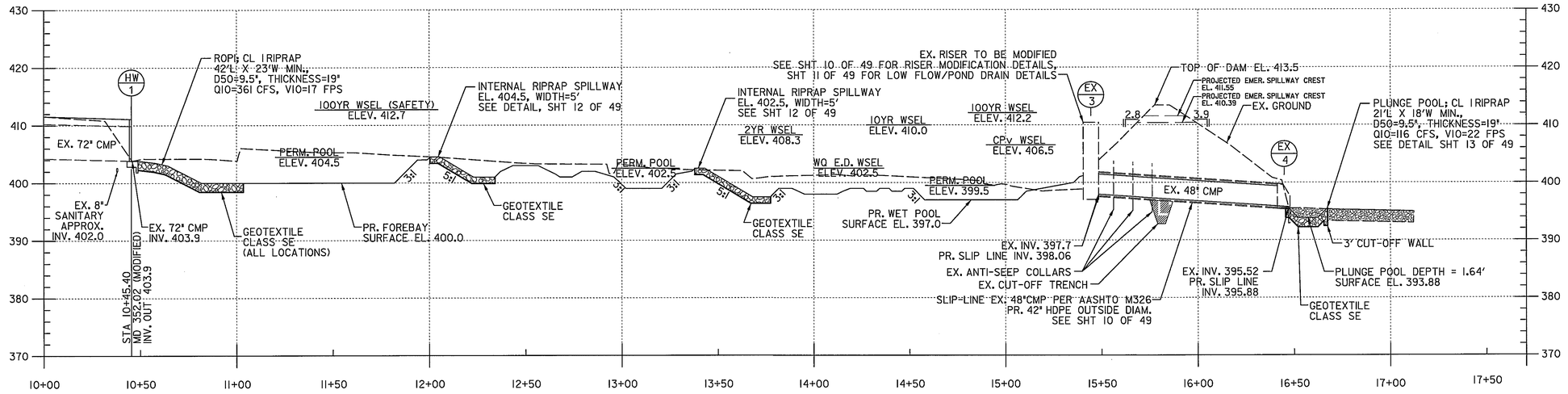
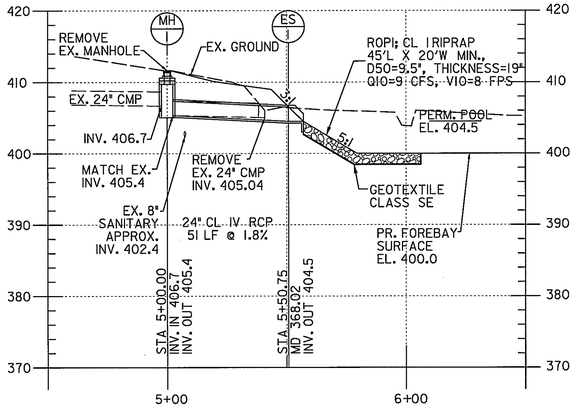


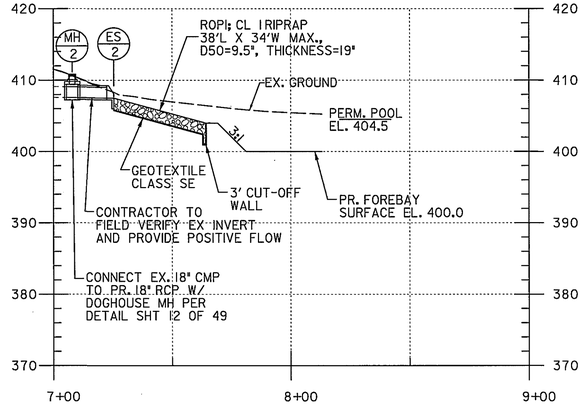
PROFILE THRU RC-73 PRINCIPAL SPILLWAY

SCALE: H: 1"=30'
V: 1"=10'



PROFILE THRU 24" INFLOW

SCALE: H: 1"=30'
V: 1"=10'



PROFILE THRU 18" INFLOW

SCALE: H: 1"=30'
V: 1"=10'

DP-73-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

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Rev. No.	Date	Description

Drainage Profiles RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: AS SHOWN

SC/SWM
SHT. # 9 of 49

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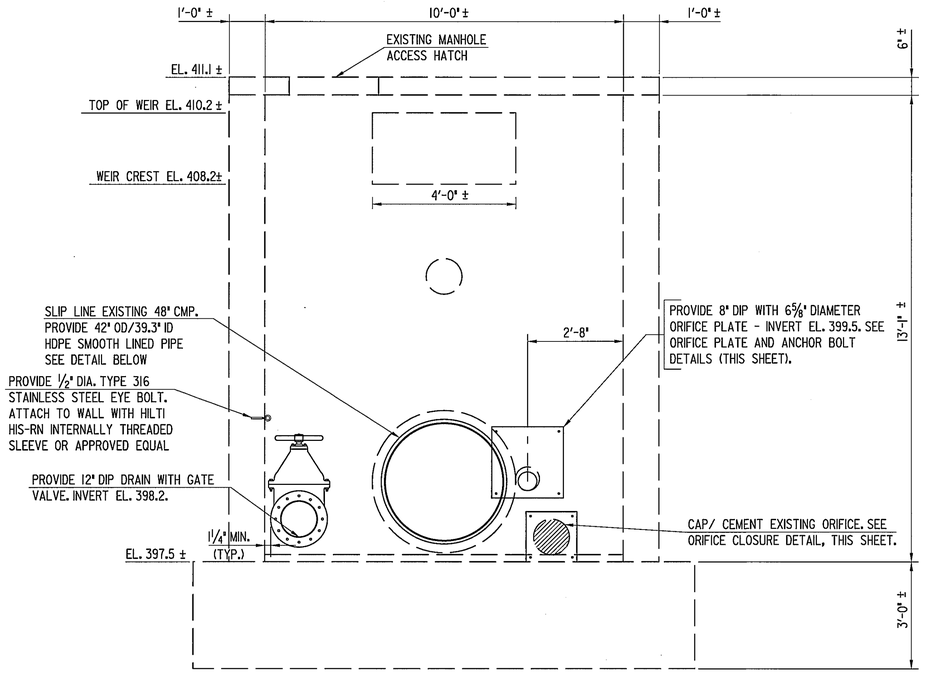
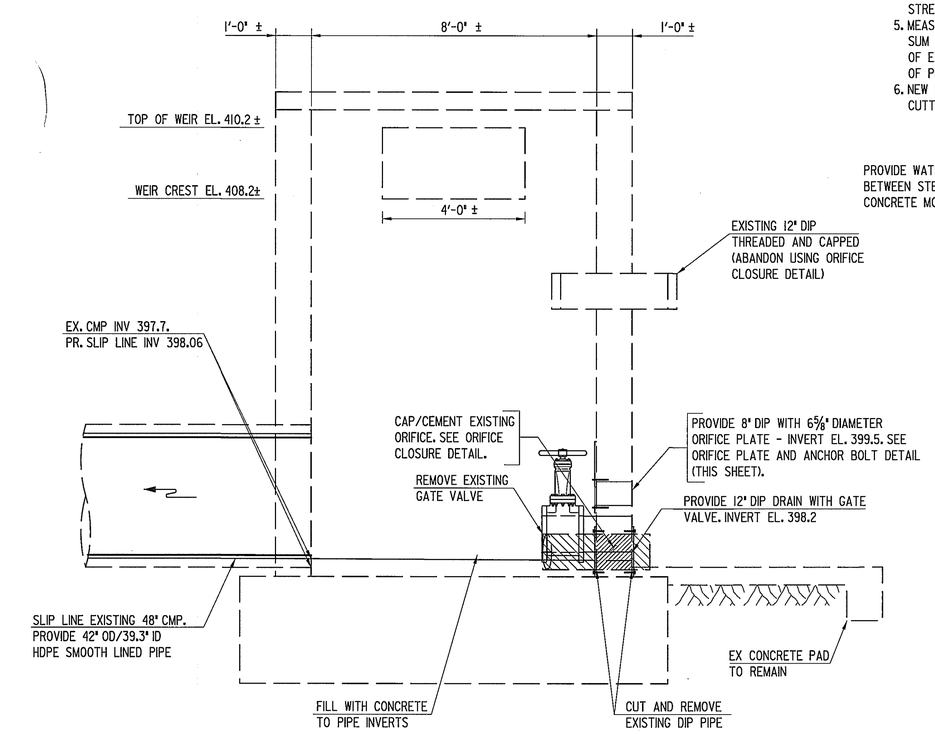


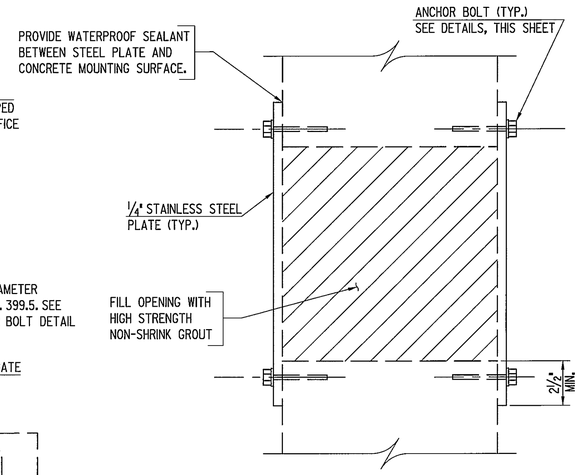
PROVIDE ¼" STAINLESS STEEL CHAIN TO SECURE HANDWHEEL OF GATE VALVE TO EYEBOLT. (PADLOCK TO BE PROVIDED BY OTHERS)

RC 73 FRONT ELEVATION



RC 73 SIDE ELEVATION

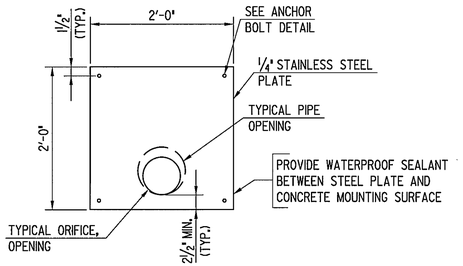
NOTES:
1. EXISTING REBAR TRASH RACK TO REMAIN OVER CONTROL WEIR OPENING
2. FOR DRAIN OUTLET DETAILS, SEE SHEET 11 OF 48.
3. INSTALL HIGH STRENGTH NON-SHRINK GROUT WITHIN ANNULAR SPACE BETWEEN THE WEIR WALL AND ALL DUCTILE IRON PIPES.
4. CONCRETE SHOWN HEREON SHALL BE 4500 PSI MINIMUM 28 DAY COMPRESSIVE STRENGTH UNLESS OTHERWISE NOTED.
5. MEASUREMENT AND PAYMENT FOR RISER MODIFICATIONS ARE INCLUDED IN THE LUMP SUM BID ITEM FOR EXISTING RISER MODIFICATION. MODIFICATIONS INCLUDE CAP/CEMENT OF EXISTING OPENINGS AS SPECIFIED, REMOVAL OF GATE VALVE, AND INSTALLATION OF PROPOSED POND DRAINS, GATE VALVE AND ORIFICE PLATE.
6. NEW DIP DRAIN LOCATIONS SHALL BE FIELD LOCATED HORIZONTALLY TO MINIMIZE CUTTING EXISTING RISER STRUCTURE REBAR.



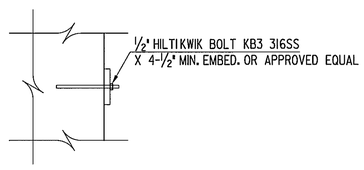
ORIFICE CLOSURE DETAIL

3" = 1'-0"

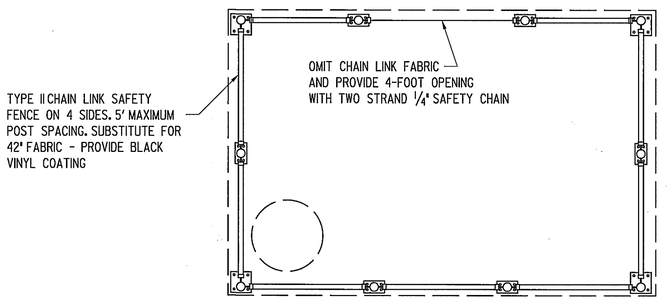
OPTIONAL CLOSURE PROCEDURE:
1. CUT AND REMOVE ANY EXISTING CONDUIT/DIP FROM THE EDGES OF THE HOLE TO BE FILLED.
2. FASTEN A ¼" STAINLESS STEEL PLATE TO ONE SIDE OF HOLE WITH ANCHOR BOLTS.
3. PLACE PLYWOOD FORMWORK ON OPPOSITE SIDE OF WALL FROM STAINLESS STEEL PLATE.
4. CUT A HOLE IN THE PLYWOOD AS SMALL AS NEEDED AND FILL THE VOID WITH NON-SHRINK HIGH STRENGTH GROUT.
5. REMOVE FORMWORK AFTER GROUT HAS CURED AND FASTEN A ¼" PLATE WITH ANCHOR BOLTS TO COVER THE FILLED HOLE.



ORIFICE PLATE



ANCHOR BOLT



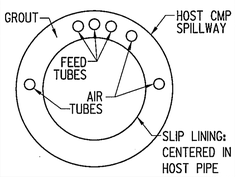
RC 73 TOP PLAN

SLIP LINING GROUT FEED TUBES

TOTAL LENGTH TO BE LINED	NUMBER OF FEED TUBES
50	1
75	2
100	2
125	3
150	3
175	4
200	4
225	4

FOR CLEAR GROUT SPACE ≥ 4" USE 1.5" TO 2" FEED TUBES

FOR CLEAR GROUT SPACE BETWEEN 2" AND 4" USE 1" FEED TUBES AND ALLOW GROUT ACCESS AT BOTH THE INLET AND THE OUTLET



•PLACE 3 AIR TUBES AT THE TOP AND SIDES OF THE LINER

NOTE: THE CONTRACTOR SHALL PROVIDE END SEALS AT THE OPEN POINTS OF EACH RUN OF PIPE TO BE GROUTED. SLIP LINING AND END SEALING SHALL BE PERFORMED PER MANUFACTURERS RECOMMENDATIONS AND AS DIRECTED BY THE CONSTRUCTION MANAGER.

DT-73-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
M Beier 8/13/15 Reviewed Date
8/13/2015 Approved Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
M Beier 8/13/15 Reviewed Date
8/13/2015 Approved Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
M Beier 8/13/15 Reviewed Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
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DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By: MBM
Engineer	Date	Checked By: DMH
DEA		
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND · STEVE G. SAARI · 16493 · PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

DETAILS RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

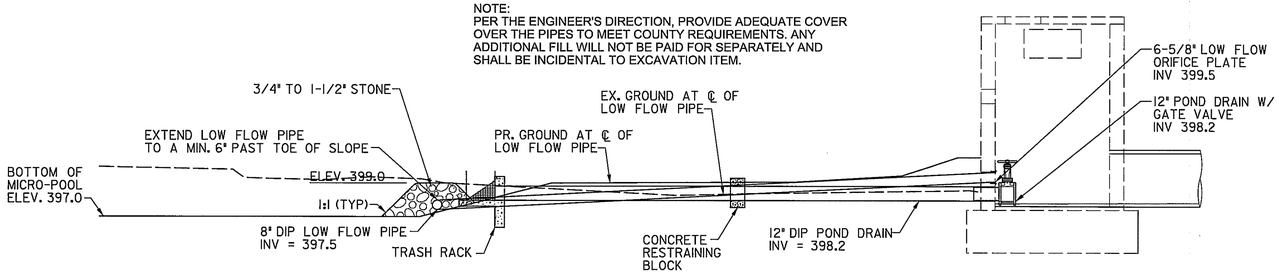
SCALE: ½" = 1'-0"

SC/SWM
SHT. # 10 of 49

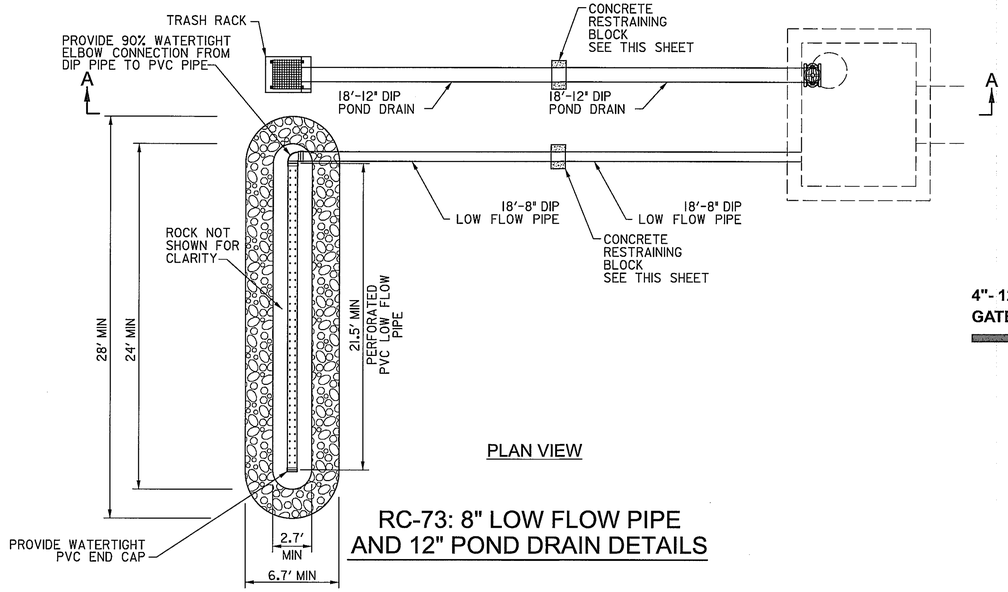
BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:30 AM
FILE: \\balrsv04\v2005\j0065\j05050_loc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pDT-0001_RC73.dgn

NOTE:
PER THE ENGINEER'S DIRECTION, PROVIDE ADEQUATE COVER OVER THE PIPES TO MEET COUNTY REQUIREMENTS. ANY ADDITIONAL FILL WILL NOT BE PAID FOR SEPARATELY AND SHALL BE INCIDENTAL TO EXCAVATION ITEM.

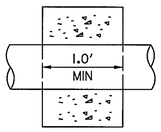


SECTION A-A



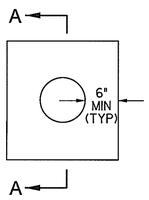
PLAN VIEW

RC-73: 8" LOW FLOW PIPE AND 12" POND DRAIN DETAILS



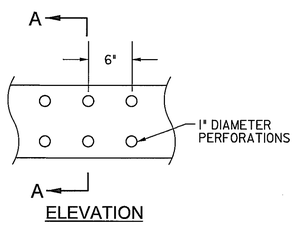
SECTION A-A

SECTION A-A



ELEVATION

RESTRAINING BLOCK DETAIL

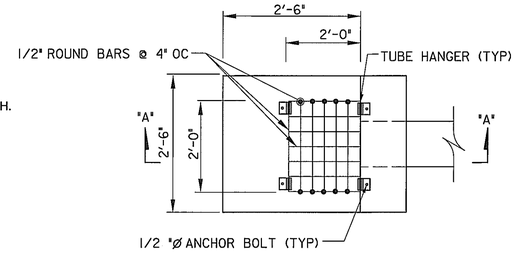


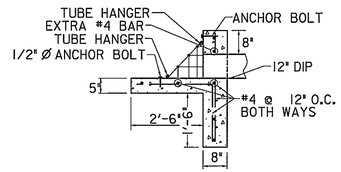
ELEVATION

8" DIAMETER PERFORATED PVC PIPE DETAIL

CONSTRUCTION SPECIFICATIONS:

1. GATE VALVE TO BE MUELLER 2361 SERIES FL X FL GATE 8 IN (OR EQUIVALENT).
2. COST OF GATE, DIP, ORIFICE PLATE, AND CONCRETE RESTRAINING BLOCK TO BE INCLUDED IN THE COST OF THE LUMP SUM BID ITEM FOR "EXISTING RISER MODIFICATIONS".
3. CONCRETE SHOWN HEREON SHALL BE 4500 PSI MINIMUM 28 DAY COMPRESSIVE STRENGTH.
4. WRAP THE PERFORATED PORTION OF PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH.



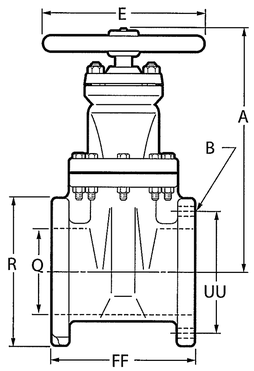


SECTION A-A

TRASH RACK DETAIL

NOT TO SCALE

4"- 12" A-2361 RESILIENT WEDGE GATE VALVES - FL. x FL. Mueller Co. **10.7** Rev. 1-15



Dimensions

Dimension	Nominal Size				
	4"	6"	8"	10"	12"
A	14.19	18.00	21.50	25.50	28.62
E	11.00	13.00	14.00	16.00	16.00
R	9.00	11.00	13.50	16.00	19.00
FF	9.00	10.50	11.50	13.00	14.00
Q (bore)	4.30	6.30	8.30	10.30	12.30
UU (bolt circle diameter)	7.50	9.50	11.75	14.25	17.00
B (number and size of holes)	8-.75	8-.88	8-.88	12-1.00	12-1.00
Turns to open	14	20.5	28.5	33	38.5
Weight*	88	154	250	392	522

All dimensions are in inches. All weights are in pounds and are approximate.

TRASH RACK NOTES:

1. ALL BARS SHALL BE NO. 6 SMOOTH BAR AND SPACED 4" ON CENTER.
2. TRASH RACK SHALL BE ATTACHED TO STRUCTURE WITH GALVANIZED ½" ANCHOR BOLTS AND TUBE HANGERS AS SHOWN.
3. SHOP WELD BARS AT CONNECTIONS AND INTERSECTIONS. NO FIELD WELDING WILL BE PERMITTED.
4. ENTIRE TRASH RACK ASSEMBLY SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
5. STEEL SHALL CONFROM TO ASTM A-36.
6. CONCRETE SHALL BE 4500 PSI MINIMUM 28 DAY COMPRESSIVE STRENGTH.
7. COST OF TRASH RACK IS TO BE INCLUDED IN THE COST OF THE LUMP SUM BID ITEM FOR "EXISTING RISER MODIFICATIONS".
4. WRAP THE PERFORATED PORTION OF PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH.

DT-73-2

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/13/2015 Date
254973
S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/13/2015 Date

Administrative Requirements:
Reviewed 8/12/15 Date
258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

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PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

BY: $USERNAME$

DESIGN

Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND · SYED F. HAQUE · 16493 · PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

DETAILS RC-73

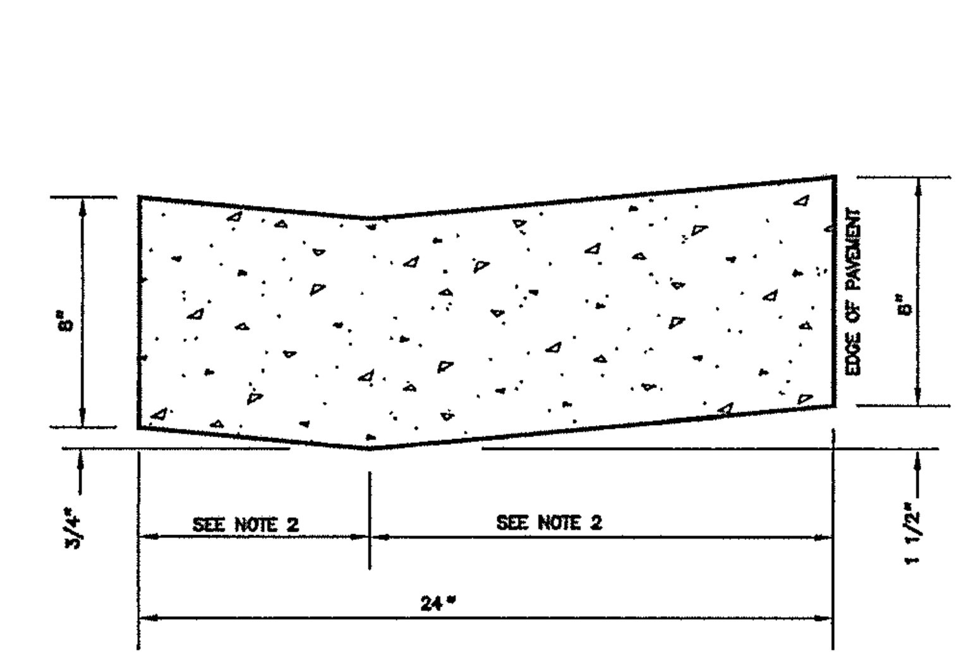
CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: N.T.S.

SC/SWM
SHT. # 11 of 49

PLOTTED: Friday, May 08, 2015 AT 09:21 AM
FILE: \\balsrv04\v2005\2005\05050_kc\ES-CM SWM Contract RC-C\RC-73\caddi\plans\pST-DR001_RC73.dgn

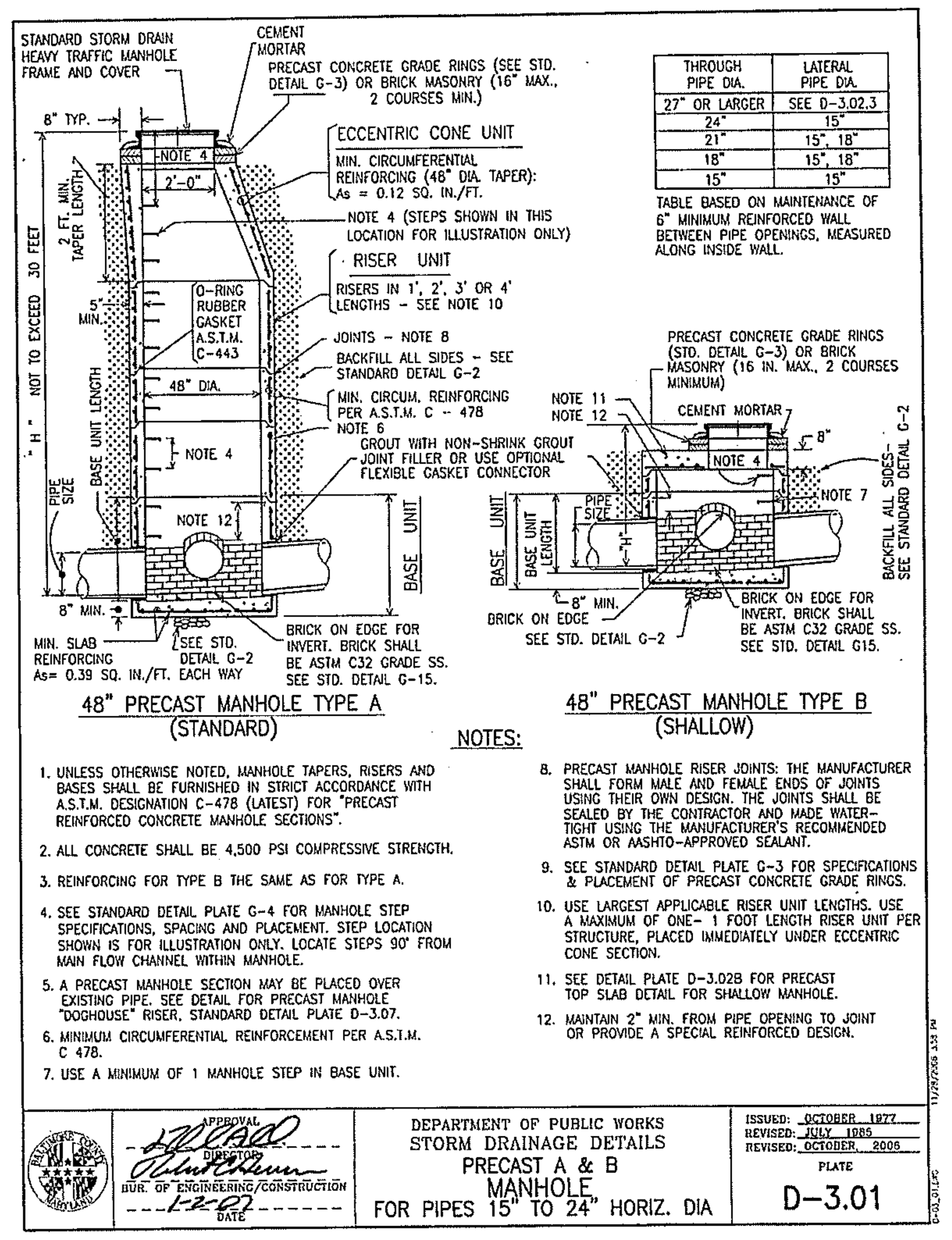
FINAL SCANNED: PLAN SCANNED: PARK CODE: C10

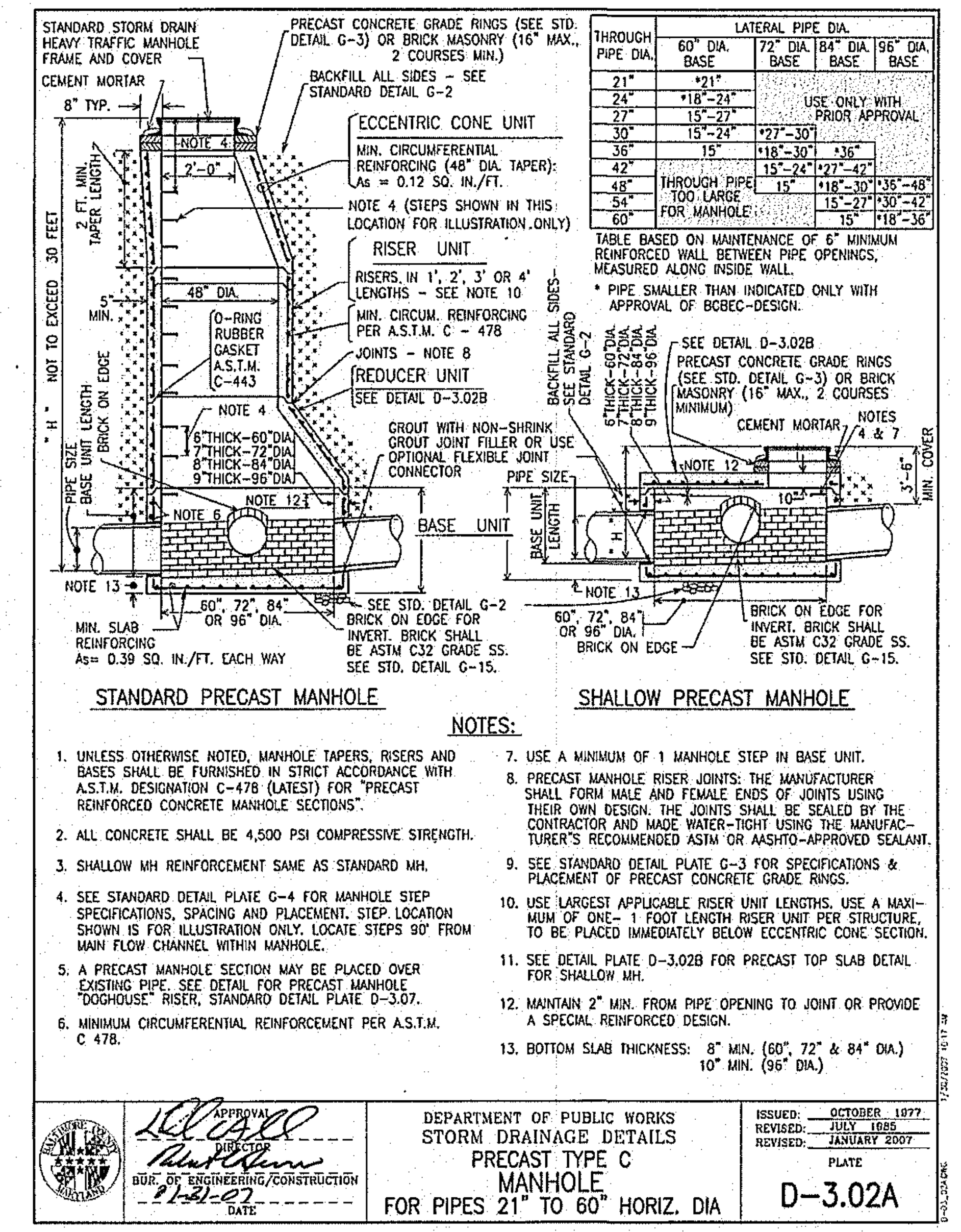


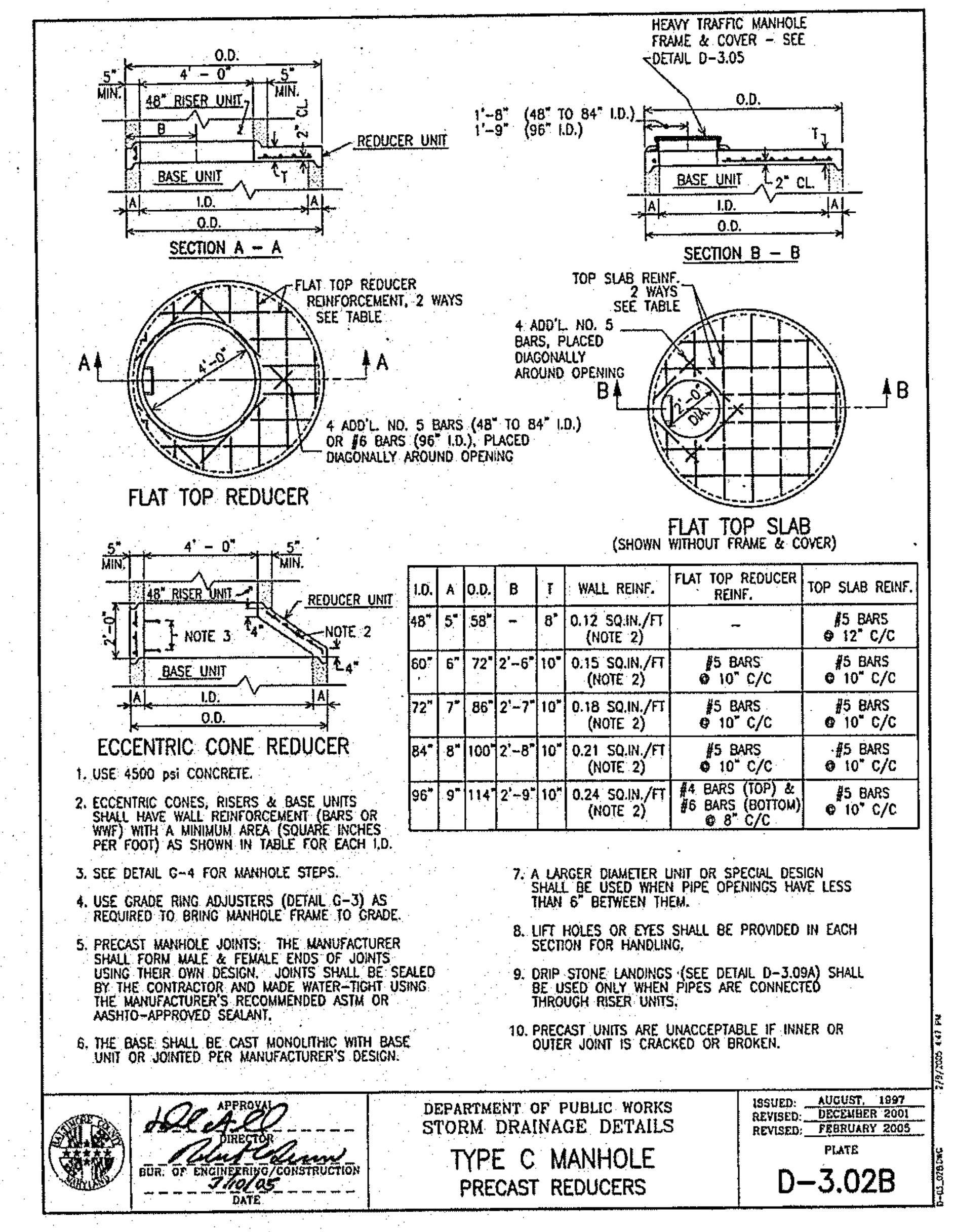
GENERAL NOTES

1. REFER TO MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR MATERIALS, METHODS OF CONSTRUCTION AND EXPANSION JOINT LOCATIONS.
2. THE DISTANCES FROM THE FLOWLINE TO THE FRONT AND BACK EDGE OF CURB SHALL BE ADJUSTED TO MATCH EXISTING CONDITIONS.
3. THE STANDARD DISTANCE BETWEEN JOINTS SHALL BE TEN FEET (MAXIMUM AND MINIMUM DISTANCES SHALL BE THIRTEEN FEET AND FIVE FEET RESPECTIVELY).
4. EXPANSION JOINT MATERIAL SHALL BE 1/2 INCH PREFORMED CORK, TRIMMED AND SEALED WITH NON-STAINING TWO-COMPONENT POLYSULFIDE OR POLYURETHANE ELASTOMERIC TYPE SEALANT COMPLYING WITH ASTM-C920. (1)

APPROVED 14 APR '06 DATE	REVISED	MONTGOMERY COUNTY DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
DIRECTOR, DEPT. OF PUBLIC WORKS & TRANSPORTATION	(1) ASTM-C920 4/2006	DEPRESSED CURB ENTRANCE
for CHIEF, DIV. OF CAP. DEV.		STANDARD NO. MC-102.01







DEPARTMENT OF PERMITTING SERVICES

RECEIVED SEP 03 2013 BY:

Isiah Leggett
County Executive

August 29, 2013

Diane R. Schwartz Jones
Director

Danielle Hankins
RK&K, LLP
81 W. Mosher Street
Baltimore, Maryland 21217

Re: Stormwater Management ***CONCEPT*** Request for Crabbs Branch Stream Valley Park - SWM Retrofits
SM File #: 254973
Tract Size/Zone: 85 Ac. / Parkland
Total Concept Area: 6.8 Ac.
Watershed: Upper Rock Creek

Dear Ms. Hawkins:

Based on a review by the Department of Permitting Services (DPS) Review Staff, the stormwater management concept for the above mentioned site is **acceptable**. The stormwater management concept consists of retrofitting two existing stormwater management ponds to achieve what the Maryland State Highway Administration (SHA) and the Montgomery County Department of Environmental Protection (MCDEP) believe will be an additional environmental benefit. This project is not associated with any new development and therefore is not subject to minimum stormwater management treatment criteria. DPS will not review it for conformance with any such standards. Safe conveyance through the facility must be demonstrated.

The following **items and conditions** will need to be addressed **during** the detailed sediment control/stormwater management plan stage:

1. Prior to permanent vegetative stabilization, all disturbed areas must be topsoiled per the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.
2. A detailed review of the conveyance computations will occur at the time of detailed plan review.
3. An engineered sediment control plan must be submitted for this project.
4. The retrofitted ponds must meet current MD-378 specifications.
5. A floodplain study is required and should be submitted under a separate application to DPS for review and approval.
6. A floodplain district permit is required and should be submitted under a separate application to DPS for approval.

This list may not be all-inclusive and may change based on available information at the time.

Payment of a stormwater management contribution in accordance with Section 2 of the Stormwater Management Regulation 4-90 **is not required.**

255 Rockville Pike, 2nd Floor • Rockville, Maryland 20850 • 240-777-6300 • 240-777-6256 TTY
www.montgomerycountymd.gov

montgomerycountymd.gov/311 MC311 240-773-3556 TTY

Danielle Hankins
August 29, 2013
Page 2

This letter must appear on the sediment control/stormwater management plan at its initial submittal. The concept approval is based on all stormwater management structures being located outside of the Public Utility Easement, the Public Improvement Easement, and the Public Right of Way unless specifically approved on the concept plan. Any divergence from the information provided to this office; or additional information received during the development process; or a change in an applicable Executive Regulation may constitute grounds to rescind or amend any approval actions taken, and to reevaluate the site for additional or amended stormwater management requirements. If there are subsequent additions or modifications to the development, a separate concept request shall be required.

If you have any questions regarding these actions, please feel free to contact Mike Geier at 240-777-6342.

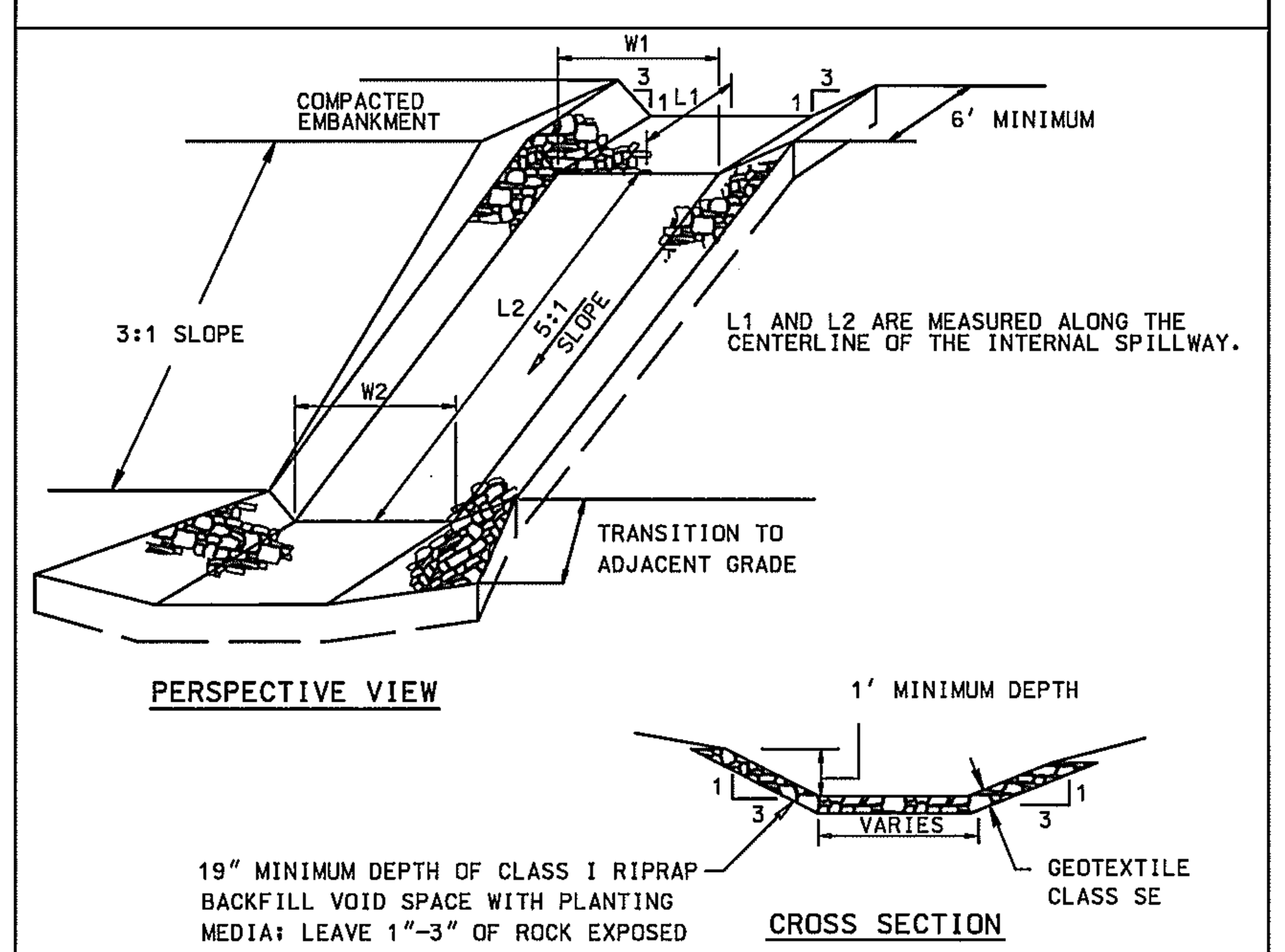
Sincerely,

Mark C. Etheridge, Manager
Water Resources Section
Division of Land Development Services

MCE: jb CN254973 Crabbs Branch Stream Valley Retro.mjg.doc

cc: SM File # 254973

INTERNAL RIPRAP SPILLWAY DETAIL

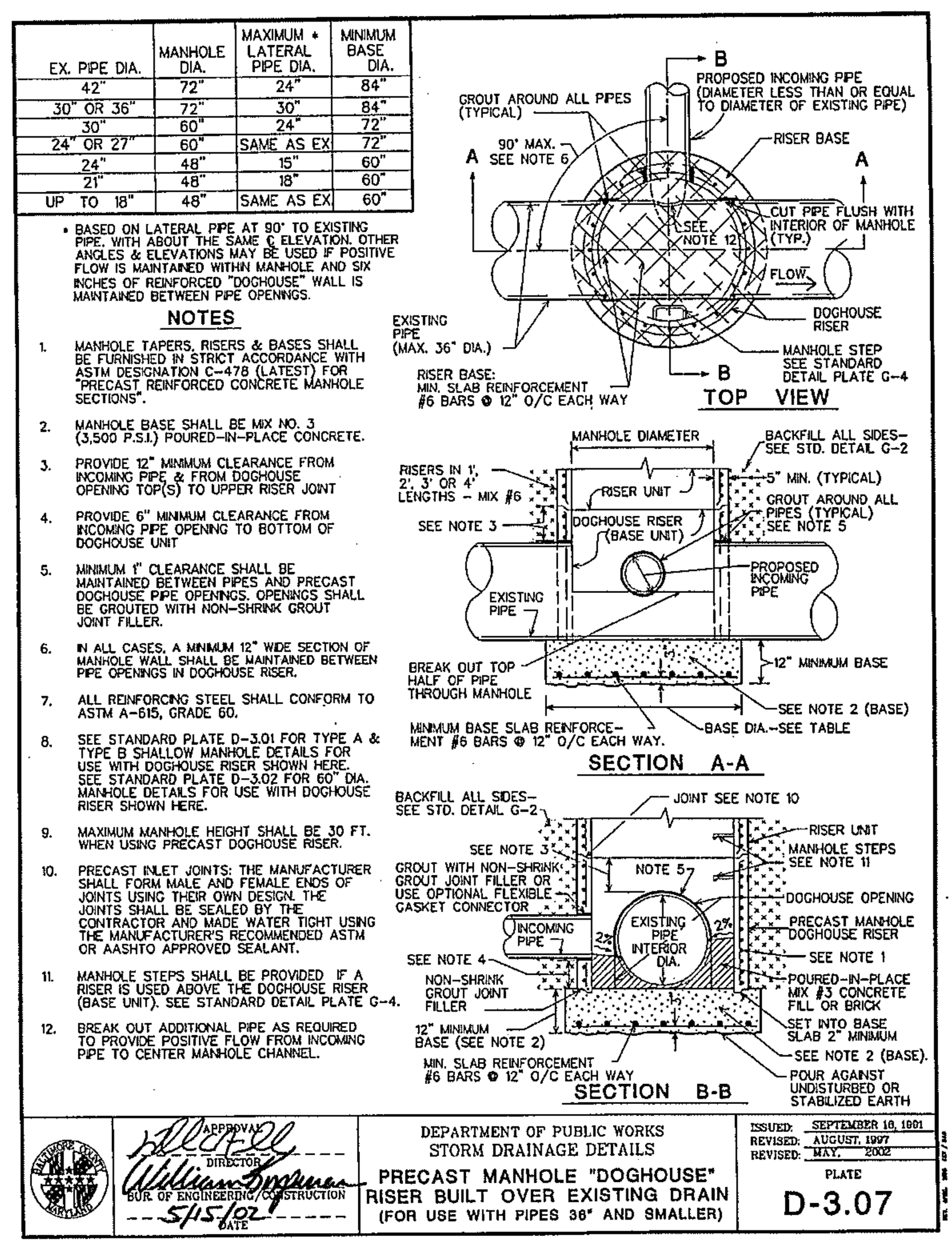


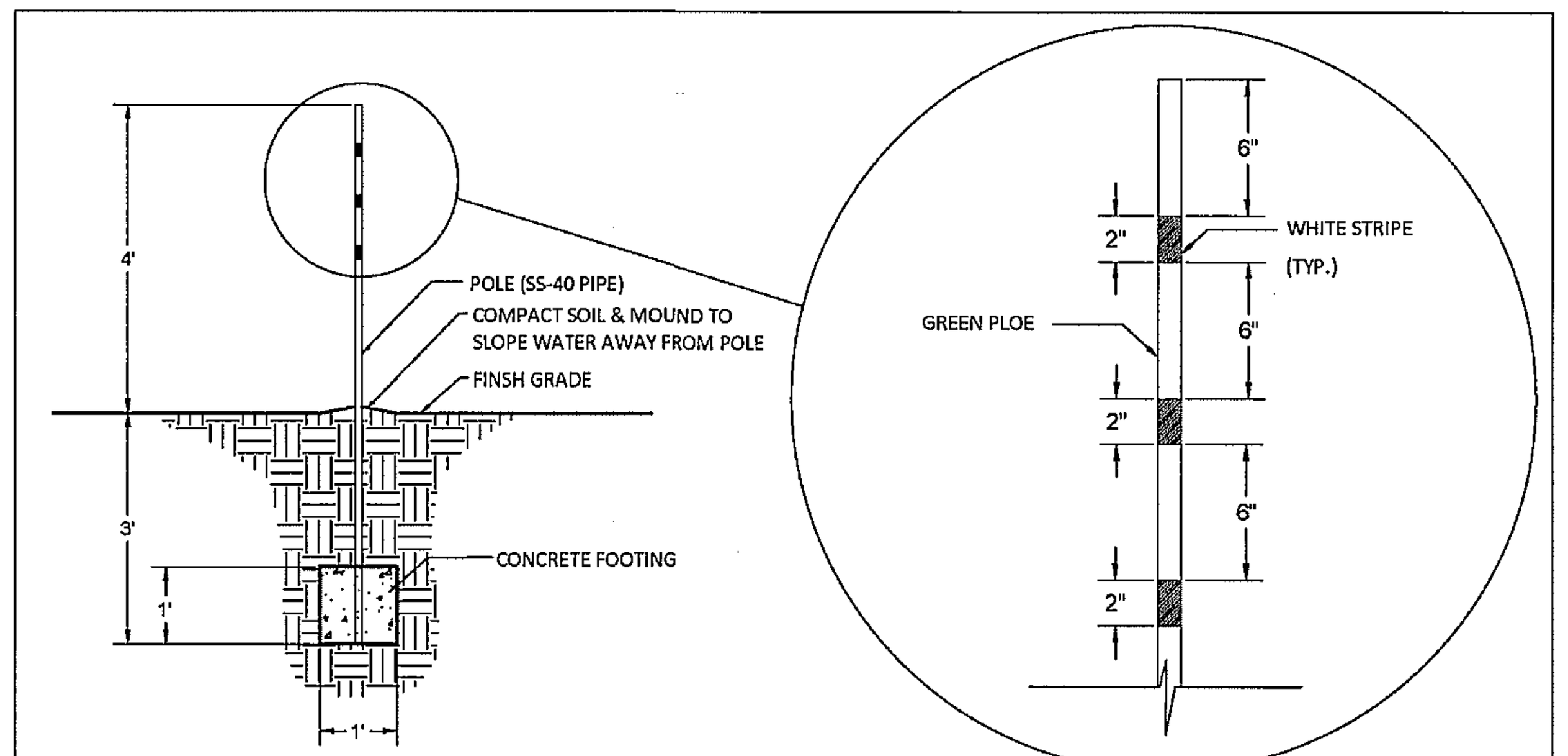
Construction Specifications

1. THE RIPRAP SPILLWAY PROTECTION MUST BE 1 FOOT IN DEPTH MINIMUM, HAVE A TRAPEZOIDAL CROSS SECTION WITH 3:1 OR FLATTER SIDE SLOPES. LINE CHANNEL WITH CLASS I RIPRAP TO A DEPTH OF 19 INCHES.
2. PROVIDE GEOTEXTILE CLASS SE UNDER ALL RIPRAP.KEY INTO GROUND PER DETAIL D-4-1 ON SHEET 13.
3. SLOPE OF RIPRAP SPILLWAY SHALL BE 5:1.
4. CONTRACTOR SHALL PLACE RIPRAP AND BACKFILL ALL VOID SPACE WITH PLANTING MEDIA UP TO TOP OF ROCKS, SO AS TO INSURE STABILITY THROUGH A RANGE OF FLOW CONDITIONS. TOP 1"-3" OF ROCKS SHALL REMAIN EXPOSED.

INTERNAL RIPRAP SPILLWAY DIMENSIONS (IN FEET)

UPSLOPE OF WET POOL #1				UPSLOPE OF WET POOL #2			
L1	L2	W1	W2	L1	L2	W1	W2
5.0'	17.5'	26.7'	23.7'	5.0'	25.0'	28.0'	15.1'





POLE INSTALLATION DETAIL

POLE STRIPING DETAIL

1. Poles shall be placed at property corners and property line breaks where applicable. If the distance between corners and/or angle points are greater than 300 feet or there is no clear sight line between two points due to physical barriers or grade changes, additional poles must be installed.
2. The poles shall be placed one foot inside the park property at all property markers (corners, angle breaks, monuments and points on line), witnessing the actual property markers.
3. The pole shall be set in concrete 3 feet below grade as shown on the drawing.
4. The pole shall be a 1 5/8-inch by 7-feet vinyl SS-40 pipe with 3 white stripes 2 inches in width as shown on the drawing.
5. The color of the pole is Woodlyn green.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
Department of Parks, Montgomery County, Maryland
PARK DEVELOPMENT DIVISION — PARK PROPERTY LINE POLE — REVISED — DATE — STANDARD NO.

DT-73-3

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Stormwater Management:	Sediment Control Technical Requirements	Administrative Requirements:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY	Reviewed 8/12/15 Date	Reviewed 8/12/15 Date
Reviewed 8/12/15 Date	Approved 8/13/2015 Date	258116 SEDIMENT CONTROL PERMIT NO.
Approved 8/13/2015 Date		
254973 S.M. FILE NO.		MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

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PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN		
Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL	
Project Manager	Date 5-14-15
Construction Manager	Date
Project Engineer	

ISSUED FOR PROCUREMENT ON

REVISIONS		
Rev. No.	Date	Description

DETAILS RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

SC/SWM
SHT. # 12 of 49

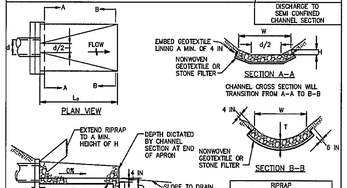
BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:31 AM
FILE: \\balsrv04\v2005\2005\05050_icc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pDT-0002_RC73.dgn

DETAIL D-4-1-A ROCK OUTLET PROTECTION I

STANDARD SYMBOL: ROP1

DISCHARGE TO SEMI CONFINED CHANNEL SECTION



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	48 IN

CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION N–1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE EITHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF THE RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

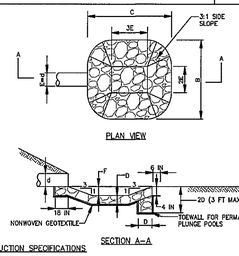
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NOTE:
LINE SIDE SLOPES AND BOTTOM OF RIPRAP OUTLETS WITH SOIL AND FILL VOIDS UP TO TOP OF ROCKS. TOP OF ROCKS SHALL REMAIN EXPOSED.

DETAIL D-4-2 PLUNGE POOL

STANDARD SYMBOL: PP



CONSTRUCTION SPECIFICATIONS

1. USE SPECIFIED CLASS OF RIPRAP.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION N–1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE EITHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
3. PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
5. STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

PLUNGE POOL DIMENSIONS (IN FEET)

OUTFALL LOCATION	STATION	B	C	D	E	F
PRINCIPAL SPILLWAY	16+47	18	21	19	3.5	1.75

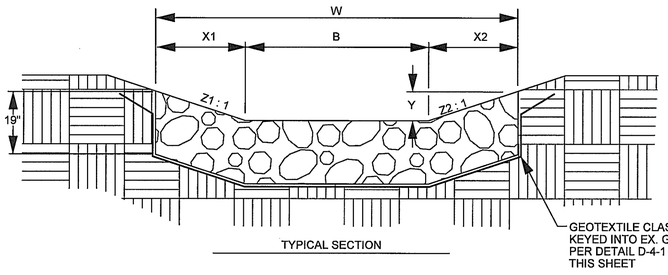
NOTE:

1. FOR LENGTH AND QUANTITIES SEE SITE PLAN SHEET 7 OF 49.
2. TYPICAL SECTIONS ARE FOR DIMENSIONAL PURPOSES ONLY. REFER TO STANDARD MDE DETAILS D–4–1 FOR CONSTRUCTION SPECIFICATIONS.

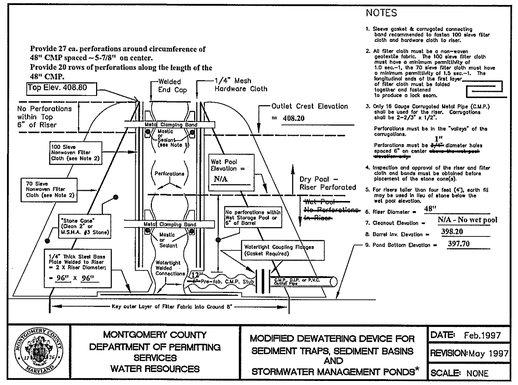
ROCK OUTFALL PROTECTION DIMENSIONS (IN FEET)

OUTFALL LOCATION	UPSTREAM SECTION							DOWNSTREAM SECTION							
	STATION	W	B	Y	X1	X2	Z1	Z2	STATION	W	B	Y	X1	X2	Z1	Z2
HW–1*	10+45	6	6	1	2	2	2	2	10+85	21	17	1	4	0	4	0
ES–1*	5+57	12.6	12.6	1	3	3	3	3	5+86	20	20	0	0	0	0	0
ES–2	7+25	4.3	0.75	1	2	2	2	2	7+64	31	21	1	5	5	5	5

*INSTALL FLAT APRON ON FOREBAY BOTTOM DOWNSLOPE OF DETAILED SECTIONS

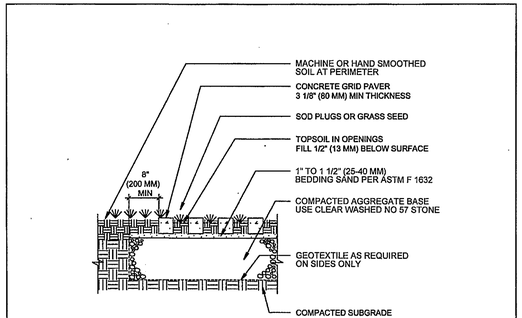


TYPICAL SECTION



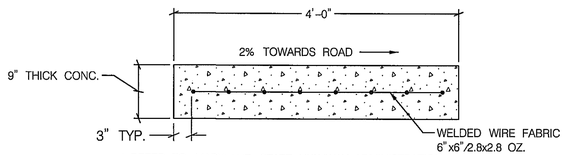
MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES WATER RESOURCES	MODIFIED DEWATERING DEVICE FOR SEDIMENT TRAPS, SEDIMENT BASINS AND STORMWATER MANAGEMENT PONDS*	DATE: Feb.1997 REVISION: May 1997 SCALE: NONE

*SEE SHEET 16 FOR ADDITIONAL INFORMATION



NOTE: 1. BASE THICKNESS VARIES WITH TRAFFIC, CLIMATE, AND SUBGRADE.
2. MINIMUM BASE THICKNESS: 6" (150 MM) RESIDENTIAL DRIVEWAYS, 8" FIRELANES & PARKING LOTS.

CONCRETE GRID PAVERS-FIRELANE, DRIVEWAY & INTERMITTENT PARKING	DRAWING NO. ICPI-08 SCALE F.S.

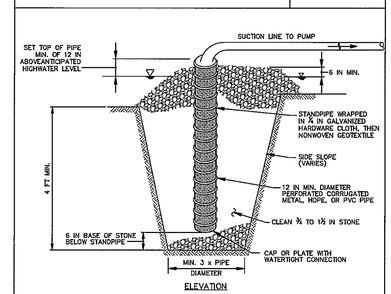


1. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.
2. EXPANSION JOINT MATERIAL SHALL BE PLACED AROUND POLES, HYDRANTS, ETC. AND ALONG THE PROPERTY LINE WHEN THE SIDEWALK ABUTS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE.
3. EXPANSION JOINT MATERIAL SHALL HAVE A MAXIMUM LONGITUDINAL SPACING OF 100 FEET. THE MATERIAL SHALL BE ½ INCH PREFORMED CORK, TRIMMED AND SEALED WITH NON-STAINING TWO-COMPONENT POLYSULFIDE OR POLYURETHANE ELASTOMETERIC TYPE SEALANT COMPLYING WITH ASTM-C920.
4. SCORE THE CONCRETE TO A DEPTH OF 1/3 THE SLAB THICKNESS TO PROVIDE WEAKENED PLANE TRANSVERSE JOINTS AT 5'–0" INTERVALS PARALLEL WITH AND PERPENDICULAR TO THE CURBING.
5. CONCRETE SHOWN HEREON SHALL BE 4500 PSI MINIMUM 28 DAY COMPRESSIVE STRENGTH UNLESS OTHERWISE NOTED.

REINFORCED CONCRETE SIDEWALK
SCALE: 1" = 1'

DETAIL F-2 SUMP PIT

STANDARD SYMBOL: SP



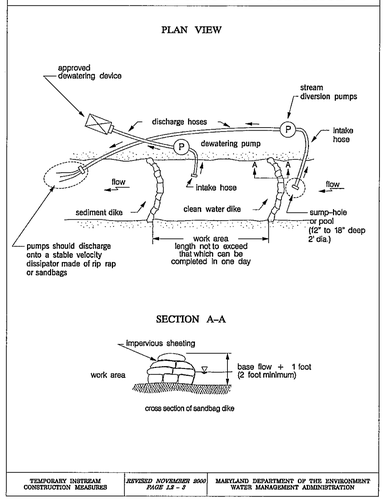
CONSTRUCTION SPECIFICATIONS

1. USE 12 INCH OR LARGER DIAMETER CORRUGATED METAL, HDPE, OR PVC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER. BOTTOM OF PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
2. WRAP PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH AND WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION N–1 MATERIALS, OVER THE HARDWARE CLOTH.
3. EXCAVATE PIT TO THREE TIMES THE PIPE DIAMETER AND FOUR FEET IN DEPTH. PLACE ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
4. SET TOP OF PIPE MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
5. BACKFILL PIT AROUND THE PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
6. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
7. A SUMP PIT REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, REMOVE PERFORATED PIPE AND REPLACE GEOTEXTILE AND STONE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Maryland's Guidelines To Waterway Construction
DETAIL 1.2: PUMP–AROUND PRACTICE



TEMPORARY INSTREAM CONSTRUCTION MEASURES	REVISED NOVEMBER 2000 PAGE 1.2 – 2	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DT-73-4

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed Date
Approved 8/12/2015 Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/12/2015 Date

Administrative Requirements:
Reviewed 8/12/15 Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

BY: SUSERNAMES

DESIGN

Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND · DAVID E. ARNOLD · 16493 · PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date
Construction Manager Date
Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

Details RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

SC/SWM
SHT. # 13 of 49

PLOTTED: Friday, May 08, 2015 AT 09:33 AM
FILE: \\bats\rk4\v2003\j0305\j05050_lcc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pDT-0003_RC73.dgn

FINAL SCANNED:

PLAN SCANNED:

PARK CODE: C10

SEQUENCE OF CONSTRUCTION

1. PRIOR TO CLEARING OF TREES, INSTALLING SEDIMENT CONTROL MEASURES, OR GRADING, A PRECONSTRUCTION MEETING MUST BE CONDUCTED ON-SITE WITH THE MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES (MCDPS) SEDIMENT CONTROL INSPECTOR (240) 777-0311 (48 HOURS NOTICE) AND THE M-NCPPC PLANNING DEPARTMENT, AND M-NCPPC CM.

2. THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO CLEARING OF TREES INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION, OR OTHER LAND DISTURBING ACTIVITIES. REFER TO THE OVERALL FINAL FOREST CONSERVATION PLANS FOR THE REQUIRED INFORMATION.

3. THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE M-NCPPC INSPECTOR, CERTIFYING THAT THE LIMITS OF DISTURBANCE AND TREE PROTECTION MEASURES ARE CORRECTLY MARKED AND INSTALLED PRIOR TO COMMENCING ANY CLEARING.

4. CLEAR AND GRADE FOR INSTALLATION OF SEDIMENT CONTROL DEVICES.

5. INSTALL STABILIZED CONSTRUCTION ENTRANCE, CONSTRUCTION ACCESS ROAD, SILT FENCE.

NOTE: MODIFICATIONS TO EX. RISER ARE REQUIRED.

6. SLIP LINE THE PRINCIPAL SPILLWAY AND INSTALL THE OUTLET PROTECTION. WITH THE WRITTEN APPROVAL OF THE MCDPS INSPECTOR CONVERT THE FACILITY TO A TEMPORARY DRY STORAGE SEDIMENT BASIN COMPLETING THE RISER MODIFICATIONS AND ATTACHING A TEMPORARY DEWATER DRAIN TO THE NEW POND DRAIN. TEMPORARILY BLOCK TO NEW LOW FLOW ORIFICE. CERTIFY ALL MODIFICATIONS BY PERFORMING A CONFINED SPACES INSPECTION BY A PROFESSIONAL ENGINEER. SUBMIT
REPORT TO M-NCPPC FOR APPROVAL OF CERTIFIED CONFINED SPACE INSPECTION AND MODIFICATIONS. THIS STEP SHALL BE PHASED SUCH THAT WORK MAY BE COMPLETED DURING CONSECUTIVE THREE (3) DAY MINIMUM DRY WEATHER INCREMENTS.

7. AT THE BEGINNING OF EACH WORKING DAY DRAIN ANY WATER BELOW THE TEMPORARY SEDIMENT BASIN DRY POOL ELEVATION FROM THE FACILITY USING A FILTER BAG. FILTER BAG MUST BE HAND PLACED AND HAND REMOVED. MAINTAIN AND REPLACE FILTER BAG WHEN IT HAS A HOLE/TEAR IN IT OR WHEN CLOGGED WITH SEDIMENT.

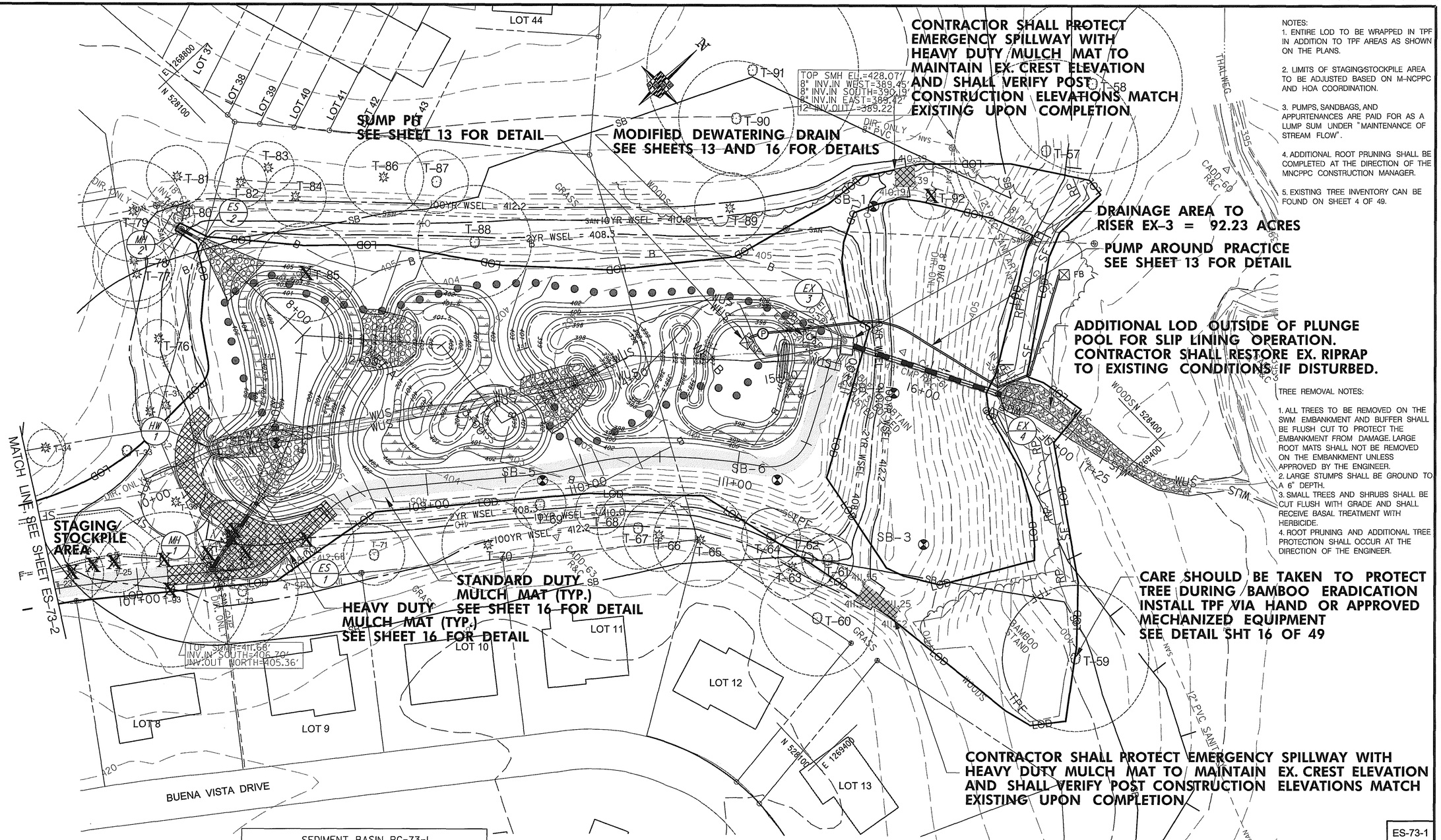
8. INSTALL HW-1 AND THE STORMDRAIN FROM MH-1 TO ES-1. BEGIN GRADING THE POND BOTTOM WORKING FROM HW-1 AND ES-1 TOWARDS THE RISER. PERFORM REGULAR INSPECTIONS WITH M-NCPPC, PROFESSIONAL GEOTECHNICAL ENGINEER, PROFESSIONAL CIVIL ENGINEER, MCDPS AS REQUIRED IN THE CHECKLIST SHOWN ON SHEET 17.

9. AS GRADING OF THE POND COMPLETES INSTALL POND ACCESS PATH.

10. WITH THE WRITTEN APPROVAL OF THE MCDPS INSPECTOR REMOVE THE REMAINDER OF THE SEDIMENT CONTROLS. UNBLOCK LOW FLOW ORIFICE AND CLOSE POND DRAIN VALVE.

11. PERMANENTLY STABILIZE ALL DISTURBED AREAS.

12. PERFORM AS-BUILT SURVEY. SUBMIT AS-BUILTS AND COPIES OF MATERIAL AND DELIVERY TICKETS TO MCDPS AND M-NCPPC FOR APPROVAL. OBTAIN AS-BUILT PERMIT AND HAVE FINAL INSPECTION MADE BETWEEN CONTRACTOR, MCDPS AND M-NCPPC FOR PUNCHLIST. PERFORM PUNCHLIST ITEMS AND OBTAIN FINAL APPROVAL OF COMPLETION OF PUNCHLIST FROM MCDPS AND M-NCPPC.



SEDIMENT BASIN RC-73-I

DRAINAGE AREA	= 92.23 AC
TOTAL STORAGE REQUIRED	= 332,028 CF
TOTAL STORAGE PROVIDED	= 333,111 CF
WET STORAGE REQUIRED	= N/A CF
WET STORAGE PROVIDED	= N/A CF
DRY STORAGE REQUIRED	= 166014 CF
DRY STORAGE PROVIDED	= 333,111 CF
ELEVATION AT DEWATERING	= N/A
CLEANOUT ELEVATION	= N/A
WEIR CREST ELEVATION	= 408.20'
ORIFICE INVERT ELEVATION	= 398.20'
BOTTOM ELEVATION	= 398.20'

NOTE: WET POOL IS NOT PROVIDED.

ES-73-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MDJTE CONFORMANCE ONLY
M Lauer 8/12/15 Reviewed Date
8/12/15 Approved Date
254973 S.M. PER NO.

Sediment Control Technical Requirements
M Lauer 8/12/15 Reviewed Date
8/12/15 Approved Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.
Administrative Requirements:
M Lauer 8/12/15 Reviewed Date
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DESIGN

Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND REED JAMES KAHL 16493 PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

E & S Plan RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

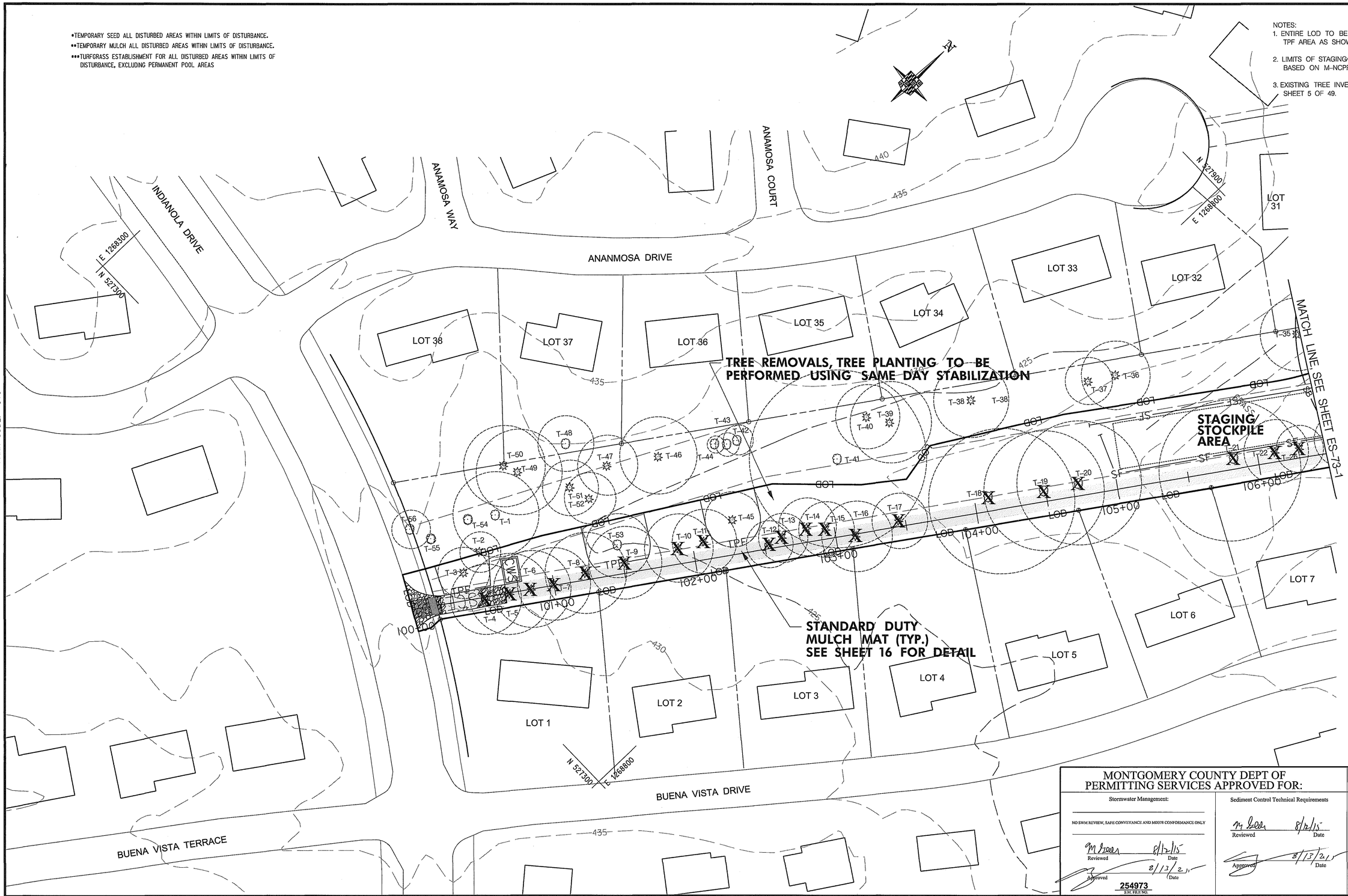
SC/SWM
SHT. # 14 of 49

BY: $USERNAME$

PLOTED: Friday, May 08, 2015 AT 09:34 AM
FILE: \\balsrv04\v2005\2005\05050_loc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pES-0001_RC73.dgn

•TEMPORARY SEED ALL DISTURBED AREAS WITHIN LIMITS OF DISTURBANCE.
••TEMPORARY MULCH ALL DISTURBED AREAS WITHIN LIMITS OF DISTURBANCE.
•••TURFGRASS ESTABLISHMENT FOR ALL DISTURBED AREAS WITHIN LIMITS OF DISTURBANCE, EXCLUDING PERMANENT POOL AREAS

NOTES:
1. ENTIRE LOD TO BE WRAPPED IIN TPF IN ADDITION TO TPF AREA AS SHOWN ON THE PLANS.
2. LIMITS OF STAGING-STOCKPILE AREA TO BE ADJUSTED BASED ON M-NCPPC AND HOA COORDINATION.
3. EXISTING TREE INVENTORY CAN BE FOUND ON SHEET 5 OF 49.



ES-73-2

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed Date
Approved Date
254973
E.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/13/15 Date

Administrative Requirements:
Reviewed 8/12/15 Date
258116
SEDIMENT CONTROL PERMIT NO.

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

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DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By:
MBM		DMH
Engineer	Date	Checked By:
DEA		DMH
Drawn by	Date	Checked By:

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. 16493
Expiration Date 05/16/2015

STATE OF MARYLAND · DAVID E. ALLEN · 16493 · PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL
Project Manager 5-14-15 Date
Construction Manager Date
Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

E & S Plan RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

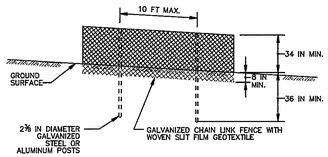
SC/SWM
SHT. # 15 of 49

BY: $USERNAME$

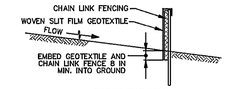
PLOTTED: Friday, May 08, 2015 AT 09:34 AM
FILE: \\balsrv04\v2009\2009\05050_jcc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pES-0002_RC73.dgn

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



ELEVATION



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

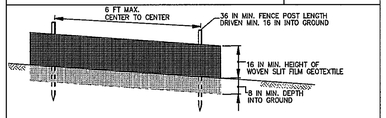
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

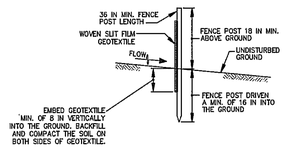
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

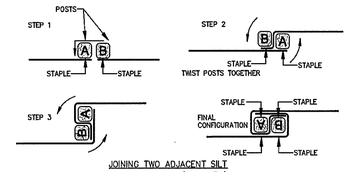
STANDARD SYMBOL: SF



ELEVATION



CROSS SECTION



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅜ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

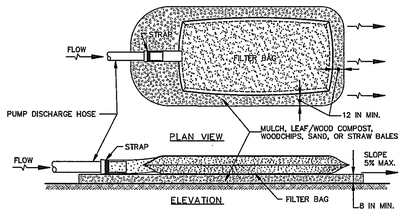
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL F-4 FILTER BAG

STANDARD SYMBOL: ☒FB



CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D-4491
PERMITTIVITY (SEC^{-1})	1.2 SEC^{-1}	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632

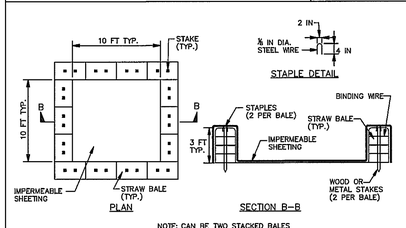
6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL: CWS



NOTE: CAN BE TWO STACKED BALES OR PARTIALLY EXCAVATED TO REACH 3 FT DEPTH

WASHOUT STRUCTURE WITH STRAW BALES

CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

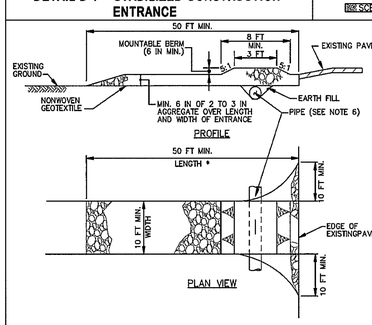
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

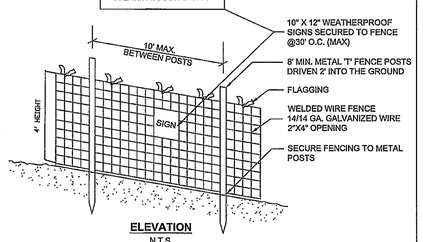
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TREE PROTECTION AREA
NO DISTURBANCE PERMITTED BEYOND THIS POINT
AREA DE PROTECCION DE ARBOLES
NO SE PERMITE TRABAJAR NI DEJAR MATERIALES EN EL AREA ATRAS DE ESTE ROTULO

STANDARD SYMBOL
TPF —— TPF —— TPF



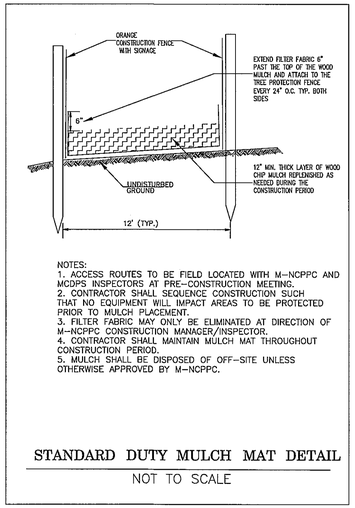
ELEVATION
N.T.S.

NOTES:
1. PRACTICE MAY BE COMBINED WITH SEDIMENT CONTROL FENCING.
2. LOCATION AND LIMITS OF FENCING SHALL BE COORDINATED IN FIELD WITH ARBORIST.
3. BOUNDARIES OF PROTECTION AREA SHOULD BE STAKED PRIOR TO INSTALLING PROTECTIVE DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE IS REQUIRED.
6. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCE

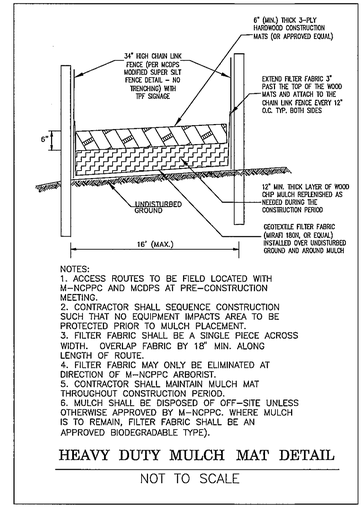
The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks

Detail No.
JUNE 2007



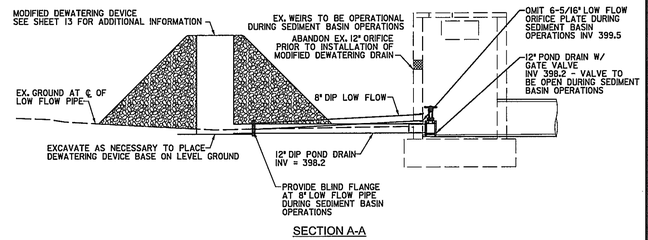
NOTES:
1. ACCESS ROUTES TO BE FIELD LOCATED WITH M-NCPPC AND MCDPS INSPECTORS AT PRE-CONSTRUCTION MEETING.
2. CONTRACTOR SHALL SEQUENCE CONSTRUCTION SUCH THAT NO EQUIPMENT WILL IMPACT AREAS TO BE PROTECTED PRIOR TO MULCH PLACEMENT.
3. FILTER FABRIC MAY ONLY BE ELIMINATED AT DIRECTION OF M-NCPPC CONSTRUCTION MANAGER/INSPECTOR.
4. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD.
5. MULCH SHALL BE DISPOSED OF OFF-SITE UNLESS OTHERWISE APPROVED BY M-NCPPC.

STANDARD DUTY MULCH MAT DETAIL
NOT TO SCALE



NOTES:
1. ACCESS ROUTES TO BE FIELD LOCATED WITH M-NCPPC AND MCDPS AT PRE-CONSTRUCTION MEETING.
2. CONTRACTOR SHALL SEQUENCE CONSTRUCTION SUCH THAT NO EQUIPMENT IMPACTS AREA TO BE PROTECTED PRIOR TO MULCH PLACEMENT.
3. FILTER FABRIC SHALL BE A SINGLE PIECE ACROSS WIDTH. OVERLAP FABRIC BY 18" MIN. ALONG LENGTH OF ROUTE.
4. FILTER FABRIC MAY ONLY BE ELIMINATED AT DIRECTION OF M-NCPPC ARBORIST.
5. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD.
6. MULCH SHALL BE DISPOSED OF OFF-SITE UNLESS OTHERWISE APPROVED BY M-NCPPC. WHERE MULCH IS TO REMAIN, FILTER FABRIC SHALL BE AN APPROVED BIODEGRADABLE TYPE).

HEAVY DUTY MULCH MAT DETAIL
NOT TO SCALE



RC-73: 8" LOW FLOW PIPE AND 12" POND DRAIN DETAILS

ES-73-3

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/12/2015 Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/12/2015 Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed 8/12/15 Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THIS PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND — DAVID E. ANDERSON — 16493 — PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

ESC Details RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

SC/SWM
SHT. # 16 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:35 AM
FILE: \\balsrv04\ji2005\j2005\05050_lcc\ES-CM SWM Contract RC-C\RC-73\csaddl\plans\pES-0003_RC73.dgn

FINAL SCANNED:

PLAN SCANNED:

PARK CODE: C10

STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. THE PERMITTEE SHALL NOTIFY THE DEPARTMENT OF PERMITTING SERVICES (DPS) FORTY-EIGHT (48) HOURS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY THE DEPARTMENT, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN THEM OR THEIR REPRESENTATIVE, THEIR ENGINEER AND AN AUTHORIZED REPRESENTATIVE OF THE DEPARTMENT.

2. THE PERMITTEE MUST OBTAIN INSPECTION AND APPROVAL BY DPS AT THE FOLLOWING POINTS:
A. AT THE REQUIRED PRE-CONSTRUCTION MEETING.
B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES AND PRIOR TO ANY OTHER LAND DISTURBING ACTIVITY.
C. DURING THE INSTALLATION OF A SEDIMENT BASIN OR STORMWATER MANAGEMENT STRUCTURE AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION IS MANDATORY.
D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
E. PRIOR TO FINAL ACCEPTANCE.

3. THE PERMITTEE SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE, SHALL HAVE THEM INSPECTED AND APPROVED BY THE DEPARTMENT PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES, SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM THE DEPARTMENT.

4. THE PERMITTEE SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO TRAVERSED PUBLIC THOROUGHFARE(S). ALL MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARE(S) SHALL BE REMOVED IMMEDIATELY.

5. THE PERMITTEE SHALL INSPECT PERIODICALLY AND MAINTAIN CONTINUOUSLY IN EFFECTIVE OPERATING CONDITION, ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE DEPARTMENT. THE PERMITTEE IS RESPONSIBLE FOR IMMEDIATELY REPAIRING OR REPLACING ANY SEDIMENT CONTROL MEASURES WHICH HAVE BEEN DAMAGED OR REMOVED BY THE PERMITTEE OR ANY OTHER PERSON.

6. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
a) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
b) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED AND STABILIZED IMMEDIATELY. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.

7. THE PERMITTEE SHALL APPLY SOD, SEED, AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS WITHIN SEVEN (7) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED ON THAT AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. ACTIVE CONSTRUCTION AREAS SUCH AS BORROW OR STOCKPILE AREAS, ROADWAY IMPROVEMENTS, AND AREAS WITHIN FIFTY (50) FEET OF A BUILDING UNDER CONSTRUCTION MAY BE EXEMPT FROM THIS REQUIREMENT, PROVIDED THAT EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED AND MAINTAINED TO PROTECT THOSE AREAS.

8. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE PERMITTEE SHALL STABILIZE ALL CONTRIBUTORY DISTURBED AREAS WITH REQUIRED SOIL AMENDMENTS AND TOPSOIL, USING SOD OR AN APPROVED PERMANENT SEED MIXTURE AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHEN THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED WITHIN SEVEN (7) CALENDAR DAYS OF ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, AN APPROVED TEMPORARY SEED AND STRAW ANCHORED MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE COMPLETED PRIOR TO THE FOLLOWING APRIL 15.

9. THE SITE PERMIT, WORK, MATERIALS, APPROVED SCSM PLANS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MONTGOMERY COUNTY.

10. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO LOWER THE WATER DOWN SLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. MECHANICAL DEVICES MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.

11. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITHIN 3 CALENDAR DAYS OF ESTABLISHMENT WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED STABILIZATION MEASURES.

12. SEDIMENT CONTROL DEVICES SHALL BE REMOVED, WITH PERMISSION OF THE DEPARTMENT, WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS.
STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.

13. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS OR ON RESIDENTIAL LOTS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NONMAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.

14. THE PERMITTEE SHALL INSTALL A SPLASHBLOCK AT THE BOTTOM OF EACH DOWNSPOUT UNLESS THE DOWNSPOUT IS CONNECTED BY A DRAIN LINE TO AN ACCEPTABLE OUTLET.

15. FOR FINISHED GRADING, THE PERMITTEE SHALL PROVIDE ADEQUATE GRADIENTS SO AS TO PREVENT WATER FROM STANDING ON THE SURFACE OF LAWNS MORE THAN TWENTY-FOUR (24) HOURS AFTER THE END OF A RAINFALL, EXCEPT IN DESIGNATED DRAINAGE COURSES AND SWALE FLOW AREAS, WHICH MAY DRAIN AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL.

16. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A BUILDING WHICH IS EXISTING OR UNDER CONSTRUCTION. NO BUILDING MAY BE CONSTRUCTED WITHIN 20 FEET OF A SEDIMENT TRAP OR BASIN.

17. ALL INLETS IN NON-SUMP AREAS SHALL HAVE ASPHALT BERMS INSTALLED AT THE TIME OF BASE PAVING ESTABLISHMENT.

18. THE SEDIMENT CONTROL INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SEDIMENT CONTROL MEASURES, AS DEEMED NECESSARY.

19. ALL TRAP ELEVATIONS ARE RELATIVE TO THE OUTLET ELEVATION, WHICH MUST BE ON EXISTING UNDISTURBED GROUND.

20. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

PROJECT LOCATION: MONTGOMERY COUNTY
Scale: 1" = 6,000'

STANDARD EROSION AND SEDIMENT CONTROL NOTES – CONTINUED

21. SEDIMENT TRAP(S)/BASIN(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO THE POINT OF ONE-HALF (1/2) THE WET STORAGE DEPTH OF THE TRAP/BASIN (1/4 THE WET STORAGE DEPTH FOR ST-III) OR WHEN REQUIRED BY THE SEDIMENT CONTROL INSPECTOR.

22. SEDIMENT REMOVED FROM TRAPS/BASINS SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN.

23. ALL SEDIMENT BASINS AND TRAPS MUST BE SURROUNDED WITH A WELDED WIRE SAFETY FENCE. THE FENCE MUST BE AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THE TWO INCHES IN WIDTH AND FOUR INCHES IN HEIGHT, WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED IN GOOD CONDITION AT ALL TIMES.

24. NO EXCAVATION IN THE AREAS OF EXISTING UTILITIES IS PERMITTED UNLESS THEIR LOCATION HAS BEEN DETERMINED. CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK.

25. OFF-SITE SPOIL OR BORROW AREAS MUST HAVE PRIOR APPROVAL BY DPS.

26. SEDIMENT TRAP/BASIN DEWATERING FOR CLEANOUT OR REPAIR MAY ONLY BE DONE WITH THE DPS INSPECTOR'S PERMISSION. THE INSPECTOR MUST APPROVE THE DEWATERING METHOD FOR EACH APPLICATION. THE FOLLOWING METHODS MAY BE CONSIDERED:
A. PUMP DISCHARGE MAY BE DIRECTED TO ANOTHER ON-SITE SEDIMENT TRAP OR BASIN, PROVIDED IT IS OF SUFFICIENT VOLUME AND THE PUMP INTAKE IS FLOATED TO PREVENT AGITATION OR SUCTION OF DEPOSITED SEDIMENTS; OR
B. THE PUMP INTAKE MAY UTILIZE A REMOVABLE PUMPING STATION AND MUST DISCHARGE INTO AN UNDISTURBED AREA THROUGH A NON-EROSIVE OUTLET; OR
C. THE PUMP INTAKE MAY BE FLOATED AND DISCHARGE INTO A DIRT BAG (12 OZ. NON-WOVEN FABRIC), OR APPROVED EQUIVALENT, LOCATED IN AN UNDISTURBED BUFFER AREA.

REMEMBER: DEWATERING OPERATION AND METHOD MUST HAVE PRIOR APPROVAL BY THE DPS INSPECTOR.

27. THE PERMITTEE MUST NOTIFY THE DEPARTMENT OF ALL UTILITY CONSTRUCTION ACTIVITIES WITHIN THE PERMITTED LIMITS OF DISTURBANCE PRIOR TO THE COMMENCEMENT OF THOSE ACTIVITIES.

28. TOPSOIL MUST BE APPLIED TO ALL PERVIOUS AREAS WITHIN THE LIMITS OF DISTURBANCE PRIOR TO PERMANENT STABILIZATION IN ACCORDANCE WITH MDE *STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS*.

SPECIFICATIONS FOR TOPSOIL

1. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY DPS. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS, AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.

2. THE SUBSOIL SHALL BE TILLED TO A MINIMUM DEPTH OF 6 INCHES BEFORE PLACEMENT OF TOPSOIL.

3. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 LBS PER 1000 SQ FT) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL.

4. TOPSOIL SHALL BE TESTED AND AMENDED AS PER SOIL TEST RECOMMENDATIONS.

TOPSOIL APPLICATION:

1. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES.

2. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4-8 INCH LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

3. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

LIST OF PREDOMANT SOIL TYPES

SYMBOL	DESCRIPTION	HSG
1C	GAILA SILT LOAM	B

M-NCPPC NOTES:

1. AN ON-SITE PRE-CONSTRUCTION MEETING SHALL BE REQUIRED AFTER THE LIMITS OF DISTURBANCE HAVE BEEN STAKED AND FLAGGED, BUT BEFORE ANY CLEARING OR GRADING BEGINS. THE CONTRACTOR SHALL CONTACT THE MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION CONSTRUCTION MANAGER PRIOR TO COMMENCING CONSTRUCTION TO VERIFY THE LIMITS OF DISTURBANCE AND DISCUSS TREE PROTECTION AND TREE CARE MEASURES. THE ATTENDANTS AT THIS MEETING SHOULD INCLUDE: CONSTRUCTION MANAGER OR SUPERINTENDENT, A CERTIFIED ARBORIST OR MD LICENSED TREE EXPERT THAT WILL IMPLEMENT THE TREE PROTECTION MEASURES, M-NCPPC CONSTRUCTION MANAGER AND/OR INSPECTOR, AND DPS SEDIMENT CONTROL INSPECTOR. AND THE MNCPPC ENVIRONMENTAL PLANNING DEPARTMENT INSPECTOR.

2. NO CLEARING OR GRADING SHALL BEGIN BEFORE STRESS-REDUCTION MEASURES HAVE BEEN IMPLEMENTED. APPROPRIATE MEASURES MAY INCLUDE, BUT ARE NOT LIMITED TO:
A. ROOT PRUNING
B. CROWN REDUCTION OR PRUNING
C. WATERING
D. FERTILIZING
E. VERTICAL MULCHING
F. ROOT AERATION MATTING
MEASURES NOT SPECIFIED ON THE EXEMPTION PLAN MAY BE REQUIRED AS DETERMINED BY THE M-NCPPC INSPECTOR IN COORDINATION WITH THE ARBORIST.

3. A STATE OF MARYLAND LICENSED TREE EXPERT, OR AN INTERNATIONAL SOCIETY OF ARBORICULTURE CERTIFIED ARBORIST MUST PERFORM ALL STRESS REDUCTION MEASURES. DOCUMENTATION OF STRESS REDUCTION MEASURES MUST BE EITHER OBSERVED BY THE M-NCPPC INSPECTOR OR SENT TO THE M-NCPPC INSPECTOR AT 8787 GEORGIA AVENUE, SILVER SPRING, MD 20910. THE M-NCPPC INSPECTOR WILL DETERMINE THE EXACT METHOD TO CONVEY THE STRESS REDUCTION MEASURES DURING THE PRE-CONSTRUCTION MEETING.

4. TEMPORARY TREE PROTECTION DEVICES SHALL BE INSTALLED PER THE EXEMPTION PLAN AND PRIOR TO ANY CONSTRUCTION ACTIVITIES. TREE PROTECTION FENCING LOCATIONS SHOULD BE STAKED PRIOR TO THE PRE-CONSTRUCTION MEETING. M-NCPPC CONSTRUCTION MANAGER AND/OR INSPECTOR, IN COORDINATION WITH THE DPS SEDIMENT CONTROL INSPECTOR, AND THE MNCPPC ENVIRONMENTAL PLANNING DEPARTMENT INSPECTOR MAY MAKE FIELD ADJUSTMENTS TO INCREASE THE SURVIVABILITY OF TREES AND FOREST SHOWN AS SAVED ON THE APPROVED PLAN. TEMPORARY TREE PROTECTION DEVICES MAY INCLUDE:
A. CHAIN LINK FENCE (FOUR FEET HIGH)
B. SUPER SILT FENCE WITH WIRE STRUNG BETWEEN THE SUPPORT POLES (MINIMUM 4 FEET HIGH) WITH HIGH VISIBILITY FLAGGING.
C. 14 GAUGE 2 INCH X 4 INCH WELDED WIRE FENCING SUPPORTED BY STEEL T-BAR POSTS (MINIMUM 4 FEET HIGH) WITH VISIBILITY FLAGGING.

5. TEMPORARY PROTECTION DEVICES SHALL BE MAINTAINED AND INSTALLED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION PROJECT AND MUST NOT BE ALTERED WITHOUT PRIOR APPROVAL FROM M-NCPPC. NO EQUIPMENT, TRUCKS, MATERIALS, OR DEBRIS MAY BE STORED WITHIN THE TREE PROTECTION FENCE AREAS DURING THE ENTIRE CONSTRUCTION PROJECT. NO VEHICLE OR EQUIPMENT ACCESS TO THE FENCED AREA WILL BE PERMITTED. TREE PROTECTION SHALL NOT BE REMOVED WITHOUT PRIOR APPROVAL OF M-NCPPC. TREE PROTECTION SERVICES TO BE COORDINATED WITH EROSION AND SEDIMENT CONTROL DEVICES AS INDICATED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE DEPARTMENT OF PERMITTING SERVICES.

6. FOREST RETENTION AREA SIGNS SHALL BE INSTALLED AS REQUIRED BY THE M-NCPPC INSPECTOR, OR AS SHOWN ON APPROVED PLAN.

7. PERIODIC INSPECTIONS BY M-NCPPC WILL OCCUR DURING THE CONSTRUCTION PROJECT. CORRECTIONS AND REPAIRS TO ALL TREE PROTECTION DEVICES, AS DETERMINED BY THE M-NCPPC INSPECTOR, MUST BE MADE WITHIN THE TIMEFRAME ESTABLISHED BY THE M-NCPPC INSPECTOR.

8. AFTER CONSTRUCTION IS COMPLETED, AN INSPECTION SHALL BE REQUESTED. CORRECTIVE MEASURES WHICH MAY BE REQUIRED INCLUDE:
A. REMOVAL AND REPLACEMENT OF DEAD AND DYING TREE
B. PRUNING OF DEAD OR DECLINING LIMBS
C. SOIL AERATION
D. FERTILIZATION
E. WATERING
F. WOUND REPAIR
G. CLEAN UP OF RETENTION AREAS

9. AFTER INSPECTION AND COMPLETION OF CORRECTIVE MEASURES HAVE BEEN UNDERTAKEN, ALL TEMPORARY PROTECTION DEVICES SHALL BE REMOVED FROM THE SITE. NO ADDITIONAL GRADING, SODDING, OR BURIAL MAY TAKE PLACE.

CONSTRUCTION INSPECTION
CHECK-OFF LIST FOR STORMWATER MANAGEMENT PONDS

STAGE		DESIGN ENGINEER (DE)	GEOTECHNICAL ENGINEER (GEO)	COUNTY INSPECTOR	MNCPPC & OTHER
* MANDATORY NOTIFICATION: Inspection and approval by the parties indicated is required at these points prior to proceeding with construction. The permittee is required to give the required inspection parties twenty-four (24) hours notice (DPS telephone 240-777-0311). The DPS inspector may waive an inspection, provided the design engineer and/or geotechnical engineer makes the required inspection per a prior scheduled arrangement which has been confirmed with the DPS inspector. Work completed without the necessary party's approval may result in the permittee having to remove and reconstruct the unapproved work. The permittee must maintain a "record set" of approved SC/SM plans on-site.		INITIAL/DATE	INITIAL/DATE	INITIAL/DATE	INITIAL/DATE
1.	Pre-construction meeting & field review of tree save flagging/tree protection	*	*	*	*
2.	Sediment control installation			*	
3.	Dewatering (GEO) and stream diversion (DE)	*	*	*	
4.	Clearing, grubbing, subgrade preparation		*	*	
5.	Core trench excavation and dewatering, if required (GEO)		*	*	
6.	Core trench dimensions, location (DE) or (GEO), backfill and compaction tests (GEO)		*	*	
7.	Construction of principal spillway and riser	*	*	*	
7a.	- Barrel class (ASTM C361) (DE) - Pipe certification from supplier (DE) - Pipe assembled I in place on acceptable subgrade (GEO) - Watertight joints (DE) - Articulated 4 feet from riser (DE) - Lifts, compaction, soil material (GEO) - Location, dimensions (DE)				
7b.	- Concrete cradle dimensions (DE) - Concrete strength tests (GEO)	*	*	*	
7c.	- Anti-seep collars (location , collar dimensions and re-bar size (DE) - Concrete strength tests (GEO)	*	*	*	
7d.	- Filter diaphragm gradations and dimensions (if applicable) (GEO)		*	*	
7e.	- Riser footing subgrade (GEO), dimensions, re-bar (DE) - Concrete strength tests (GEO)	*	*	*	
7f.	Precast Riser: - Shop drawings approved by DE, accepted by County - Visual inspection of riser (no cracks, spaulding, exposed steel, incorrect dimensions, honeycombing) (DE) - Certification from supplier (DE) - Watertight joints (DE) - Wall and opening dimensions per plan (DE)	*		*	
7g.	Cast-In-Place Riser: - Wall and openings dimensions per plan (DE) - Re-bar size, number, spacing acceptable (DE) - Concrete testing and certification (GEO) - Watertight joints (DE) - Extreme weather provisions (DE)	*	*	*	
7h.	Valve/orifice plate installation (DE). Note: may be delayed for SC purposes.	*		*	
8.	Backfilling of principal spillway (GEO)		*	*	
9.	Underdrain (if applicable) location (DE), pipe size (DE), filter cloth (DE), gravel (DE), field adjustment s(GEO)	*	*	*	
10.	Channelization work and pond outfall protection (DE) or (GEO)	*		*	
11.	Diversion of stream through principal spillway (DE)	*	*	*	
12.	Construction of embankment - Lifts, compaction, soil material (GEO) - Location, dimension (DE)	*		*	
13.	Construction of emergency spillway in cut (DE)	*		*	
14.	Field verification of constructed contours (DE)	*		*	
15.	Permanent stabilization, delivery tickets from supplier			*	
16.	Submit record drawing and documentation (DE) and (GEO)	*			
17.	Other items. (Set valve(s) to design opening values, if required) (DE) Sliplining of principal spillway (DE)	*		*	
18.	Final inspection (DE) and (GEO)	*	*	*	

NOTES:
1. Permittee to supply Design Engineer with delivery tickets for all materials used in Pond construction, for submission with the as-built package. DPS Inspection Telephone: (240) 777-0311
2. See construction specifications this plan for detailed requirements.
3. A copy of this completed checklist must be submitted as part of the stormwater management as-built package. MNCP&PC Inspection Telephone (301) 495-4571.

ES-73-4

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
M Bean 8/12/15 Reviewed Date
3/13/215 Approved Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
M Bean 8/12/15 Reviewed Date
8/13/21 Approved Date

Administrative Requirements:
M Bean 8/12/15 Reviewed Date
258116 SEDIMENT CONTROL PERMIT NO.

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

BY: $USERNAME$

DESIGN		
Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493
Expiration Date 05/16/2015
STATE OF MARYLAND DAVID E. ANDERSON 16493 PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL
Project Manager 5/14/15 Date
Construction Manager Date
Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS		
Rev. No.	Date	Description

EROSION AND SEDIMENT CONTROL NOTES RC-73
CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT
SCALE: 1 = 30'

SC/SWM
SHT. # 17 of 49

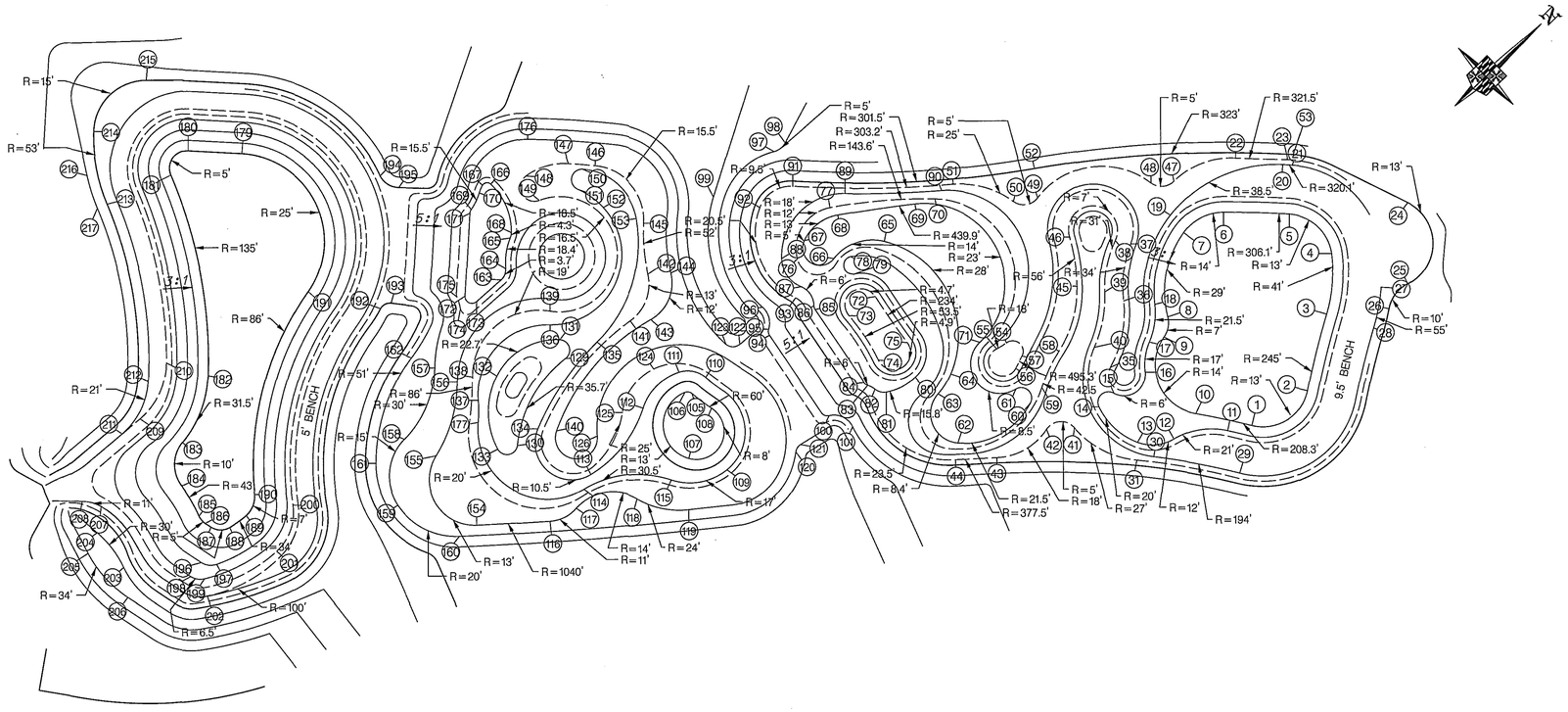
PLOTTED: Friday, May 08, 2015 AT 09:37 AM
FILE: \\balsrv04\p2005\2005\05050_loc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pES-N000_RC73.dgn

FINAL SCANNED:

PLAN SCANNED:

PARK CODE: C10

STAKEOUT DATA RC-73			
POINT	ELEVATION	EASTING	NORTHING
POOL 1			
1	397.0	1,269,213.75	528,220.40
2	397.0	1,269,217.59	528,238.88
3	397.0	1,269,205.58	528,257.98
4	397.0	1,269,193.98	528,270.96
5	397.0	1,269,177.53	528,270.00
6	397.0	1,269,164.09	528,256.82
7	397.0	1,269,160.44	528,244.55
8	397.0	1,269,174.72	528,224.62
9	397.0	1,269,178.16	528,219.86
10	397.0	1,269,200.18	528,211.24
11	398.0	1,269,210.02	528,214.45
12	398.0	1,269,201.16	528,201.69
13	398.0	1,269,914.57	528,193.53
14	398.0	1,269,179.64	528,192.70
15	398.0	1,269,179.75	528,198.41
16	398.0	1,269,181.66	528,208.96
17	398.0	1,269,176.27	528,215.83
18	398.0	1,269,169.55	528,224.45
19	399.0	1,269,154.25	528,245.27
20	399.0	1,269,166.06	528,278.45
21	399.0	1,269,168.04	528,280.29
22	399.5	1,269,155.31	528,269.98
23	399.5	1,269,165.99	528,280.39
24	400.0	1,269,198.60	528,296.69
25	400.0	1,269,215.40	528,280.61
26	400.0	1,269,216.86	528,271.82
27	399.0	1,269,210.83	528,274.52
28	399.0	1,269,217.76	528,264.87
29	399.0	1,269,221.12	528,208.50
30	399.0	1,269,200.77	528,194.01
31	399.5	1,269,198.12	528,189.85
WETCELL 1			
35	399.0	1,269,173.76	528,202.82
36	399.0	1,269,162.67	528,218.75
37	398.5	1,269,152.26	528,231.16
38	398.5	1,269,148.55	528,228.88
39	398.5	1,269,157.03	528,216.67
40	398.5	1,269,166.43	528,203.52
41	399.5	1,269,179.16	528,183.43
42	399.5	1,269,174.03	528,177.33
43	399.5	1,269,169.96	528,161.49
44	399.5	1,269,162.25	528,152.47
45	398.5	1,269,150.46	528,212.00
46	398.5	1,269,138.76	528,220.18
47	399.5	1,269,147.97	528,252.68
48	399.5	1,269,143.73	528,247.66
49	399.5	1,269,124.44	528,221.31
50	399.5	1,269,120.35	528,215.62
51	399.5	1,269,104.94	528,206.58
52	400.0	1,269,117.75	528,226.48
53	400.0	1,269,166.00	528,282.49
54	399.5	1,269,148.19	528,186.18
55	399.5	1,269,147.48	528,182.94
56	399.5	1,269,155.30	528,183.03
57	399.5	1,269,154.00	528,186.80
58	398.5	1,269,160.35	528,195.29
59	398.5	1,269,164.47	528,184.67
60	398.0	1,269,165.37	528,179.30
61	398.0	1,269,159.61	528,178.98
62	398.0	1,269,159.26	528,156.30
63	398.0	1,269,145.27	528,161.99
64	398.0	1,269,143.68	528,168.47
65	398.0	1,269,103.03	528,181.06
66	398.0	1,269,096.65	528,167.19
67	398.0	1,269,087.02	528,164.69
68	398.0	1,269,088.42	528,176.68
69	398.0	1,269,101.43	528,194.79
70	398.5	1,269,104.35	528,199.93
71	398.0	1,269,142.80	528,180.83
72	398.5	1,269,112.53	528,168.29
73	398.5	1,269,111.53	528,159.02
74	398.5	1,269,126.37	528,156.29
75	398.5	1,269,128.53	528,165.74
76	398.5	1,269,089.39	528,159.55
77	398.5	1,269,085.42	528,176.40
78	399.0	1,269,099.53	528,170.99
79	399.0	1,269,103.84	528,168.46
80	399.0	1,269,137.28	528,160.50
81	399.0	1,269,134.58	528,151.64
82	399.0	1,269,131.74	528,149.90
83	399.0	1,269,129.51	528,149.18
84	399.0	1,269,128.19	528,148.96
85	399.0	1,269,103.47	528,153.25
86	399.0	1,269,102.45	528,153.76
87	399.0	1,269,095.90	528,154.86
88	399.0	1,269,086.20	528,156.40
89	399.0	1,269,085.45	528,182.38
90	399.0	1,269,103.93	528,202.96
91	399.5	1,269,073.58	528,173.00



WETCELL 1 (CONT.)			
92	395.5	1,269,071.42	528,161.95
93	395.5	1,269,097.16	528,151.51
94	401.0	1,269,099.01	528,136.26
95	401.0	1,269,098.28	528,139.70
96	401.0	1,269,092.46	528,142.81
97	403.0	1,269,062.65	528,175.94
98	403.0	1,269,063.07	528,179.97
99	404.0	1,269,060.10	528,154.42
100	401.0	1,269,128.17	528,135.07
101	401.0	1,269,135.11	528,137.81
WETCELL 2			
105	399.0	1,269,096.42	528,111.05
106	399.0	1,269,094.77	528,109.79
107	399.0	1,269,109.12	528,097.51
108	399.0	1,269,103.30	528,112.22
109	401.0	1,269,119.04	528,103.21
110	401.0	1,269,095.76	528,117.02
111	401.0	1,269,089.42	528,112.52
112	401.0	1,269,089.73	528,098.08
113	401.0	1,269,092.99	528,073.90
114	401.0	1,269,094.64	528,069.84
115	401.0	1,269,110.07	528,089.67
116	402.0	1,269,094.56	528,056.28
117	402.0	1,269,097.11	528,064.26
118	402.0	1,269,107.23	528,078.86
119	402.0	1,269,119.76	528,087.44
120	403.0	1,269,129.01	528,121.02
121	403.0	1,269,128.44	528,123.51
122	403.0	1,269,095.71	528,130.65
123	401.2	1,269,092.92	528,127.80
124	401.5	1,269,083.75	528,107.97
125	402.0	1,269,086.50	528,092.69
126	402.0	1,269,086.33	528,082.89
129	401.0	1,269,064.06	528,091.65

WETCELL 2 (CONT.)			
130	401.0	1,269,072.44	528,064.55
131	401.0	1,269,059.02	528,094.15
132	401.0	1,269,054.14	528,073.93
133	401.0	1,269,069.36	528,059.71
134	401.0	1,269,073.08	528,072.10
135	401.0	1,269,066.94	528,101.37
136	401.0	1,269,054.00	528,095.12
137	401.0	1,269,055.43	528,065.39
138	401.5	1,269,049.51	528,068.71
139	401.5	1,269,051.18	528,097.82
140	402.0	1,269,077.20	528,075.55
141	401.5	1,269,069.16	528,112.66
142	401.5	1,269,062.96	528,125.63
143	402.0	1,269,072.96	528,117.18
144	402.0	1,269,067.27	528,130.65
145	401.5	1,269,051.61	528,134.51
146	401.5	1,269,030.14	528,135.97
147	401.5	1,269,024.36	528,130.81
148	401.5	1,269,018.54	528,119.69
149	401.5	1,269,029.18	528,117.57
150	401.0	1,269,028.39	528,132.71
151	401.0	1,269,031.53	528,127.69
152	401.0	1,269,040.36	528,129.34
153	401.0	1,269,049.16	528,134.16
154	402.0	1,269,080.88	528,040.34
155	402.0	1,269,058.50	528,045.72
156	402.0	1,269,047.48	528,064.72
157	403.0	1,269,040.09	528,062.80
158	403.0	1,269,048.86	528,042.41
159	403.0	1,269,061.21	528,028.04
160	403.0	1,269,079.71	528,034.48
161	404.0	1,269,048.15	528,031.76
162	404.0	1,269,033.45	528,059.94
163	401.0	1,269,035.11	528,093.97
164	401.0	1,269,033.69	528,097.06

WETCELL 2 (CONT.)			
165	401.0	1,269,028.21	528,104.08
166	401.0	1,269,027.30	528,105.41
167	401.0	1,269,013.23	528,110.72
168	401.0	1,269,011.88	528,108.80
169	401.0	1,269,012.81	528,106.64
170	401.0	1,269,014.62	528,101.69
171	401.0	1,269,015.12	528,100.69
172	401.0	1,269,031.27	528,031.27
173	401.0	1,269,034.73	528,084.59
174	401.5	1,269,032.97	528,079.84
175	401.5	1,269,029.84	528,081.47
176	402.0	1,269,011.24	528,127.18
177	401.0	1,269,059.98	528,060.96
FOREBAY 1			
179	400.0	1,268,957.73	528,065.37
180	400.0	1,268,946.54	528,054.91
181	400.0	1,268,948.17	528,046.59
182	400.0	1,268,996.99	528,014.50
183	400.0	1,269,005.67	527,996.09
184	400.0	1,269,014.40	527,987.28
185	400.0	1,269,024.03	527,984.96
186	400.0	1,269,026.80	527,984.77
187	400.0	1,269,028.74	527,985.09
188	400.0	1,269,032.54	527,988.99
189	400.0	1,269,033.32	527,994.79
190	400.0	1,269,030.65	528,000.63
191	400.0	1,268,999.34	528,051.87
192	405.0	1,269,017.20	528,063.36
193	405.0	1,269,018.15	528,066.61
194	405.0	1,268,989.68	528,089.58
195	405.0	1,268,995.78	528,091.06
196	402.0	1,269,034.10	527,976.13
197	402.0	1,269,037.56	527,978.94
198	403.0	1,269,034.89	527,971.19

FOREBAY 1 (CONT.)			
199	403.0	1,269,038.12	527,973.53
200	403.5	1,269,040.38	528,006.48
201	403.5	1,269,046.75	527,993.92
202	404.0	1,269,042.23	527,970.70
203	406.0	1,269,019.83	527,959.17
204	406.0	1,269,007.38	527,960.66
205	407.0	1,269,009.83	527,954.67
206	407.0	1,269,026.81	527,954.05
207	404.0	1,269,002.75	527,966.67
208	404.0	1,268,997.96	527,963.79
209	403.9	1,268,992.40	527,992.02
210	403.9	1,268,986.11	528,008.40
211	404.0	1,268,991.93	527,985.35
212	404.0	1,268,986.31	528,001.06
213	405.0	1,268,941.49	528,027.73
214	405.0	1,268,923.83	528,039.30
215	405.0	1,268,923.71	528,060.23
216	406.0	1,268,931.63	528,029.28
217	406.0	1,268,940.41	528,024.93

SO-73-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Stormwater Management:

NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY

Reviewed 8/12/15 Date

Approved 8/13/2015 Date

254973 S.M. FILE NO.

Sediment Control Technical Requirements

Reviewed 8/12/15 Date

Approved 8/17/2015 Date

Administrative Requirements:

Reviewed 8/12/15 Date

258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

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PH: (410) 728-2900 FAX: (410) 728-3160
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www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND — STEVEN E. SCHNEIDER — 16493 — PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

Grading Stakeout RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

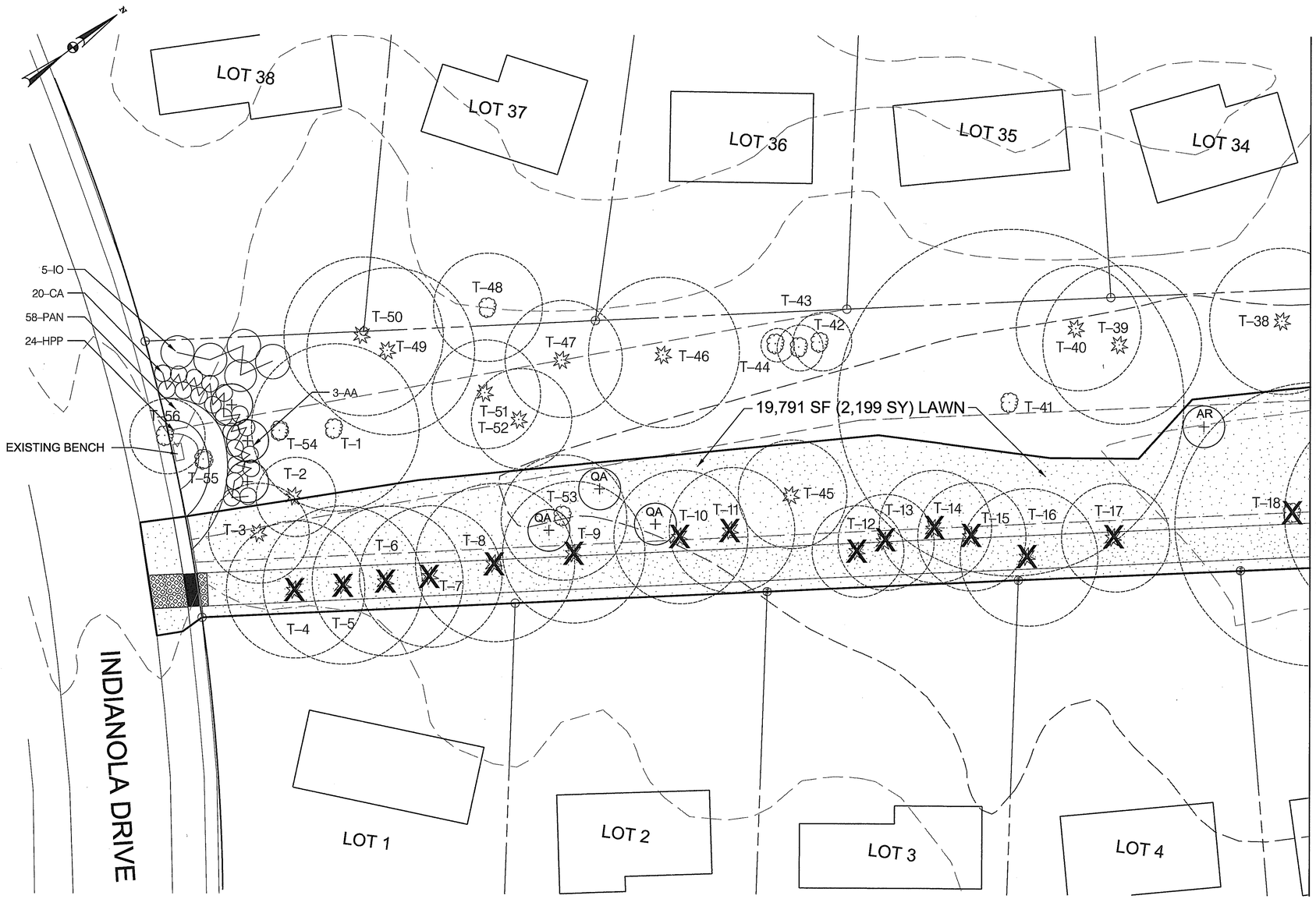
SCALE: 1 = 20'

SC/SWM

SHT. # 18 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:37 AM
FILE: \\balsrv04\vol005\2005\05050_loc\ES-CM SWM Contract RC-C\RC-73\caddf\plans\pGR-5001_RC73.dgn



MATCH LINE – SEE SHEET LD–73–2

PLANTING SCHEDULE - THIS SHEET

Symbol	Species Quantity	Botanical Name	Common Name	Size	Type	Placement
		TREES				
AR	1	*Acer rubrum*	red maple	6' ht.	Container grown	As Shown on Plan
AA	3	*Amelanchier arborea*	downy serviceberry	6' ht.	Multi-stem, 3 stem minimum, container grown	As Shown on Plan
IO	5	*Ilex opaca**	American holly	6' ht.	Balled and Burlapped	As Shown on Plan
QA	3	*Quercus alba**	white oak	6' ht.	Container grown	As Shown on Plan
	12	**=total**				
		SHRUBS				
CA	28	*Cornus amomum*	silky dogwood	18" ht.	Container grown	As Shown on Plan
		HERBACEOUS PLANTS				
HPP	24	*Heuchera micrantha "Purple Palace"*	coral bells	1 gal.	Container grown	As Shown on Plan
PAN	58	*Panicum virgatum*	switchgrass	1 gal.	Container grown	As Shown on Plan
	82	**=total**				

* = Fall Digging Hazard

NOTE:
1. THIS SHEET IS FOR LANDSCAPING PURPOSES ONLY.
2. REFER TO SPECIFICATION SECTION 705 - SEEDING AND SODDING FOR TURF AREAS FOR DIRECTION ON LAWN ESTABLISHMENT.

LEGEND

- EXISTING EVERGREEN TREE
- EXISTING DECIDUOUS TREE
- EXISTING TREE TO BE REMOVED
- PROPOSED SHRUB
- PROPOSED TREE LINE
- PROPOSED TREE
- LOD — LIMIT OF DISTURBANCE
- 401 — PROPOSED CONTOURS

PLANTING ZONES

REGULAR INUNDATION (RI)	(EMERGENT OBL HERB SPECIES) EL. 403.0 - 404.5 POND A EL. 401.5 - 402.5 POND B
PERIODIC INUNDATION (PI)	(OBL, FACW & FAC SPECIES) EL. 404.5 - 407.5 POND A EL. 402.5 - 406.0 POND B
PERIODIC INUNDATION ACCESS ROAD (PIA)	(OBL, FACW & FAC LOW GROWING SPECIES)
PERIODIC INUNDATION FLOODPLAIN (PIF)	(OBL, FACW & FAC) EL. 398.0 - 405.0
INFREQUENT INUNDATION (II)	(FAC & UPL SPECIES) EL. 407.5 - 410.0 POND A EL. 406.0 - 410.0 POND B

PLANTING ZONES (UPLAND)

NO INUNDATION (NI)	(UPLAND SPECIES) EL. 410.0+
LAWN	

LD-73-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/12/2015 Date
254973
S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/12/2015 Date

Administrative Requirements:
Reviewed 8/12/15 Date
258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

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PH: (410) 728-2900 FAX: (410) 728-3160
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DESIGN

DAM		JAH
Landscape Architect	Date	Checked By:
Architect	Date	Checked By:
DMH		SAS
Engineer	Date	Checked By:
DLW		WMM
Drawn by	Date	Checked By:

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

License No. 3126

Expiration Date 03/20/2016

STATE OF MARYLAND · DAVID A. MITCHELL · No. 3126 · LANDSCAPE ARCHITECT

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager	5-14-15 Date
Construction Manager	Date
Park Manager	Date

ISSUED FOR PROCUREMENT ON _____

REVISIONS

Rev. No.	Date	Description

Landscape Plan RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 20'

SC/SWM
SHT. # 19 of 49

FINAL SCANNED:
PLAN SCANNED:
PARK CODE: C10
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BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:38 AM
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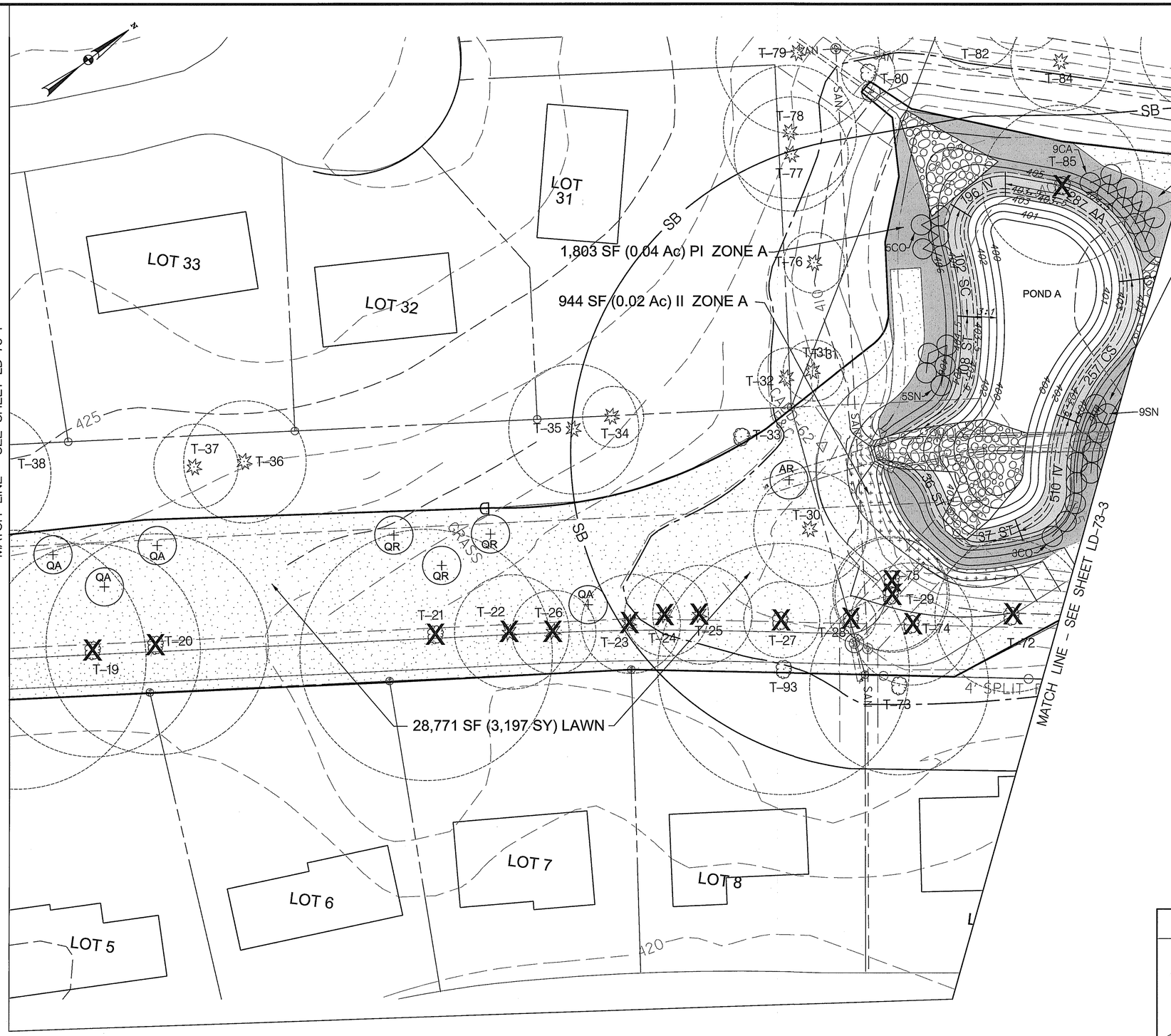

POND A
FOREBAY PERMANENT POOL= EL. 404.5
BOTTOM ELEVATION= EL. 400.0
EMERGENT AND FLOATING AQUATIC ZONE = EL. 403.0- 404.5
FLUCTUATING ZONE= EL. 404.5 - 410.0

NOTES:
1. THIS SHEET IS FOR LANDSCAPING PURPOSES ONLY.
2. SEE SHEETS LD-73-4 AND LD-73-5 FOR PLANTING SCHEDULES.
3. REFER TO SPECIFICATION SECTION 705 - SEEDING AND SODDING FOR TURF AREAS FOR DIRECTIVES ON LAWN ESTABLISHMENT

LEGEND

- EXISTING EVERGREEN TREE
- EXISTING DECIDUOUS TREE
- EXISTING TREE TO BE REMOVED
- PROPOSED SHRUB
- PROPOSED TREE
- PROPOSED TREE LINE
- —LOD— LIMIT OF DISTURBANCE
- — 401 — PROPOSED CONTOURS
- — SB — 150 FT STREAM BUFFER

PLANTING ZONES (POND A)

REGULAR INUNDATION (RI)	(OBL EMERGENT HERB SPECIES) EL. 403.0 - 404.5 POND A
PERIODIC INUNDATION (PI)	(OBL, FACW & FAC SPECIES) EL. 404.5 - 407.5 POND A
PERIODIC INUNDATION FLOODPLAIN (PIF)	(OBL, FACW & FAC) EL. 398.0 - 405.0
INFREQUENT INUNDATION (II)	(FAC & UPL SPECIES) EL. 407.5 - 410.0 POND A

PLANTING ZONES (UPLAND)

- LAWN

LD-73-2

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
M Green 8/12/15 Reviewed Date
8/13/2015 Approved Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
M Green 8/12/15 Reviewed Date
8/13/2015 Approved Date

Administrative Requirements:
M Green 8/12/15 Reviewed Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

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PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

DAM		JAH
Landscape Architect	Date	Checked By:
Architect	Date	Checked By:
DMH		SAS
Engineer	Date	Checked By:
DLW		WMM
Drawn by	Date	Checked By:

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

License No. 3126

Expiration Date 03/20/2016

STATE OF MARYLAND · DAVID M. LEWELL · No. 3126 · LANDSCAPE ARCHITECT

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

5-14-15
Project Manager Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON _____

REVISIONS

Rev. No.	Date	Description

Landscape Plan RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 20'

SC/SWM
SHT. # 20 of 49

FINAL SCANNED:
PLAN SCANNED:
PARK CODE: C10
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BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:38 AM
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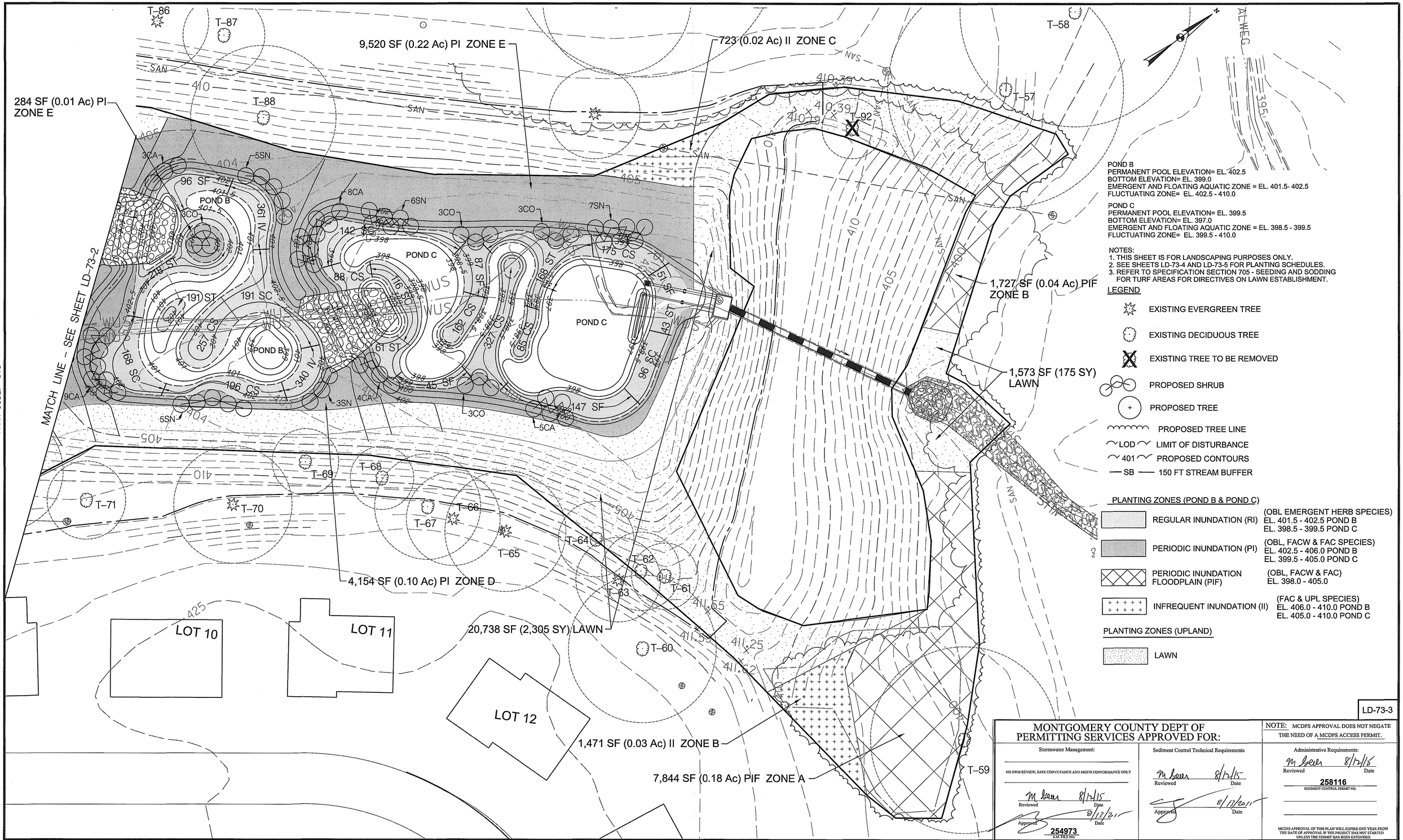

POND B
PERMANENT POOL ELEVATION= EL. 402.5
BOTTOM ELEVATION= EL. 399.0
EMERGENT AND FLOATING AQUATIC ZONE = EL. 401.5- 402.5
FLUCTUATING ZONE= EL. 402.5 - 410.0

POND C
PERMANENT POOL ELEVATION= EL. 399.5
BOTTOM ELEVATION= EL. 397.0
EMERGENT AND FLOATING AQUATIC ZONE = EL. 398.5 - 399.5
FLUCTUATING ZONE= EL. 399.5 - 410.0

NOTES:
1. THIS SHEET IS FOR LANDSCAPING PURPOSES ONLY.
2. SEE SHEETS LD-73-4 AND LD-73-5 FOR PLANTING SCHEDULES.
3. REFER TO SPECIFICATION SECTION 705 - SEEDING AND SODDING FOR TURF AREAS FOR DIRECTIVES ON LAWN ESTABLISHMENT.

LEGEND

- EXISTING EVERGREEN TREE
- EXISTING DECIDUOUS TREE
- EXISTING TREE TO BE REMOVED
- PROPOSED SHRUB
- PROPOSED TREE
- PROPOSED TREE LINE
- LOD — LIMIT OF DISTURBANCE
- 401 — PROPOSED CONTOURS
- SB — 150 FT STREAM BUFFER

PLANTING ZONES (POND B & POND C)

- REGULAR INUNDATION (RI) — (OBL EMERGENT HERB SPECIES) EL. 401.5 - 402.5 POND B; EL. 398.5 - 399.5 POND C
- PERIODIC INUNDATION (PI) — (OBL, FACW & FAC SPECIES) EL. 402.5 - 406.0 POND B; EL. 399.5 - 405.0 POND C
- PERIODIC INUNDATION FLOODPLAIN (PIF) — (OBL, FACW & FAC) EL. 398.0 - 405.0
- INFREQUENT INUNDATION (II) — (FAC & UPL SPECIES) EL. 406.0 - 410.0 POND B; EL. 405.0 - 410.0 POND C

PLANTING ZONES (UPLAND)

- LAWN

LD-73-3

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND M83/78 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/12/2015 Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/12/2015 Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed 8/12/15 Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

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PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
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DESIGN

DAM		JAH
Landscape Architect	Date	Checked By:
Architect	Date	Checked By:
DMH		SAS
Engineer	Date	Checked By:
DLW		WMM
Drawn by	Date	Checked By:

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

License No. 3126

Expiration Date 03/20/2016

STATE OF MARYLAND · DAVID A. NITSCHKE · No. 3126 · LANDSCAPE ARCHITECT

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

Landscape Plan RC-73

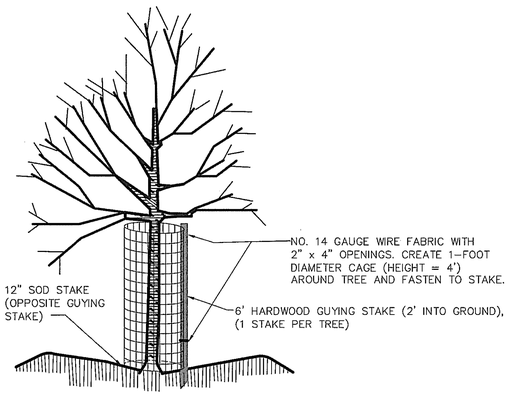
CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 20'

SC/SWM
SHT. # 21 of 49

BY: $USERNAMES

PLOTTED: Friday, May 08, 2015 AT 09:39 AM
FILE: \\balsrv04\y2003\2003\05050_lcc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pLD-003_RC73-DLW.dgn



NOTES:
1. CAGE SHALL BE NO. 14 GAUGE WIRE FABRIC WITH 2"x 4"OPENINGS.
2. CAGE HEIGHT SHALL BE 4' (MIN.)
3. CREATE A 1–FOOT DIAMETER CAGE AROUND TREE.
4. FOR MULTI–STEM TREES AND SHRUBS OR TREES WITH LEADERS BELOW 4', USE WIDER CAGE TO LEAVE A 1–FOOT DIAMETER AROUND TREE.
5. CAGE SHALL BE FASTENED TO STAKE WITH TWO (MIN.) 11–INCH TWIST TIES, ONE AT TOP AND ONE AT 6"(MIN.) ABOVE THE GROUND.
6. INSTALL 6' HARDWOOD GUYING STAKE, 2' INTO GROUND, 1 STAKE (MIN.) PER CAGE.
7. ENSURE CAGE IS FASTENED TO THE GROUND TO PREVENT UPLIFT BY DEER BY INSTALLING A 12"SOD STAKE OPPOSITE THE GUYING STAKE.
8. FOR TREES LARGER THAN 3"CALIPER WITH NO BRANCHING BELOW 4', CAGE CAN BE SUBSTITUTED WITH DEER BARK PROTECTORS (ITEMS #bg48, BY A.M. LEONARD) OR EQUAL.
9. DO NOT DAMAGE TREE DURING INSTALLATION.
10. CAGES TO BE REMOVED ONLY AT DIRECTION OF FOREST ECOLOGIST.

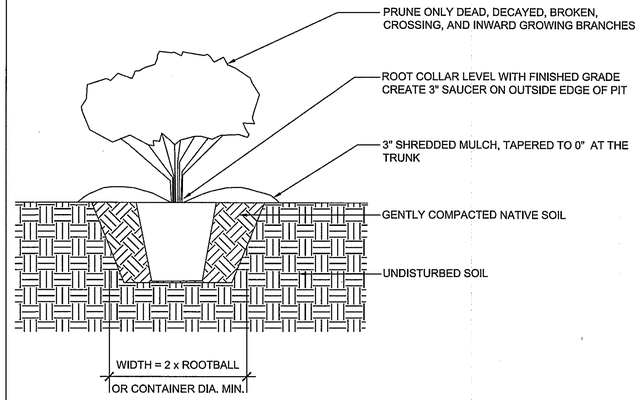
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
Department of Park and Planning, Montgomery County, Maryland

PARK PLANNING & DEVELOPMENT DIVISION
9500 BRUNETT AVENUE
SILVER SPRING, MD 20901

DATE APPROVED
CHIEF ENGINEER
DIRECTOR OF PARKS

DEER PROTECTION CAGE

REVISED	DATE	STANDARD NO.



NOTES:
1. REMOVE ALL POTS AND WIRE AND CUT CONTAINER CLEANLY WAY FROM ROOTS.
2. REMOVE BURLAP FROM TOP HALF OF ROOT BALL.
3. CONTAINER PLANTINGS MAKE 4 TO 5 VERTICAL CUTS TO THE ROOT BALL BEFORE SETTING IN PLACE.
4. PRUNE ALL DAMAGED, DISEASED, OR WEAK LIMBS AND ROOTS.
5. CLEANLY PRUNE ALL DAMAGED ROOT ENDS TEASE ROOTS OF CONTAINER GROWN STOCK.
6. DO NOT ALLOW ROOTS TO DRY OUT DURING INSTALLLATION PROCESS.
7. DEEP WATER AFTER PLANTING.

LANDSCAPE SHRUB N. T.S.
The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
Detail No.
OCTOBER 2007

REGULAR INUNDATION ZONE -- POND A

Plant Key	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Size	Type	Placement
NATIVE RIPARIAN HERBS							
AA	287	*Acorus americanus*	sweet flag	OBL	2"	Plug	As per plan, 18" O.C.
CS	257	*Carex stricta*	tussock sedge	OBL	2"	Plug	As per plan, 18" O.C.
IV	706	*Iris versicolor*	blue flag	OBL	2"	Plug	As per plan, 12" O.C.
SC	102	*Saururus cernuus*	lizard's tail	OBL	2"	Plug	As per plan, 24" O.C.
ST	181	*Scirpus tabernaemontani*	soft stem bulrush	OBL	2"	Plug	As per plan, 24" O.C.
	1,533	**=total**					

REGULAR INUNDATION ZONE -- POND B

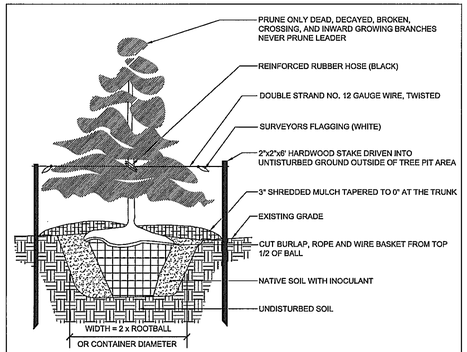
Plant Key	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Size	Type	Placement
NATIVE RIPARIAN HERBS							
CS	453	*Carex stricta*	tussock sedge	OBL	2"	Plug	As per plan, 18" O.C.
IV	701	*Iris versicolor*	blue flag	OBL	2"	Plug	As per plan, 12" O.C.
SC	359	*Saururus cernuus*	lizard's tail	OBL	2"	Plug	As per plan, 24" O.C.
SF	96	*Scirpus fluviatilis*	river bulrush	OBL	2"	Plug	As per plan, 24" O.C.
ST	218	*Scirpus tabernaemontani*	soft stem bulrush	OBL	2"	Plug	As per plan, 24" O.C.
	1,827	**=total**					

REGULAR INUNDATION ZONE -- POND C

Plant Key	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Size	Type	Placement
NATIVE RIPARIAN HERBS							
CS	837	*Carex stricta*	tussock sedge	OBL	2"	Plug	As per plan, 18" O.C.
SC	354	*Saururus cernuus*	lizard's tail	OBL	2"	Plug	As per plan, 24" O.C.
SF	330	*Scirpus fluviatilis*	river bulrush	OBL	2"	Plug	As per plan, 24" O.C.
ST	272	*Scirpus tabernaemontani*	soft stem bulrush	OBL	2"	Plug	As per plan, 24" O.C.
	1,793	**=total**					

PERIODIC INUNDATION - ZONE A Size (acres): 0.04

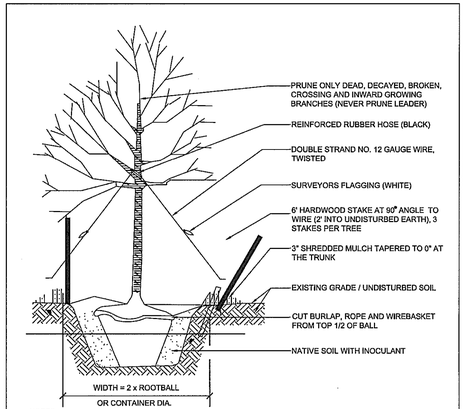
Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	TYPE	Placement
40 lbs.	**NATIVE PERMANENT SEED**						
	20	0.4	*Carex vulpinoidea*	fox sedge	OBL	SEED	LB. of P.L.S. 76%
	20	0.3	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	0.2	*Leersia oryzoides*	rice cutgrass	OBL	SEED	LB. of P.L.S. 76%
	20	0.3	*Panicum clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	15	0.2	*Panicum virgatum*	switchgrass	FAC	SEED	LB. of P.L.S. 76%
	10	0.2	*Scirpus cyperinus*	wool grass	FACW	SEED	LB. of P.L.S. 76%
	100.0	**1.6**	**= total**				



SECTION N.T.S.

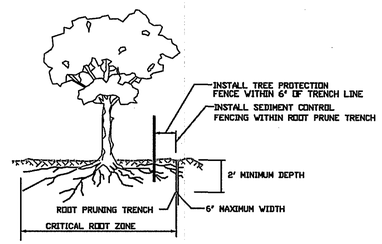
NOTES:
1. TREES UP TO 12' HT. USE 2 STAKES PER TREE, GUY TREES 12' - 20' HT. WITH 3 GUY STAKES PER TREE, GUY TREES OVER 20' HT' WITH 3 GROUND ANCHORS OR DEAD MEN PER TREE.
2. STAKES AND WIRES MUST BE REMOVED NO LATER THAN 12 MONTHS AFTER PLANTING.
3. PLANTING HOLE SHALL BE DUG BY A BACKHOE OR OTHER MACHINE AND FINISHED BY HAND.
4. IF SURROUNDING SOIL IS COMPACTED AS DETERMINED BY M-NCPPC CONSTRUCTION MANAGER, AN AREA UP TO 5 TIMES THE DIAMETER OF THE ROOT MASS SHALL BE EXCAVATED OR ROTOTILLED TO A 1' DEPTH.
5. DO NOT DAMAGE OR CUT LEADER.
6. ROOT FLAIR EVEN WITH LEVEL OF UNDISTURBED GROUND.

EVERGREEN PLANTS N.T.S.
The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
Detail No.
SEPTEMBER 2008



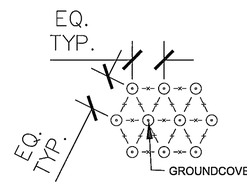
NOTES:
1. STAKES AND WIRES MUST BE REMOVED NO LATER THAN 12 MONTHS AFTER PLANTING.
2. PLANTING HOLE SHALL BE DUG BY A BACKHOE OR OTHER MACHINE AND FINISHED BY HAND.
3. IF SURROUNDING SOIL IS COMPACTED AS DETERMINED BY M-NCPPC PLANNING DEPT INSPECTOR OR PARKS DEPT FOREST ECOLOGIST, AN AREA UP TO 5 TIMES THE DIA. OF THE ROOT MASS SHALL BE EXCAVATED OR ROTOTILLED TO A 1' DEPTH AND THE SOIL SHALL BE AMENDED.
4. DO NOT DAMAGE OR CUT LEADER.
5. ROOT FLAIR EVEN WITH LEVEL OF UNDISTURBED GROUND.

DECIDUOUS PLANTS - (2 ½" Caliper or Larger)
The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
Detail No.
DECEMBER 2007



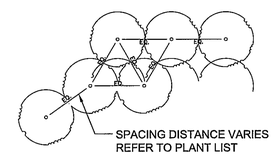
NOTES:
1. RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
2. BOUNDARIES OF RETENTION AREAS TO BE STAKED, FLAGGED AND/OR FENCED PRIOR TO TRENCHING.
3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED IN FIELD WITH M-NCPPC.
4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR ORGANIC SOIL.
5. ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.

ROOT PRUNING



REFER TO PLANT LIST FOR SPACING.

GROUNDCOVER SPACING



SHRUB SPACING

LD-73-4

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/12/2015 Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 9/13/2015 Date

Administrative Requirements:
Reviewed 8/12/15 Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN		
DAM		JAH
Landscape Architect	Date	Checked By:
Architect	Date	Checked By:
DMH		SAS
Engineer	Date	Checked By:
DLW		WMM
Drawn by	Date	Checked By:

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed landscape architect under the laws of the State of Maryland.
License No. 3126
Expiration Date 03/20/2016
STATE OF MARYLAND — DAVID L. WELL — No. 3126 — LANDSCAPE ARCHITECT

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL
Project Manager 5-14-15 Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON _____

REVISIONS

Rev. No.	Date	Description

Landscape Notes and Details RC-73
CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: N.T.S.

SC/SWM
SHT. # 22 of 49

PLOTTED: Friday, May 08, 2015 AT 09:39 AM
FILE: \\balrsn04\d000\2000\05000_loc\RS-CM SWM Contract RC-C\RC-73\cadd\plans\pLD-001_RC73.dgn

PERIODIC INUNDATION FLOODPLAIN - ZONE A — Size (acres): 0.18

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	TYPE	Placement
40 lbs.	NATIVE PERMANENT SEED						
	15	1.2	*Carex vulpinoidea*	fox sedge	OBL	SEED	LB. of P.L.S. 76%
	20	1.4	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	20	1.4	*Elymus virginicus*	virginia wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	1.1	*Leersia oryzoides*	rice cutgrass	OBL	SEED	LB. of P.L.S. 76%
	10	0.7	*Panicum clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	10	0.7	*Panicum virgatum*	switchgrass	FAC	SEED	LB. of P.L.S. 76%
	10	0.7	*Scirpus cyperinus*	wool grass	FACW	SEED	LB. of P.L.S. 76%
	100.0	**7.2**	**= total**				

PERIODIC INUNDATION - ZONE B — Size (acres): 0.04

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	TYPE	Placement
40 lbs.	NATIVE PERMANENT SEED						
	20	0.4	*Carex vulpinoidea*	fox sedge	OBL	SEED	LB. of P.L.S. 76%
	20	0.3	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	0.2	*Leersia oryzoides*	rice cutgrass	OBL	SEED	LB. of P.L.S. 76%
	20	0.3	*Panicum clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	15	0.2	*Panicum virgatum*	switchgrass	FAC	SEED	LB. of P.L.S. 76%
	10	0.2	*Scirpus cyperinus*	wool grass	FACW	SEED	LB. of P.L.S. 76%
	100.0	**1.6**	**= total**				

PERIODIC INUNDATION FLOODPLAIN - ZONE B — Size (acres): 0.04

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	TYPE	Placement
40 lbs.	NATIVE PERMANENT SEED						
	15	0.2	*Carex vulpinoidea*	fox sedge	OBL	SEED	LB. of P.L.S. 76%
	20	0.3	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	20	0.3	*Elymus virginicus*	virginia wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	0.2	*Leersia oryzoides*	rice cutgrass	OBL	SEED	LB. of P.L.S. 76%
	10	0.2	*Panicum clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	10	0.2	*Panicum virgatum*	switchgrass	FAC	SEED	LB. of P.L.S. 76%
	10	0.2	*Scirpus cyperinus*	wool grass	FACW	SEED	LB. of P.L.S. 76%
	100.0	**1.6**	**= total**				

PERIODIC INUNDATION - ZONE C — Size (acres): 0.04

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	TYPE	Placement
40 lbs.	NATIVE PERMANENT SEED						
	20	0.4	*Carex vulpinoidea*	fox sedge	OBL	SEED	LB. of P.L.S. 76%
	20	0.3	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	0.2	*Leersia oryzoides*	rice cutgrass	OBL	SEED	LB. of P.L.S. 76%
	20	0.3	*Panicum clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	15	0.2	*Panicum virgatum*	switchgrass	FAC	SEED	LB. of P.L.S. 76%
	10	0.2	*Scirpus cyperinus*	wool grass	FACW	SEED	LB. of P.L.S. 76%
	100.0	**1.6**	**= total**				

PERIODIC INUNDATION - ZONE D — Size (acres): 0.10

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	TYPE	Placement
40 lbs.	NATIVE PERMANENT SEED						
	20	0.8	*Carex vulpinoidea*	fox sedge	OBL	SEED	LB. of P.L.S. 76%
	20	0.8	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	0.6	*Leersia oryzoides*	rice cutgrass	OBL	SEED	LB. of P.L.S. 76%
	20	0.8	*Panicum clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	15	0.6	*Panicum virgatum*	switchgrass	FAC	SEED	LB. of P.L.S. 76%
	10	0.4	*Scirpus cyperinus*	wool grass	FACW	SEED	LB. of P.L.S. 76%
	100.0	**4**	**= total**				

PERIODIC INUNDATION - ZONE E — Size (acres): 0.23

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	TYPE	Placement
40 lbs.	NATIVE PERMANENT SEED						
	20	1.8	*Carex vulpinoidea*	fox sedge	OBL	SEED	LB. of P.L.S. 76%
	20	1.8	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	1.4	*Leersia oryzoides*	rice cutgrass	OBL	SEED	LB. of P.L.S. 76%
	20	1.8	*Panicum clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	15	1.4	*Panicum virgatum*	switchgrass	FAC	SEED	LB. of P.L.S. 76%
	10	0.9	*Scirpus cyperinus*	wool grass	FACW	SEED	LB. of P.L.S. 76%
	100.0	**9.2**	**= total**				

INFREQUENT INUNDATION - ZONE A — Size (acres): 0.02

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Type	Placement
40 LBS	NATIVE PERMANENT SEED						
	10	0.1	*Andropogon virginicus*	broomsedge	FACU	SEED	LB. of P.L.S. 76%
	10	0.1	*Dichanthelium clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	20	0.2	*Elymus canadensis*	Canada wild rye	FAC	SEED	LB. of P.L.S. 76%
	20	0.1	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	0.1	*Sorghastrum nutans*	Indiangrass	UPL	SEED	LB. of P.L.S. 76%
	10	0.1	*Schizachyrium scoparium*	little bluestem	FACU	SEED	LB. of P.L.S. 76%
	15	0.1	*Tridens flavus*	purple top	FACU	SEED	LB. of P.L.S. 76%
	100	**0.8**	**= total**				

P.L.S. = Pure Live Seed

INFREQUENT INUNDATION - ZONE B — Size (acres): 0.03

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Type	Placement
40 LBS	NATIVE PERMANENT SEED						
	10	0.1	*Andropogon virginicus*	broomsedge	FACU	SEED	LB. of P.L.S. 76%
	10	0.1	*Dichanthelium clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	20	0.2	*Elymus canadensis*	Canada wild rye	FAC	SEED	LB. of P.L.S. 76%
	20	0.2	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	0.2	*Sorghastrum nutans*	Indiangrass	UPL	SEED	LB. of P.L.S. 76%
	10	0.1	*Schizachyrium scoparium*	little bluestem	FACU	SEED	LB. of P.L.S. 76%
	15	0.2	*Tridens flavus*	purple top	FACU	SEED	LB. of P.L.S. 76%
	100	**1.2**	**= total**				

P.L.S. = Pure Live Seed

INFREQUENT INUNDATION - ZONE C — Size (acres): 0.02

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Type	Placement
40 LBS	NATIVE PERMANENT SEED						
	10	0.1	*Andropogon virginicus*	broomsedge	FACU	SEED	LB. of P.L.S. 76%
	10	0.1	*Dichanthelium clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	20	0.2	*Elymus canadensis*	Canada wild rye	FAC	SEED	LB. of P.L.S. 76%
	20	0.2	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	0.1	*Sorghastrum nutans*	Indiangrass	UPL	SEED	LB. of P.L.S. 76%
	10	0.1	*Schizachyrium scoparium*	little bluestem	FACU	SEED	LB. of P.L.S. 76%
	15	0.1	*Tridens flavus*	purple top	FACU	SEED	LB. of P.L.S. 76%
	100	**0.9**	**= total**				

P.L.S. = Pure Live Seed

NATIVE TREES - LD 73-2

Symbol	Species Quantity	Botanical Name	Common Name	Size	Type	Placement
		TREES				
AR	1	*Acer rubrum*	red maple	6' ht.	Container grown	As shown on plan
QA	4	*Quercus alba**	white oak	6' ht.	Container grown	As shown on plan
QR	3	Quercus rubra*	red oak	6' ht.	Container grown	As shown on plan
	8	**=Total**				

* = Fall Digging Hazard

NATIVE SHRUBS Pond A

Symbol	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Size	Type	Placement
		SHRUBS					
CO	8	*Cephalanthus occidentalis*	button bush	OBL	18"	Container grown	As Shown on Plan
CA	9	*Cornus amomum*	silky dogwood	FACW	18"	Container grown	As Shown on Plan
SN	14	*Salix nigra*	black willow	OBL	18"	Container grown	As Shown on Plan
	31	**=total**					

NATIVE SHRUBS POND B

Symbol	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Size	Type	Placement
		SHRUBS					
CO	3	*Cephalanthus occidentalis*	button bush	OBL	18"	Container grown	As Shown on Plan
CA	12	*Cornus amomum*	silky dogwood	FACW	18"	Container grown	As Shown on Plan
SN	13	*Salix nigra*	black willow	OBL	18"	Container grown	As Shown on Plan
	28	**=total**					

NATIVE SHRUBS POND C

Symbol	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Size	Type	Placement
		SHRUBS					
CO	9	*Cephalanthus occidentalis*	button bush	OBL	18"	Container grown	As Shown on Plan
CA	17	*Cornus amomum*	silky dogwood	FACW	18"	Container grown	As Shown on Plan
SN	13	*Salix nigra*	black willow	OBL	18"	Container grown	As Shown on Plan
	39	**=total**					

LD-73-5

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
M Green 8/12/15 Reviewed Date
9/17/2015 Approved Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
M Green 8/12/15 Reviewed Date
Approved Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
M Green 8/12/15 Reviewed Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

DAM		JAH
Landscape Architect	Date	Checked By:
Architect	Date	Checked By: DMH
Engineer	Date	Checked By: SAS
DLW		WMM
Drawn by	Date	Checked By:

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

License No. 3126

Expiration Date 03/20/2016

STATE OF MARYLAND — DONALD A. MORRELL — No. 3126 — LANDSCAPE ARCHITECT

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

5-14-15
Project Manager Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON_____

REVISIONS

Rev. No.	Date	Description

Landscape Notes and Details RC-73
CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: N.T.S.

SC/SWM
SHT. # 23 of 49

FINAL SCANNED:
PLAN SCANNED:
PARK CODE: C10
C:\X_DATA\Standard Cover Sheet for Drawings.dwg Model Plotted By: dblock, 2/17/2010 3:28 PM, ----
BY: $USERNAMES

PLOTTED: Friday, May 08, 2015 AT 09:40 AM
FILE: \\belserv04\v2005\2003\05050_loc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pLD-005_RC73.dgn

FINAL SCANNED:

PLAN SCANNED:

PARK CODE: C10

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 2
Boring ____ of 280

Contract No. AX3765C60 Project Description ICC CM-ES-CS: Buena Vista Drive RC-73)

Boring No. RC-73 B-1 Station/Offset ____ Coordinates N 528379 E 1269175

Boring By E2CR, INC

Surface Elevation 413.3 Date Started 7/26/10
Date Completed 7/26/10

Driller J. Sies
Rig Type CME 450
Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
0.0	413.3	0	7/26/10

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS	DEPTH	CASING BLOWS / FOOT
		Dry, Red Brown, Sandy CLAY, with Gravel	1	6-6 7-7	0.0- 2.0	16	3" top soil	1	
2.0	411.30							2	
		Moist, Red Brown, Sandy CLAY, with Gravel, Trace Organics	2	9-9 8-9	2.0- 4.0	18	NMC= 15.8% LL= 31 PI= 8 % Passing #200= 63	3	
								4	
			3	10-10 18-18	4.0- 6.0	18	NMC= 9.5% LL= 28 PI= 7 % Passing #200= 32	5	
6.0	407.30							6	
		Moist, Tan Brown, Sandy CLAY; Trace Organics, Gravel and Roots	4	8-8 8-4	6.0- 8.0	16		7	
8.0	405.30							8	
		Grey Brown, Sandy CLAY, Trace Organics	5	2-2 3-5	8.0- 10.0	14	NMC= 23.8% LL= 32 PI= 9 % Passing #200= 70	9	
10.0	403.30							10	
		Grey Brown, Sandy CLAY	6	3-7 8-9	10.0- 12.0	16		11	
12.0	401.30							12	
		Tan Red Brown, Sandy CLAY, Trace Gravel	7	6-7 8-7	12.0- 14.0	18	NMC= 15.8% LL= 27 PI= 8 % Passing #200= 56	13	
14.0	399.30							14	
		Red Brown, Silty SAND, Trace Organics	8	6-7 3-4	14.0- 16.0	16		15	

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 2 of 2
Boring ____ of 280

Contract No. AX3765C60 Project Description ICC CM-ES-CS: Buena Vista Drive RC-73)

Boring No. RC-73 B-1 Station/Offset ____ Coordinates N 528379 E 1269175

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS	DEPTH	CASING BLOWS / FOOT
		Red Brown, Silty SAND, Trace Organics (Continued)	8	6-7 3-4	14.0- 16.0	16		16	
16.0	397.30						Bottom of soil.	17	
								18	
		Red Brown, Silty SAND, Trace Organics and Gravel	9	12-5 5	18.5- 20.0	8	NMC= 6.1% LL= 28 PI= 10 % Passing #200= 14	19	
20.0	393.30							20	
							Water encountered	21	
								22	
		Wet, Brown, Silty SAND, with Large Rock Pieces 1/2" Angular	10	23-40 50/5	23.5- 25.0	12	NMC= 12.8% LL= 28 PI= 8 % Passing #200= 24	23	
25.0	388.30							24	
								25	
								26	
								27	
								28	
		Moist, Tan Brown, Silty SAND, with Organics	11	18-18 23	28.5- 30.0	16		29	
30.0	383.30							30	
		Bottom of Boring @ 30 feet.					Bottom of Boring. 0hr Water: Dry ; Caved: 11'-0 24 hr Water:____ Caved:____	31	
								32	
								33	

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 2
Boring ____ of 280

Contract No. AX3765C60 Project Description ICC CM-ES-CS: Buena Vista Drive RC-73)

Boring No. RC-73 B-2 Station/Offset ____ Coordinates N 528299 E 1269263

Boring By E2CR, INC

Surface Elevation 413.5 Date Started 7/26/10
Date Completed 7/26/10

Driller J. Sies
Rig Type CME 450
Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
0.0	413.5	0	7/26/10

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS	DEPTH	CASING BLOWS / FOOT
		Dry, Tan Brown, Sandy CLAY, Trace Roots and Gravel	1	8-12 12-14	0.0- 2.0	14	Top soil 3"	1	
2.0	411.50							2	
		Dry, Tan Red Brown, Sandy CLAY, Trace Gravel	2	10-14 14-18	2.0- 4.0	18	NMC= 6.8% LL= 27 PI= 8 % Passing #200= 33	3	
4.0	409.50							4	
		Red Brown, Sandy CLAY, Trace Organics, with Gravel	3	5-7 7-8	4.0- 6.0	16	NMC= 14.3% LL= 30 PI= 8 % Passing #200= 43	5	
6.0	407.50							6	
		Red Brown, Sandy CLAY, Trace Organics and Gravel	4	5-4 4-4	6.0- 8.0	18		7	
8.0	405.50							8	
		Moist, Tan Brown, Sandy CLAY, with Gravel and Grey Deposits	5	2-3 4-3	8.0- 10.0	16	NMC= 18.7% LL= 29 PI= 9 % Passing #200= 49	9	
10.0	403.50							10	
		Moist, Tan Brown, Sandy CLAY, with Gravel, Organics, and Grey Deposits	6	2-3 3-4	10.0- 12.0	14		11	
12.0	401.50							12	
		Moist, Tan Brown, Sandy CLAY, with Organics	7	3-3 4-4	12.0- 14.0	18	NMC= 22.6% LL= 34 PI= 12 % Passing #200= 69	13	
14.0	399.50							14	
		Moist, Tan Brown, Sandy CLAY, with Organics	8	6-6 4-6	14.0- 16.0	16		15	

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 2 of 2
Boring ____ of 280

Contract No. AX3765C60 Project Description ICC CM-ES-CS: Buena Vista Drive RC-73)

Boring No. RC-73 B-2 Station/Offset ____ Coordinates N 528299 E 1269263

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS	DEPTH	CASING BLOWS / FOOT
		Moist, Tan Brown, Sandy CLAY, with Organics (Continued)	8	6-6 4-6	14.0- 16.0	16	Bottom of Fill	16	
16.0	397.50							17	
								18	
		Moist, Brown, Sandy CLAY, Trace Organics	9	8-12 7	18.5- 20.0	4		19	
20.0	393.50							20	
								21	
								22	
		Moist, Tan Brown, Silty SAND, with Organics	10	11-16 18	23.5- 25.0	12	NMC= 22.3% LL= 35 PI= 11 % Passing #200= 65	23	
25.0	388.50							24	
								25	
								26	
								27	
								28	
		Moist, Tan Brown, Silty SAND	11	9-11 14	28.5- 30.0	18		29	
30.0	383.50							30	
		Bottom of Boring @ 30 feet.					Bottom of Boring 0hr: Water: Dry Cave 26'-6", 24hr Water____ Cave:____	31	
								32	
								33	

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 2
Boring ____ of 280

Contract No. AX3765C60 Project Description ICC CM-ES-CS: Buena Vista Drive RC-73)

Boring No. RC-73 B-3 Station/Offset ____ Coordinates N 528246 E 1269346

Boring By E2CR, INC

Surface Elevation 413.1 Date Started 7/26/10
Date Completed 7/26/10

Driller J. Sies
Rig Type CME 450
Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
0.0	413.1	0	7/26/10

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS	DEPTH	CASING BLOWS / FOOT
		Dry, Tan Brown, Sandy CLAY, with Roots and Organics	1	2-3 5-5	0.0- 2.0	14	Top Soil 3"	1	
2.0	411.10							2	
		Moist, Brown, Sandy CLAY; with Gravel, Roots, Worms	2	6-6 7-8	2.0- 4.0	12	NMC= 7.6% LL= 36 PI= 13 % Passing #200= 34	3	
4.0	409.10							4	
		Moist, Brown, Sandy CLAY, with Gravel	3	6-7 6-7	4.0- 6.0	12	NMC= 14.4% LL= 29 PI= 9 % Passing #200= 57	5	
6.0	407.10							6	
		Moist, Red Brown, Sandy CLAY, with Organics and Gravel	4	3-4 5-5	6.0- 8.0	16		7	
8.0	405.10							8	
		Moist, Red Brown, Sandy CLAY, with Organics	5	3-4 4-7	8.0- 10.0	16	NMC= 18.7% LL= 30 PI= 10 % Passing #200= 61	9	
10.0	403.10							10	
		Moist, Tan Brown, Sandy CLAY, with Organics	6	2-3 3-4	10.0- 12.0	14		11	
12.0	401.10							12	
		Moist, Tan Brown, Sandy CLAY, with Organics and Gravel	7	7-11 11-10	12.0- 14.0	14	NMC= 10.2% LL= 23 PI= 6 % Passing #200= 37	13	
							Bottom of fill	14	
			8	50/3	14.0- 16.0			15	

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 2 of 2
Boring ____ of 280

Contract No. AX3765C60 Project Description ICC CM-ES-CS: Buena Vista Drive RC-73)

Boring No. RC-73 B-3 Station/Offset ____ Coordinates N 528246 E 1269346

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS	DEPTH	CASING BLOWS / FOOT
		Moist, Tan Brown, Sandy CLAY, with Organics and Gravel (Continued)	8	50/3	14.0- 16.0		Bedrock Refusal. Another Boring B3A was drilled 5'-0" south off center to verify Refusal depth. B3A depth was approximately 17.1. B3 0hr Water: Dry Cave: 9'-0" 24hr Water Cave:____ B3A 0hr Water: Dry Cave: 12'-0" 24hr Water:____ Cave:____	16	
16.0	397.10							17	
		Bottom of Boring @ 15 feet.						18	
								19	
								20	
								21	
								22	
								23	
								24	
								25	
								26	
								27	
								28	
								29	
								30	
								31	
								32	
								33	

SB-73-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:

NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY

Reviewed 8/12/15 Date

Approved 8/13/2015 Date

254973
S.M. FILE NO.

Sediment Control Technical Requirements

Reviewed 8/12/15 Date

Approved 8/12/15 Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:

Reviewed 8/12/15 Date

258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
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PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

BY: $USERNAME$

DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By: DMH
MBM		
Engineer	Date	Checked By: DMH
DEA		
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND — DAVID E. ARMSTRONG — 16493 — PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON ____

REVISIONS

Rev. No.	Date	Description

Soil Borings RC-73

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: N.T.S.

SC/SWM
SHT. # 24 of 49

PLOTTED: Friday, May 08, 2015 AT 09:41 AM
FILE: \\balsrv04\v2005\2005\05050_loc\ES-CM SWM Contract RC-C\RC-73\caddfplans\pSB-0001_RC73.dgn

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ____ of 280

Contract No. AX3765C60 Project Description ICC CM-ES-CS: Buena Vista Drive RC-73)

Boring No. RC-73 B-4 Station/Offset ____ Coordinates N 527992 E 1269015

Boring By E2CR, INC Driller J. Sies
Rig Type CME 450
Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

Surface Elevation 405.9 Date Started 9/24/10
Date Completed 9/24/10

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
		0	9/24/10

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Moist, Brown, fine SAND, Silt	S-1	3-9 10-9	0.0- 2.0	1	
2.0	403.90	Moist, Brown, SILT	S-2	4-5 5-7	2.0- 4.0	20	NMC= 26.4% LL= 36 PI= 15 % Passing #200= 47.9 Dry and Caved at 2.5-ft at 0-hrs
		Tan, Brown, fine Sand	S-3	3-5 4-8	4.0- 6.0	20	NMC= 26.5% LL= 38 PI= 14 % Passing #200= 57.4
6.0	399.90	Moist, Brown, Tan, fine SAND, Silt	S-4	1-5 6-7	6.0- 8.0	16	NMC= 19.3% LL= 30 PI= 14 % Passing #200= 52.1
		Brown, Black and Tan	S-5	3-6 11-31	8.0- 10.0	20	NMC= 15.8% LL= 32 PI= 9 % Passing #200= 54.2
		Moist, Tan, SAND	S-6	11-33 50	10.0- 12.0	18	
12.0	393.90	Bottom of Boring @ 12 feet.					

DEPTH	CASING BLOWS / FOOT
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ____ of 280

Contract No. AX3765C60 Project Description ICC CM-ES-CS: Buena Vista Drive RC-73)

Boring No. RC-73 B-5 Station/Offset ____ Coordinates N 528098 E 1269149

Boring By E2CR, INC Driller J. Sies
Rig Type CME 450
Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

Surface Elevation 403.3 Date Started 9/24/10
Date Completed 9/24/10

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
		0	9/24/10

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Moist, Brown, Tan, fine SAND, Silt	S-1	2-3 3-3	0.0- 2.0	16	
		Tan	S-2	3-3 3-5	2.0- 4.0	16	NMC= 24.3% LL= 33 PI= 10 % Passing #200= 51.7 Dry and Caved at 3-ft at 0-hrs
			S-3	3-4 7-8	4.0- 6.0	18	NMC= 20.7% LL= 34 PI= 7 % Passing #200= 45.9
		Moist, Brown, Tan, White, SAND	S-4	2-4 3-3	6.0- 8.0	16	NMC= 28.3% LL= 38 PI= 12 % Passing #200= 49.2
		Brown, Tan	S-5	5-6 10-14	8.0- 10.0	18	NMC= 20.3% LL= 30 PI= 13 % Passing #200= 48.5
		Brown, Red-Brown, Black, Trace Small Stone	S-6	3-5 14-27	10.0- 12.0	18	
12.0	391.30	Bottom of Boring @ 12 feet.					

DEPTH	CASING BLOWS / FOOT
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Buena Vista Drive (RC-73)

Boring No. RC-73 B-6 Station/Offset ____ Coordinates N 528207 E 1269252

Boring By E2CR, INC Driller J. Sies
Rig Type CME 450
Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

Surface Elevation 401.0 Date Started 9/24/10
Date Completed 9/24/10

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
		0	9/24/10

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Moist, Brown, Tan, fine SAND, Silt, Trace small Stone	S-1	1-3 6-10	0.0- 2.0	14	
		Gray, Tan	S-2	6-5 6-5	2.0- 4.0	16	NMC= 14.6% LL= 30 PI= 6 % Passing #200= 31.4 Dry and Caved at 3-ft at 0-hrs
4.0	397.00	Moist, Gray, Tan, SILT, fine Sand, Trace small Stone	S-3	3-2 4-6	4.0- 6.0	18	NMC= 22.5% LL= 28 PI= 6 % Passing #200= 41.8
			S-4	2-3 4-3	6.0- 8.0	16	NMC= 21.0% LL= 33 PI= 3 % Passing #200= 44.1
8.0	393.00	Moist, Tan, White, fine SAND, Silt	S-5	4-10 14-16	8.0- 10.0	18	NMC= 15.6% LL= 24 PI= 3 % Passing #200= 43.5
		Moist, Brown, Black and Tan, SAND, Trace Small Stone	S-6	10-14 12-18	10.0- 12.0	16	
12.0	389.00	Bottom of Boring @ 12 feet.					

DEPTH	CASING BLOWS / FOOT
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

SB-73-2

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
M Green 8/12/15 Reviewed Date
8/13/2015 Approved Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
M Green 8/12/15 Reviewed Date
8/13/2015 Approved Date

Administrative Requirements:
M Green 8/12/15 Reviewed Date
258116 SEDIMENT CONTROL PERMIT NO.

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND — SEVERO A. SUAREZ — No. 16493 — PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

5-14-15
Project Manager Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON ____

REVISIONS

Rev. No.	Date	Description

Soil Borings RC-73

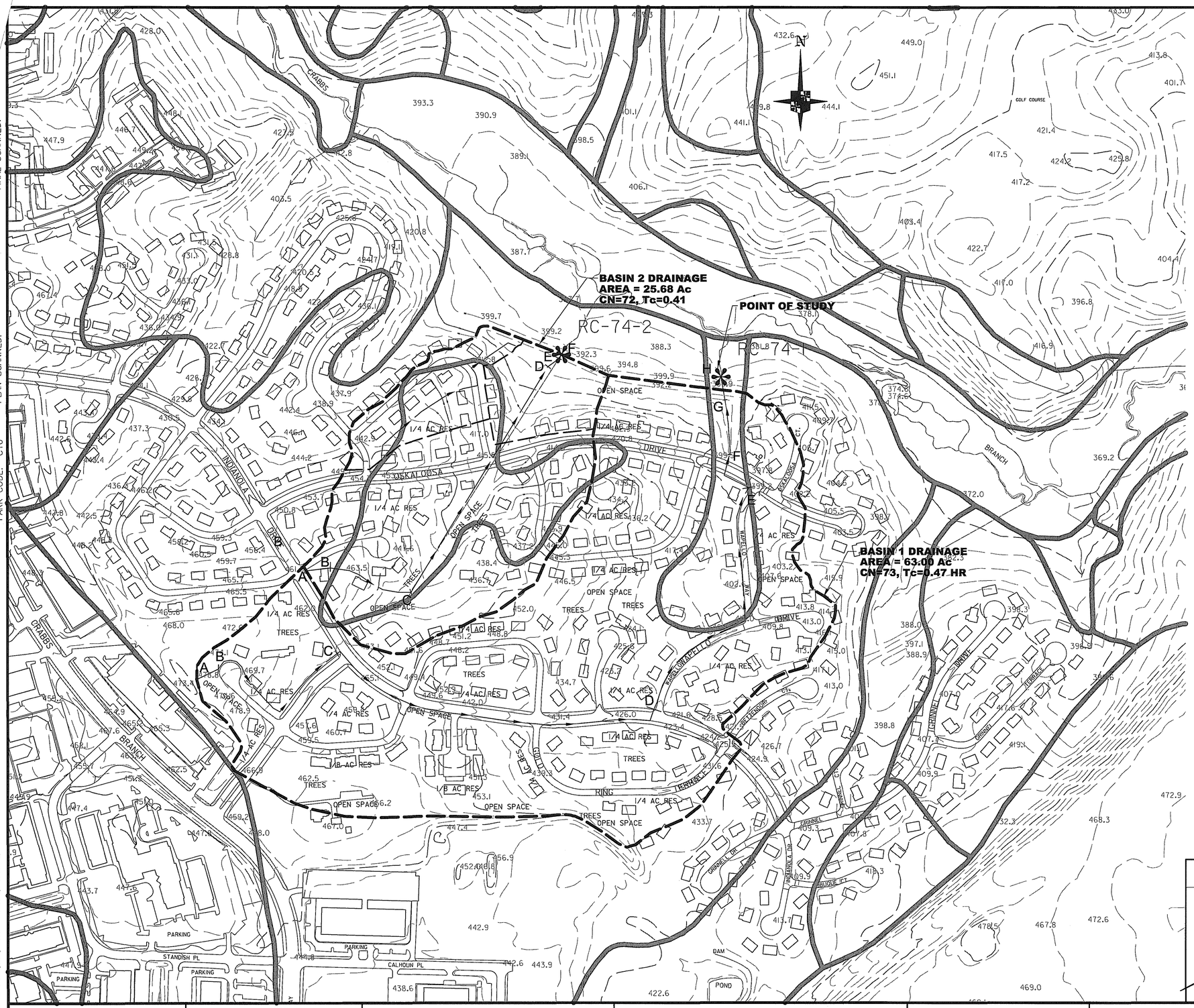
CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: N.T.S.

SC/SWM
SHT. # 25 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:41 AM
FILE: \\baltsrv04\v2008\2008\05080_icc\ES-CM SWM Contract RC-C\RC-73\cadd\plans\pSB-0002_RC73.dgn



LEGEND

- CONTOURS
- B — HYDROLOGIC SOILS GROUP
- DRAINAGE BOUNDARY
- 1/4AC RES — LAND USE
- POINT OF STUDY

DA-74-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
M Green 8/12/15 Reviewed Date
M Green 8/12/15 Reviewed Date
8/13/2015 Approved Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
M Green 8/12/15 Reviewed Date
8/13/2015 Approved Date

Administrative Requirements:
M Green 8/12/15 Reviewed Date
258116 SEDIMENT CONTROL PERMIT NO.

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By: DMH
MBM		
Engineer	Date	Checked By:
DEA		DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND — SEVER D. BLOCK — 16493 — PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

5-14-15
Project Manager Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

Drainage Area Map RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 400'

SC/SWM
SHT. # 26 of 49

PLOTTED: Friday, May 08, 2015 AT 09:42 AM
FILE: \\balsrv04\vol2005\2005\05050_1cn\ES-CM SWM Contract RC-C\RC-74\cadd\plans\pDA-E000_RC74.dgn

TREE INVENTORY			
TREE NO.	SPECIES	DBH	COMMENTS
T-93	BLACK WILLOW (CLUMP-6)	18.5 "	TREE PROTECTION
T-94	TWIN BLACK WILLOW	32 "	REMOVE
T-95	BLACK WILLOW	18 "	REMOVE
T-96	BLACK WILLOW (CLUMP)	12 "	REMOVE
T-97	BLACK WILLOW	15 "	REMOVE
T-98	BLACK WILLOW (CLUMP)	15 "	REMOVE
T-99	WHITE PINE	17 "	TREE PROTECTION
T-100	WHITE PINE	15 "	REMOVE

EX. SAN. LINE

EX. SAN. LINE

100-YR FLOODPLAIN BOUNDARY

150' STREAM BUFFER

EXISTING EMBANKMENT TO REMAIN
TOP OF DAM EL. 399.6

EXISTING EMERGENCY SPILLWAY EL. 395.7

EXISTING EMBANKMENT TO REMAIN
TOP OF DAM EL. 399.8

CONTRACTOR TO ID PROPERTY CORNERS WITH GREEN & WHITE PROPERTY MARKER (TYP.); SEE DETAIL SHT 36 OF 49

BASIN 2

COMBINED INTERNAL SPILLWAY EL. 393.8

EX 100YR WSEL EL. = 396.3

BASIN 1

CONTRACTOR TO ID PROPERTY CORNERS WITH GREEN & WHITE PROPERTY MARKER (TYP.); SEE DETAIL SHT 36 OF 49

EX. END SECTION TO REMAIN

20' ACCESS EASEMENT TO STORM WATER MANAGEMENT BASIN

STORM WATER MANAGEMENT BASIN EASEMENT

MAHASKA DRIVE

OSKALOOSA DRIVE

KANAWHA COURT

TITONIKA WAY

CRABBS BRANCH

EX-74-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:

NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY

M Lewer 8/12/15
Reviewed Date

8/13/2015
Approved Date

254973
S.M. FILE NO.

Sediment Control Technical Requirements

M Lewer 8/12/15
Reviewed Date

8/13/2015
Approved Date

Administrative Requirements:

M Lewer 8/12/15
Reviewed Date

258116
SEDIMENT CONTROL PERMIT NO.

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

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DESIGN		
Landscape Architect	Date	Checked By:
Architect	Date	Checked By: MBM
Engineer	Date	Checked By: DMH
DEA		DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND · DAVID MICHAEL HOWARD · 16493 · PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL	
Project Manager	5-14-15 Date
Construction Manager	Date
Park Manager	Date

ISSUED FOR PROCUREMENT ON _____

REVISIONS		
Rev. No.	Date	Description

Existing Conditions RC-74

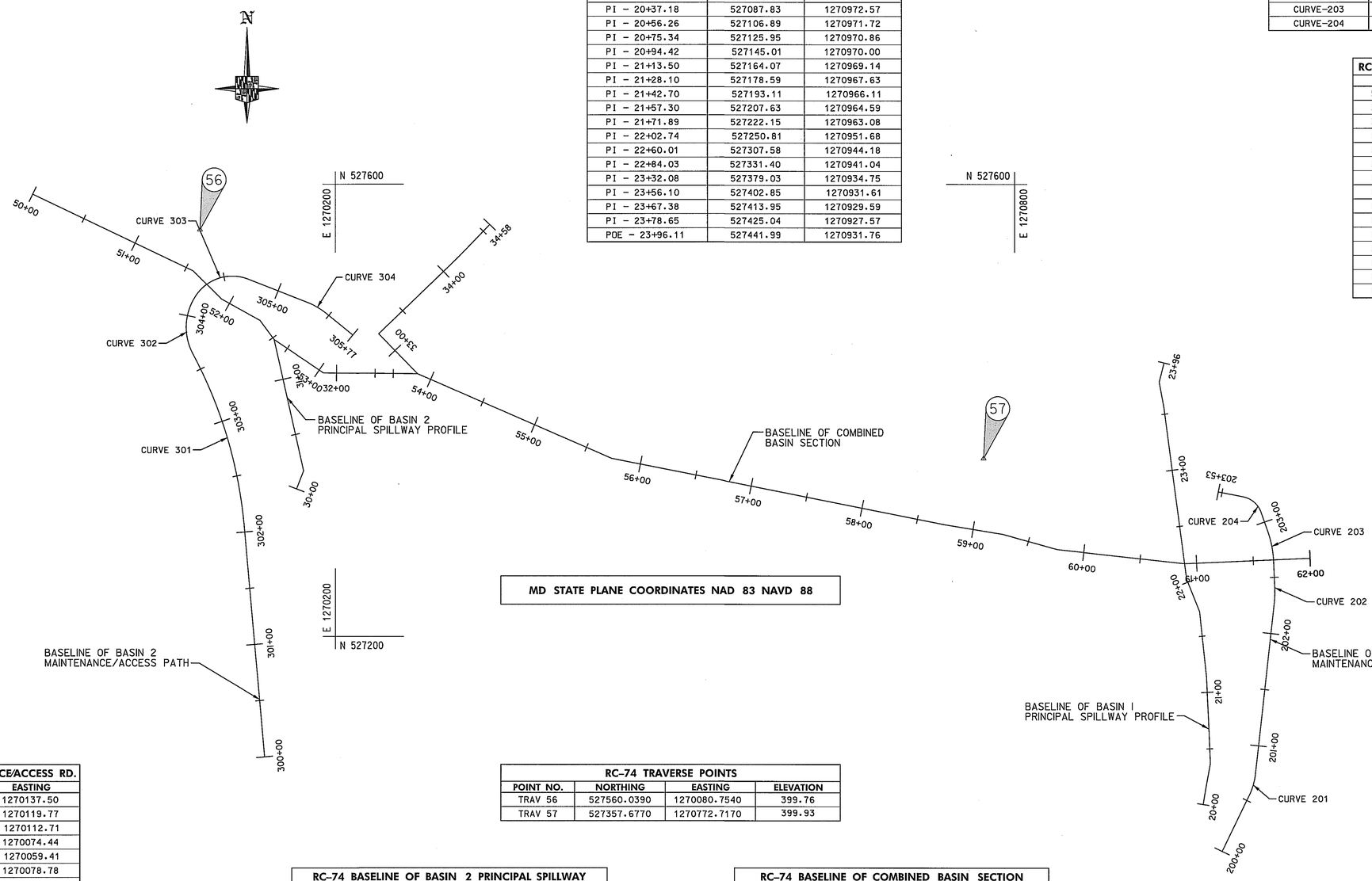
CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 50'

SC/SWM
SHT. # 27 of 49

FINAL SCANNED:
PLAN SCANNED:
PARK CODE: C10
C:\XX_DATA\Standard Cover Sheet for Drawings.dwg Model Plotted By: dblack 2/17/2010 3:28 PM, ----
BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:43 AM
FILE: \\balsrv04\v2005\2005\05050_loc\ES-CM SWM Contract RC-C\RC-74\cadd\plans\pEX-0000_RC74.dgn



MD STATE PLANE COORDINATES NAD 83 NAVD 88

RC–74 BASELINE OF BASIN 1 PRINCIPAL SPILLWAY		
STATION	NORTHING	EASTING
POB – 20+00.00	527051.20	1270966.20
PI – 20+11.15	527062.21	1270967.94
PI – 20+37.18	527087.83	1270972.57
PI – 20+56.26	527106.89	1270971.72
PI – 20+75.34	527125.95	1270970.86
PI – 20+94.42	527145.01	1270970.00
PI – 21+13.50	527164.07	1270969.14
PI – 21+28.10	527178.59	1270967.63
PI – 21+42.70	527193.11	1270966.11
PI – 21+57.30	527207.63	1270964.59
PI – 21+71.89	527222.15	1270963.08
PI – 22+02.74	527250.81	1270951.68
PI – 22+60.01	527307.58	1270944.18
PI – 22+84.03	527331.40	1270941.04
PI – 23+32.08	527379.03	1270934.75
PI – 23+56.10	527402.85	1270931.61
PI – 23+67.38	527413.95	1270929.59
PI – 23+78.65	527425.04	1270927.57
POE – 23+96.11	527441.99	1270931.76

RC–74 BASELINE OF BASIN 1 MAINTENANCE/ACCESS ROAD: CURVE DATA			
CURVE	DELTA	RADIUS	LENGTH
CURVE–201	19°29′53.11″	56.00	19.06
CURVE–202	8°42′02.28″	94.00	14.27
CURVE–203	16°50′30.94″	94.00	27.63
CURVE–204	59°30′32.18″	21.00	21.81

RC–74 BASELINE OF BASIN 1 MAINTENANCE/ACCESS RD.		
STATION	NORTHING	EASTING
POB – 200+00.00	527009.75	1270982.90
PC – 200+55.37	527059.60	1271007.00
PI – 200+64.99	527068.26	1271011.19
PT – 200+74.42	527077.82	1271012.24
PI – 201+14.59	527117.74	1271016.65
PC – 202+26.66	527229.14	1271028.91
PI – 202+33.81	527236.25	1271029.69
PT – 202+40.93	527243.40	1271029.38
PC – 202+63.66	527266.11	1271028.42
PI – 202+77.58	527280.01	1271027.84
PT – 202+91.30	527293.15	1271023.24
PC – 203+09.04	527309.89	1271017.39
PI – 203+21.04	527321.23	1271013.43
PT – 203+30.85	527323.56	1271001.65
POE – 203+53.32	527327.94	1270979.62

RC–74 TRAVERSE POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
TRAV 56	527560.0390	1270080.7540	399.76
TRAV 57	527357.6770	1270772.7170	399.93

RC–74 BASELINE OF BASIN 2 MAINTENANCE/ACCESS RD.		
STATION	NORTHING	EASTING
POB – 300+00.00	527093.40	1270137.50
PC – 302+04.41	527297.04	1270119.77
PI – 302+85.91	527378.23	1270112.71
PRC – 303+65.20	527450.18	1270074.44
PI – 303+97.21	527478.44	1270059.41
PCC – 304+22.14	527503.92	1270078.78
PI – 304+50.67	527526.63	1270096.04
PT – 304+71.08	527516.39	1270122.66
PC – 305+28.59	527495.23	1270176.14
PI – 305+37.60	527491.92	1270184.52
PT – 305+46.46	527486.20	1270191.48
POE – 305+77.39	527466.57	1270215.38

RC–74 BASELINE OF BASIN 2 MAINTENANCE/ACCESS ROAD: CURVE DATA			
CURVE	DELTA	RADIUS	LENGTH
CURVE–301	23°01′55.40″	400.00	160.79
CURVE–302	65°14′42.59″	50.00	56.94
CURVE–303	73°47′18.32″	38.00	48.94
CURVE–304	17°48′23.06″	57.50	17.87

RC–74 BASELINE OF BASIN 2 PRINCIPAL SPILLWAY		
STATION	NORTHING	EASTING
POB – 30+00.00	527330.57	1270165.83
PI – 30+17.17	527346.61	1270171.96
PI – 31+36.00	527462.58	1270146.07
PI – 31+88.55	527433.08	1270189.56
PI – 32+71.40	527432.20	1270272.40
PI – 33+20.61	527467.57	1270238.20
PI – 33+62.92	527496.98	1270268.62
PI – 34+02.23	527524.30	1270296.88
PI – 34+12.03	527531.16	1270303.88
PI – 34+21.83	527538.03	1270310.87
PI – 34+40.01	527551.16	1270323.44
POE – 34+58.18	527564.29	1270336.01

RC–74 BASELINE OF COMBINED BASIN SECTION		
STATION	NORTHING	EASTING
POB – 50+00.00	527591.43	1269933.49
PI – 51+56.83	527523.52	1270074.86
PI – 51+91.87	527498.73	1270099.62
PI – 52+30.78	527479.71	1270133.56
PI – 52+51.98	527462.58	1270146.07
PI – 53+04.54	527433.08	1270189.56
PI – 53+82.83	527433.41	1270267.85
PI – 55+74.23	527357.52	1270443.56
PI – 58+74.15	527299.11	1270737.74
PI – 59+59.13	527286.25	1270821.74
PI – 60+90.63	527256.87	1270949.91
POE – 61+95.05	527260.36	1271054.28

GE-74-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
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Approved 8/13/2015 Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/13/2015 Date

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Administrative Requirements:
Reviewed 8/12/15 Date
258116 SEDIMENT CONTROL PERMIT NO.

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DESIGN

Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Park Manager Date

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

Geometry Plan RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 50'

SC/SWM

SHT. # 28 of 49

PLOTTED: Friday, May 08, 2015 AT 09:43 AM
FILE: \\balsrv04\p0000\0080\05050_sc\ES-CM SWM Contract RC-C\RC-74\cadd\plans\pGE-0001_RC74.dgn

NOTES:

1. FOR PROPOSED RISER DETAILS, SEE SHEETS 32 AND 34 OF 49.
2. FOR PROPOSED LOW FLOW PIPE AND POND DRAIN DETAILS, SEE SHEETS 33 AND 35 OF 49.
3. FOR PROPOSED SIDEWALK, GRASS PAVERS, AND MDSHA STD STRUCTURAL DETAILS, SEE SHEET 36 OF 49.

3A. PRIOR TO ANY OFFSITE GRADING CONTACT MNCPPC CONTRACT MANAGER AT LEAST 72 HOURS IN ADVANCE.

4. FOR ROCK OUTFALL PROTECTION AND PLUNGE POOL DETAILS, SEE SHEET 37 OF 49.
5. DURING CONSTRUCTION OF ROCK OUTFALL PROTECTION, CONTRACTOR SHALL PLACE RIPRAP AND BACKFILL VOID SPACE WITH PLANTING MEDIA SUCH AS TO INSURE STABILITY THROUGH A RANGE OF FLOW CONDITIONS.
6. PRIOR TO COMMENCING SHED RELOCATION, CONTACT THE MNCPPC CM AT LEAST 72 HOURS BEFORE STARTING WORK TO OBTAIN PERMISSION TO PROCEED. CONTRACTOR SHALL RELOCATE THE SHED ONE TIME SUCH THAT IT IS PLACED APPROXIMATELY 6-INCHES FROM THE HOUSE WITH ADEQUATE CLEARANCE FOR LAUNDRY VENT AND DRAINS. THE LEFT EDGE OF THE SHED SHALL MEASURE APPROXIMATELY 7' - 11" FROM THE NORTH-EAST CORNER OF THE HOUSE, AND THE SHED PLACED BETWEEN THE TWO REAR WINDOWS OF THE HOUSE TO PREVENT OBSTRUCTION OF VIEW. THE SHED SHALL BE ORIENTED SUCH THAT THE DOOR OPENS TOWARDS THE BACK OF THE LOT AND AWAY FROM THE HOUSE.
   NOTE: MNCPPC ACCEPTS NO LIABILITY FOR THE EXISTING HOMEOWNER SHED. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO THE SHED DURING THE MOVEMENT PROCESS AND THE CONDITION OF THE SHED NEEDS TO BE MAINTAINED OR REPLACED.
7. PRIOR TO COMMENCING FENCE WORK, CONTACT THE MNCPPC CM AT LEAST 72 HOURS BEFORE STARTING WORK TO OBTAIN PERMISSION TO PROCEED. EXISTING FENCE AND GATE SHALL BE RESTORED IN-KIND AT THE COMPLETIONS OF CONSTRUCTION, AND PLACED ON THE PROPERTY BOUNDARY OR AS NEAR AS POSSIBLE INSIDE THE PROPERTY LINES. TEMPORARY FENCING SHALL BE INSTALLED ALONG THE PROPERTY BOUNDARY DURING CONSTRUCTION ACTIVITIES TO ENCLOSE PORTIONS OF THE YARD NOT AFFECTED BY THE TEMPORARY RIGHT-OF-WAY EASEMENT.
8. EXISTING METAL SURVEY RODS IDENTIFYING PROPERTY CORNERS OF LOT 9 SHALL BE RESET AT FINISHED GRADE PRIOR TO THE END OF CONSTRUCTION.

DRAINAGE SCHEDULE

STRUCTURE TABLE

STRUCT. NO.	DESCRIPTION	TOP OF STRUCT. ELEVATION	INV. IN	INV. OUT	STATION	OFFSET	COMMENTS
EW-1	MDSHA STANDARD TYPE F ENDWALL (MD 358.01)	399.3	395.5	395.5	30+17	00.00	
BASIN 1 RISER	PROPOSED 10'8" X 10'8" CONCRETE OUTFALL CONTROL STRUCTURE	397.9	389.0	386.2	22+56	00.00	
BASIN 2 RISER	PROPOSED 8' X 8' CONCRETE OUTFALL CONTROL STRUCTURE	396.8	391.5	391.1	33+21	00.00	
EW-2	MDSHA MODIFIED TYPE F ENDWALL (MD 358.01)	391.59	389.59	389.59	33+92	00.00	CASE 2 MODIFICATION (MD 358.03)

STABILIZE ACCESS PATH WITH CONCRETE GRID PAVERS BELOW EL. 395.0

PROPOSED 8'X 8' RISER

PROPOSED FOREBAY VOLUME PROVIDED (0.08 AC-FT)

PLUNGE POOL; CLASS I RIPRAP 6'L X 5'W, 3' CUTOFF WALL SEE SHT 37 OF 49

SLIP LINE EX. 18" CMP PR. 14" HDPE SMOOTH LINED PIPE OUTSIDE DIAM.

BASIN 2

EXISTING EMERGENCY SPILLWAY EL. 395.7

PLUNGE POOL; CLASS I RIPRAP 18'L X 15'W, 3' CUTOFF WALL SEE SHT 37 OF 49

PROPOSED 10'8"x10'8" RISER (EX. 72"CMP RISER TO BE REMOVED)

SLIP LINE EX. 42" CMP PER AASHTO M326 PR. 36" HDPE SMOOTH LINED PIPE OUTSIDE DIAM.

PROPOSED FILTER DRAINAGE DIAPHRAGM

REMOVE 36"CMP DOWNSTREAM OF PROPOSED EW-1

ROP II CLASS I RIPRAP 16'L X 19'W 3' CUTOFF WALL SEE SHT 37 OF 49

PROPOSED SHALLOW MARSH VOLUME PROVIDED 0.30 AC-FT

COMBINED INTERNAL SPILLWAY EL. 393.8

PROPOSED SHALLOW MARSH VOLUME PROVIDED 0.31 AC-FT

SAW-CUT EXISTING RESIDENTIAL SIDEWALK; INSTALL REINFORCED SIDEWALK

RELOCATE SHED PER NOTE 6

FILL TO ELEVATION 397 AND PROVIDE POSITIVE DRAINAGE TO POND FACILITY

RELOCATE FENCE NOTE 7

INSTALL CONCRETE GRID PAVERS

ROP II; CLASS I RIPRAP 34'L X 34'W, 3' CUTOFF WALL SEE SHT 37 OF 49

BASIN 1

SAW-CUT EXISTING RESIDENTIAL SIDEWALK INSTALL REINFORCED SIDEWALK

INSTALL CONCRETE GRID PAVERS

PROPOSED ACCESS PATH

OSKALOOSA DRIVE

TITONKA WAY

KANAWHA COURT

CRABBS BRANCH

DRAINAGE SCHEDULE

PIPE

FROM STRUCT. NO.	TO STRUCT. NO.	SIZE	TYPE	LENGTH
BASIN 1 RISER	EX-2	36"	HDPE SLIP LINE	69 LF•
BASIN 2 RISER	EX-1	14"	HDPE SLIP LINE	69 LF•

•INSTALL ADDITIONAL SLIP LINE LENGTH ON EITHER END OF HOST PIPE AND FINISH AND SEAL PER MANUFACTURERS RECOMMENDATIONS/SHTS 32 AND 34 OF 49

DD-74-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
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M Gavis 8/12/15 Reviewed Date
8/13/2015 Approved Date

Sediment Control Technical Requirements
M Gavis 8/12/15 Reviewed Date
8/13/2015 Approved Date

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DESIGN

Landscape Architect	Date	Checked By:
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Expiration Date 05/16/2015

STATE OF MARYLAND · DENNIS E. SAUER · 16493 · REGISTERED PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

5-14-15
Project Manager Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON _____

REVISIONS

Rev. No.	Date	Description

Site Plan RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 50'

SC/SWM
SHT. # 29 of 49

PLOTTED: Friday, May 08, 2015 AT 09:43 AM
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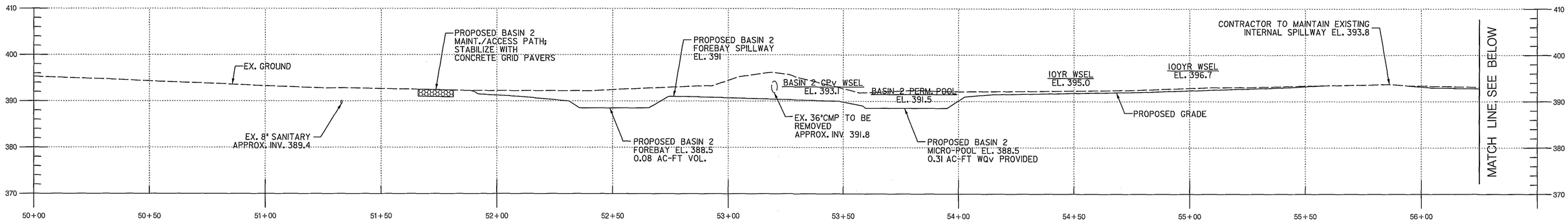
FINAL SCANNED:
BY: $USERNAME$



SECTION THRU RC-74 BASINS

SCALE: H: 1"=20'
V: 1"=10'

DP-74-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
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Reviewed — Date 8/12/15
Approved — Date 8/13/15
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Approved — Date 8/11/15

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DESIGN		
Landscape Architect	Date	Checked By:
Architect	Date	Checked By: MBM
Engineer	Date	Checked By: DMH
DEA		Checked By: DMH
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(301) 495-2535

REVIEW AND APPROVAL
Project Manager — Date 5-14-15
Construction Manager — Date
Park Manager — Date

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

Drainage Profiles RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: AS SHOWN

SC/SWM
SHT. # 30 of 49

PLOTTED: Friday, May 08, 2015 AT 09:44 AM
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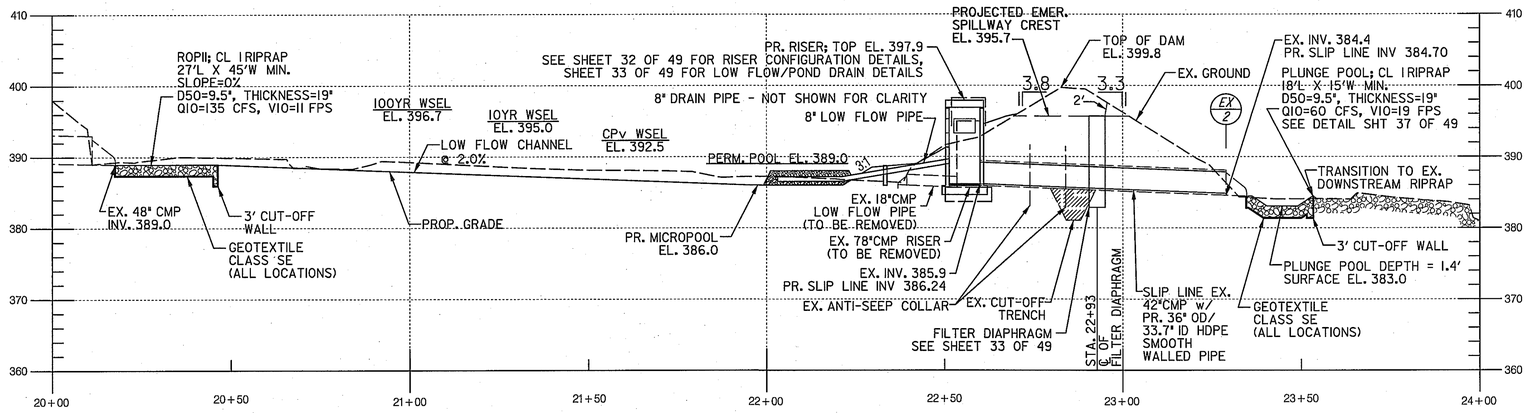
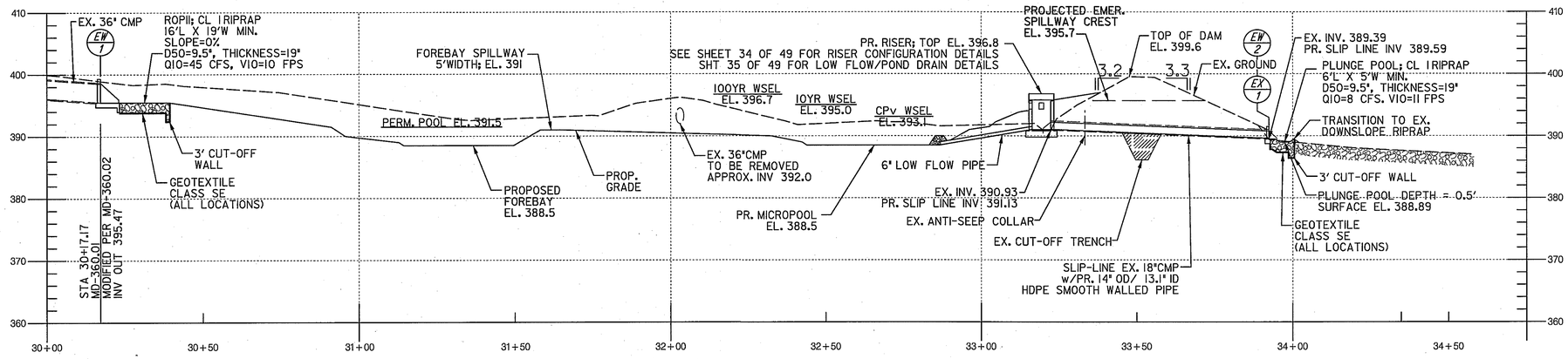


PROFILE THRU BASIN 1 PRINCIPAL SPILLWAY

SCALE: H: 1"=20'
V: 1"=10'



PROFILE THRU BASIN 2 PRINCIPAL SPILLWAY

SCALE: H: 1"=20'
V: 1"=10'

DP-74-2

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

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Sediment Control Technical Requirements
M Green 8/12/15 Reviewed Date
8/17/2015 Approved Date

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DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By:
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Engineer	Date	Checked By:
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Drainage Profiles RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: AS SHOWN

SC/SWM
SHT. # 31 of 49

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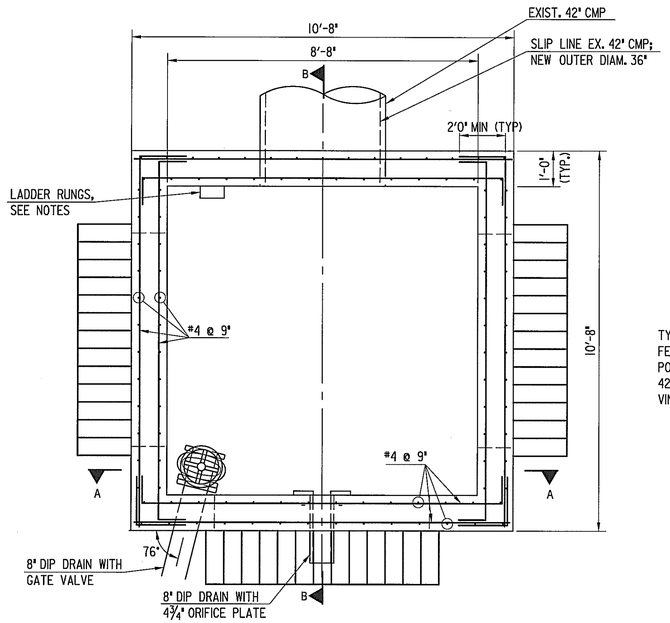
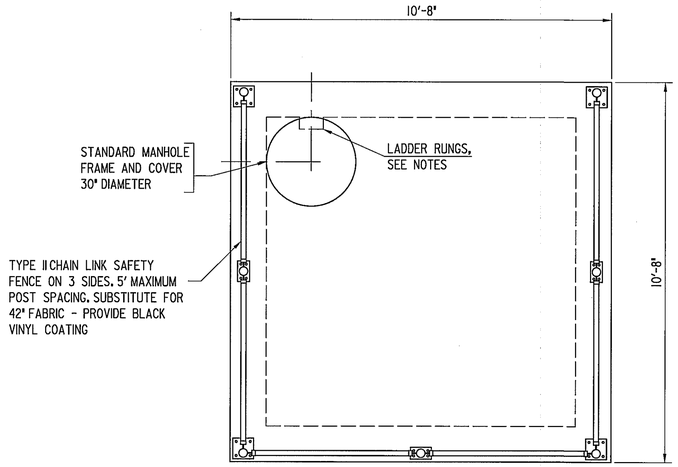
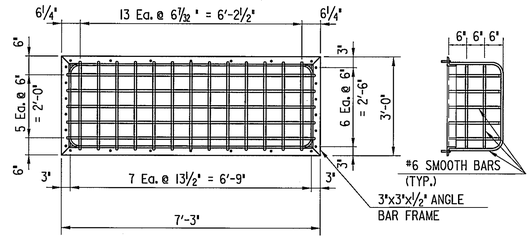


RC74 BASIN I-PLAN



RC74 BASIN I TOP SLAB - PLAN



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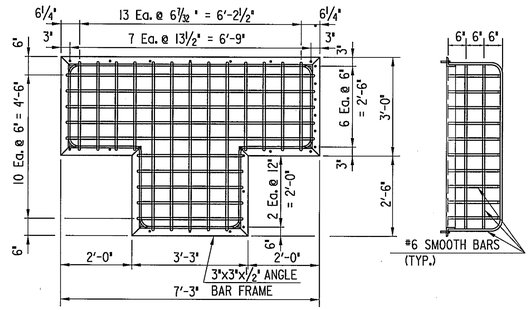
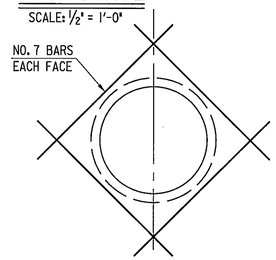


1 EA. REQ'D.

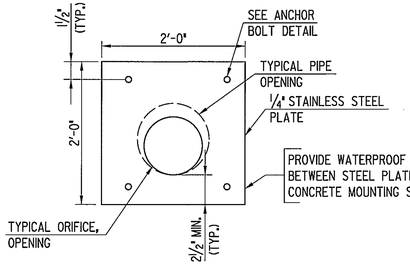
WEIR GRATE

SCALE: ½" = 1'-0"



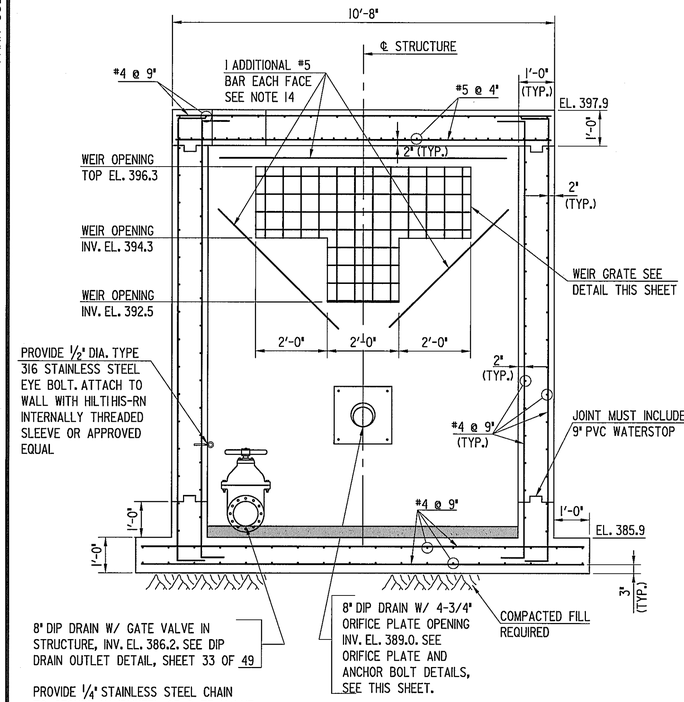
CONCRETE STRUCTURAL NOTES

1. CONCRETE CONSTRUCTION SHALL BE CAST IN PLACE AND DESIGNED, REINFORCED, AND CONSTRUCTED IN ACCORDANCE WITH ACI 350 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
2. CONCRETE SHOWN HEREON SHALL BE 4500 PSI MINIMUM 28 DAY COMPRESSIVE STRENGTH UNLESS OTHERWISE NOTED.
3. REINFORCING STEEL SHALL BE DEFORMED APOXY COATED STEEL BARS CONFORMING TO ASTM A615, GRADE 60.
4. CONCRETE EXPOSED TO WEATHER SHALL HAVE 5% MINIMUM ENTRAINED AIR.
5. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4-INCH.
6. TRASH RACK & WEIR GRATING ASSEMBLIES SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION AND PAINTED WITH 2 COATS OF BATTLESHIP GRAY PAINT.
7. CAST WALLS DIRECTLY AROUND BARREL PIPE TO FORM A WATERTIGHT SEAL.
8. FABRICATOR SHALL PROVIDE LADDER RUNGS IN ACCORDANCE WITH STANDARD MD-383.91 OR MD-383.92.
9. ALL DIP PIPES SHOULD BE CAST WITH RISER WALL. ADD BENTONITE WATERSTOP WRAP AROUND PIPE, LOCATED IN THE CENTER OF THE WALL AT PENETRATIONS.
10. FOR DRAIN OUTLET DETAILS, SEE SHEET 33 OF 49.
11. MEASUREMENT AND PAYMENT SHALL BE INCLUDED UNDER THE LUMP SUM BID ITEM FOR "RC-74 BASIN I SWM OUTFALL STRUCTURE. PAYMENT WILL INCLUDE FULL COMPENSATION FOR ALL EXCAVATION, CONCRETE, REINFORCEMENT, RESTRICTOR PLATE, LOW FLOW AND POND DRAIN, UNDERDRAIN STUBS, FRAMES, GRATES AND COVERS, GRADE SLOPE ADJUSTMENTS, BACKFILL, AND FOR ALL OTHER MATERIAL, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
12. A PROFESSIONAL CIVIL ENGINEER MUST INSPECT REBAR, FORMWORK AND CONCRETE DURING CONSTRUCTION OF STRUCTURE AND PROVIDE A SIGNED AND SEALED INSPECTION REPORT TO MNCPPC AND MCDPS.
13. A PROFESSIONAL GEOTECHNICAL ENGINEER TO PROVIDE CONCRETE TEST BREAK SAMPLE RESULTS FOR ALL CONCRETE POURS OF STRUCTURE AS APPLICABLE TO MNCPPC AND MCDPS.
14. FOR ADDITIONAL REINFORCING BAR DETAILS SEE SHEET 35 OF 49.

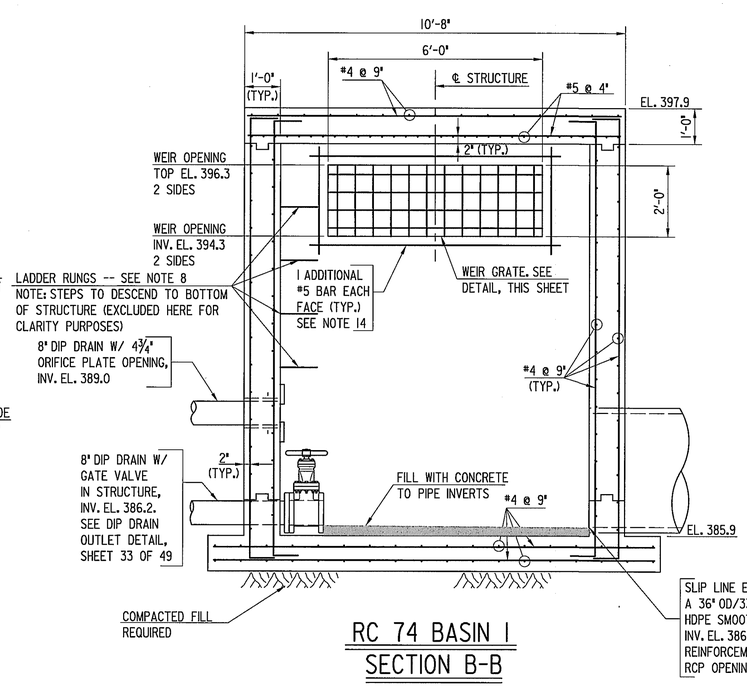


ORIFICE PLATE

SCALE: 1" = 1'-0"

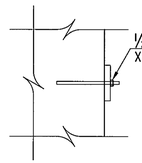


RC 74 BASIN I SECTION A-A



RC 74 BASIN I SECTION B-B

WALL REINFORCEMENT AT CMP AND DIP OPENING



ANCHOR BOLT

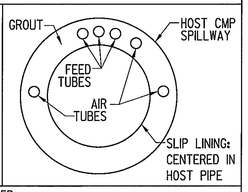
SCALE: ¼" = 1'-0"

SLIP LINING GROUT FEED TUBES

TOTAL LENGTH TO BE LINED	NUMBER OF FEED TUBES
50	1
75	2
100	2
125	3
150	3
175	4
200	4
225	4

FOR CLEAR GROUT SPACE ≥ 4" USE 1.5" TO 2" FEED TUBES

FOR CLEAR GROUT SPACE BETWEEN 2" AND 4" USE 1" FEED TUBES AND ALLOW GROUT ACCESS AT BOTH THE INLET AND THE OUTLET



•PLACE 3 AIR TUBES AT THE TOP AND SIDES OF THE LINER

NOTE: THE CONTRACTOR SHALL PROVIDE END SEALS AT THE OPEN POINTS OF EACH RUN OF PIPE TO BE GROUTED. SLIP LINING AND END SEALING SHALL BE PERFORMED PER MANUFACTURERS RECOMMENDATIONS AND AS DIRECTED BY THE CONSTRUCTION MANAGER.

2 1 0 1 2
SCALE: ½" = 1'-0"

DT-74-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/12/15 Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/12/15 Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed 8/12/15 Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By:
MBM		DMH
Engineer	Date	Checked By:
DEA		DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND — DAVID E. ALLEN — 16493 — PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON _____

REVISIONS

Rev. No.	Date	Description

Details RC-74

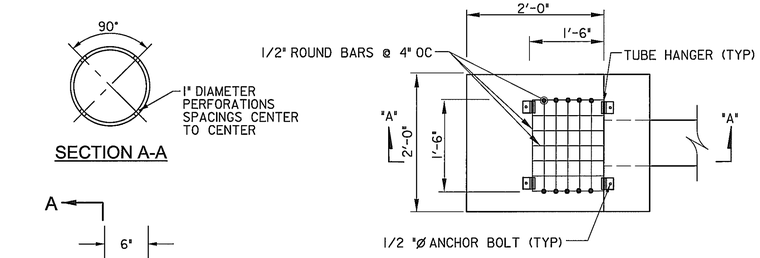
CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: ½" = 1'-0"

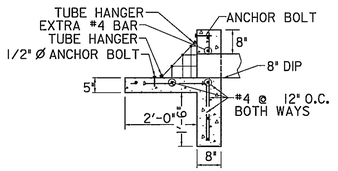
SC/SWM
SHT. # 32 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:46 AM
FILE: \\balrsv04\c0305\0005\05050_tcc\ES-CM SWM Contract RC-C\RC-74\caddi\plans\pST-S001-RC74_2d.dgn



8" DIAMETER PERFORATED PVC PIPE DETAIL



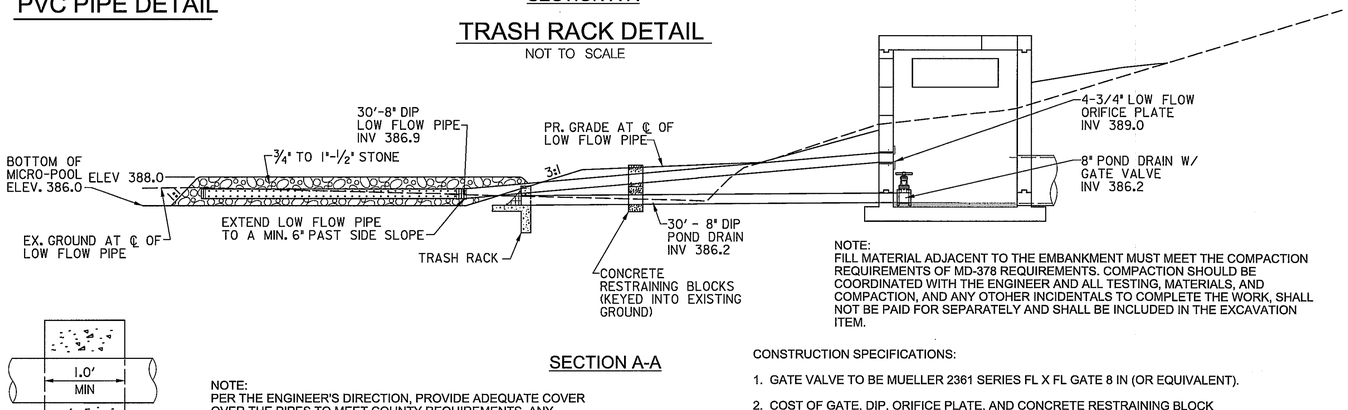
SECTION A-A

TRASH RACK DETAIL

NOT TO SCALE

TRASH RACK NOTES:

1. ALL BARDS SHALL BE NO. 6 SMOOTH BAR AND SPACED 4" ON CENTER.
2. TRASH RACK SHALL BE ATTACHED TO STRUCTURE WITH GALVANIZED ½" ANCHOR BOLTS AND TUBE HANGERS AS SHOWN.
3. SHOP WELD BARS AT CONNECTIONS AND INTERSECTIONS. NO FIELD WELDING WILL BE PERMITTED.
4. ENITER TRASH RACK ASSEMBLY SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
5. STEEL SHALL CONFROM TO ASTM A-36.
6. CONCRETE SHALL BE 4500 PSI MINIMUM 28 DAY COMPRESSIVE STRENGTH.
7. COST OF TRASH RACK IS TO BE INCLUDED IN THE COST OF THE LUMP SUM BID ITEM FOR "EXISTING RISER MODIFICATIONS".
8. WRAP THE PERFORATED PORTION OF PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH.



SECTION A-A

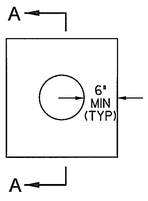
NOTE:
FILL MATERIAL ADJACENT TO THE EMBANKMENT MUST MEET THE COMPACTION REQUIREMENTS OF MD-378 REQUIREMENTS. COMPACTION SHOULD BE COORDINATED WITH THE ENGINEER AND ALL TESTING, MATERIALS, AND COMPACTION, AND ANY OTOHER INCIDENTALS TO COMPLETE THE WORK, SHALL NOT BE PAID FOR SEPARATELY AND SHALL BE INCLUDED IN THE EXCAVATION ITEM.

CONSTRUCTION SPECIFICATIONS:

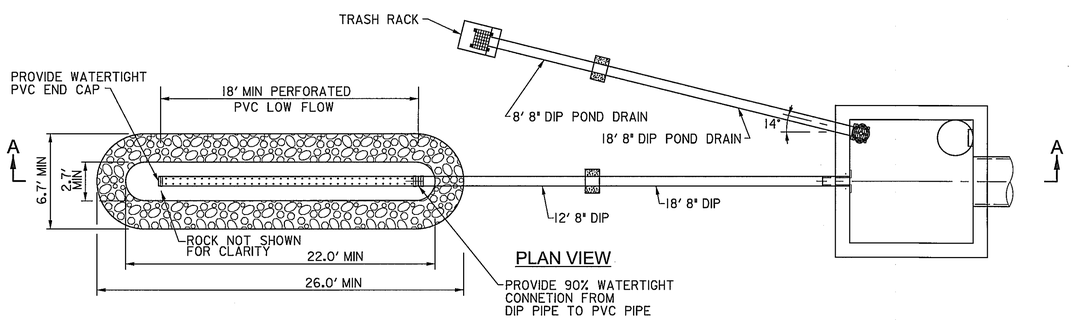
1. GATE VALVE TO BE MUELLER 2361 SERIES FL X FL GATE 8 IN (OR EQUIVALENT).
2. COST OF GATE, DIP, ORIFICE PLATE, AND CONCRETE RESTRAINING BLOCK TO BE INCLUDED IN THE COST OF THE LUMP SUM BID ITEM FOR "EXISTING RISER MODIFICATIONS".
3. CONCRETE SHOWN HEREON SHALL BE 4500 PSI MINIMUM 28 DAY COMPRESSIVE STRENGTH.
4. WRAP THE PERFORATED PORTION OF PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH.

SECTION A-A

NOTE:
PER THE ENGINEER'S DIRECTION, PROVIDE ADEQUATE COVER OVER THE PIPES TO MEET COUNTY REQUIREMENTS. ANY ADDITIONAL FILL WILL NOT BE PAID FOR SEPARATELY AND SHALL BE INCIDENTAL TO EXCAVATION ITEM.



RESTRAINING BLOCK DETAIL



BASIN 1 - 8" LOW FLOW PIPE AND 8" POND DRAIN DETAILS

NOTES:

THE FILTER DRAINAGE DIAPHRAGM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS SECTION AND AS SHOWN ON THE PLANS. THE MATERIAL SHALL BE PLACED IN CONTINUOUS, APPROXIMATELY HORIZONTAL LAYERS NOT MORE THAN I2 INCHES IN LOOSE THICKNESS. THE WATER CONTENT OF THE DRAINAGE MATERIAL BEFORE AND DURING COMPACTION SHALL BE UNIFORM THROUGHOUT EACH LAYER OF THE MATERIAL. THE WATER CONTENT SHALL BE SUFFICIENT TO ATTAIN THE REQUIRED DENSITY OF THE MATERIAL IN PLACE WHEN COMPACTED. THE MATERIAL SHALL BE COMPACTED AS SPECIFIED IN "EARTH FILL".

THE DIAPHRAGM SHALL BE THOROUGHLY FLOODED UPON COMPLETION AND THE OUTLET DRAIN OBSERVED FOR PROPER FUNCTION.

CARE SHALL BE TAKEN SO THAT THE DRAINAGE MATERIAL DOES NOT BECOME CONTAMINATED. CONTAMINATED DRAINAGE MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL.

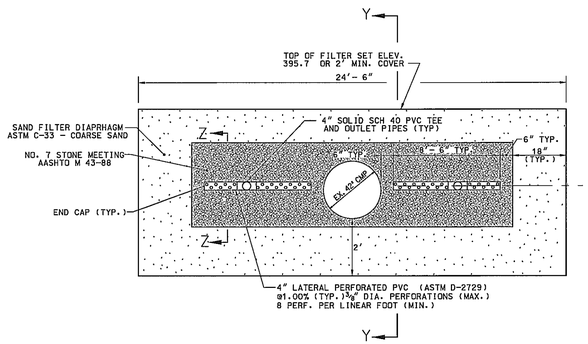
DURING PERIODS OF SHUTDOWN AND AT ALL EQUIPMENT CROSSINGS, THE DRAINAGE MATERIAL SHALL BE PROTECTED BY PROTECTIVE COVERING MATERIAL SUCH AS POLYETHYLENE SHEETING, PVC SHEETING OR EQUAL. AT EQUIPMENT CROSSINGS, THE SHEETING MATERIAL SHALL BE COVERED WITH A SUFFICIENT DEPTH OF EMBANKMENT MATERIAL TO PREVENT DAMAGE TO THE SHEETING BY THE EQUIPMENT, OR A MINIMUM OF I2 INCHES, WHICHEVER PROVIDES GREATER PROTECTION. PRIOR TO PLACING ADDITIONAL DRAINAGE MATERIAL AFTER SHUTDOWN AT EQUIPMENT CROSSINGS, THE CONTRACTOR SHALL REMOVE ANY TEMPORARY PROTECTIVE COVERINGS AND REPLACE ANY MATERIAL THAT MAY HAVE BECOME CONTAMINATED.

4 INCH PVC OUTLET DRAIN TO PROJECT A MINIMUM OF 4 INCHES FROM THE FACE OF ENDWALL ON INTERIOR WALL OF INLET/MANHOLE.

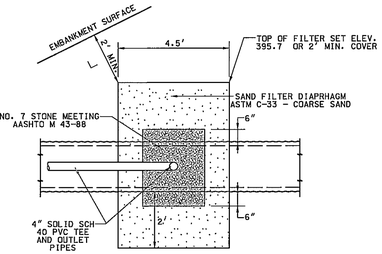
A REMOVABLE ANIMAL GUARD (AGRIDRAIN RATGUARD OR EQUAL) IS TO BE ATTACHED TO THE OUTLET END OF THE 4 INCH PVC DRAINS. AN ALTERNATE IS ¼"X¼" HARDWARE CLOTH ATTACHED WITH STAINLESS STEEL HOSE CLAMP.

A GEOTECHNICAL ENGINEER SHALL BE PRESENT DURING CONSTRUCTION.

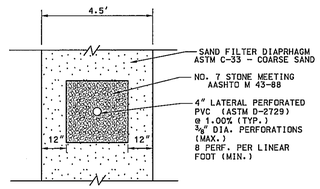
FILTER DRAINAGE DIAPHRAGM, OUTLET PIPE AND ANIMAL GUARDS ARE INCIDENTAL TO THE SWM OUTFALL STRUCTURE ITEM. NO SEPARATE PAY.



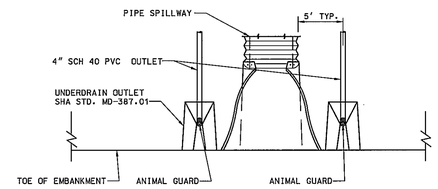
ELEVATION



SECTION Y-Y



SECTION Z-Z
PVC LATERAL



PLAN

FILTER DIAPHRAGM DETAILS

DT-74-2

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/13/2015 Date
254973
S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/17/2015 Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed 8/12/15 Date
258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND · DEREK A. SCHMIDT · 16493 · PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Park Manager Date

ISSUED FOR PROCUREMENT ON _____

REVISIONS

Rev. No.	Date	Description

Details RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: N.T.S.

SC/SWM
SHT. # 33 of 49

FINAL SCANNED:
PLAN SCANNED:
PARK CODE: C10
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BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:45 AM
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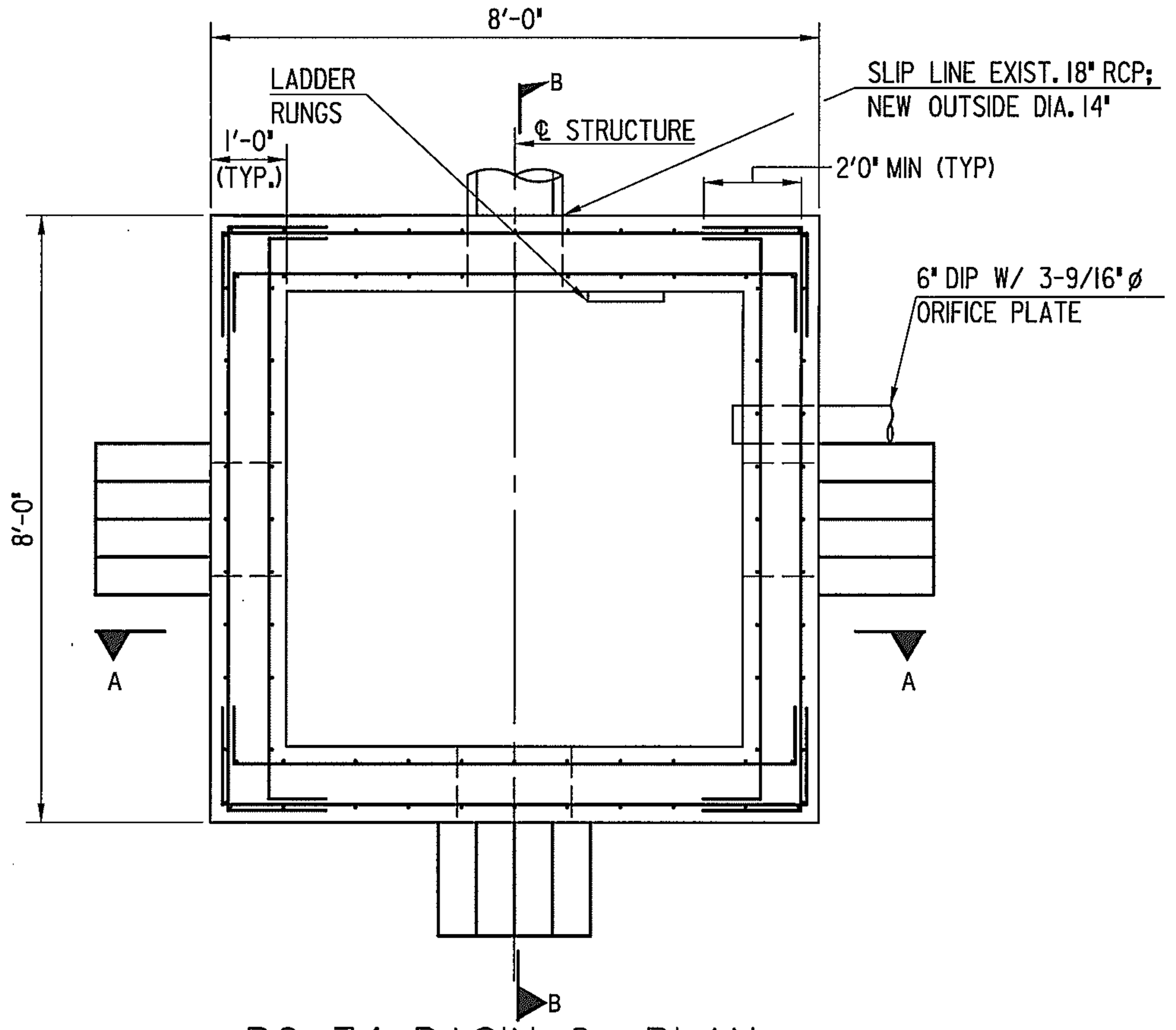
FINAL SCANNED:

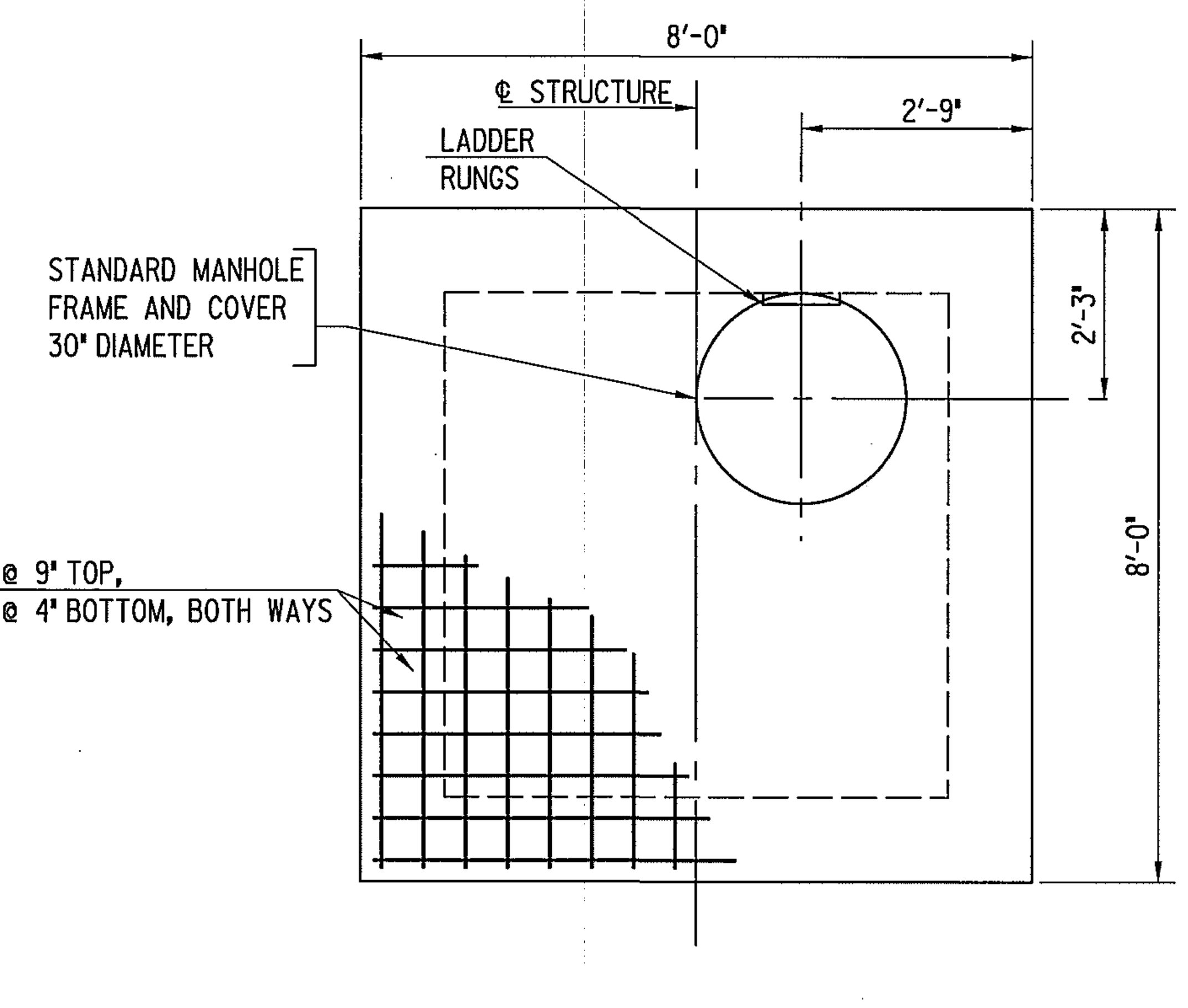
PLAN SCANNED:

PARK CODE: C10



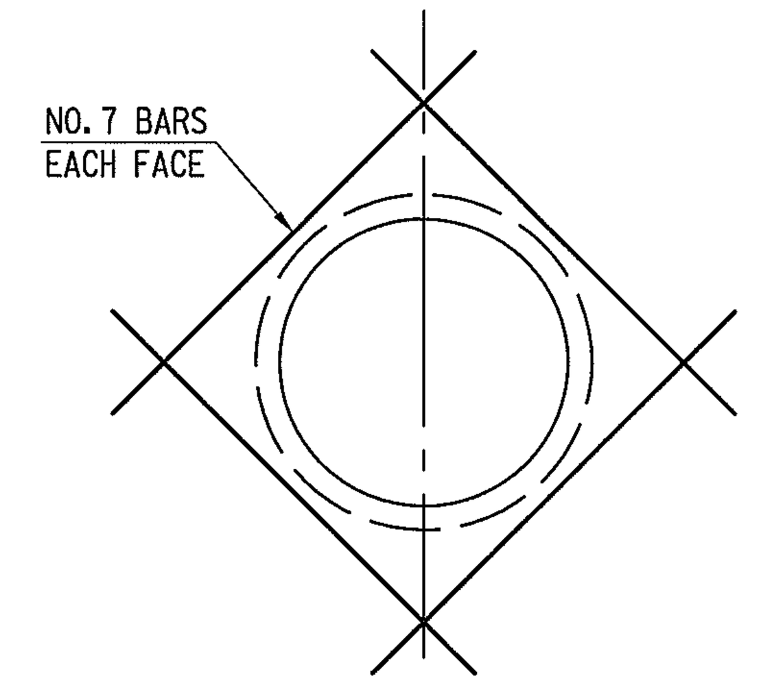
RC 74 BASIN 2- PLAN

SCALE: 1/2" = 1'-0"



RC 74 BASIN 2 RISER TOP SLAB - PLAN

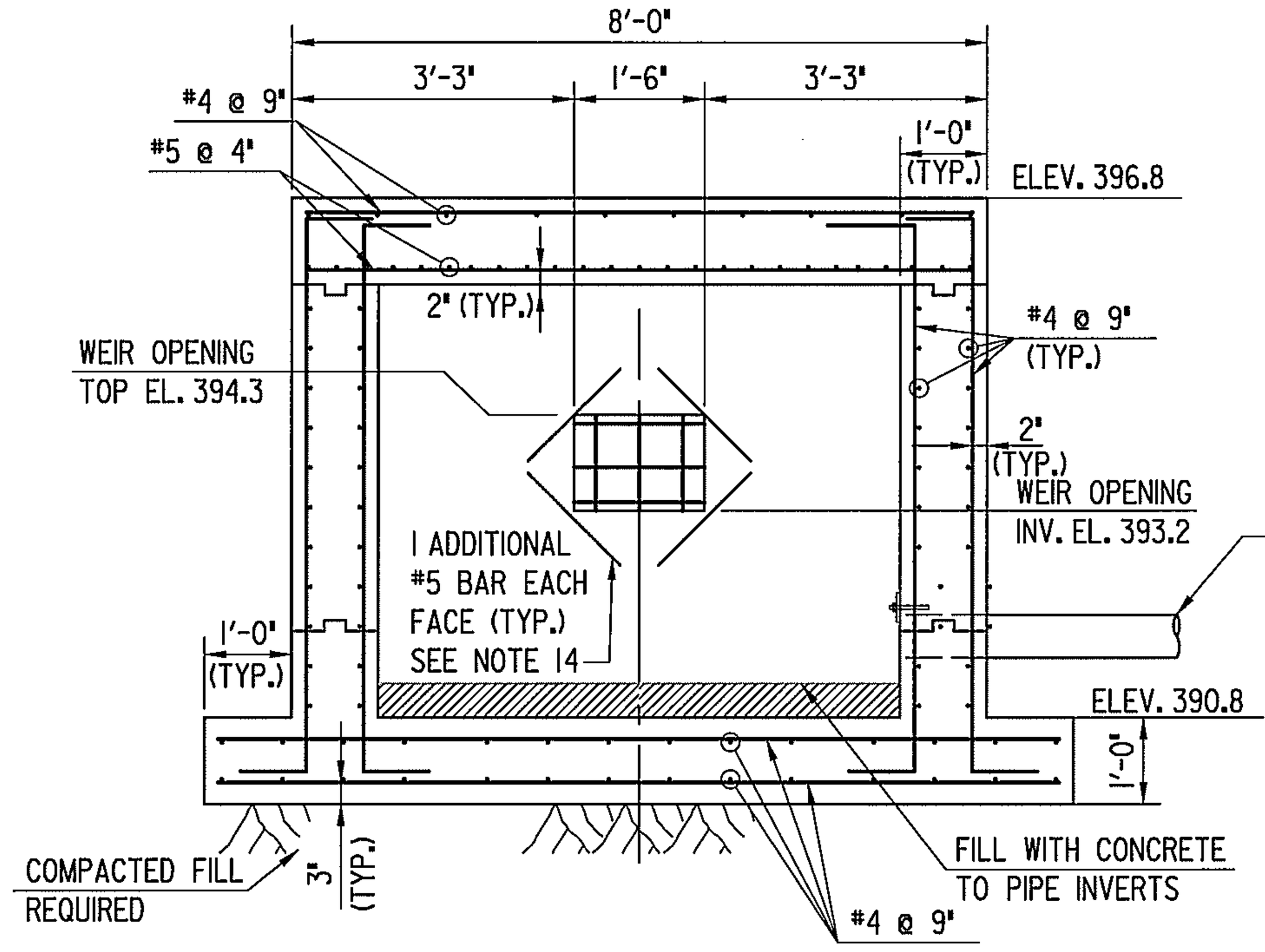
SCALE: 1/2" = 1'-0"



WALL REINFORCEMENT AT CMP AND RCP OPENING

CONCRETE STRUCTURAL NOTES

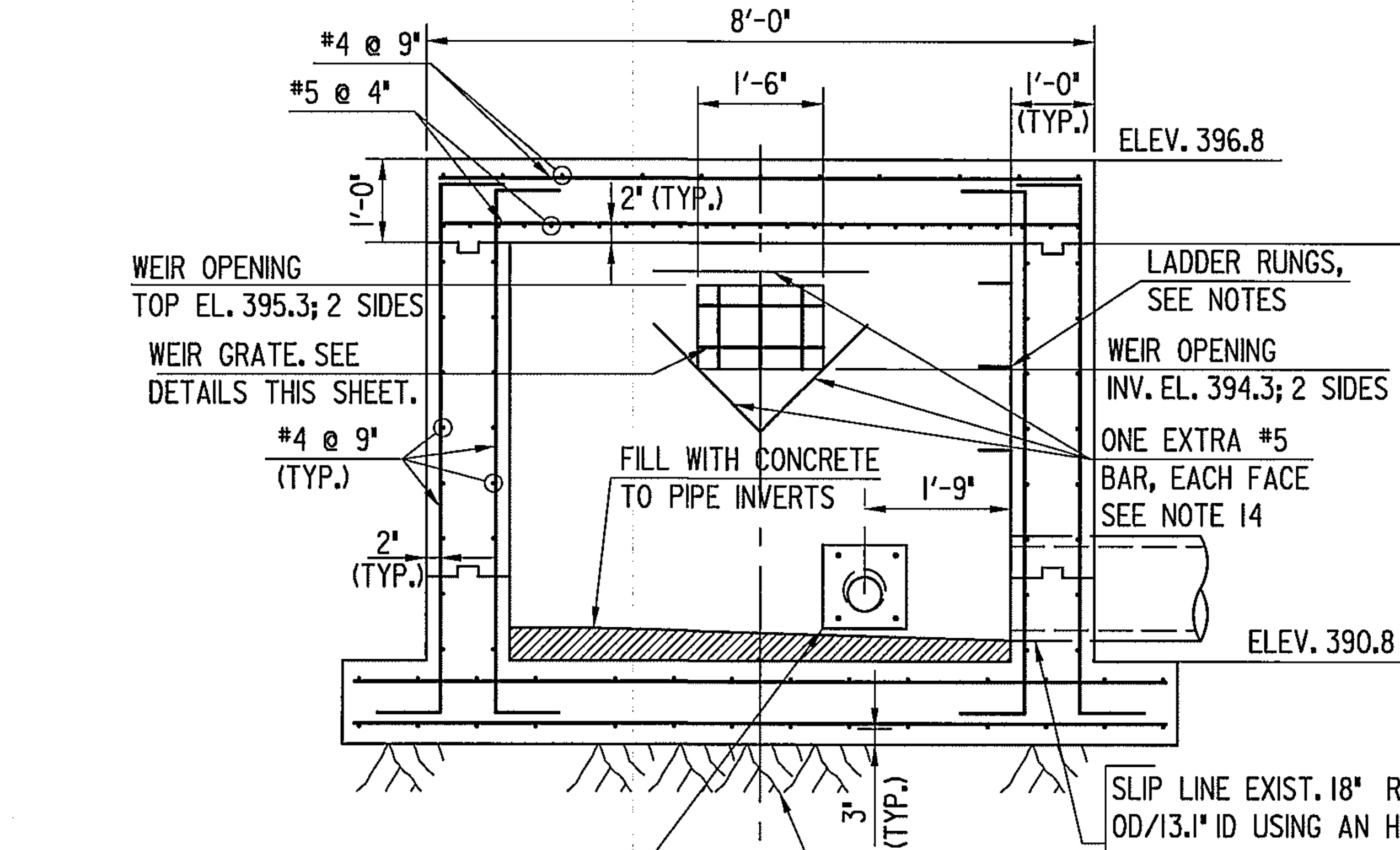
1. CONCRETE CONSTRUCTION SHALL BE CAST IN PLACE AND DESIGNED, REINFORCED, AND CONSTRUCTED IN ACCORDANCE WITH ACI 350 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
2. CONCRETE SHOWN HEREON SHALL BE 4500 PSI MINIMUM 28 DAY COMPRESSIVE STRENGTH UNLESS OTHERWISE NOTED.
3. REINFORCING STEEL SHALL BE DEFORMED APOXY COATED STEEL BARS CONFORMING TO ASTM A615, GRADE 60.
4. CONCRETE EXPOSED TO WEATHER SHALL HAVE 5% MINIMUM ENTRAINED AIR.
5. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4-INCH.
6. TRASH RACK & WEIR GRATING ASSEMBLIES SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION AND PAINTED WITH 2 COATS OF BATTLESHIP GRAY PAINT.
7. CAST WALLS DIRECTLY AROUND BARREL PIPE TO FORM AWATERTIGHT SEAL.
8. FABRICATOR SHALL PROVIDE LADDER RUNGS IN ACCORDANCEWITH STANDARD MD-383.91 OR MD-383.92.
9. ALL DIP PIPES SHOULD BE CAST WITH RISER WALL. ADD BENTONITEWATERSTOP WRAP AROUND PIPE, LOCATED IN THE CENTER OF THE WALL AT PENETRATIONS.
10. FOR DRAIN OUTLET DETAILS, SEE SHEET 35 OF 48.
11. MEASUREMENT AND PAYMENT SHALL BE INCLUDED UNDER THE LUMP SUM BID ITEM FOR "RC-74 BASIN 2 SWM OUTFALL STRUCTURE. PAYMENT WILL INCLUDE FULL COMPENSATION FOR ALL EXCAVATION, CONCRETE, REINFORCEMENT, RESTRICTOR PLATE, LOW FLOW AND POND DRAIN, UNDERDRAIN STUBS, FRAMES, GRATES AND COVERS, GRADE SLOPE ADJUSTMENTS, BACKFILL, AND FOR ALL OTHER MATERIAL, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
12. A PROFESSIONAL CIVIL ENGINEER MUST INSPECT REBAR, FORMWORK AND CONCRETE DURING CONSTRUCTION OF STRUCTURE AND PROVIDE A SIGNED AND SEALED INSPECTION REPORT TO MNCPPC AND MCDPS.
13. A PROFESSIONAL GEOTECHNICAL ENGINEER TO PROVIDE CONCRETE TEST BREAK SAMPLE RESULTS FOR ALL CONCRETE POURS OF STRUCTURE AS APPLICABLE TO MNCPPC AND MCDPS.
14. FOR ADDITIONAL REINFORCING BAR DETAILS SEE SHEET 35 OF 48.



6" DIP W/ 3 9/16"ø ORIFICE PLATE OPENING INV. EL. 391.5. SEE ORIFICE PLATE AND ANCHOR BOLT DETAILS, THIS SHEET.

RC 74 BASIN 2 SECTION A-A

SCALE: 1/2" = 1'-0"



SLIP LINE EXIST. 18" RCP TO A 14" OD/13.1" ID USING AN HDPE SMOOTH LINED PIPE WITH INV. EL. 391.13. SEE WALL REINFORCEMENT AT CMP AND RCP OPENING DETAILS, THIS SHEET

6" DIP W/ 3 9/16"ø ORIFICE PLATE OPENING INV. EL. 391.5. SEE ORIFICE PLATE AND ANCHOR BOLT DETAILS, THIS SHEET.

RC 74 BASIN 2 SECTION B-B

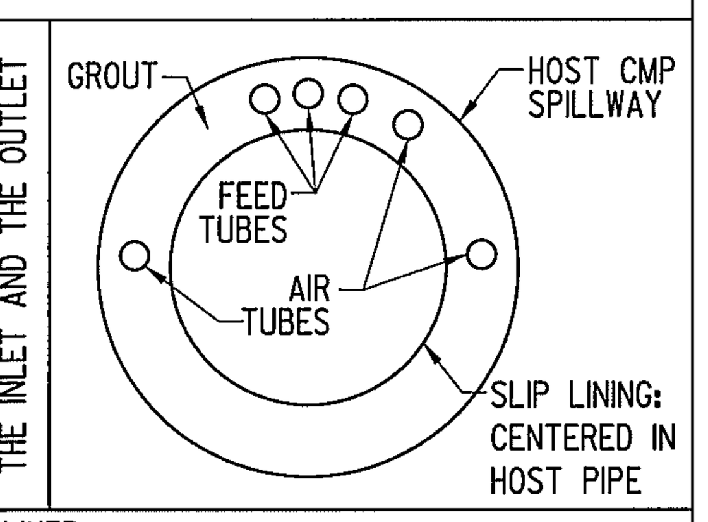
SCALE: 1/2" = 1'-0"

SLIP LINING GROUT FEED TUBES

TOTAL LENGTH TO BE LINED	NUMBER OF FEED TUBES
50	1
75	2
100	2
125	3
150	3
175	4
200	4
225	4

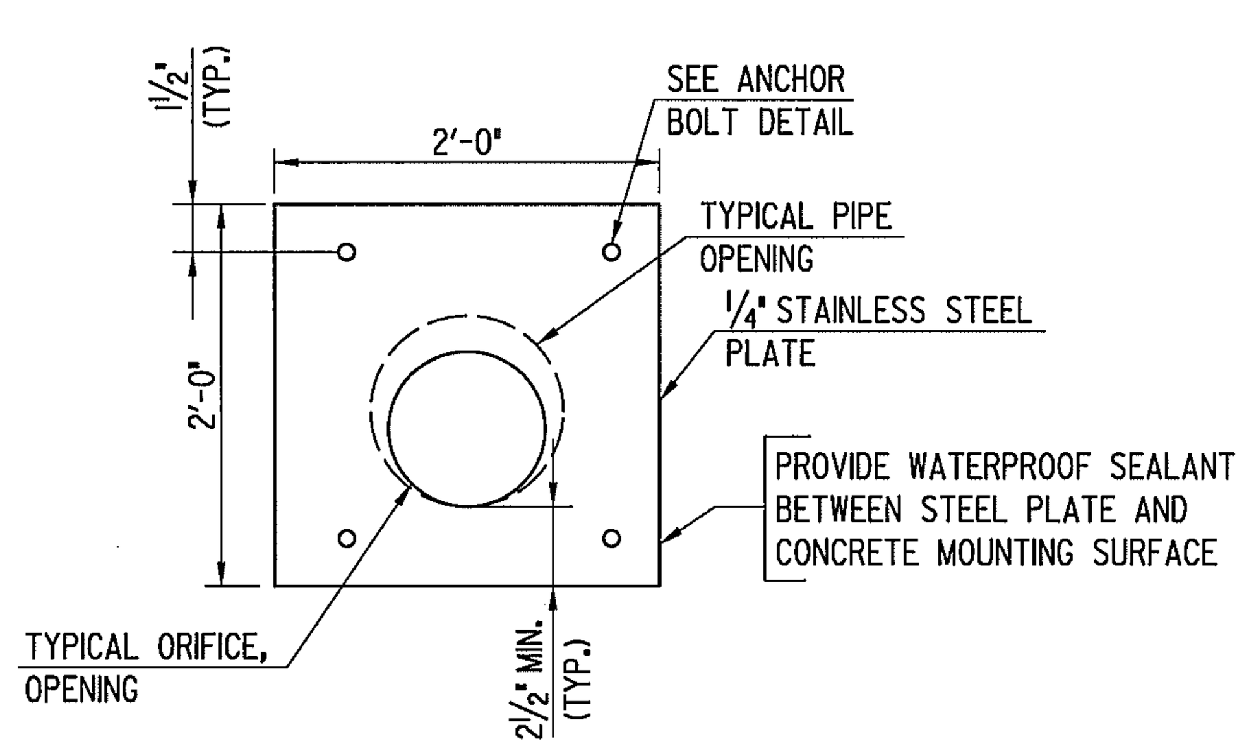
FOR CLEAR GROUT SPACE ≥ 4" USE 1.5" TO 2" FEED TUBES

FOR CLEAR GROUT SPACE BETWEEN 2" AND 4" USE 1" FEED TUBES AND ALLOW GROUT ACCESS AT BOTH THE INLET AND THE OUTLET



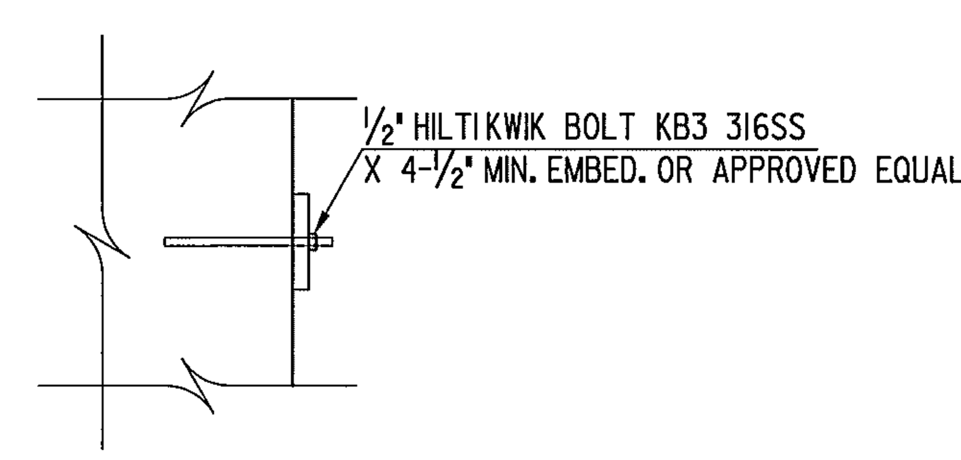
*PLACE 3 AIR TUBES AT THE TOP AND SIDES OF THE LINER

NOTE: THE CONTRACTOR SHALL PROVIDE END SEALS AT THE OPEN POINTS OF EACH RUN OF PIPE TO BE GROUTED. SLIP LINING AND END SEALING SHALL BE PERFORMED PER MANUFACTURERS RECOMMENDATIONS AND AS DIRECTED BY THE CONSTRUCTION MANAGER.



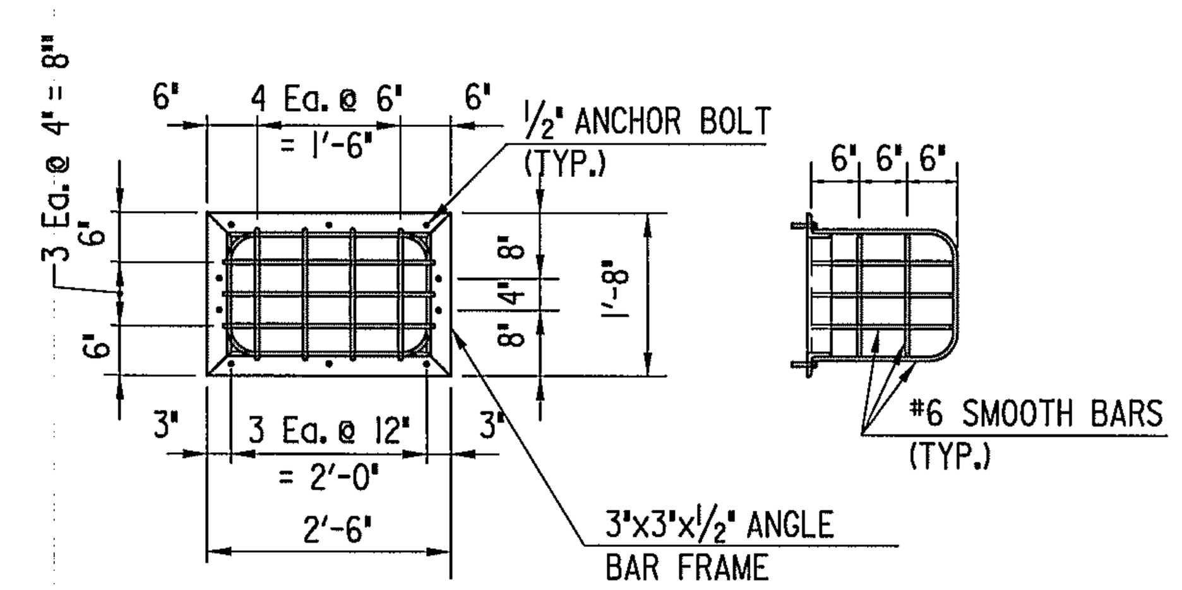
ORIFICE PLATE

SCALE: 1/4" = 1'-0"



ANCHOR BOLT

SCALE: 1/4" = 1'-0"



3 EA. REQ'D.

WEIR GRATE

SCALE: 1/2" = 1'-0"

NOTE:
ALL METAL PARTS TO BE GALVANIZED.
BOLTS SHALL BE STAINLESS STEEL.

SCALE: 1/2" = 1'-0"

DT-74-3

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/13/2015 Date
254973
S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/13/2015 Date

Administrative Requirements:
Reviewed 8/12/15 Date
258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN		
Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL
Project Manager 5-14-15 Date
Construction Manager Date
Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS		
Rev. No.	Date	Description

Details RC-74

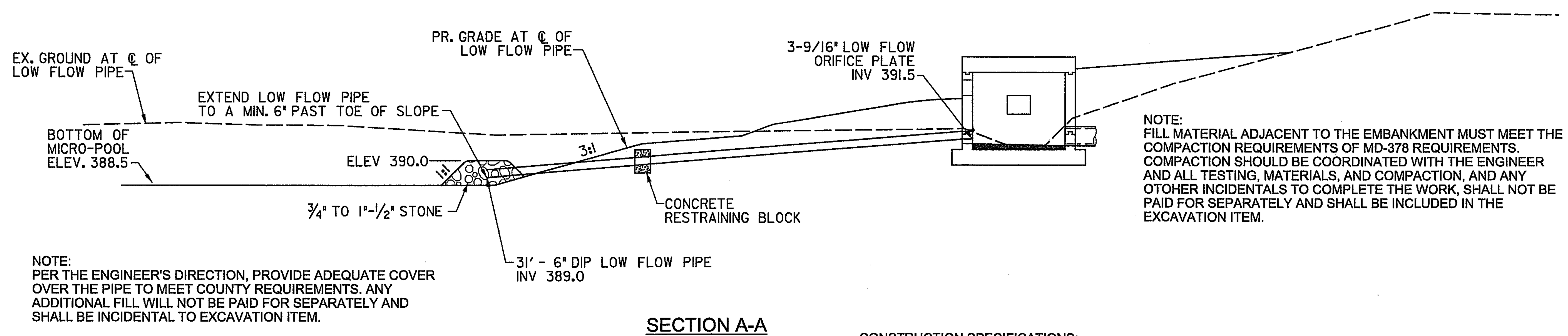
CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE:

SC/SWM
SHT. # 34 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:46 AM
FILE: \\baltsrv04\v2005\2005\05050_lcc\ES-CM SWM Contract RC-C\RC-74\cadd\plans\pST-S002-RC74_2d.dgn



NOTE:
PER THE ENGINEER'S DIRECTION, PROVIDE ADEQUATE COVER OVER THE PIPE TO MEET COUNTY REQUIREMENTS. ANY ADDITIONAL FILL WILL NOT BE PAID FOR SEPARATELY AND SHALL BE INCIDENTAL TO EXCAVATION ITEM.

NOTE:
FILL MATERIAL ADJACENT TO THE EMBANKMENT MUST MEET THE COMPACTION REQUIREMENTS OF MD-378 REQUIREMENTS. COMPACTION SHOULD BE COORDINATED WITH THE ENGINEER AND ALL TESTING, MATERIALS, AND COMPACTION, AND ANY OTOHER INCIDENTALS TO COMPLETE THE WORK, SHALL NOT BE PAID FOR SEPARATELY AND SHALL BE INCLUDED IN THE EXCAVATION ITEM.

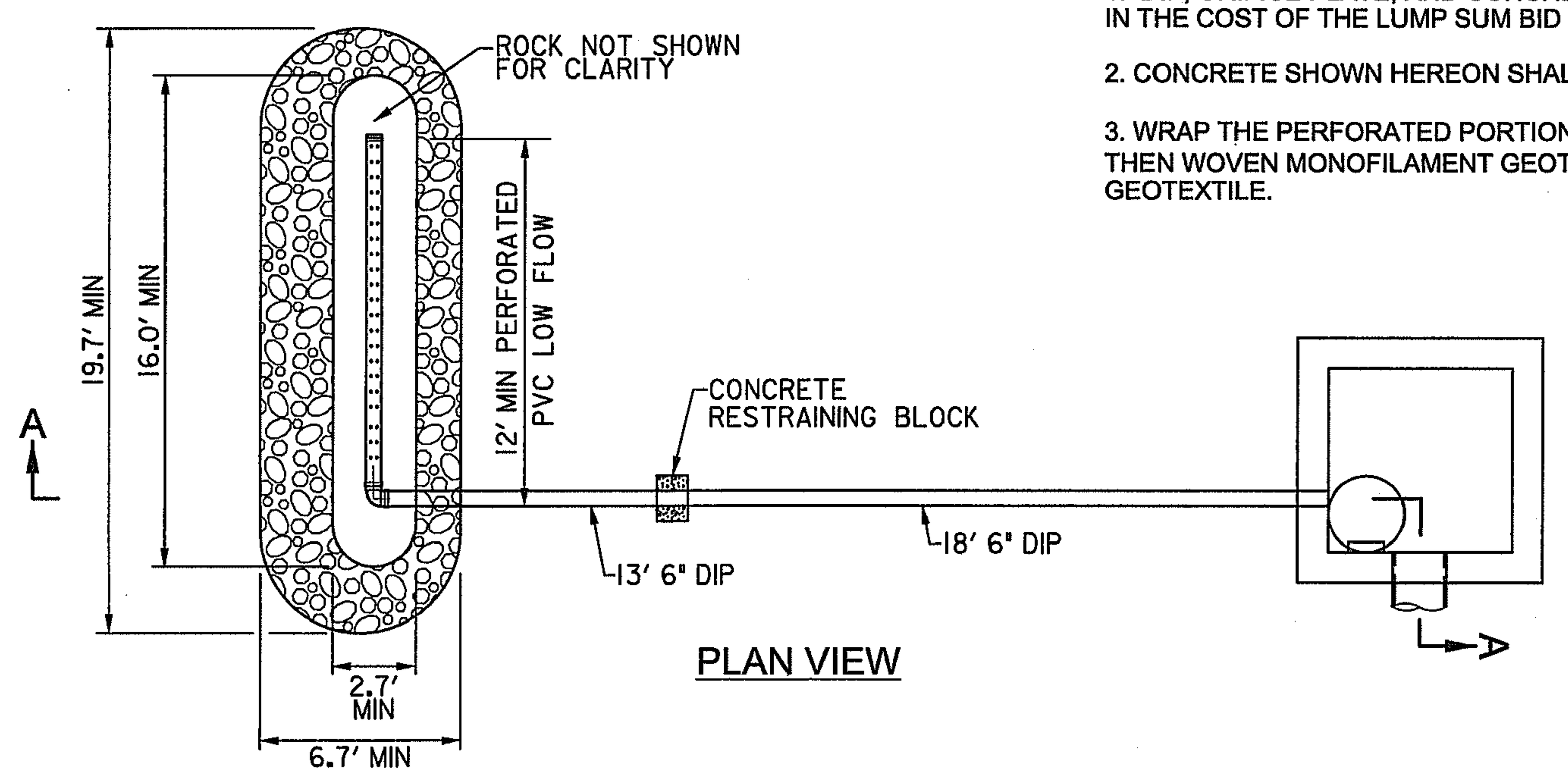
SECTION A-A

CONSTRUCTION SPECIFICATIONS:

1. DIP, ORIFICE PLATE, AND CONCRETE RESTRAINING BLOCK TO BE INCLUDED IN THE COST OF THE LUMP SUM BID ITEM FOR "EXISTING RISER MODIFICATIONS".

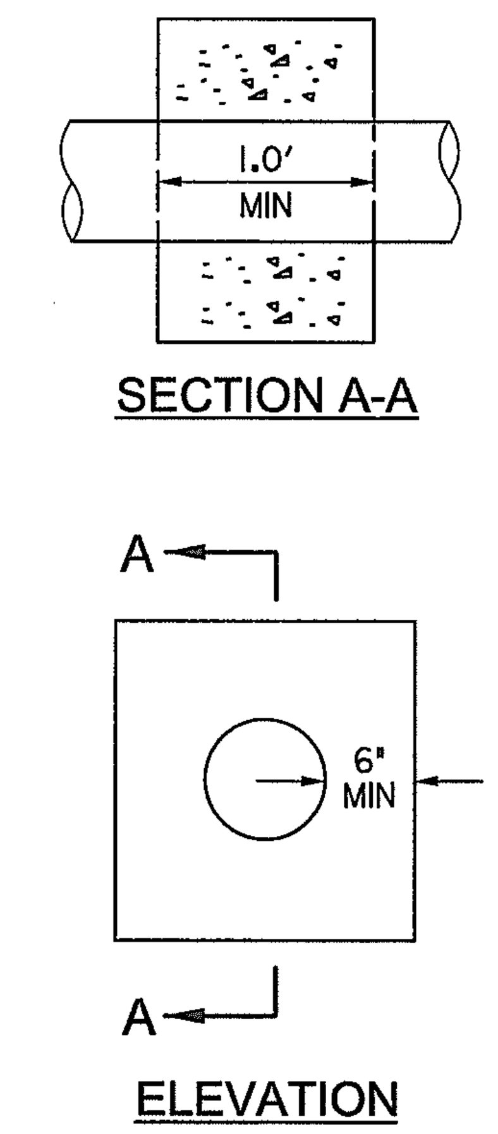
2. CONCRETE SHOWN HEREON SHALL BE 4500 PSI MINIMUM 28 DAY COMPRESSIVE STRENGTH.

3. WRAP THE PERFORATED PORTION OF PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH, THEN WOVEN MONOFILAMENT GEOTEXTILE. DO NOT WRAP WITH MORE THAN ONE LAYER OF GEOTEXTILE.

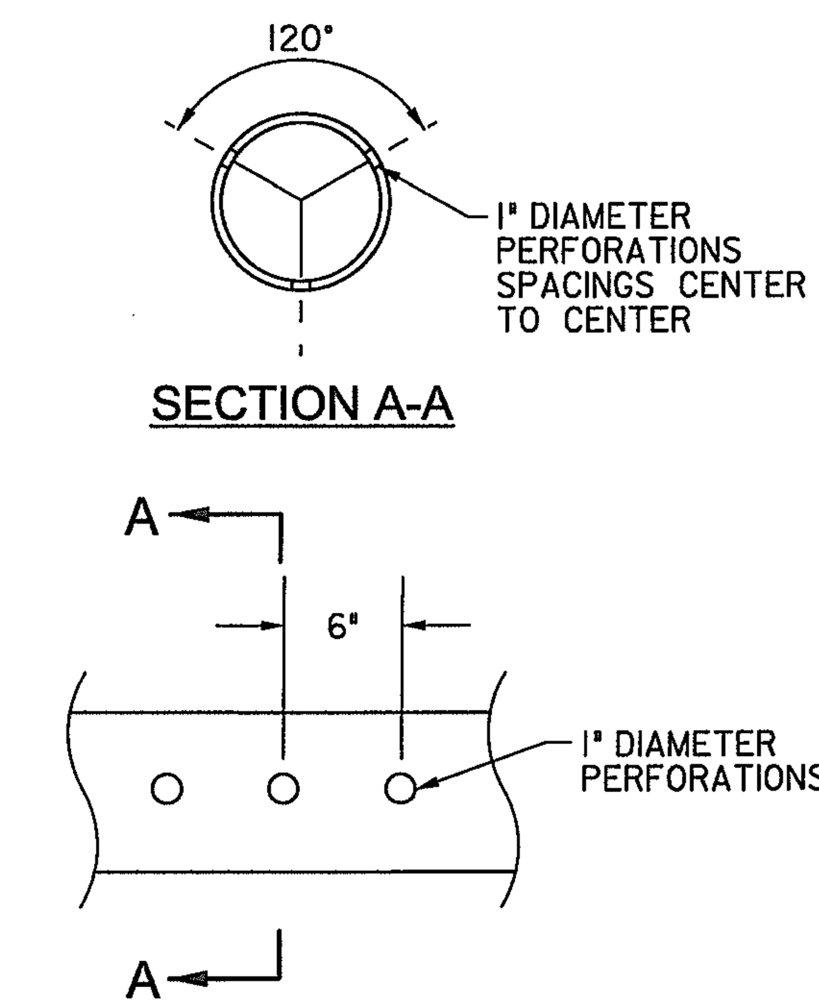


PLAN VIEW

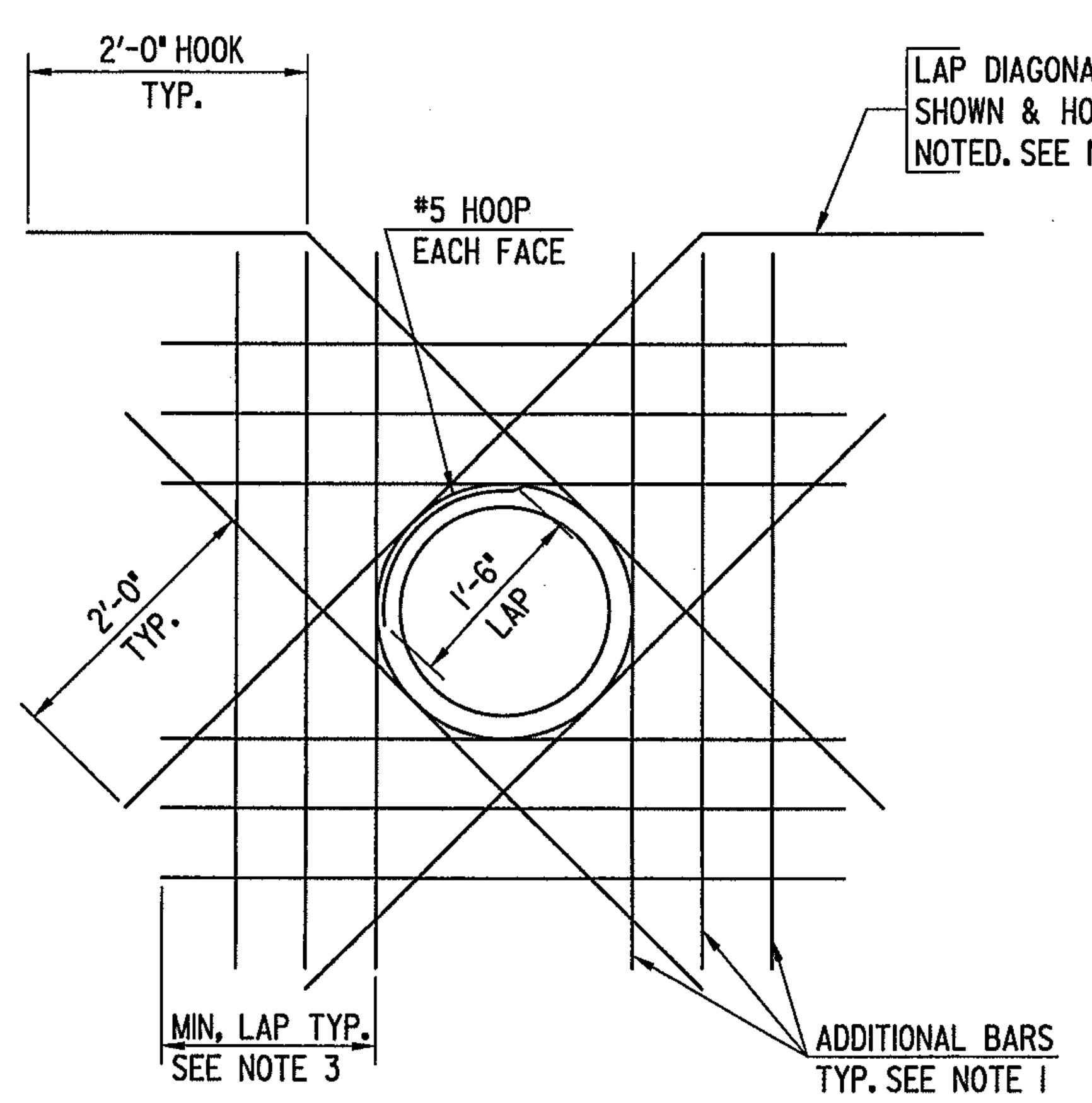
BASIN 2 - 6" LOW FLOW PIPE



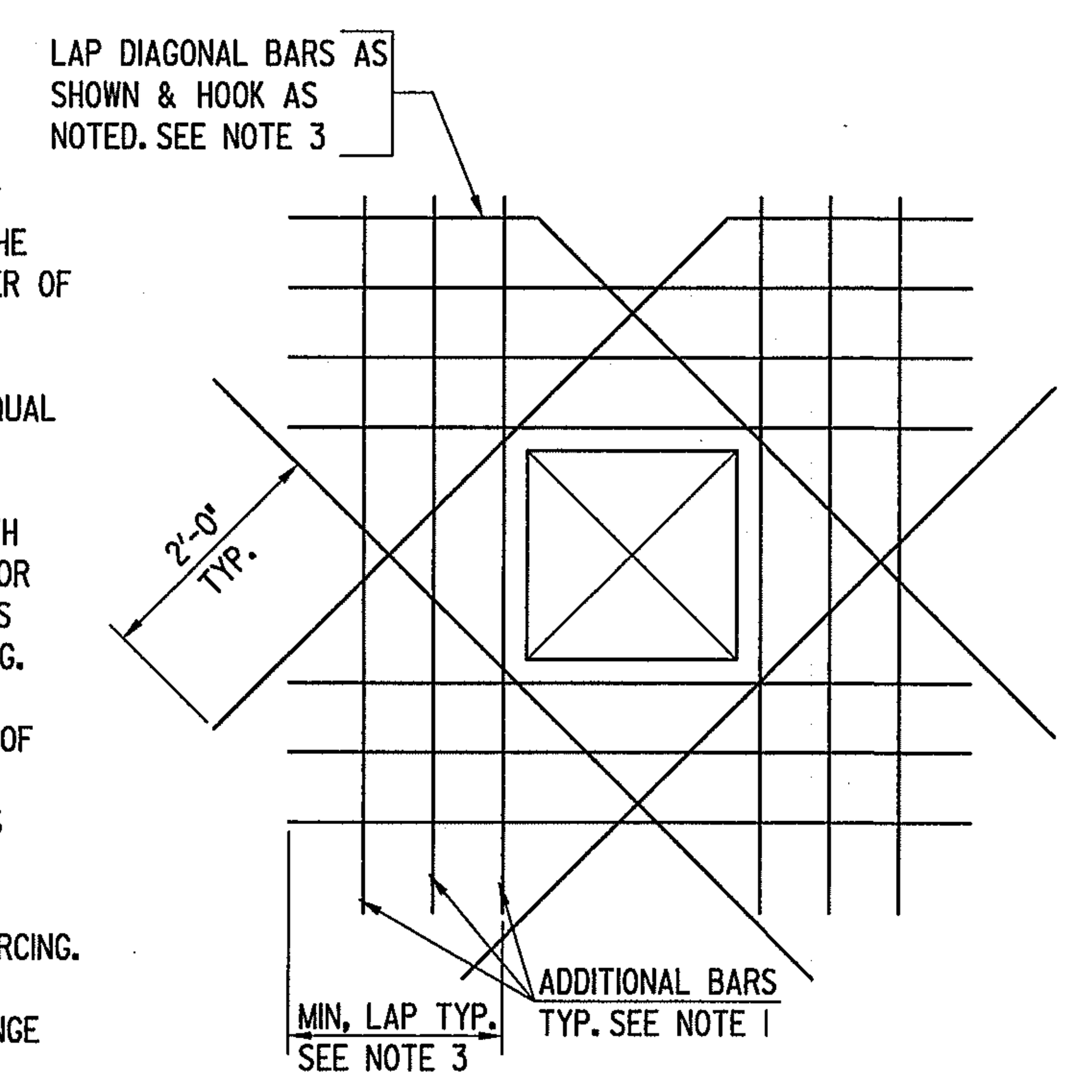
RESTRAINING BLOCK DETAIL



6" DIAMETER PERFORATED PVC PIPE DETAIL



NOTES:
1. NUMBER OF ADDITIONAL REINFORCING BARS AT EACH SIDE OF OPENING SHALL EQUAL HALF THE NUMBER OF INTERRUPTED BARS IN EACH LAYER OF REINFORCING.
2. SIZE OF ADDITIONAL REINFORCING BARS TO EQUAL SIZE OF INTERRUPTED REINFORCING BARS.
3. PROVIDE STANDARD HOOK BARS IF LAP LENGTH EXTENSION CANNOT BE OBTAINED AT JOINTS OR OTHER OBSTRUCTIONS. PLACE ADDITIONAL BARS IN SAME PLANES AS INTERRUPTED REINFORCING.
4. SIZE OF DIAGONAL BARS SHALL BE THE SIZE OF THE LARGEST NORMAL REINFORCING BAR CUT, UNLESS OTHERWISE NOTED. LOCATE DIAGONALS IN EACH LAYER OF REINFORCING.
5. PLACE DIAGONAL BARS INSIDE NORMAL REINFORCING.
6. ALL REINFORCING TO CLEAR OPENING OR FLANGE COLLARS BY 2".



ADDITIONAL REINFORCING BAR DETAILS

DT-74-4

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Stormwater Management:	Sediment Control Technical Requirements	Administrative Requirements:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY	Reviewed 8/12/15	Reviewed 8/12/15
Reviewed 8/12/15	Approved 8/13/2015	258116 SEDIMENT CONTROL PERMIT NO.
Approved 8/13/2015		
254973 S.M. FILE NO.		MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

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DESIGN	Date	Checked By:
Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493
Expiration Date 05/16/2015

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL
Project Manager 3-9-15 Date
Construction Manager / Park Manager 3-9-15 Date

ISSUED FOR PROCUREMENT ON

REVISIONS		
Rev. No.	Date	Description

Details RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

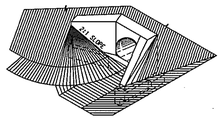
SCALE: N.T.S.

SC/SWM
SHT. # 35 of 49

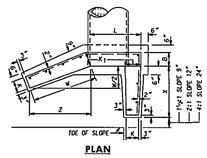
FINAL SCANNED:

PLAN SCANNED:

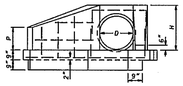
PARK CODE: C10



ISOMETRIC VIEW



PLAN



ELEVATION

QUANTITIES FOR ESTIMATING PURPOSES ONLY

SLOPE 1:1

OPENING		DIMENSIONS									QUANTITIES	
		ENDWALL			WINGS						1-ENDWALL 2-WINGS	
D	PIPE DIA. AREA SQ.FT.	L	B	H	W	X	Z	R_1	K	P	CONC. C.Y.	STEEL LBS.
12"	0.79	1'-9"	3"	1'-6"	2'-0"	1'-3"	1'-9"	9"	7"	1'-6"	0.51	30
15"	1.23	2'-0"	3"	2'-0"	2'-4"	1'-6"	2'-0"	9"	7"	1'-6"	0.63	42
18"	1.77	2'-3"	3"	2'-3"	2'-8"	2'-1"	2'-4"	9"	8"	1'-6"	0.77	48
21"	2.40	2'-6"	3"	2'-6"	3'-0"	2'-7"	2'-8"	9"	8"	1'-9"	1.10	61
24"	3.14	3'-0"	12"	2'-9"	3'-6"	2'-11"	3'-0"	12"	11"	2'-1"	1.43	73
27"	3.98	3'-3"	12"	3'-3"	3'-11"	3'-4"	3'-4"	12"	11"	2'-3"	1.66	85
30"	4.91	3'-6"	12"	3'-6"	4'-4"	3'-9"	3'-8"	12"	11"	2'-4"	1.88	96
33"	5.94	3'-9"	12"	3'-9"	4'-8"	4'-1"	4'-0"	12"	11"	2'-6"	2.10	107
36"	7.07	4'-0"	12"	4'-0"	5'-0"	4'-6"	4'-4"	12"	11"	2'-7"	2.32	118
42"	9.62	4'-6"	12"	4'-7"	5'-8"	5'-4"	5'-0"	12"	11"	2'-11"	2.65	144
48"	12.57	5'-0"	12"	5'-1"	6'-4"	6'-2"	5'-8"	12"	11"	3'-3"	3.37	170

SLOPE 2:1

OPENING		DIMENSIONS									QUANTITIES	
		ENDWALL			WINGS						1-ENDWALL 2-WINGS	
D	PIPE DIA. AREA SQ.FT.	L	B	H	W	X	Z	R_1	K	P	CONC. C.Y.	STEEL LBS.
12"	0.79	1'-9"	9"	1'-7"	2'-3"	1'-03"	2'-0"	9"	7"	1'-7"	0.55	38
15"	1.23	2'-0"	9"	1'-11"	2'-6"	2'-6"	2'-2"	9"	8"	1'-5"	0.73	46
18"	1.77	2'-3"	9"	2'-3"	3'-0"	2'-7"	2'-7"	9"	8"	1'-7"	0.89	57
21"	2.40	2'-6"	9"	2'-6"	3'-6"	3'-0"	3'-0"	9"	8"	1'-10"	1.27	70
24"	3.14	3'-0"	12"	2'-9"	4'-0"	4'-0"	3'-5"	12"	11"	2'-1"	1.64	82
27"	3.98	3'-3"	12"	3'-0"	4'-4"	4'-6"	3'-9"	12"	11"	2'-3"	1.89	98
30"	4.91	3'-6"	12"	3'-4"	4'-8"	5'-0"	4'-1"	12"	11"	2'-6"	2.14	113
33"	5.94	3'-9"	12"	3'-7"	5'-0"	5'-6"	4'-4"	12"	11"	2'-8"	2.31	123
36"	7.07	4'-0"	12"	3'-10"	5'-4"	6'-2"	4'-7"	12"	11"	2'-10"	2.48	132
42"	9.62	4'-6"	12"	4'-5"	6'-4"	7'-4"	5'-5"	12"	11"	3'-2"	3.30	163
48"	12.57	5'-0"	12"	4'-11"	7'-0"	8'-4"	6'-1"	12"	11"	3'-6"	3.85	193

SLOPE 4:1

OPENING		DIMENSIONS									QUANTITIES	
		ENDWALL			WINGS						1-ENDWALL 2-WINGS	
D	PIPE DIA. AREA SQ.FT.	L	B	H	W	X	Z	R_1	K	P	CONC. C.Y.	STEEL LBS.
12"	0.79	1'-9"	9"	1'-6"	2'-4"	1'-4"	2'-2"	9"	8"	1'-3"	0.61	42
15"	1.23	2'-0"	9"	1'-9"	3'-0"	2'-0"	2'-7"	9"	8"	1'-5"	1.04	68
18"	1.77	2'-3"	9"	2'-0"	3'-6"	2'-6"	3'-0"	9"	8"	1'-7"	1.26	74
21"	2.40	2'-6"	9"	2'-3"	4'-0"	3'-0"	3'-5"	9"	8"	1'-10"	1.75	89
24"	3.14	3'-0"	12"	2'-6"	4'-6"	3'-6"	3'-11"	12"	11"	2'-2"	2.23	104
27"	3.98	3'-3"	12"	2'-9"	5'-0"	3'-11"	4'-4"	12"	11"	2'-4"	2.64	125
30"	4.91	3'-6"	12"	3'-1"	5'-6"	4'-5"	4'-10"	12"	11"	2'-7"	3.04	147
33"	5.94	3'-9"	12"	3'-4"	6'-0"	5'-0"	5'-4"	12"	11"	2'-9"	3.40	164
36"	7.07	4'-0"	12"	3'-7"	6'-6"	5'-6"	5'-9"	12"	11"	3'-0"	3.75	180
42"	9.62	4'-6"	12"	4'-2"	7'-6"	6'-11"	7'-2"	12"	14"	3'-6"	4.67	218
48"	12.57	5'-0"	12"	4'-8"	8'-3"	8'-2"	8'-1"	12"	14"	3'-11"	5.57	277

SPECIFICATION	CATEGORY CODE ITEMS
305	

APPROVED Kirk G. McClelland
DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT

SHA	APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
	APPROVAL 8-28-86	APPROVAL 12-12-86
	REVISED 10-1-01	REVISED
	REVISED	REVISED
	REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STANDARD TYPE F ENDWALL
METAL OR CONCRETE ROUND PIPE

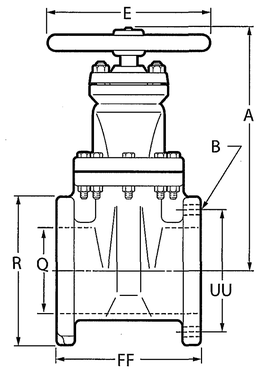
STANDARD NO. MD 358.01

4"- 12" A-2361 RESILIENT WEDGE GATE VALVES - FL. x FL.

Mueller Co.

10.7

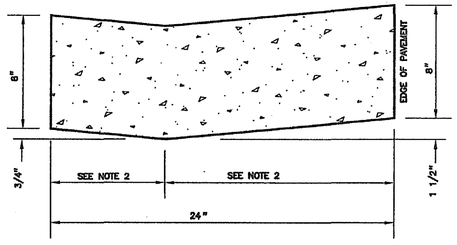
Rev. 1-15



Dimensions

Dimension	Nominal Size				
	4"	6"	8"	10"	12"
A	14.19	18.00	21.50	25.50	28.62
E	11.00	13.00	14.00	16.00	16.00
R	9.00	11.00	13.50	16.00	19.00
FF	9.00	10.50	11.50	13.00	14.00
Q (bore)	4.30	6.30	8.30	10.30	12.30
UU (bolt circle diameter)	7.50	9.50	11.75	14.25	17.00
B (number and size of holes)	8–.75	8–.88	8–.88	12–1.00	12–1.00
Turns to open	14	20.5	28.5	33	39.5
Weight*	88	154	220	392	522

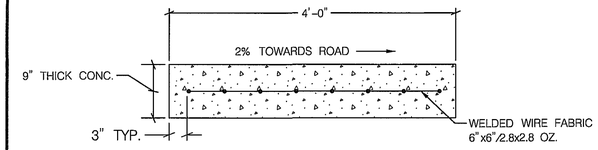
All dimensions are in inches. All weights are in pounds and are approximate.



GENERAL NOTES

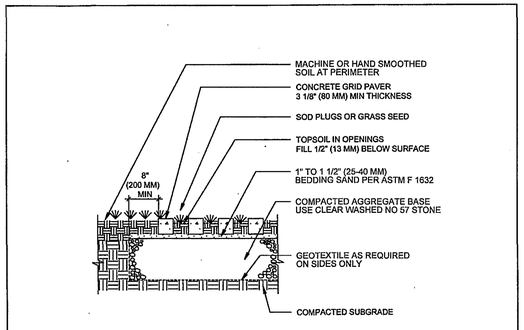
1. REFER TO MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR MATERIALS, METHODS OF CONSTRUCTION AND EXPANSION JOINT LOCATIONS.
2. THE DISTANCES FROM THE FLOWLINE TO THE FRONT AND BACK EDGE OF CURB SHALL BE ADJUSTED TO MATCH EXISTING CONDITIONS.
3. THE STANDARD DISTANCE BETWEEN JOINTS SHALL BE TEN FEET (MAXIMUM AND MINIMUM DISTANCES SHALL BE THIRTEEN FEET AND FIVE FEET RESPECTIVELY).
4. EXPANSION JOINT MATERIAL SHALL BE 1/2 INCH PREFORMED CORK, TRIMMED AND SEALED WITH NON-STAINING TWO-COMPONENT POLYSULFIDE OR POLYURETHANE ELASTOMERIC TYPE SEALANT COMPLYING WITH ASTM-C920. ⚠

APPROVED 14 APR '06 DATE	REVISED	MONTGOMERY COUNTY DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
DIRECTOR, DEPT. OF PUBLIC WORKS & TRANSPORTATION	⚠ ASTM-C920 4/2006	DEPRESSED CURB ENTRANCE
CHIEF, DIV. OF CAP. DEV.		STANDARD NO. MC-102.01



1. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.
2. EXPANSION JOINT MATERIAL SHALL BE PLACED AROUND POLES, HYDRANTS, ETC. AND ALONG THE PROERTY LINE WHEN THE SIDEWALK ABUTS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE.
3. EXPANSION JOINT MATERIAL SHALL HAVE A MAXIMUM LONGITUDINAL SPACING OF 100 FEET. THE MATERIAL SHALL BE 1/2 INCH PREFORMED CORK, TRIMMED AND SEALED WITH NON-STAINING TWO-COMPONENT POLYSULFIDE OR POLYURETHANE ELASTOMETERIC TYPE SEALANT COMPLYING WITH ASTM-C920.
4. SCORE THE CONCRETE TO A DEPTH OF 1/3 THE SLAB THICKNESS TO PROVIDE WEAKENED PLANE TRANSVERSE JOINTS AT 5'-0" INTERVALS PARALLEL WITH AND PERPENDICULAR TO THE CURBING.

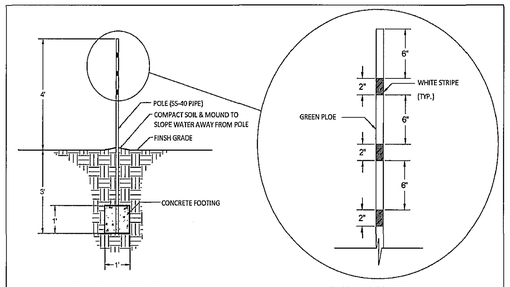
REINFORCED CONCRETE SIDEWALK
SCALE: 1" = 1'



NOTE: 1. BASE THICKNESS VARIES WITH TRAFFIC, CLIMATE, AND SUBGRADE.
2. MINIMUM BASE THICKNESS: 6" (150 MM) RESIDENTIAL DRIVEWAYS, 8" FIRELANES & PARKING LOTS.

CONCRETE GRID PAVERS-FIRELANE, DRIVEWAY & INTERMITTENT PARKING

DRAWING NO.	ICPI-08
SCALE	F.S.



POLE INSTALLATION DETAIL

POLE STRIPING DETAIL

1. Poles shall be placed at property corners and property line breaks where applicable. If the distance between corners and/or angle points are greater than 300 feet or there is no clear sight line between two points due to physical barriers or grade changes, additional poles must be installed.
2. The poles shall be placed one foot inside the park property at all property markers (corners, angle breaks, monuments and points on line), witnessing the actual property markers.
3. The pole shall be set in concrete 3 feet below grade as shown on the drawing.
4. The pole shall be a 1.5/8-inch by 7-feet vinyl SS-40 pipe with 3 white stripes 2 inches in width as shown on the drawing.
5. The color of the pole is Woodlyn green.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
Department of Parks, Montgomery County, Maryland

PARK DEVELOPMENT DIVISION — SRC STATUS — PARK PROPERTY LINE POLE

DT-74-5

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
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PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
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BY: $USERNAMES

DESIGN		
Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND — BRIAN D. FOSTER — 16493 — REGISTERED PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager — Date 5-14-15

Construction Manager — Date

Project Engineer

ISSUED FOR PROCUREMENT ON _____

REVISIONS		
Rev. No.	Date	Description

Details RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

SC/SWM
SHT. # 36 of 49

PLOTTED: Friday, May 08, 2015 AT 09:48 AM
FILE: \\balsrv04\d0003\2009\05050_bcr\ES-CM SWM Contract RC-C\RC-74\cadd\plans\cDT-0003_RC74.dgn

FINAL SCANNED:

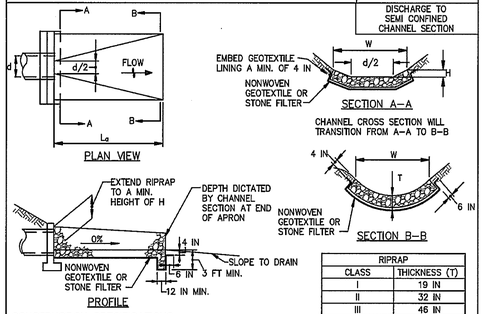
PLAN SCANNED:

PARK CODE: C10

DETAIL D-4-1-A ROCK OUTLET PROTECTION I

STANDARD SYMBOL: ROP1

DISCHARGE TO SEMI CONFINED CHANNEL SECTION



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF THE RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

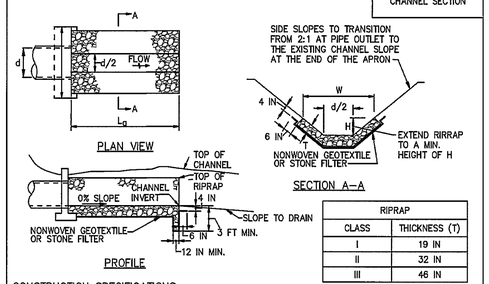
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL D-4-1-B ROCK OUTLET PROTECTION II

STANDARD SYMBOL: ROPII

DISCHARGE TO CONFINED CHANNEL SECTION



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

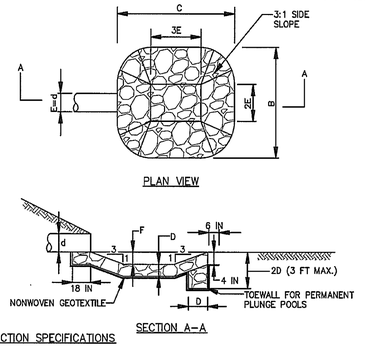
1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL D-4-2 PLUNGE POOL

STANDARD SYMBOL: PP



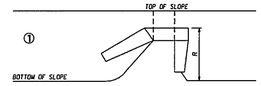
CONSTRUCTION SPECIFICATIONS

1. USE SPECIFIED CLASS OF RIPRAP.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS, AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
3. PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
5. STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

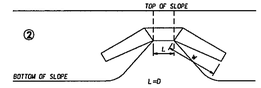
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

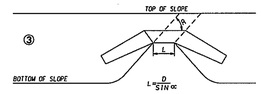
CASE ①. STANDARD TYPE "F" ENDWALL



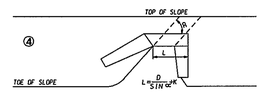
CASE ②. WHEN A WATER COURSE IS PERPENDICULAR OR ASKEW TO THE ℄, AND THE SIDE DITCH DRAINAGE IS IN BOTH DIRECTIONS AND IT IS MORE ECONOMICAL OR BETTER PRACTICE TO PLACE THE PIPE AT RIGHT ANGLES TO THE ℄, THE "F" ENDWALL CAN BE USED BY MAKING THE SHORTER WING EQUAL IN LENGTH AND ANGLE TO THE LONGER WING.



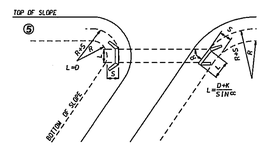
CASE ③. WHEN THE DRAINAGE CONDITIONS ARE SIMILIAR TO CASE 2 BUT IT IS DESIRED TO PLACE THE PIPE ASKEW, THE "F" ENDWALL CAN BE USED. THE WINGS WILL BE PLACED THE SAME AS IN CASE 2. BUT THE LENGTH OF THE HEADWALL WILL BE INCREASED DUE TO THE INCREASED AREA OF THE PIPE.



CASE ④. WHEN A PIPE IS PLACED ASKEW TO FOLLOW THE NATURAL WATER COURSE AND THE SIDE DITCH DRAINAGE IS IN ONE DIRECTION. THE "F" ENDWALL WILL BE USED WITH THE EXCEPTION THAT THE HEADWALL WILL BE LENGTHENED DUE TO THE INCREASED AREA OF THE PIPE.



CASE ⑤. WHEN AND ASKEWED ROAD OR ENTRANCE INTERSECTS THE MAIN LINE AND THE DRAINAGE IS PARALLEL TO THE MAIN LINE AND INTERSECTING ROAD OR ENTRANCE, THE "F" ENDWALL CAN BE USED AS FOLLOWS:
A. DETERMINE DIRECTION OF PIPE. B. COMPUTE "S". THEN A LINE WHICH IS PERPENDICULAR TO THE ℄ OF THE PIPE AND TANGENT TO THE ARC WHOSE RADIUS IS R + S DETERMINES THE LOCATION OF THE HEADWALL. THE LENGTH OF THE WINGWALLS IS STANDARD BUT THE ANGLE IS SUCH, THAT THE END OF THE WINGWALL IS 6" FROM THE TOE OF THE SLOPE, AS SHOWN. "S" IS COMPUTED IN LIKE MANNER. AND THE LOCATION OF THE HEADWALL IS THE INTERSECTION OF THE ARC R + S, AND THE ℄ OF THE PIPE. THE WINGS ARE LOCATED AS DESCRIBED ABOVE, OR AS SHOWN.



SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

SHA State Highway Administration	APPROVAL + SHA REVISIONS	APPROVAL + FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	1-24-72	9-23-56
REVISED	10-1-01	REVISED
REVISED		REVISED
REVISED		REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STANDARD TYPE F ENDWALL MODIFICATIONS

STANDARD NO. MD 358.03

NOTE:
LINE SIDE SLOPES AND BOTTOM OF RIPRAP OUTLETS WITH SOIL AND FILL VOIDS UP TO TOP OF ROCKS. TOP OF ROCKS SHALL REMAIN EXPOSED.

ROCK OUTFALL PROTECTION DIMENSIONS (IN FEET)

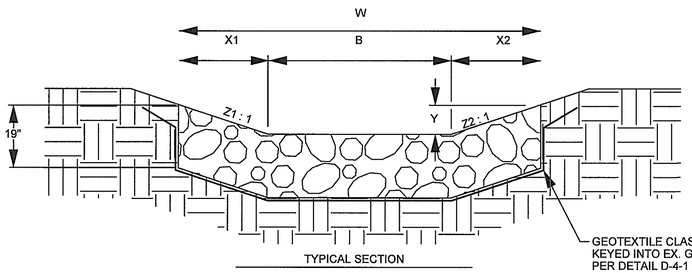
OUTFALL LOCATION	UPSTREAM SECTION								DOWNSTREAM SECTION							
	STATION	W	B	Y	X1	X2	Z1	Z2	STATION	W	B	Y	X1	X2	Z1	Z2
48" CMP*	20+11	26	1.5	4.5	12	12	2	2	20+36	45	12.5	4.5	16.5	16	3	3
EW–1	30+23	9	3	1	3	3	3	3	30+39	19	13	1	3	3	3	3

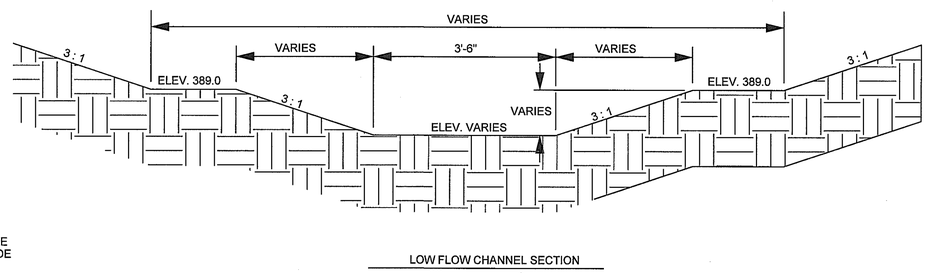
*INSTALL ROCK TO EL. 393.5/TOP OF PIPE; MATCH EX. GRADES ALONG CHANNEL SIDE SLOPES

NOTE:
1. FOR LENGTH AND QUANTITIES SEE SITE PLAN SHEET 29 OF 48.
2. TYPICAL SECTIONS ARE FOR DIMENSIONAL PURPOSES ONLY. REFER TO STANDARD MDE DETAILS D–4–1 FOR CONSTRUCTION SPECIFICATIONS.

PLUNGE POOL DIMENSIONS (IN FEET)

OUTFALL LOCATION	STATION	B	C	D	E	F
BASIN 1	20+11	15	18	19	3	1.5
BASIN 2	30+23	5	6	19	1	0.5





DT-74-6

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed Date 8/12/15
Approved Date 8/13/15
254973
S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed Date 8/12/15
Approved Date 8/13/15

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed Date 8/12/15
258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

BY: $USERNAMES

DESIGN		
Landscape Architect	Date	Checked By:
Architect	Date	Checked By: MBM
Engineer	Date	Checked By: DMH
DEA		
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND · STEVEN M. GREER · 16493 · PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

Details RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

SC/SWM
SHT. # 37 of 49

PLOTTED: Friday, May 08, 2015 AT 09:49 AM
FILE: \\balsrv04\v2005\2005\05050_lcr\ES-CM SWM Contract RC-C\RC-74\cadd\plans\pDT-0004_RC74.dgn

SEQUENCE OF CONSTRUCTION

1. PRIOR TO CLEARING OF TREES, INSTALLING SEDIMENT CONTROL MEASURES, OR GRADING, A PRECONSTRUCTION MEETING MUST BE CONDUCTED ON-SITE WITH THE MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES (MCDPS) SEDIMENT CONTROL INSPECTOR (240) 777-0311 (48 HOURS NOTICE) AND THE M-NCPPC PLANNING DEPARTMENT, AND A REPRESENTATIVE ENGINEER FROM THE ICC.

BASIN 1 (FAST)
WORK ON BASIN 1 MUST BE COMPLETED BEFORE BEGINNING WORK ON BASIN 2.

2. THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO CLEARING OF TREES, INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION, OR OTHER LAND DISTURBING ACTIVITIES. REFER TO THE OVERALL FINAL FOREST CONSERVATION PLANS FOR THE REQUIRED INFORMATION.

3. THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE M-NCPPC INSPECTOR, CERTIFYING THAT THE LIMITS OF DISTURBANCE AND TREE PROTECTION MEASURES ARE CORRECTLY MARKED AND INSTALLED PRIOR TO COMMENCING ANY CLEARING.

4. INSTALL STABILIZED CONSTRUCTION ENTRANCE, CONSTRUCTION ACCESS ROAD, SILT FENCE, COFFERDAM, SUMP PIT AND SANDBAG FLOW BARRIER. REMOVING EXISTING RISER STRUCTURE AND LOW FLOW PIPE. PROVIDE PUMP AND FILTER BAG TO DEWATER EXISTING STORAGE BASIN DURING CONSTRUCTION OF PROPOSED RISER. CONTINUOUS PUMPING OPERATIONS MAY BE NECESSARY UNTIL THE RISER AND PRINCIPAL SPILLWAY WORK IS COMPLETED, COFFERDAM AND SANDBAG FLOW BARRIER REMOVED AND MODIFIED DEWATERING DEVICE INSTALLED.

5. SLIP LINE THE PRINCIPAL SPILLWAY AND INSTALL THE RISER. ALSO INSTALL THE ROCK OUTLET PROTECTION AND FILTER DRAINAGE DIAPHRAGM. INSTALL TEMPORARY MODIFIED DEWATERING DEVICE IMMEDIATELY AFTER REMOVAL OF THE TEMPORARY COFFERDAM AND SANDBAG FLOW BARRIER.

6. AT THE BEGINNING OF EACH WORKING DAY DRAIN ANY WATER FROM THE BOTTOM OF THE SEDIMENT BASIN USING A FILTER BAG. FILTER BAG MUST BE HAND PLACED AND HAND REMOVED.

7. BEGIN GRADING THE POND.

8. AS GRADING OF THE POND IS COMPLETED INSTALL POND ACCESS PATH.

9. WITH THE WRITTEN APPROVAL OF THE MCDPS INSPECTOR REMOVE THE REMAINDER OF THE SEDIMENT CONTROLS.

BASIN 2 (WEST)
WORK ON BASIN 2 MUST BEGIN AFTER THE WORK ON BASIN 1 IS COMPLETED.

10. THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO CLEARING OF TREES, INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION, OR OTHER LAND DISTURBING ACTIVITIES. REFER TO THE OVERALL FINAL FOREST CONSERVATION PLANS FOR THE REQUIRED INFORMATION.

11. THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE M-NCPPC INSPECTOR, CERTIFYING THAT THE LIMITS OF DISTURBANCE AND TREE PROTECTION MEASURES ARE CORRECTLY MARKED AND INSTALLED PRIOR TO COMMENCING ANY CLEARING.

12. INSTALL STABILIZED CONSTRUCTION ENTRANCE, CONSTRUCTION ACCESS ROAD, DIVERSION PIPES, SILT FENCE, SUMP PITS AND SANDBAG FLOW BARRIERS. CONTINUOUS PUMPING OPERATIONS MAY BE NECESSARY UNTIL THE RISER AND PRINCIPAL SPILLWAY WORK IS COMPLETED, SANDBAG FLOW BARRIERS REMOVED AND MODIFIED DEWATERING DEVICE INSTALLED.

13. SLIP LINE THE PRINCIPAL SPILLWAY; INSTALL THE RISER, EW-2, ROCK OUTLET PROTECTION AND STORM DRAIN TO EW-1. INSTALL TEMPORARY MODIFIED DEWATERING DEVICE IMMEDIATELY AFTER REMOVAL OF THE SANDBAG FLOW BARRIERS.

14. AT THE BEGINNING OF EACH WORKING DAY DRAIN ANY WATER FROM THE BOTTOM OF THE SEDIMENT BASIN USING A FILTER BAG.

15. BEGIN GRADING THE POND.

16. AS GRADING OF THE POND IS COMPLETED INSTALL POND ACCESS PATH.

17. WITH THE WRITTEN APPROVAL OF THE MCDPS INSPECTOR REMOVE THE REMAINDER OF THE SEDIMENT CONTROLS.

18. PERMANENTLY STABILIZE ALL DISTURBED AREAS.

SEDIMENT BASIN RC-74-2	
DRAINAGE AREA	= 25.68 AC
TOTAL STORAGE REQUIRED	= 46,224 CF
TOTAL STORAGE PROVIDED	= 47,657 CF
WET STORAGE REQUIRED	= N/A CF
WET STORAGE PROVIDED	= N/A CF
DRY STORAGE REQUIRED	= 46,224 CF
DRY STORAGE PROVIDED	= 47,657 CF
ELEVATION AT DEWATERING	= N/A
CLEANOUT ELEVATION	= N/A
WEIR CREST ELEVATION	= 394.50'
ORIFICE INVERT ELEVATION	= 390.90'
BOTTOM ELEVATION	= 390.90'

NOTE: WET POOL IS NOT PROVIDED.

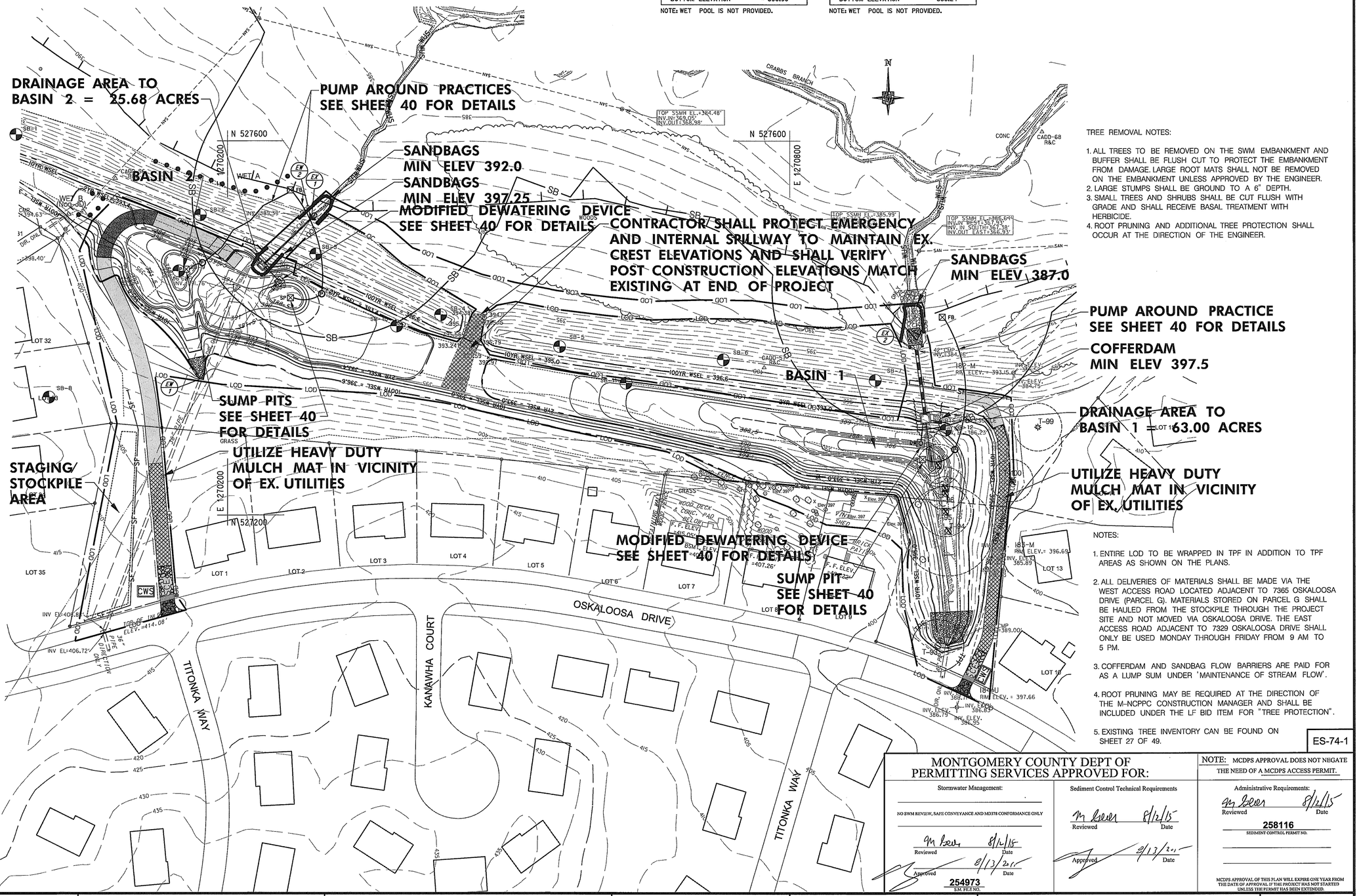
SEDIMENT BASIN RC-74-1	
DRAINAGE AREA	= 63.00 A.C.
TOTAL STORAGE REQUIRED	= 113,400 CF
TOTAL STORAGE PROVIDED	= 134,961 CF
WET STORAGE REQUIRED	= N/A CF
WET STORAGE PROVIDED	= N/A CF
DRY STORAGE REQUIRED	= 113,400 CF
DRY STORAGE PROVIDED	= 134,961 CF
ELEVATION AT DEWATERING	= N/A
CLEANOUT ELEVATION	= N/A
WEIR CREST ELEVATION	= 392.30'
ORIFICE INVERT ELEVATION	= 386.24'
BOTTOM ELEVATION	= 386.24'

NOTE: WET POOL IS NOT PROVIDED.

*TEMPORARY SEED ALL DISTURBED AREAS WITHIN LIMITS OF DISTURBANCE

**TEMPORARY MULCH ALL DISTURBED AREAS WITHIN LIMITS OF DISTURBANCE

***TURFGRASS ESTABLISHMENT FOR ALL DISTURBED AREAS WITHIN LIMITS OF DISTURBANCE THAT ARE INDICATED AS LAWN ON THE LANDSCAPING PLANS.



TREE REMOVAL NOTES:

1. ALL TREES TO BE REMOVED ON THE SWM EMBANKMENT AND BUFFER SHALL BE FLUSH CUT TO PROTECT THE EMBANKMENT FROM DAMAGE. LARGE ROOT MATS SHALL NOT BE REMOVED ON THE EMBANKMENT UNLESS APPROVED BY THE ENGINEER.
2. LARGE STUMPS SHALL BE GROUND TO A 6" DEPTH.
3. SMALL TREES AND SHRUBS SHALL BE CUT FLUSH WITH GRADE AND SHALL RECEIVE BASAL TREATMENT WITH HERBICIDE.
4. ROOT PRUNING AND ADDITIONAL TREE PROTECTION SHALL OCCUR AT THE DIRECTION OF THE ENGINEER.

NOTES:

1. ENTIRE LOD TO BE WRAPPED IN TPF IN ADDITION TO TPF AREAS AS SHOWN ON THE PLANS.
2. ALL DELIVERIES OF MATERIALS SHALL BE MADE VIA THE WEST ACCESS ROAD LOCATED ADJACENT TO 7365 OSKALOOSA DRIVE (PARCEL G). MATERIALS STORED ON PARCEL G SHALL BE HAULED FROM THE STOCKPILE THROUGH THE PROJECT SITE AND NOT MOVED VIA OSKALOOSA DRIVE. THE EAST ACCESS ROAD ADJACENT TO 7329 OSKALOOSA DRIVE SHALL ONLY BE USED MONDAY THROUGH FRIDAY FROM 9 AM TO 5 PM.
3. COFFERDAM AND SANDBAG FLOW BARRIERS ARE PAID FOR AS A LUMP SUM UNDER 'MAINTENANCE OF STREAM FLOW'.
4. ROOT PRUNING MAY BE REQUIRED AT THE DIRECTION OF THE M-NCPPC CONSTRUCTION MANAGER AND SHALL BE INCLUDED UNDER THE LF BID ITEM FOR "TREE PROTECTION".
5. EXISTING TREE INVENTORY CAN BE FOUND ON SHEET 27 OF 49.

ES-74-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/14/15 Date
Approved 8/13/2015 Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/13/2015 Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed 8/12/15 Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
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Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By: MBM
Engineer	Date	Checked By: DMH
DEA		DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND — STEVEN M. SAPP — 16493 — PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON _____

REVISIONS

Rev. No.	Date	Description

E & S Plan RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 50'

SC/SWM
SHT. # 38 of 49

PLOTTED: Friday, May 08, 2015 AT 09:51 AM
FILE: \\balsnp04\v2005\2005\05050_loc\ES-CM SWM Contract RC-C\RC-74\cadd\plans\pES-D000_RC74.dgn

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PLAN SCANNED:
PARK CODE: C10
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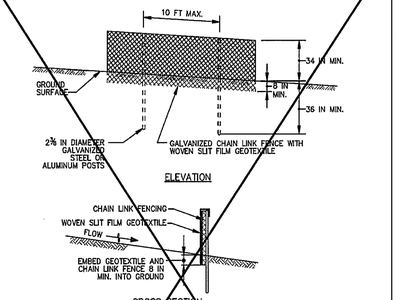
C:\XX_DATA\Standard Cover Sheet for Drawings.dwg Model
BY: $USERNAME$

FINAL SCANNED:
PLAN SCANNED:
PARK CODE: C10

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



CONSTRUCTION SPECIFICATIONS

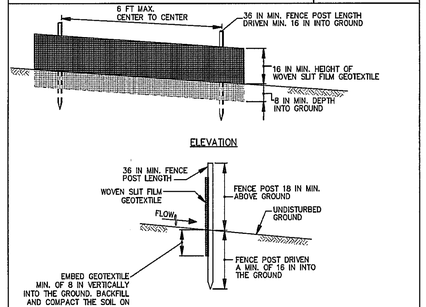
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2¼ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HOG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1/8 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

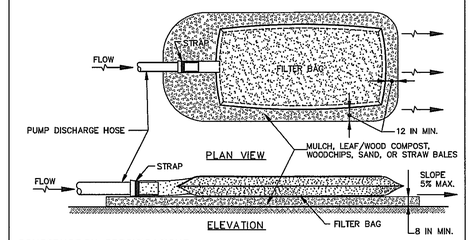
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL F-4 FILTER BAG

STANDARD SYMBOL: ☒FB



CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D-4491
PERMITTIVITY (SEC⁻¹)	1.2 SEC⁻¹	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632

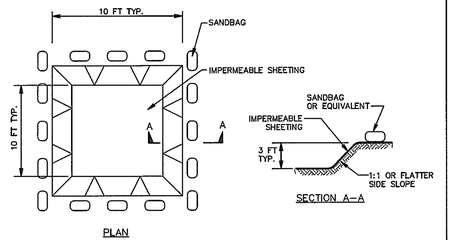
6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL: CWS



WASHOUT STRUCTURE WITH WOOD PLANKS

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE

CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*50 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

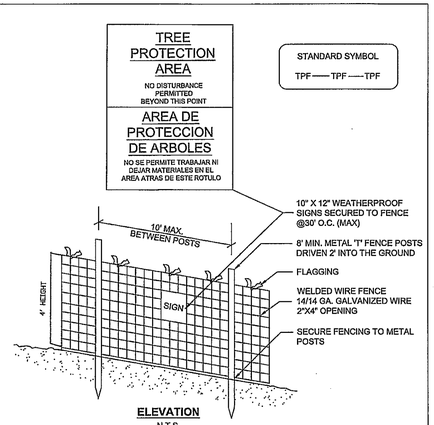
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TREE PROTECTION FENCE

TREE PROTECTION AREA
NO DISTURBANCE PERMITTED BEYOND THIS POINT
AREA DE PROTECCION DE ARBOLES
NO SE PERMITE TRABAJAR NI DEJAR MATERIALES EN EL AREA ATRAS DE ESTE ROTULO

STANDARD SYMBOL: TPF —— TPF —— TPF

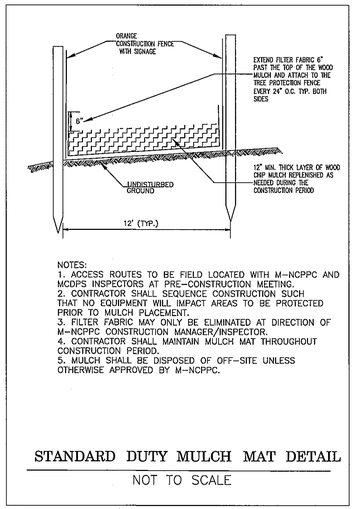


NOTES:

1. PRACTICE MAY BE COMBINED WITH SEDIMENT CONTROL FENCING.
2. LOCATION AND LIMITS OF FENCING SHALL BE COORDINATED IN FIELD WITH ARBORIST.
3. BOUNDARIES OF PROTECTION AREA SHOULD BE STAKED PRIOR TO INSTALLING PROTECTIVE DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE IS REQUIRED.
6. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks

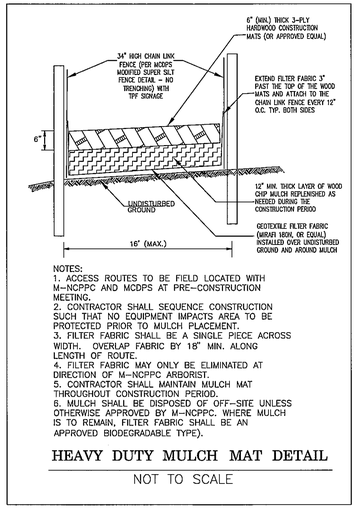
Detail No.
JUNE 2007



NOTES:
1. ACCESS ROUTES TO BE FIELD LOCATED WITH M-NCPPC AND MCDPS INSPECTORS AT PRE-CONSTRUCTION MEETING.
2. CONTRACTOR SHALL SEQUENCE CONSTRUCTION SUCH THAT NO EQUIPMENT WILL IMPACT AREAS TO BE PROTECTED PRIOR TO MULCH PLACEMENT.
3. FILTER FABRIC MAY ONLY BE ELIMINATED AT DIRECTION OF M-NCPPC CONSTRUCTION MANAGER/INSPECTOR.
4. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD.
5. MULCH SHALL BE DISPOSED OF OFF-SITE UNLESS OTHERWISE APPROVED BY M-NCPPC.

STANDARD DUTY MULCH MAT DETAIL

NOT TO SCALE



NOTES:
1. ACCESS ROUTES TO BE FIELD LOCATED WITH M-NCPPC AND MCDPS INSPECTORS AT PRE-CONSTRUCTION MEETING.
2. CONTRACTOR SHALL SEQUENCE CONSTRUCTION SUCH THAT NO EQUIPMENT IMPACTS AREA TO BE PROTECTED PRIOR TO MULCH PLACEMENT.
3. FILTER FABRIC SHALL BE A SINGLE PIECE ACROSS WIDTH. OVERLAP FABRIC BY 18" MIN. ALONG LENGTH OF ROUTE.
4. FILTER FABRIC MAY ONLY BE ELIMINATED AT DIRECTION OF M-NCPPC ARBORIST.
5. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD.
6. MULCH SHALL BE DISPOSED OF OFF-SITE UNLESS OTHERWISE APPROVED BY M-NCPPC. WHERE MULCH IS TO REMAIN, FILTER FABRIC SHALL BE AN APPROVED BIODEGRADABLE TYPE).

HEAVY DUTY MULCH MAT DETAIL

NOT TO SCALE

ES-74-2

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed Date
Approved Date
254973
S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/13/2015 Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed 8/12/15 Date
258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

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DESIGN

Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

ESC Details RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

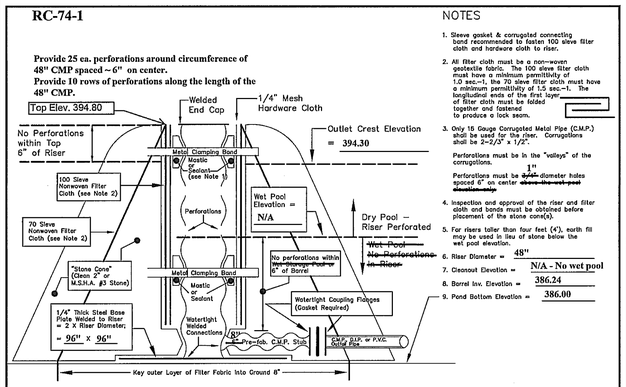
SCALE: N ≠ A0'

SC/SWM
SHT. # 39 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:52 AM
FILE: \\balan04\v0020\j0060\j60500_bc\ES-CM SWM Contract RC-C\RC-74\cadd\plans\pES-0002_RC74.dgn

RC-74-1

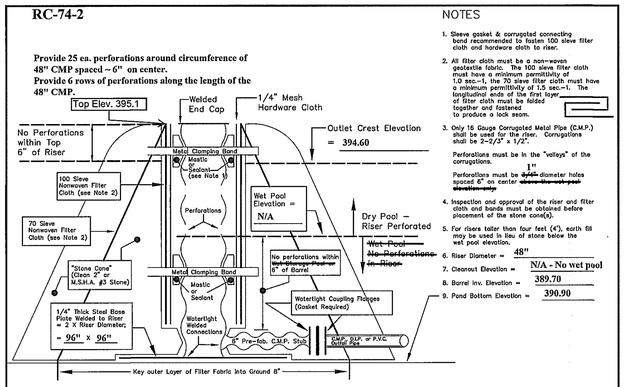


NOTES

1. Sleeve gasket & corrugated connecting band recommended to fasten 100 sieve filter cloth and hardware cloth to riser.
2. All filter cloth must be a non-woven geotextile fabric. The 100 sieve filter cloth must have a minimum permittivity of 1.0 sec.-1, the 70 sieve filter cloth must have a minimum permittivity of 1.5 sec.-1. The longitudinal ends of the first layer of filter cloth must be folded together and fastened to produce a lock seam.
3. Only 16 Gauge Corrugated Metal Pipe (C.M.P.) shall be used for the riser. Corrugations shall be 2-2/3" x 1/2".
   Perforations must be in the "valleys" of the corrugations.
   Perforations must be 1" diameter holes spaced 6" on center ~~above the wet pool elevation~~.
4. Inspection and approval of the riser and filter cloth and bands must be obtained before placement of the stone cone(s).
5. For risers taller than four feet (4'), earth fill may be used in lieu of stone below the wet pool elevation.
6. Riser Diameter = 48"
7. Cleanout Elevation = N/A - No wet pool
8. Barrel Inv. Elevation = 386.24
9. Pond Bottom Elevation = 386.00

	MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES WATER RESOURCES	MODIFIED DEWATERING DEVICE FOR SEDIMENT TRAPS, SEDIMENT BASINS AND STORMWATER MANAGEMENT PONDS	DATE: Feb.1997 REVISION: May 1997 SCALE: NONE

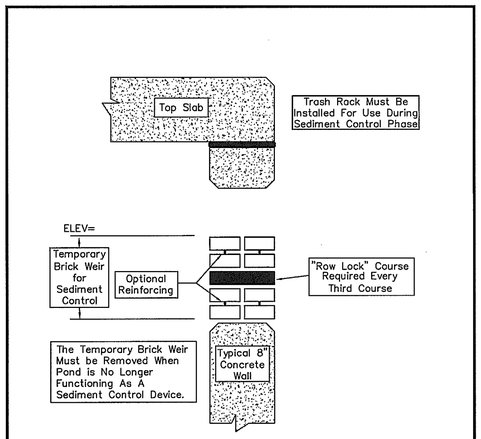
RC-74-2



NOTES

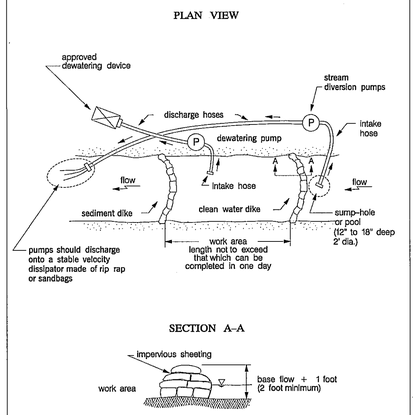
1. Sleeve gasket & corrugated connecting band recommended to fasten 100 sieve filter cloth and hardware cloth to riser.
2. All filter cloth must be a non-woven geotextile fabric. The 100 sieve filter cloth must have a minimum permittivity of 1.0 sec.-1, the 70 sieve filter cloth must have a minimum permittivity of 1.5 sec.-1. The longitudinal ends of the first layer of filter cloth must be folded together and fastened to produce a lock seam.
3. Only 16 Gauge Corrugated Metal Pipe (C.M.P.) shall be used for the riser. Corrugations shall be 2-2/3" x 1/2".
   Perforations must be in the "valleys" of the corrugations.
   Perforations must be 1" diameter holes spaced 6" on center ~~above the wet pool elevation~~.
4. Inspection and approval of the riser and filter cloth and bands must be obtained before placement of the stone cone(s).
5. For risers taller than four feet (4'), earth fill may be used in lieu of stone below the wet pool elevation.
6. Riser Diameter = 48"
7. Cleanout Elevation = N/A - No wet pool
8. Barrel Inv. Elevation = 389.70
9. Pond Bottom Elevation = 390.90

	MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES WATER RESOURCES	MODIFIED DEWATERING DEVICE FOR SEDIMENT TRAPS, SEDIMENT BASINS AND STORMWATER MANAGEMENT PONDS	DATE: Feb.1997 REVISION: May 1997 SCALE: NONE



	MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES WATER RESOURCES	TEMPORARY BRICK WEIR IN PERMANENT CONCRETE RISERS	DATE: 10/03 SCALE: NONE

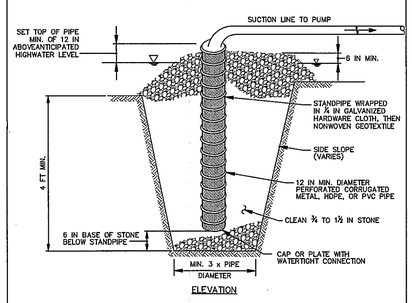
Maryland's Guidelines To Waterway Construction
DETAIL 1.2: PUMP–AROUND PRACTICE



TEMPORARY INSTREAM CONSTRUCTION MEASURES	*REVISED NOVEMBER 2000 PAGE 1.2 – 3*	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL F-2 SUMP PIT

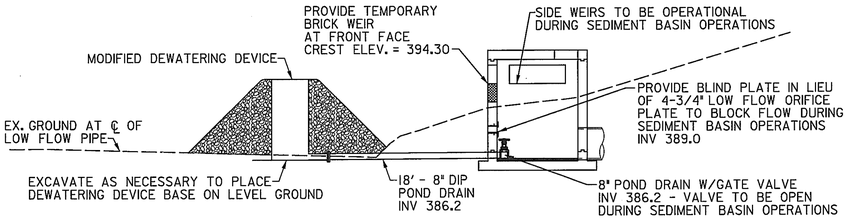
STANDARD SYMBOL ☒SP



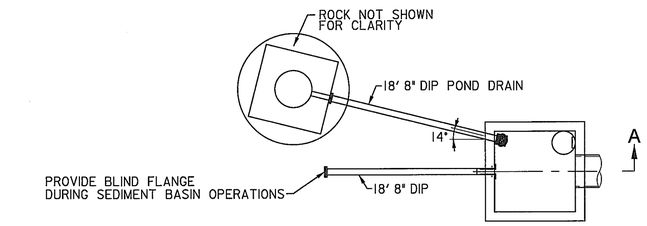
CONSTRUCTION SPECIFICATIONS

1. USE 12 INCH OR LARGER DIAMETER CORRUGATED METAL, HDPE, OR PVC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER. BOTTOM OF PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
2. WRAP PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH AND WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, OVER THE HARDWARE CLOTH.
3. EXCAVATE PIT TO THREE TIMES THE PIPE DIAMETER AND FOUR FEET IN DEPTH. PLACE ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
4. SET TOP OF PIPE MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
5. BACKFILL PIT AROUND THE PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
6. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
7. A SUMP PIT REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, REMOVE PERFORATED PIPE AND REPLACE GEOTEXTILE AND STONE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

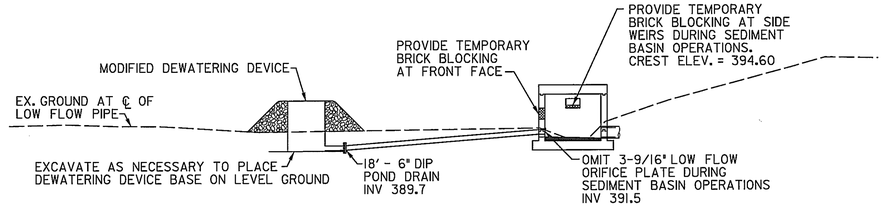


SECTION A-A

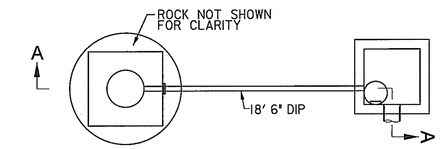


PLAN VIEW

BASIN 1 - 8" LOW FLOW PIPE AND 8" POND DRAIN DETAILS TEMPORARY SEDIMENT BASIN MODIFICATIONS



SECTION A-A



PLAN VIEW

BASIN 2 - 6" LOW FLOW PIPE TEMPORARY SEDIMENT BASIN MODIFICATIONS

ES-74-3

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/13/2015 Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/13/2015 Date

Administrative Requirements:
Reviewed 8/12/15 Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

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Engineers | Construction Managers | Planners | Scientists
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DESIGN

Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND DENNIS E. SAUNDERS 16493 PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date

Construction Manager Date

Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

ESC Details RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: N/A 30'

SC/SWM
SHT. # 40 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:53 AM
FILE: \\balrsrv04\d0003\2003\05050_loc\ES-CM SWM Contract RC-C\RC-74\cadd\plans\pES-0003_RC74.dgn

FINAL SCANNED:

PLAN SCANNED:

PARK CODE: C10

STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. THE PERMITTEE SHALL NOTIFY THE DEPARTMENT OF PERMITTING SERVICES (DPS) FORTY-EIGHT (48) HOURS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY THE DEPARTMENT, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN THEM OR THEIR REPRESENTATIVE, THEIR ENGINEER AND AN AUTHORIZED REPRESENTATIVE OF THE DEPARTMENT.

2. THE PERMITTEE MUST OBTAIN INSPECTION AND APPROVAL BY DPS AT THE FOLLOWING POINTS:
A. AT THE REQUIRED PRE-CONSTRUCTION MEETING.
B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES AND PRIOR TO ANY OTHER LAND DISTURBING ACTIVITY.
C. DURING THE INSTALLATION OF A SEDIMENT BASIN OR STORMWATER MANAGEMENT STRUCTURE AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION IS MANDATORY.
D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
E. PRIOR TO FINAL ACCEPTANCE.

3. THE PERMITTEE SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE, SHALL HAVE THEM INSPECTED AND APPROVED BY THE DEPARTMENT PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES, SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM THE DEPARTMENT.

4. THE PERMITTEE SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO TRAVERSED PUBLIC THOROUGHFARE(S). ALL MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARE(S) SHALL BE REMOVED IMMEDIATELY.

5. THE PERMITTEE SHALL INSPECT PERIODICALLY AND MAINTAIN CONTINUOUSLY IN EFFECTIVE OPERATING CONDITION, ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE DEPARTMENT. THE PERMITTEE IS RESPONSIBLE FOR IMMEDIATELY REPAIRING OR REPLACING ANY SEDIMENT CONTROL MEASURES WHICH HAVE BEEN DAMAGED OR REMOVED BY THE PERMITTEE OR ANY OTHER PERSON.

6. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
a) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
b) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED AND STABILIZED IMMEDIATELY. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.

7. THE PERMITTEE SHALL APPLY SOD, SEED, AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS WITHIN SEVEN (7) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED ON THAT AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. ACTIVE CONSTRUCTION AREAS SUCH AS BORROW OR STOCKPILE AREAS, ROADWAY IMPROVEMENTS, AND AREAS WITHIN FIFTY (50) FEET OF A BUILDING UNDER CONSTRUCTION MAY BE EXEMPT FROM THIS REQUIREMENT, PROVIDED THAT EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED AND MAINTAINED TO PROTECT THOSE AREAS.

8. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE PERMITTEE SHALL STABILIZE ALL CONTRIBUTORY DISTURBED AREAS WITH REQUIRED SOIL AMENDMENTS AND TOPSOIL, USING SOD OR AN APPROVED PERMANENT SEED MIXTURE AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHEN THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED WITHIN SEVEN (7) CALENDAR DAYS OF ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, AN APPROVED TEMPORARY SEED AND STRAW ANCHORED MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE COMPLETED PRIOR TO THE FOLLOWING APRIL 15.

9. THE SITE PERMIT, WORK, MATERIALS, APPROVED SC/SM PLANS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MONTGOMERY COUNTY.

10. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO LOWER THE WATER DOWN SLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. MECHANICAL DEVICES MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.

11. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITHIN 3 CALENDAR DAYS OF ESTABLISHMENT WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED STABILIZATION MEASURES.

12. SEDIMENT CONTROL DEVICES SHALL BE REMOVED, WITH PERMISSION OF THE DEPARTMENT, WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS.
STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.

13. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS OR ON RESIDENTIAL LOTS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NONMAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.

14. THE PERMITTEE SHALL INSTALL A SPLASHBLOCK AT THE BOTTOM OF EACH DOWNSPOUT UNLESS THE DOWNSPOUT IS CONNECTED BY A DRAIN LINE TO AN ACCEPTABLE OUTLET.

15. FOR FINISHED GRADING, THE PERMITTEE SHALL PROVIDE ADEQUATE GRADIENTS SO AS TO PREVENT WATER FROM STANDING ON THE SURFACE OF LAWNS MORE THAN TWENTY-FOUR (24) HOURS AFTER THE END OF A RAINFALL, EXCEPT IN DESIGNATED DRAINAGE COURSES AND SWALE FLOW AREAS, WHICH MAY DRAIN AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL.

16. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A BUILDING WHICH IS EXISTING OR UNDER CONSTRUCTION. NO BUILDING MAY BE CONSTRUCTED WITHIN 20 FEET OF A SEDIMENT TRAP OR BASIN.

17. ALL INLETS IN NON-SUMP AREAS SHALL HAVE ASPHALT BERMS INSTALLED AT THE TIME OF BASE PAVING ESTABLISHMENT.

18. THE SEDIMENT CONTROL INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SEDIMENT CONTROL MEASURES, AS DEEMED NECESSARY.

19. ALL TRAP ELEVATIONS ARE RELATIVE TO THE OUTLET ELEVATION, WHICH MUST BE ON EXISTING UNDISTURBED GROUND.

20. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

RC-74

PROJECT LOCATION: MONTGOMERY COUNTY
Scale: 1" = 6,000'

STANDARD EROSION AND SEDIMENT CONTROL NOTES - CONTINUED

21. SEDIMENT TRAP(S)/BASIN(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO THE POINT OF ONE-HALF (1/2) THE WET STORAGE DEPTH OF THE TRAP/BASIN (1/4 THE WET STORAGE DEPTH FOR ST-III) OR WHEN REQUIRED BY THE SEDIMENT CONTROL INSPECTOR.

22. SEDIMENT REMOVED FROM TRAPS/BASINS SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN.

23. ALL SEDIMENT BASINS AND TRAPS MUST BE SURROUNDED WITH A WELDED WIRE SAFETY FENCE. THE FENCE MUST BE AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THE TWO INCHES IN WIDTH AND FOUR INCHES IN HEIGHT, WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED IN GOOD CONDITION AT ALL TIMES.

24. NO EXCAVATION IN THE AREAS OF EXISTING UTILITIES IS PERMITTED UNLESS THEIR LOCATION HAS BEEN DETERMINED. CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK.

25. OFF-SITE SPOIL OR BORROW AREAS MUST HAVE PRIOR APPROVAL BY DPS.

26. SEDIMENT TRAP/BASIN DEWATERING FOR CLEANOUT OR REPAIR MAY ONLY BE DONE WITH THE DPS INSPECTOR'S PERMISSION. THE INSPECTOR MUST APPROVE THE DEWATERING METHOD FOR EACH APPLICATION. THE FOLLOWING METHODS MAY BE CONSIDERED:
A. PUMP DISCHARGE MAY BE DIRECTED TO ANOTHER ON-SITE SEDIMENT TRAP OR BASIN, PROVIDED IT IS OF SUFFICIENT VOLUME AND THE PUMP INTAKE IS FLOATED TO PREVENT AGITATION OR SUCTION OF DEPOSITED SEDIMENTS; OR
B. THE PUMP INTAKE MAY UTILIZE A REMOVABLE PUMPING STATION AND MUST DISCHARGE INTO AN UNDISTURBED AREA THROUGH A NON-EROSIVE OUTLET; OR
C. THE PUMP INTAKE MAY BE FLOATED AND DISCHARGE INTO A DIRT BAG (12 OZ. NON-WOVEN FABRIC), OR APPROVED EQUIVALENT, LOCATED IN AN UNDISTURBED BUFFER AREA.

REMEMBER: DEWATERING OPERATION AND METHOD MUST HAVE PRIOR APPROVAL BY THE DPS INSPECTOR.

27. THE PERMITTEE MUST NOTIFY THE DEPARTMENT OF ALL UTILITY CONSTRUCTION ACTIVITIES WITHIN THE PERMITTED LIMITS OF DISTURBANCE PRIOR TO THE COMMENCEMENT OF THOSE ACTIVITIES.

28. TOPSOIL MUST BE APPLIED TO ALL PERVIOUS AREAS WITHIN THE LIMITS OF DISTURBANCE PRIOR TO PERMANENT STABILIZATION IN ACCORDANCE WITH MDE *STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS*.

SPECIFICATIONS FOR TOPSOIL

1. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY DPS. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS, AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.

2. THE SUBSOIL SHALL BE TILLED TO A MINIMUM DEPTH OF 6 INCHES BEFORE PLACEMENT OF TOPSOIL.

3. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 LBS PER 1000 SQ FT) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL.

4. TOPSOIL SHALL BE TESTED AND AMENDED AS PER SOIL TEST RECOMMENDATIONS.

TOPSOIL APPLICATION:

1. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES.

2. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4-8 INCH LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

3. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

LIST OF PREDOMANT SOIL TYPES

SYMBOL	DESCRIPTION	HSG
2B	GLENLG SILT LOAM	B
5B	GLENLG SILT LOAM	C

M-NCPPC NOTES:

1. AN ON-SITE PRE-CONSTRUCTION MEETING SHALL BE REQUIRED AFTER THE LIMITS OF DISTURBANCE HAVE BEEN STAKED AND FLAGGED, BUT BEFORE ANY CLEARING OR GRADING BEGINS. THE CONTRACTOR SHALL CONTACT THE MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION CONSTRUCTION MANAGER PRIOR TO COMMENCING CONSTRUCTION TO VERIFY THE LIMITS OF DISTURBANCE AND DISCUSS TREE PROTECTION AND TREE CARE MEASURES. THE ATTENDANTS AT THIS MEETING SHOULD INCLUDE: CONSTRUCTION MANAGER OR SUPERINTENDENT, A CERTIFIED ARBORIST OR MD LICENSED TREE EXPERT THAT WILL IMPLEMENT THE TREE PROTECTION MEASURES, M-NCPPC CONSTRUCTION MANAGER AND/OR INSPECTOR, AND DPS SEDIMENT CONTROL INSPECTOR. AND THE MNCPPC ENVIRONMENTAL PLANNING DEPARTMENT INSPECTOR.

2. NO CLEARING OR GRADING SHALL BEGIN BEFORE STRESS-REDUCTION MEASURES HAVE BEEN IMPLEMENTED. APPROPRIATE MEASURES MAY INCLUDE, BUT ARE NOT LIMITED TO:
A. ROOT PRUNING
B. CROWN REDUCTION OR PRUNING
C. WATERING
D. FERTILIZING
E. VERTICAL MULCHING
F. ROOT AERATION MATTING
MEASURES NOT SPECIFIED ON THE EXEMPTION PLAN MAY BE REQUIRED AS DETERMINED BY THE M-NCPPC INSPECTOR IN COORDINATION WITH THE ARBORIST.

3. A STATE OF MARYLAND LICENSED TREE EXPERT, OR AN INTERNATIONAL SOCIETY OF ARBORICULTURE CERTIFIED ARBORIST MUST PERFORM ALL STRESS REDUCTION MEASURES. DOCUMENTATION OF STRESS REDUCTION MEASURES MUST BE EITHER OBSERVED BY THE M-NCPPC INSPECTOR OR SENT TO THE M-NCPPC INSPECTOR AT 8787 GEORGIA AVENUE, SILVER SPRING, MD 20910. THE M-NCPPC INSPECTOR WILL DETERMINE THE EXACT METHOD TO CONVEY THE STRESS REDUCTION MEASURES DURING THE PRE-CONSTRUCTION MEETING.

4. TEMPORARY TREE PROTECTION DEVICES SHALL BE INSTALLED PER THE EXEMPTION PLAN AND PRIOR TO ANY CONSTRUCTION ACTIVITIES. TREE PROTECTION FENCING LOCATIONS SHOULD BE STAKED PRIOR TO THE PRE-CONSTRUCTION MEETING. M-NCPPC CONSTRUCTION MANAGER AND/OR INSPECTOR, IN COORDINATION WITH THE DPS SEDIMENT CONTROL INSPECTOR, AND THE MNCPPC ENVIRONMENTAL PLANNING DEPARTMENT INSPECTOR MAY MAKE FIELD ADJUSTMENTS TO INCREASE THE SURVIVABILITY OF TREES AND FOREST SHOWN AS SAVED ON THE APPROVED PLAN.
TEMPORARY TREE PROTECTION DEVICES MAY INCLUDE:
A. CHAIN LINK FENCE (FOUR FEET HIGH)
B. SUPER SILT FENCE WITH WIRE STRUNG BETWEEN THE SUPPORT POLES (MINIMUM 4 FEET HIGH) WITH HIGH VISIBILITY FLAGGING.
C. 14 GAUGE 2 INCH X 4 INCH WELDED WIRE FENCING SUPPORTED BY STEEL T-BAR POSTS (MINIMUM 4 FEET HIGH) WITH VISIBILITY FLAGGING.

5. TEMPORARY PROTECTION DEVICES SHALL BE MAINTAINED AND INSTALLED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION PROJECT AND MUST NOT BE ALTERED WITHOUT PRIOR APPROVAL FROM M-NCPPC. NO EQUIPMENT, TRUCKS, MATERIALS, OR DEBRIS MAY BE STORED WITHIN THE TREE PROTECTION FENCE AREAS DURING THE ENTIRE CONSTRUCTION PROJECT. NO VEHICLE OR EQUIPMENT ACCESS TO THE FENCED AREA WILL BE PERMITTED. TREE PROTECTION SHALL NOT BE REMOVED WITHOUT PRIOR APPROVAL OF M-NCPPC. TREE PROTECTION SERVICES TO BE COORDINATED WITH EROSION AND SEDIMENT CONTROL DEVICES AS INDICATED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE DEPARTMENT OF PERMITTING SERVICES.

6. FOREST RETENTION AREA SIGNS SHALL BE INSTALLED AS REQUIRED BY THE M-NCPPC INSPECTOR, OR AS SHOWN ON APPROVED PLAN.

7. PERIODIC INSPECTIONS BY M-NCPPC WILL OCCUR DURING THE CONSTRUCTION PROJECT. CORRECTIONS AND REPAIRS TO ALL TREE PROTECTION DEVICES, AS DETERMINED BY THE M-NCPPC INSPECTOR, MUST BE MADE WITHIN THE TIMEFRAME ESTABLISHED BY THE M-NCPPC INSPECTOR.

8. AFTER CONSTRUCTION IS COMPLETED, AN INSPECTION SHALL BE REQUESTED. CORRECTIVE MEASURE WHICH MAY BE REQUIRED INCLUDE:
A. REMOVAL AND REPLACEMENT OF DEAD AND DYING TREE
B. PRUNING OF DEAD OR DECLINING LIMBS
C. SOIL AERATION
D. FERTILIZATION
E. WATERING
F. WOUND REPAIR
G. CLEAN UP OF RETENTION AREAS

9. AFTER INSPECTION AND COMPLETION OF CORRECTIVE MEASURES HAVE BEEN UNDERTAKEN, ALL TEMPORARY PROTECTION DEVICES SHALL BE REMOVED FROM THE SITE. NO ADDITIONAL GRADING, SODDING, OR BURIAL MAY TAKE PLACE.

CONSTRUCTION INSPECTION
CHECK-OFF LIST FOR STORMWATER MANAGEMENT PONDS

STAGE	DESIGN ENGINEER (DE)	GEOTECHNICAL ENGINEER (GEO)	COUNTY INSPECTOR	MNCPPC & OTHER
* MANDATORY NOTIFICATION: Inspection and approval by the parties indicated is required at these points prior to proceeding with construction. The permittee is required to give the required inspection parties twenty-four (24) hours notice (DPS telephone 240-777-0311). The DPS inspector may waive an inspection, provided the design engineer and/or geotechnical engineer makes the required inspection per a prior scheduled arrangement which has been confirmed with the DPS inspector. Work completed without the necessary party's approval may result in the permittee having to remove and reconstruct the unapproved work. The permittee must maintain a "record set" of approved SC/SM plans on-site.	INITIAL/DATE	INITIAL/DATE	INITIAL/DATE	INITIAL/DATE
1. Pre-construction meeting & field review of tree save flagging/tree protection	*	*	*	*
2. Sediment control installation			*	
3. Dewatering (GEO) and stream diversion (DE)	*	*	*	
4. Clearing, grubbing, subgrade preparation		*	*	
5. Core trench excavation and dewatering, if required (GEO)		*	*	
6. Core trench dimensions, location (DE) or (GEO), backfill and compaction tests (GEO)		*	*	
7. Construction of principal spillway and riser 7a. - Barrel class (ASTM C361) (DE) - Pipe certification from supplier (DE) - Pipe assembled I in place on acceptable subgrade (GEO) - Watertight joints (DE) - Articulated 4 feet from riser (DE) - Lifts, compaction, soil material (GEO) - Location, dimensions (DE)	*	*	*	
7b. - Concrete cradle dimensions (DE) - Concrete strength tests (GEO)	*	*	*	
7c. - Anti-seep collars (location , collar dimensions and re-bar size (DE) - Concrete strength tests (GEO)	*	*	*	
7d. - Filter diaphragm gradations and dimensions (if applicable) (GEO)		*	*	
7e. - Riser footing subgrade (GEO), dimensions, re-bar (DE) - Concrete strength tests (GEO)	*	*	*	
7f. Precast Riser: - Shop drawings approved by DE, accepted by County - Visual inspection of riser (no cracks, spaulding, exposed steel, incorrect dimensions, honeycombing) (DE) - Certification from supplier (DE) - Watertight joints (DE) - Wall and opening dimensions per plan (DE)	*		*	
7g. Cast-In-Place Riser: - Wall and openings dimensions per plan (DE) - Re-bar size, number, spacing acceptable (DE) - Concrete testing and certification (GEO) - Watertight joints (DE) - Extreme weather provisions (DE)	*	*	*	
7h. Valve/orifice plate installation (DE). Note: may be delayed for SC purposes.	*		*	
8. Backfilling of principal spillway (GEO)		*	*	
9. Underdrain (if applicable) location (DE), pipe size (DE), filter cloth (DE), gravel (DE), field adjustment s(GEO)	*	*	*	
10. Channelization work and pond outfall protection (DE) or (GEO)	*		*	
11. Diversion of stream through principal spillway (DE)	*	*	*	
12. Construction of embankment - Lifts, compaction, soil material (GEO) - Location, dimension (DE)	*		*	
13. Construction of emergency spillway in cut (DE)	*		*	
14. Field verification of constructed contours (DE)	*		*	
15. Permanent stabilization, delivery tickets from supplier			*	
16. Submit record drawing and documentation (DE) and (GEO)	*			
17. Other items. (Set valve(s) to design opening values, if required) (DE) Sliplining of principal spillway (DE)	*		*	
18. Final inspection (DE) and (GEO)	*	*	*	

NOTES:
1. Permittee to supply Design Engineer with delivery tickets for all materials used in Pond construction, for submission with the as-built package. DPS Inspection Telephone: (240) 777-0311
2. See construction specifications this plan for detailed requirements.
3. A copy of this completed checklist must be submitted as part of the stormwater management as-built package. MNCP&PC Inspection Telephone (301) 495-4571.

ES-74-4

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
M Geer 8/12/15
Reviewed Date
8/13/2015
Approved Date
254973
S.M. FILE NO.

Sediment Control Technical Requirements
M Geer 8/12/15
Reviewed Date
8/13/2015
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NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
M Geer 8/12/15
Reviewed Date
258116
SEDIMENT CONTROL PERMIT NO.

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Rummel, Klepper & Kahl, LLP
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Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN		
Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND PROFESSIONAL ENGINEER No. 16493

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL
Project Manager 5-14-15 Date
Construction Manager Date
Project Engineer

ISSUED FOR PROCUREMENT ON

REVISIONS		
Rev. No.	Date	Description

EROSION AND SEDIMENT CONTROL NOTES RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

SC/SWM
SHT. # 41 of 49

BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:55 AM
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STAKEOUT DATA RC-74			
POINT	ELEVATION	EASTING	NORTHING
BASIN 1 SHALLOW MARSH			
1	386.0	1,270,947.62	527,247.23
2	386.0	1,270,957.78	527,246.52
3	386.0	1,270,958.30	527,283.66
4	386.0	1,270,944.60	527,270.42
5	386.0	1,270,876.93	527,277.73
6	386.0	1,270,872.27	527,278.30
7	386.0	1,270,857.47	527,280.38
8	386.0	1,270,856.25	527,269.96
9	386.0	1,270,914.17	527,264.81
10	387.0	1,270,947.83	527,241.94
11	387.0	1,270,957.50	527,227.60
12	387.0	1,270,959.86	527,221.67
13	387.0	1,270,963.92	527,197.21
14	387.0	1,270,967.40	527,197.57
15	387.0	1,270,964.82	527,255.80
16	387.5	1,270,966.50	527,172.47
17	387.5	1,270,969.99	527,172.84
18	388.0	1,270,796.34	527,294.93
19	388.0	1,270,793.26	527,283.43
20	388.0	1,270,815.75	527,270.54
21	388.0	1,270,825.58	527,266.80
22	388.0	1,270,966.40	527,163.94
23	388.0	1,270,968.14	527,147.51
24	388.0	1,270,971.63	527,147.66
25	388.0	1,270,971.88	527,164.19
26	388.0	1,270,969.01	527,228.88
27	388.0	1,270,969.05	527,230.50
28	388.0	1,270,970.51	527,248.76
29	388.5	1,270,744.42	527,304.03
30	388.5	1,270,742.66	527,292.43
31	388.5	1,270,770.24	527,288.25
32	388.5	1,270,969.26	527,122.53
33	388.5	1,270,972.76	527,122.69
34	388.5	1,270,716.37	527,320.47
35	389.0	1,270,712.06	527,298.07
36	389.0	1,270,716.76	527,296.98
37	389.0	1,270,728.68	527,288.36
BASIN 1 EMBANKMENT			
38	389.0	1,270,740.77	527,280.58
39	389.0	1,270,773.43	527,275.63
40	389.0	1,270,806.47	527,260.67
41	389.0	1,270,824.44	527,253.35
42	389.0	1,270,912.54	527,245.38
43	389.0	1,270,934.15	527,232.71
44	389.0	1,270,945.34	527,216.12
45	389.0	1,270,948.15	527,209.82
46	389.0	1,270,979.38	527,210.27
47	389.0	1,270,977.43	527,182.24
48	389.0	1,270,937.99	527,163.40
49	389.0	1,270,930.74	527,197.38
50	390.0	1,270,933.23	527,174.78
51	390.0	1,270,933.82	527,170.33
52	390.0	1,270,748.26	527,276.41
53	390.0	1,270,720.89	527,261.57
54	390.0	1,270,640.69	527,300.04
55	390.0	1,270,625.19	527,321.90
56	390.0	1,270,625.66	527,325.86
57	390.0	1,270,636.84	527,334.61
58	390.0	1,270,934.31	527,294.32
59	390.0	1,270,939.23	527,293.84
60	390.0	1,270,947.28	527,293.66
61	391.0	1,270,658.75	527,292.71
62	391.0	1,270,612.65	527,302.74
63	393.0	1,270,600.91	527,298.76
64	393.0	1,270,553.77	527,308.42
65	393.0	1,270,520.80	527,315.49
66	393.0	1,270,485.97	527,323.15
BASIN 2 SHALLOW MARSH			
67	388.5	1,270,276.07	527,423.29
68	388.5	1,270,279.26	527,432.01
69	388.5	1,270,266.80	527,443.48
70	388.5	1,270,255.87	527,442.36
71	388.5	1,270,249.02	527,439.87
72	388.5	1,270,250.08	527,427.36
73	388.5	1,270,265.03	527,422.33
74	390.0	1,270,239.28	527,441.11
75	391.0	1,270,215.10	527,444.68
76	391.0	1,270,187.54	527,457.45
77	391.0	1,270,176.72	527,455.88
78	391.0	1,270,168.70	527,440.16
79	391.0	1,270,171.95	527,430.75
80	391.0	1,270,173.22	527,428.59
81	391.0	1,270,174.76	527,423.63
82	391.0	1,270,182.27	527,415.86
83	391.0	1,270,194.16	527,411.72
84	391.0	1,270,216.63	527,414.32

BASIN 2 FOREBAY			
85	388.5	1,270,161.55	527,459.42
86	388.5	1,270,160.05	527,472.56
87	388.5	1,270,146.03	527,478.11
88	388.5	1,270,135.21	527,466.60
89	388.5	1,270,143.93	527,444.89
90	388.5	1,270,155.06	527,447.02
91	391.0	1,270,130.24	527,459.17
92	391.0	1,270,116.20	527,481.63
93	391.0	1,270,125.04	527,494.48
94	391.5	1,270,295.20	527,415.77
95	391.5	1,270,294.26	527,434.70
96	391.5	1,270,280.03	527,447.62
97	391.5	1,270,264.67	527,454.50
98	391.5	1,270,257.32	527,455.48
99	391.5	1,270,236.29	527,452.99
100	391.5	1,270,220.15	527,455.56
101	391.5	1,270,116.30	527,499.55
102	391.5	1,270,097.43	527,497.32
103	391.5	1,270,096.83	527,483.11
104	391.5	1,270,126.37	527,436.26
105	391.5	1,270,135.47	527,429.92
106	391.5	1,270,144.28	527,424.26
107	391.5	1,270,164.01	527,427.54
108	391.5	1,270,171.78	527,428.14

BASIN 2 EMBANKMENT			
109	393.0	1,270,352.61	527,413.89
110	393.0	1,270,357.70	527,400.64
111	393.0	1,270,345.52	527,373.55
112	393.0	1,270,322.75	527,362.27
113	393.0	1,270,297.12	527,366.13
114	393.0	1,270,274.55	527,372.25
115	393.0	1,270,264.55	527,377.57
116	393.0	1,270,197.51	527,397.12
117	393.0	1,270,189.72	527,398.97
118	393.0	1,270,128.62	527,426.10
119	393.0	1,270,119.46	527,427.48
120	393.0	1,270,096.66	527,468.86
121	393.0	1,270,092.82	527,486.16
122	393.0	1,270,083.83	527,493.40
123	393.0	1,270,069.72	527,501.41
124	393.0	1,270,066.25	527,505.39
125	393.0	1,270,208.47	527,481.95
126	393.0	1,270,226.41	527,474.01
127	393.0	1,270,238.10	527,461.92
128	393.0	1,270,247.44	527,458.66
129	393.0	1,270,366.06	527,346.47
130	393.0	1,270,337.89	527,356.00
131	394.0	1,270,090.24	527,472.51
132	394.0	1,270,079.51	527,484.77
133	394.0	1,270,467.98	527,324.73
134	394.0	1,270,424.06	527,335.45
135	395.0	1,270,176.24	527,394.14
136	395.0	1,270,172.25	527,391.36

DD-74-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed — Date
Approved — Date
254973
S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/13/2015 Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed 8/12/15 Date
258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By: MBM
Engineer	Date	Checked By: DMH
DEA		Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON

REVISIONS

Rev. No.	Date	Description

Grading Stakeout RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 40'

SC/SWM
SHT. # 42 of 49

PLOTTED: Friday, May 08, 2015 AT 09:56 AM
FILE: \\balsrv04\v2005\2005\05050_lcc\ES-CM SWM Contract RC-C\(RC-74\cadd\plans\pGR-S000_RC74.dgn

TREES AND SHRUBS -- THIS SHEET

Symbol	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Size	Type	Placement
TREES							
AR	3	*Acer rubrum*	red maple	FAC	6' ht.	Container grown	As Shown on Plan
BN	2	*Betula nigra**	river birch	FACW		Multistem, 3 stems min., Container grown	As Shown on Plan
CF	2	*Cornus florida 'Appalachian Spring'*	flowering dogwood	FACU	6' ht.	Container grown	As Shown on Plan
PO	1	*Platanus occidentalis**	American sycamore	FACW	6' ht.	Container grown	As Shown on Plan
QA	2	*Quercus alba**	white oak	FACU	6' ht.	Container grown	As Shown on Plan
	10	**=total**					
SHRUBS							
CA	8	*Cornus amomum*	silky dogwood	FACW	18" ht.	Container grown	As Shown on Plan
CO	5	Cephalanthus occidentalis	buttonbush	OBL	18" ht.	Container grown	As Shown on Plan
SN	3	*Salix nigra*	black willow	OBL	18" ht.	Container grown	As Shown on Plan
	16	**=total**					

* = Fall Digging Hazard

POND A
PERMANENT POOL ELEVATION= EL. 391.5
BOTTOM ELEVATION= EL. 388.5
EMERGENT AND FLOATING AQUATIC ZONE = EL. 391.0- 391.5
FLUCTUATING ZONE= EL. 391.5 - 396.7

NOTES:
1. THIS SHEET IS FOR LANDSCAPING PURPOSES ONLY.
2. SEE SHEET LD-74-3 FOR PLANTING SCHEDULES.
3. REFER TO SPECIFICATION SECTION 705 - SEEDING AND SODDING FOR TURF AREAS FOR DIRECTIVES ON LAWN ESTABLISHMENT (3,260 SQ. YDS. THIS SHEET).

LEGEND

- EXISTING DECIDUOUS TREE
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- PROPOSED SHRUB
- LOD — LIMIT OF DISTURBANCE
- 401 — PROPOSED CONTOUR
- PROPOSED TREE LINE

PLANTING ZONES (POND A)

- REGULAR INUNDATION (RI) — (OBL EMERGENT HERB SPECIES) EL. 391.0 - 391.5 POND A
- PERIODIC INUNDATION (PI) — (OBL, FACW & FAC SPECIES) EL. 391.5 - 393.0 POND A
- INFREQUENT INUNDATION (II) — (FAC & UPL SPECIES) EL. 393.0 - 396.0 POND A

PLANTING ZONES (UPLAND)

- NO INUNDATION (NI) — (UPLAND SPECIES) EL. 396.0+
- LAWN

LD-74-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/13/2015 Date

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/13/2015 Date
254973
S.M. FILE NO.

Administrative Requirements:
Reviewed 8/12/15 Date
258116
SEDIMENT CONTROL PERMIT NO.

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

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PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

DDM		JAH
Landscape Architect	Date	Checked By:
Architect	Date	Checked By:
DMH		SAS
Engineer	Date	Checked By:
SJS		WMM
Drawn by	Date	Checked By:

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

License No. 3126
Expiration Date 03/20/2016

STATE OF MARYLAND · WILLIAM M. SHELL · No. 3126 · LANDSCAPE ARCHITECT

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON _____

REVISIONS

Rev. No.	Date	Description

Landscape Plan RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

SC/SWM
SHT. # 43 of 49

PARK CODE: C10 PLAN SCANNED: FINAL SCANNED:
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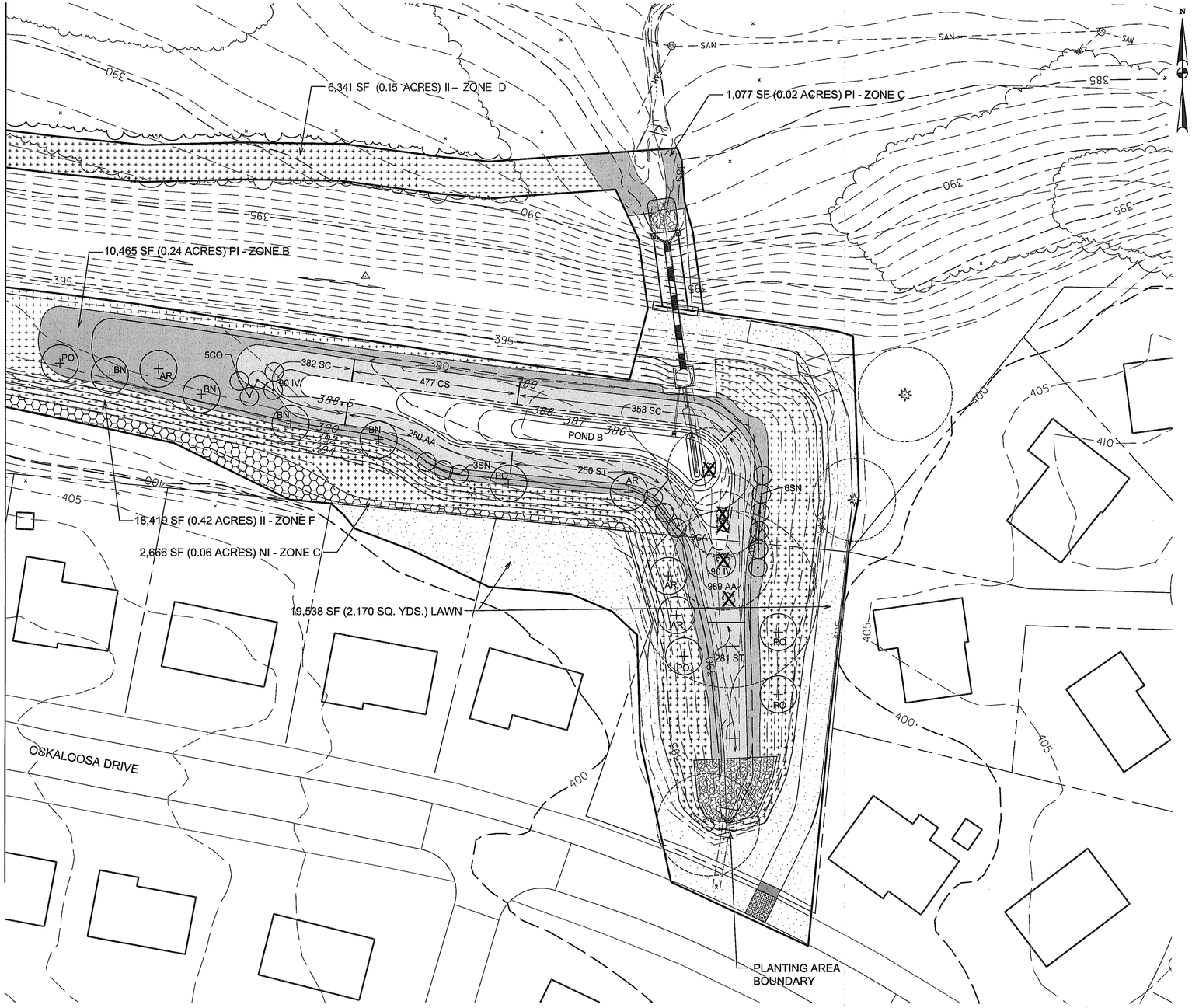
BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:56 AM
FILE: \\balsn04\v2005\2005\05050_loc\ES-CM SWM Contract RC-C\RC-74\caddf\plans\pLD-001_RC74-DLW.dgn



TREES AND SHRUBS -- THIS SHEET							
Symbol	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Size	Type	Placement
TREES							
AR	4	*Acer rubrum*	red maple	FAC	6' ht.	Container grown	As Shown on Plan
BN	4	*Betula nigra**	river birch	FACW		Multistem, 3 stems min., Container grown	As Shown on Plan
PO	5	*Platanus occidentalis**	American sycamore	FACW	6' ht.	Container grown	As Shown on Plan
	13	**=total**					
SHRUBS							
CA	3	*Cornus amomum*	silky dogwood	FACW	18" ht.	Container grown	As Shown on Plan
CO	5	Cephalanthus occidentalis	buttonbush	OBL	18" ht.	Container grown	As Shown on Plan
SN	9	*Salix nigra*	black willow	OBL	18" ht.	Container grown	As Shown on Plan
	17	**=total**					
* = Fall Digging Hazard							

POND B
PERMANENT POOL ELEVATION= EL. 389.0
BOTTOM ELEVATION= EL. 386.0
EMERGENT AND FLOATING AQUATIC ZONE = EL. 388.5- 389.0
FLUCTUATING ZONE= EL. 389.0 - 396.7

NOTES:
1. THIS SHEET IS FOR LANDSCAPING PURPOSES ONLY.
2. SEE SHEET LD-74-3 FOR PLANTING SCHEDULES.
3. REFER TO SPECIFICATION SECTION 705 - SEEDING AND SODDING FOR TURF AREAS FOR DIRECTIVES ON LAWN ESTABLISHMENT (2,170 SQ. YDS. THIS SHEET).

LEGEND

- EXISTING DECIDUOUS TREE
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- PROPOSED SHRUB
- PROPOSED TREE LINE
- —LOD— PROPOSED LIMIT OF DISTURBANCE
- —401— PROPOSED CONTOUR

PLANTING ZONES (POND A)

- REGULAR INUNDATION (RI) — (OBL EMERGENT HERB SPECIES) EL. 391.0 - 391.5 POND A
- PERIODIC INUNDATION (PI) — (OBL, FACW & FAC SPECIES) EL. 391.5 - 393.0 POND A
- INFREQUENT INUNDATION (II) — (FAC & UPL SPECIES) EL. 393.0 - 396.0 POND A

PLANTING ZONES (UPLAND)

- NO INUNDATION (NI) — (UPLAND SPECIES) EL. 396.0+
- LAWN

LD-74-2

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
M Lewer 8/12/15 Reviewed Date
8/13/2015 Approved Date
254973 E.M. FILE NO.

Sediment Control Technical Requirements
M Lewer 8/12/15 Reviewed Date
8/13/2015 Approved Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
M Lewer 8/12/15 Reviewed Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN
DDM — JAH
Landscape Architect — Date — Checked By:
Architect — Date — Checked By:
DMH — SAS
Engineer — Date — Checked By:
SJS — WMM
Drawn by — Date — Checked By:

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed landscape architect under the laws of the State of Maryland.
License No. 3126
Expiration Date 03/20/2016
STATE OF MARYLAND — DAVID M. BELL — No. 3126 — LANDSCAPE ARCHITECT

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL
Project Manager — 5-14-15 Date
Construction Manager — Date
Park Manager — Date

ISSUED FOR PROCUREMENT ON _____

REVISIONS

Rev. No.	Date	Description

Landscape Plan RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: 1 = 30'

SC/SWM
SHT. # 44 of 49

FINAL SCANNED:
PLAN SCANNED:
PARK CODE: C10
C:\X_DATA\Standard Cover Sheet for Drawings.dwg Model — Plotted By: dblack, 2/17/2010 3:28 PM, ----
BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:57 AM
FILE: \\balsrv04\v2005\20085\05050_lcc\ES-CM SWM Contract RC-C\RC-74\caddfg\plans\pLD-002_RC74-DLW.dgn

NO INUNDATION - ZONE A — Size (acres): 0.24

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Type	Placement
40 LBS	NATIVE PERMANENT SEED						
	20	1.9	*Chamaecrista fasciculata*	partridge pea	FACU	SEED	LB. of P.L.S. 76%
	20	1.9	*Elymus canadensis*	Canada wildrye	FACU	SEED	LB. of P.L.S. 76%
	15	1.4	*Elymus hystrix*	bottlebrush grass	NI	SEED	LB. of P.L.S. 76%
	3	0.3	*Monarda fistulosa*	wild bergamot	UPL	SEED	LB. of P.L.S. 76%
	4	0.4	*Rudbeckia hirta*	black eyed susan	FACU	SEED	LB. of P.L.S. 76%
	15	1.4	*Sorghastrum nutans*	Indiangrass	UPL	SEED	LB. of P.L.S. 76%
	10	1.0	*Schizachyrium scoparium*	little bluestem	FACU	SEED	LB. of P.L.S. 76%
	3	0.3	*Tridens flavus*	purple top	FACU	SEED	LB. of P.L.S. 76%
	10	1.0	*Tradescantia virginiana*	Virginia spiderwort	FACU	SEED	LB. of P.L.S. 76%
	100	**9.6**	**=total**				

P.L.S. = Pure Live Seed

NO INUNDATION - ZONE C — Size (acres): 0.06

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Type	Placement
40 LBS	NATIVE PERMANENT SEED						
	20	0.5	*Chamaecrista fasciculata*	partridge pea	FACU	SEED	LB. of P.L.S. 76%
	20	0.5	*Elymus canadensis*	Canada wildrye	FACU	SEED	LB. of P.L.S. 76%
	15	0.4	*Elymus hystrix*	bottlebrush grass	NI	SEED	LB. of P.L.S. 76%
	3	0.1	*Monarda fistulosa*	wild bergamot	UPL	SEED	LB. of P.L.S. 76%
	4	0.1	*Rudbeckia hirta*	black eyed susan	FACU	SEED	LB. of P.L.S. 76%
	15	0.4	*Sorghastrum nutans*	Indiangrass	UPL	SEED	LB. of P.L.S. 76%
	10	0.2	*Schizachyrium scoparium*	little bluestem	FACU	SEED	LB. of P.L.S. 76%
	3	0.1	*Tridens flavus*	purple top	FACU	SEED	LB. of P.L.S. 76%
	10	0.2	*Tradescantia virginiana*	Virginia spiderwort	FACU	SEED	LB. of P.L.S. 76%
	100	**2.4**	**=total**				

P.L.S. = Pure Live Seed

PERIODIC INUNDATION - ZONE A — Size (acres): 0.31

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	TYPE	Placement
40 lbs.	NATIVE PERMANENT SEED						
	20	2.5	*Carex vulpinoidea*	fox sedge	OBL	SEED	LB. of P.L.S. 76%
	20	2.5	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	1.9	*Leersia oryzoides*	rice cutgrass	OBL	SEED	LB. of P.L.S. 76%
	20	2.5	*Panicum clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	15	1.8	*Panicum virgatum*	switchgrass	FAC	SEED	LB. of P.L.S. 76%
	10	1.2	*Scirpus cyperinus*	wool grass	FACW	SEED	LB. of P.L.S. 76%
	100.0	**12.4**	**= total**				

P.L.S. = Pure Live Seed

PERIODIC INUNDATION - ZONE B — Size (acres): 0.24

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	TYPE	Placement
40 lbs.	NATIVE PERMANENT SEED						
	20	1.9	*Carex vulpinoidea*	fox sedge	OBL	SEED	LB. of P.L.S. 76%
	20	1.9	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	1.5	*Leersia oryzoides*	rice cutgrass	OBL	SEED	LB. of P.L.S. 76%
	20	1.9	*Panicum clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	15	1.4	*Panicum virgatum*	switchgrass	FAC	SEED	LB. of P.L.S. 76%
	10	1	*Scirpus cyperinus*	wool grass	FACW	SEED	LB. of P.L.S. 76%
	100.0	**9.6**	**= total**				

P.L.S. = Pure Live Seed

PERIODIC INUNDATION - ZONE C — Size (acres): 0.02

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	TYPE	Placement
40 lbs.	NATIVE PERMANENT SEED						
	20	0.2	*Carex vulpinoidea*	fox sedge	OBL	SEED	LB. of P.L.S. 76%
	20	0.2	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	0.1	*Leersia oryzoides*	rice cutgrass	OBL	SEED	LB. of P.L.S. 76%
	20	0.1	*Panicum clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	15	0.1	*Panicum virgatum*	switchgrass	FAC	SEED	LB. of P.L.S. 76%
	10	0.1	*Scirpus cyperinus*	wool grass	FACW	SEED	LB. of P.L.S. 76%
	100.0	**0.8**	**= total**				

P.L.S. = Pure Live Seed

INFREQUENT INUNDATION - ZONE A — Size (acres): 0.33

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Type	Placement
40 LBS	NATIVE PERMANENT SEED						
	10	1.3	*Andropogon virginicus*	broomsedge	FACU	SEED	LB. of P.L.S. 76%
	10	1.3	*Dichanthelium clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	20	2.6	*Elymus canadensis*	Canada wild rye	FAC	SEED	LB. of P.L.S. 76%
	20	2.6	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	2.0	*Sorghastrum nutans*	Indiangrass	UPL	SEED	LB. of P.L.S. 76%
	10	1.3	*Schizachyrium scoparium*	little bluestem	FACU	SEED	LB. of P.L.S. 76%
	15	2.0	*Tridens flavus*	purple top	FACU	SEED	LB. of P.L.S. 76%
	100	**13.2**	**= total**				

P.L.S. = Pure Live Seed

INFREQUENT INUNDATION - ZONE B — Size (acres): 0.16

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Type	Placement
40 LBS	NATIVE PERMANENT SEED						
	10	0.6	*Andropogon virginicus*	broomsedge	FACU	SEED	LB. of P.L.S. 76%
	10	0.6	*Dichanthelium clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	20	1.3	*Elymus canadensis*	Canada wild rye	FAC	SEED	LB. of P.L.S. 76%
	20	1.3	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	1.0	*Sorghastrum nutans*	Indiangrass	UPL	SEED	LB. of P.L.S. 76%
	10	0.6	*Schizachyrium scoparium*	little bluestem	FACU	SEED	LB. of P.L.S. 76%
	15	1.0	*Tridens flavus*	purple top	FACU	SEED	LB. of P.L.S. 76%
	100	**6.4**	**= total**				

P.L.S. = Pure Live Seed

INFREQUENT INUNDATION - ZONE C — Size (acres): 0.03

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Type	Placement
40 LBS	NATIVE PERMANENT SEED						
	10	0.1	*Andropogon virginicus*	broomsedge	FACU	SEED	LB. of P.L.S. 76%
	10	0.1	*Dichanthelium clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	20	0.2	*Elymus canadensis*	Canada wild rye	FAC	SEED	LB. of P.L.S. 76%
	20	0.2	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	0.2	*Sorghastrum nutans*	Indiangrass	UPL	SEED	LB. of P.L.S. 76%
	10	0.1	*Schizachyrium scoparium*	little bluestem	FACU	SEED	LB. of P.L.S. 76%
	15	0.2	*Tridens flavus*	purple top	FACU	SEED	LB. of P.L.S. 76%
	100	**1.2**	**= total**				

P.L.S. = Pure Live Seed

INFREQUENT INUNDATION - ZONE D — Size (acres): 0.15

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Type	Placement
40 LBS	NATIVE PERMANENT SEED						
	10	0.6	*Andropogon virginicus*	broomsedge	FACU	SEED	LB. of P.L.S. 76%
	10	0.6	*Dichanthelium clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	20	1.2	*Elymus canadensis*	Canada wild rye	FAC	SEED	LB. of P.L.S. 76%
	20	1.2	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	0.9	*Sorghastrum nutans*	Indiangrass	UPL	SEED	LB. of P.L.S. 76%
	10	0.6	*Schizachyrium scoparium*	little bluestem	FACU	SEED	LB. of P.L.S. 76%
	15	0.9	*Tridens flavus*	purple top	FACU	SEED	LB. of P.L.S. 76%
	100	**6.0**	**= total**				

P.L.S. = Pure Live Seed

INFREQUENT INUNDATION - ZONE F — Size (acres): 0.42

Quantity per acre	Frequency (%)	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Type	Placement
40 LBS	NATIVE PERMANENT SEED						
	10	1.7	*Andropogon virginicus*	broomsedge	FACU	SEED	LB. of P.L.S. 76%
	10	1.7	*Dichanthelium clandestinum*	deertongue	FAC	SEED	LB. of P.L.S. 76%
	20	3.4	*Elymus canadensis*	Canada wild rye	FAC	SEED	LB. of P.L.S. 76%
	20	3.4	*Elymus riparius*	riverbank wild rye	FACW	SEED	LB. of P.L.S. 76%
	15	2.5	*Sorghastrum nutans*	Indiangrass	UPL	SEED	LB. of P.L.S. 76%
	10	1.7	*Schizachyrium scoparium*	little bluestem	FACU	SEED	LB. of P.L.S. 76%
	15	2.5	*Tridens flavus*	purple top	FACU	SEED	LB. of P.L.S. 76%
	100	**17.0**	**= total**				

P.L.S. = Pure Live Seed

REGULAR INUNDATION ZONE -- POND A

Plant Key	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Size	Type	Placement
NATIVE RIPARIAN HERBS							
AA	289	*Acorus americanus*	sweet flag	OBL	2"	Plug	As per plan, 18" O.C.
CS	392	*Carex stricta*	tussock sedge	OBL	2"	Plug	As per plan, 18" O.C.
IV	713	*Iris versicolor*	blue flag	OBL	2"	Plug	As per plan, 12" O.C.
SC	348	*Saururus cernuus*	lizard's tail	OBL	2"	Plug	As per plan, 24" O.C.
ST	154	*Scirpus tabernaemontani*	soft stem bulrush	OBL	2"	Plug	As per plan, 24" O.C.
	1,896	**=total**					

REGULAR INUNDATION ZONE -- POND B

Plant Key	Species Quantity	Botanical Name	Common Name	Wetland Indicator Status	Size	Type	Placement
NATIVE RIPARIAN HERBS							
AA	1269	*Acorus americanus*	sweet flag	OBL	2"	Plug	As per plan, 18" O.C.
CS	477	*Carex stricta*	tussock sedge	OBL	2"	Plug	As per plan, 18" O.C.
IV	180	*Iris versicolor*	blue flag	OBL	2"	Plug	As per plan, 12" O.C.
SC	735	*Saururus cernuus*	lizard's tail	OBL	2"	Plug	As per plan, 24" O.C.
ST	531	*Scirpus tabernaemontani*	soft stem bulrush	OBL	2"	Plug	As per plan, 24" O.C.
	3,192	**=total**					

NOTE:
FOR LANDSCAPE DETAILS SEE SHEET 22 OF 49 (DWG NO. LD-73-4).

LD-74-3

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed — Date 8/12/15
Approved — Date 8/13/2015
254973
S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed — Date 8/12/15
Approved — Date 8/13/15

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed — Date 8/12/15
258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

DDM		JAH
Landscape Architect	Date	Checked By:
Architect	Date	Checked By: DMH
		SAS
Engineer	Date	Checked By: SJS
		WMM
Drawn by	Date	Checked By:

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

License No. 3126

Expiration Date 03/20/2016

STATE OF MARYLAND — DAVID A. MINSHELL — No. 3126 — LANDSCAPE ARCHITECT

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager — Date 5-14-15
Construction Manager — Date
Park Manager — Date

ISSUED FOR PROCUREMENT ON _____

REVISIONS

Rev. No.	Date	Description

Landscape Notes and Details RC-74
CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: N.T.S.

SC/SWM
SHT. # 45 of 49

PARK CODE: C10 PLAN SCANNED: FINAL SCANNED:

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BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:57 AM
FILE: \\balserv04\v2005\2005\05050_loc\ES-CM SWM Contract RC-C\RC-74\cadd\plans\pLD-003_RC74.dgn

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 2
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-01 Station/Offset ____ Coordinates N 527607 E 1269975
Boring By E2CR, INC Driller J. Sies
Surface Elevation 399.9 Date Started 7/22/10 Rig Type CME 450
Date Completed 7/22/10 Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
16.5	383.4	0	7/21/10
0.0	399.9		

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Dry, Grey, Sandy CLAY	1	4-4 6-6	0.0-2.0	14	Top soil = 1-inch
2.0	397.90	Dry, Red Brown Sandy CLAY	2	5-6 7-8	2.0-4.0	16	NMC= 14.8% LL= 35 PI= 15 % Passing #200= 66
4.0	395.90	Moist, Brown, Sandy CLAY, with Trace Gravel	3	6-8 7-7	4.0-6.0	16	NMC= 18.7% LL= 38 PI= 15 % Passing #200= 75
6.0	393.90	Moist, Brown, Sandy CLAY, with Trace Gravel and Organics	4	4-4 5-6	6.0-8.0	18	NMC= 19.2% LL= 38 PI= 13 % Passing #200= 65
			5	3-3 2-3	8.0-10.0	16	NMC= 26.6% LL= 35 PI= 10 % Passing #200= 67
10.0	389.90	Fine Silty CLAY	6	2-2 2-6	10.0-12.0	2	End of Fill at 11.5-ft
							NMC= 22.8% LL= 42 PI= 18 % Passing #200= 52
			7	2-3 2	13.5-15.0	14	NMC= 20.5% LL= 38 PI= 5 % Passing #200= 39

DEPTH | CASING BLOWS / FOOT: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 2 of 2
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-01 Station/Offset ____ Coordinates N 527599 E 1270380

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Fine Silty CLAY *(Continued)*					NMC= 11.9% % Passing #200= 26 Water encountered at 16.5-ft
18.5	381.40						
		Moist, Tan, Silty SAND, with Trace Organics	8	7-7 7	18.5-20.0	14	
20.0	379.90						
		Moist, Grey, Silty SAND	9	16-16 16	23.5-25.0	14	
25.0	374.90	Bottom of Boring @ 25 feet.					Bottom of Boring Water Dry and Caved at 5'-0"

DEPTH | CASING BLOWS / FOOT: 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 2
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-02 Station/Offset ____ Coordinates N 527521 E 1270171
Boring By E2CR, INC Driller J. Sies
Surface Elevation 399.6 Date Started 7/22/10 Rig Type CME 450
Date Completed 7/22/10 Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
15.0	384.6	0	7/21/10
0.0	399.6		

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Dry, Brown, Sandy CLAY	1	4-4 5-7	0.0-2.0	16	Top soil = 3"
2.0	397.60	Dry to Moist, Red Brown, Sandy CLAY	2	7-7 8-10	2.0-4.0	12	NMC= 24.1% LL= 32 PI= 10 % Passing #200= 57
4.0	395.60	Dry to Moist, Red Brown, Sandy CLAY, Trace Organics	3	5-6 6-8	4.0-6.0	18	NMC= 19.4% LL= 37 PI= 13 % Passing #200= 69
			4	5-5 6-6	6.0-8.0	18	NMC= 18.6% LL= 35 PI= 13 % Passing #200= 64
10.0	389.60		5	3-4 7-6	8.0-10.0	16	NMC= 13.2% LL= 35 PI= 14 % Passing #200= 46
12.0	387.60	Dry to Moist, Red Brown, Sandy CLAY, Trace Gravel	6	6-12 6-7	10.0-12.0	14	NMC= 18.4% LL= 38 PI= 13 % Passing #200= 59
14.0	385.60	Dry to Moist, Red Brown, Sandy CLAY, Trace Organics and Gravel	7	2-2 2-7	12.0-14.0	14	Bottom of Fill
		Moist, Brown, Silty SAND, with Gravel	8	7-6 4-4	14.0-16.0	18	NMC= 11.9% LL= 25 PI= 6 % Passing #200= 17

DEPTH | CASING BLOWS / FOOT: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 2 of 2
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-02 Station/Offset ____ Coordinates N 527521 E 1270171

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
16.0	383.60	Moist, Brown, Silty SAND, with Gravel *(Continued)*	8	7-6 4-4	14.0-16.0	18	Encountered Water 15'-0"
		Wet, Grey Brown, Silty SAND, with Gravel	9	7-6 7	18.5-20.0	12	NMC= 21.4% LL= 28 PI= 8 % Passing #200= 30
25.0	374.60		10	16-20 28	23.5-25.0	4	
30.0	369.60	Moist, Tan Brown, Silty SAND, with Organics	11	18-22 28	28.5-30.0	16	
		Bottom of Boring @ 30 feet.					Bottom of Boring 30'-0" End of Drilling: Water; Dry; Caved: 3'0 24hr Water Dry Caved 2'-2"

DEPTH | CASING BLOWS / FOOT: 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 2
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-03 Station/Offset ____ Coordinates N 527479 E 1270294
Boring By E2CR, INC Driller J. Sies
Surface Elevation 399.4 Date Started 7/22/10 Rig Type CME 450
Date Completed 7/22/10 Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
25.0	374.4	0	7/21/10
0.0	399.4		

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Dry, Brown, Sandy CLAY	1	3-4 4-7	0.0-2.0	12	Top soil=2"
2.0	397.40	Dry, Red Brown, Sandy CLAY	2	12-12 10-12	2.0-4.0	18	NMC= 16.3% LL= 40 PI= 17 % Passing #200= 71
4.0	395.40	Dry, Red Brown, Sandy CLAY, Trace Gravel	3	10-10 9-14	4.0-6.0	18	NMC= 17.6% LL= 34 PI= 11 % Passing #200= 70
			4	5-7 5-5	6.0-8.0	18	NMC= 18.7% LL= 36 PI= 14 % Passing #200= 68
8.0	391.40	Moist, Red Brown, Sandy CLAY, with Trace Organics	5	6-6 7-7	8.0-10.0	14	NMC= 16.1% LL= 38 PI= 15 % Passing #200= 55
			6	3-4 5-6	10.0-12.0	16	NMC= 21.5% LL= 40 PI= 16 % Passing #200= 78
12.0	387.40	Moist, Brown, Silty SAND, with Organics	7	3-3 4-6	12.0-14.0	18	End of fill at 12'-6"
14.0	385.40	Moist, Grey Brown, Silty SAND	8	5-5 5-6	14.0-16.0	12	NMC= 20.7% LL= 43 PI= 19 % Passing #200= 63

DEPTH | CASING BLOWS / FOOT: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 2 of 2
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-03 Station/Offset ____ Coordinates N 527479 E 1270294

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
16.0	383.40	Moist, Grey Brown, Silty SAND *(Continued)*	8	5-5 5-6	14.0-16.0	12	NMC= 21.2% LL= 34 PI= 10 % Passing #200= 50
		Moist, Red Brown, Silty SAND	9	6-9 12	18.5-20.0	18	
20.0	379.40	Moist, Red Brown, Silty SAND, Trace Gravel and Roots	10	11-11 12	23.5-25.0	10	Encountered water at 25'-0
25.0	374.40	Moist, Red Brown, Silty SAND	11	9-11 14	28.5-30.0	18	
30.0	369.40	Bottom of Boring @ 30 feet.					Bottom of Boring End of drilling Water: 24'-0" Cave: 26'-3" 24hr Water:___ Cave:___

DEPTH | CASING BLOWS / FOOT: 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

SB-74-1

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/13/2015 Date
254973 S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/13/2015 Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed 8/12/15 Date
258116 SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect MBM	Date	Checked By: DMH
Engineer DEA	Date	Checked By: DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND DAVID E. ALLAS PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5-14-15 Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON ____

REVISIONS

Rev. No.	Date	Description

Soil Borings RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: N.T.S.

SC/SWM
SHT. # 46 of 49

PLOTTED: Friday, May 08, 2015 AT 09:58 AM
FILE: \\balsrv04\vol003\2003\05050_lcc\ES-CM SWM Contract RC-C\RC-74\cadd\plans\p589-0001_RC74.dgn

PARK CODE: C10 PLAN SCANNED: FINAL SCANNED:
C:\XL_DATA\Standard Cover Sheet for Drawings.dwg Model Plotted By: dblack, 2/17/2010 3:28 PM, -----
BY: $USERNAME$

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 2
Boring ___ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-04 Station/Offset ___ Coordinates N 527414 E 1270429
Boring By E2CR, INC
Surface Elevation 399.7 Date Started 7/22/10 Date Completed 7/22/10

Driller	J. Sies
Rig Type	CME 450
Rig No.	
Drive Hammer	140 LB.
Casing Auger Size	3.25 IN.
Size of Core	IN.
Size of Bit OD	IN.
Core Barrel Type	
Auger Depth	

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
0.0	399.7	0	7/21/10
0.0	399.7		

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Dry, Tan Brown, Sandy CLAY, Trace Roots	1	3-3 4-4	0.0-2.0	14	Top Soil: 2"
2.0	397.70	Dry to Moist, Brown, Sandy CLAY	2	6-5 6-7	2.0-4.0	16	NMC= 13.9% LL= 33 PI= 11 % Passing #200= 69
4.0	395.70	Dry to Moist, Brown, Sandy CLAY, Trace Gravel	3	6-7 7-7	4.0-6.0	18	NMC= 17.3% LL= 34 PI= 13 % Passing #200= 63
6.0	393.70	Dry to Moist, Brown, Sandy CLAY, Trace Organics	4	5-5 8-8	6.0-8.0	18	NMC= 19.9% LL= 42 PI= 16 % Passing #200= 63
8.0	391.70	Dry to Moist, Red Grey Brown, Sandy CLAY, with Organics	5	3-5 5-4	8.0-10.0	18	NMC= 27.2% LL= 39 PI= 11 % Passing #200= 55 Bottom of the Fill
10.0	389.70	Moist, Silty SAND, with Organics	6	5-5 6-7	10.0-12.0	18	NMC= 21.7% LL= 37 PI= 10 % Passing #200= 47
12.0	387.70	Moist, Silty SAND, Trace Gravel and Organics	7	3-4 5	13.5-15.0	18	NMC= 21.9% LL= 33 PI= 9 % Passing #200= 56 NMC= 25.3% LL= 36 PI= 11 % Passing #200= 58
15.0	384.70						

DEPTH	CASING BLOWS / FOOT
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 2 of 2
Boring ___ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-04 Station/Offset ___ Coordinates N 527414 E 1270429

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Moist, Gray, Silty SAND, Trace Organics	8	5-7 8	18.5-20.0	18	
20.0	379.70	Moist, Tan, Silty SAND with Organics	9	8-9 10	23.5-25.0	16	
25.0	374.70	Bottom of Boring @ 25 feet.					Bottom of Boring End of Drilling Water: Dry; Cave 20'-0" 24hr Water:15'-7" Cave:23'-0"

DEPTH	CASING BLOWS / FOOT
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 2
Boring ___ of 280

Contract No. AX3765860 Project Description ICC CM-ES-CS: Peachwood (PB-114)
Boring No. RC-74 B-05 Station/Offset ___ Coordinates N 527380 E 1270554
Boring By E2CR, INC
Surface Elevation 399.7 Date Started 7/21/10 Date Completed 7/21/10

Driller	J. Sies
Rig Type	CME 450
Rig No.	
Drive Hammer	140 LB.
Casing Auger Size	3.25 IN.
Size of Core	IN.
Size of Bit OD	IN.
Core Barrel Type	
Auger Depth	

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
27.0	372.7	0	7/21/10

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Dry to moist, brown and tan, sandy CLAY with trace gravel (CL)	S-1	3-3 6-6	0.0-2.0	16	2-Inches Topsoil, Woodchips, Fill
		Red-brown sandy CLAY at 3-ft	S-2	5-5 9-10	2.0-4.0	16	NMC= 13.8% LL= 36 PI= 13 % Passing #200= 47
			S-3	6-7 7-11	4.0-6.0	16	NMC= 16.7% LL= 34 PI= 12 % Passing #200= 53
		Trace organic at 7-ft	S-4	5-6 7-8	6.0-8.0	18	NMC= 21.7% LL= 37 PI= 13 % Passing #200= 77
10.5	389.20	Moist, red-brown, sandy CLAY at 9-ft	S-5	4-7 7-7	8.0-10.0	12	NMC= 21.1% LL= 46 PI= 19 % Passing #200= 62
		Moist, tan, silty SAND (SM)	S-6	3-3 6-7	10.0-12.0	18	NMC= 17.6% LL= 31 PI= 5 % Passing #200= 49 Residual
		Moist, black, sandy organic at 14-ft	S-7	8-10 10	13.5-15.0	16	NMC= 16.4% LL= 34 PI= 3 % Passing #200= 40 NMC= 18.7% LL= 28 PI= 3 % Passing #200= 36

DEPTH	CASING BLOWS / FOOT
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 2 of 2
Boring ___ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-05 Station/Offset ___ Coordinates N 527380 E 1270554

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Moist, tan; silty SAND (SM) (Continued)					
		Medium sand, trace organic at 19-ft	S-8	7-9 12	18.5-20.0	18	
		Tan, silty SAND with trace organic at 24-ft	S-9	7-9 14	23.5-25.0	18	Water at 23.2-ft at 0-hrs 21'-6" at 24 hrs Caved at 24.0-ft at 0-hrs 21'-6" at 24 hrs Encountered Water at 27-ft
30.0	369.70	Bottom of Boring @ 30 feet.	S-10		28.5-30.0		

DEPTH	CASING BLOWS / FOOT
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 2
Boring ___ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-06 Station/Offset ___ Coordinates N 527366 E 1270729
Boring By E2CR, INC
Surface Elevation 399.5 Date Started 7/21/10 Date Completed 7/21/10

Driller	J. Sies
Rig Type	CME 450
Rig No.	
Drive Hammer	140 LB.
Casing Auger Size	3.25 IN.
Size of Core	IN.
Size of Bit OD	IN.
Core Barrel Type	
Auger Depth	

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
24.0	375.5	0	7/21/10

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Dry to moist, brown, sandy CLAY with trace gravel (CL)	S-1	6-6 9-10	0.0-2.0	14	1-Inch Topsoil, Fill
			S-2	7-7 9-11	2.0-4.0	16	NMC= 16.2% LL= 36 PI= 15 % Passing #200= 66
			S-3	6-6 7-10	4.0-6.0	14	NMC= 16.2% LL= 35 PI= 12 % Passing #200= 62
			S-4	5-7 7-10	6.0-8.0	16	NMC= 19.2% LL= 34 PI= 10 % Passing #200= 60
		Red-brown with trace organic at 9-ft	S-5	4-4 5-5	8.0-10.0	16	NMC= 18.3% LL= 36 PI= 14 % Passing #200= 66
10.0	389.50	Moist, red-brown, sandy CLAY with trace gravel (CL)	S-6	2-3 3-3	10.0-12.0	14	Fill
			S-7	12-10 8-8	12.0-14.0	14	NMC= 11.8% LL= 32 PI= 12 % Passing #200= 41
15.0	384.50		S-8	5-6 6-8	14.0-16.0	12	

DEPTH	CASING BLOWS / FOOT
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 2 of 2
Boring ___ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-06 Station/Offset ___ Coordinates N 527366 E 1270729

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Moist, tan and brown, silty SAND (SM)	S-8	5-6 6-8	14.0-16.0	12	Residual
		Trace gravel at 16-ft	S-9	8-8 9	18.5-20.0	16	NMC= 19.1% LL= 30 PI= 7 % Passing #200= 36 NMC= 22.1% LL= 32 PI= 10 % Passing #200= 41
		Trace organic at 24-ft	S-10	9-9 10	23.5-25.0	16	Water Encountered at 24-ft Water and Caved at 24.4-ft at 0-hrs
30.0	369.50	With organic and trace gravel Bottom of Boring @ 30 feet.	S-11	10-17 21	28.5-30.0	14	

DEPTH	CASING BLOWS / FOOT
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	

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SB-74-2

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed Date 8/12/15
Approved Date 8/13/2015
254973
S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed Date 8/12/15
Approved Date 8/13/2015

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed Date 8/12/15
258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN		
Landscape Architect	Date	Checked By:
Architect	Date	Checked By: MBM
Engineer	Date	Checked By: DEA
Drawn by	Date	Checked By:

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. 16493
Expiration Date 05/16/2015

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL
Project Manager 5-14-15 Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON ___

REVISIONS		
Rev. No.	Date	Description

Soil Borings RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: N.T.S.

SC/SWM
SHT. # 47 of 49

PLOTTED: Friday, May 08, 2015 AT 09:58 AM
FILE: \\belsrv04\v2005\2008\05050_loc\ES-CM SWM Contract RC-C\RC-74\cadd\plans\pSB-0002_RC74.dgn

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 2
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-07 Station/Offset ____ Coordinates N 527344 E 1270891
Boring By E2CR, INC
Surface Elevation 399.7 Date Started 7/22/10 Date Completed 7/22/10

Driller J. Sies
Rig Type CME 450
Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
27.0	372.7	0	7/21/10

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS	DEPTH	CASING BLOWS / FOOT
		Dry brown sandy clay		6-7 7-9	0.0-2.0	12	Top Soil = 1"	1	
2.0	397.70							2	
		Trace gravel		7-7 8-10	2.0-4.0	16	NMC= 14.9% LL= 34 PI= 13 % Passing #200= 53	3	
4.0	395.70							4	
		Moist red brown w/ trace gravel		6-8 8-10	4.0-6.0	18	NMC= 16.3% LL= 43 PI= 19 % Passing #200= 64	5	
6.0	393.70							6	
		Grey brown sandy clay		6-7 8-10	6.0-8.0	12	NMC= 18.6% LL= 37 PI= 14 % Passing #200= 67	7	
				5-6 7-8	8.0-10.0	18	NMC= 19.0% LL= 37 PI= 14 % Passing #200= 71	9	
10.0	389.70							10	
		No recovery			10.0-12.0	0		11	
12.0	387.70							12	
		Moist tan brown silty sand		4-6 8-8	12.0-14.0	18	NMC= 17.4% LL= 35 PI= 15 % Passing #200= 64	13	
14.0	385.70						Bottom of Boring @ 14 feet.	14	
		Trace organic		6-5 7-9	14.0-16.0	18		15	

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 2 of 2
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-07 Station/Offset ____ Coordinates N 527344 E 1270891

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS	DEPTH	CASING BLOWS / FOOT
		Trace organic (Continued)		6-6 7-9	14.0-16.0	18		16	
16.0	383.70						NMC= 18.7% LL= 31 PI= 9 % Passing #200= 39	17	
								18	
				6-8 9	18.5-20.0	16	NMC= 13.7% LL= 26 PI= 4 % Passing #200= 38	19	
								20	
								21	
								22	
		Moist tan brown silty sand						23	
				14-30 34	23.5-25.0	18		24	
25.0	374.70							25	
								26	
								27	
								28	
								29	
		Bottom of Boring @ 30 feet.		18-8 10	28.5-30.0	4	Water Encountered Bottom of Boring End of Drilling Water: Dry ; Caved: 25-8" 24hr Reading Water: Dry ; Caved: 24'2"	30	
								31	
								32	
								33	

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 2
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-08 Station/Offset ____ Coordinates N 527326 E 1270010
Boring By E2CR, INC
Surface Elevation 399.7 Date Started 7/21/10 Date Completed 7/21/10

Driller J. Sies
Rig Type CME 450
Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
0.0	399.7	0	7/21/10

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS	DEPTH	CASING BLOWS / FOOT
		Dry to moist, brown, sandy CLAY (CL)	S-1	5-7 7-8	0.0-2.0	14	2-inches Topsoil, Fill	1	
								2	
			S-2	10-11 11-12	2.0-4.0	14	NMC= 13.4% LL= 36 PI= 12 % Passing #200= 51	3	
								4	
			S-3	6-7 6-7	4.0-6.0	18	NMC= 16.2% LL= 39 PI= 15 % Passing #200= 65	5	
		Gray-brown, sandy CLAY with trace gravel at 5-ft						6	
		Red-brown, moist, sandy CLAY at 7-ft	S-4	5-4 4-6	6.0-8.0	16	NMC= 20.9% LL= 43 PI= 18 % Passing #200= 69	7	
		Trace gravel and organic at 9-ft	S-5	5-6 6-7	8.0-10.0	18	NMC= 16.8% LL= 40 PI= 18 % Passing #200= 49	9	
								10	
			S-6	4-4 4-7	10.0-12.0	12		11	
11.5	388.20	Moist, tan and brown, silty SAND (SM)					Residual	12	
			S-7	7-7 8-8	12.0-14.0	16	NMC= 13.6% LL= 30 PI= 8 % Passing #200= 51	13	
			S-8	8-10 11-11	14.0-16.0	14		14	

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 2 of 2
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-08 Station/Offset ____ Coordinates N 527326 E 1270010

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS	DEPTH	CASING BLOWS / FOOT
		Moist, tan and brown, silty SAND (SM) (Continued) With organic at 15-ft	S-8	8-10 11-11	14.0-16.0	14	NMC= 9.7% LL= 31 PI= 10 % Passing #200= 52	16	
								17	
								18	
							NMC= 8.8% LL= 27 PI= 7 % Passing #200= 39	19	
		Trace gravel and organic at 19-ft	S-9	10-15 23	18.5-20.0	14	Dry and Caved at 19.0-ft at 0-hrs	20	
							No Water Encountered	21	
								22	
								23	
		Trace gravel	S-10	18-23 26	23.5-25.0	14		24	
25.0	374.70	Bottom of Boring @ 25 feet.						25	
								26	
								27	
								28	
								29	
								30	
								31	
								32	
								33	

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-09 Station/Offset ____ Coordinates N 527461 E 1270148
Boring By E2CR, INC
Surface Elevation 392.2 Date Started 9/23/10 Date Completed 9/23/10

Driller J. Sies
Rig Type CME 450
Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
4.3	387.9	0	9/23/10

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS	DEPTH	CASING BLOWS / FOOT
		Moist, Brown, fine SAND, Silt	S-1	2-4 5-8	0.0-2.0	16		1	
								2	
		Brown, Tan and Black	S-2	3-6 7-5	2.0-4.0	16	NMC= 18.6% LL= 30 PI= 5 % Passing #200= 33.4	3	
								4	
		Brown, Black	S-3	3-3 4-5	4.0-6.0	16	NMC= 26.1% LL= 27 PI= 6 % Passing #200= 28.3 Water at 4.3-ft Caved at 4.8-ft at 0-hrs	5	
								6	
		Brown, Black, Stone	S-4	5-3 5-4	6.0-8.0	16	Water on Spoon at 6-ft NMC= 17.2% LL= 26 PI= 7 % Passing #200= 20.3	7	
								8	
		Tan, Brown	S-5	4-3 2-2	8.0-10.0	16		9	
								10	
10.0	382.20	Moist, Tan, Brown and Gray, SILT	S-6	3-4 6-8	10.0-12.0	16	NMC= 23.5% LL= 28 PI= 9 % Passing #200= 41.7	11	
								12	
12.0	380.20	Bottom of Boring @ 12 feet.						13	
								14	

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MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)
Boring No. RC-74 B-10 Station/Offset ____ Coordinates N 527402 E 1270380
Boring By E2CR, INC
Surface Elevation 392.3 Date Started 9/23/10 Date Completed 9/23/10

Driller J. Sies
Rig Type CME 450
Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
		0	9/23/10

Boring and Sampling Conforms to AASHTO: T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS	DEPTH	CASING BLOWS / FOOT
		Moist, Brown, fine SAND, Silt	S-1	1-3 3-6	0.0-2.0	14		1	
								2	
		Trace Stone	S-2	3-4 6-6	2.0-4.0	18	NMC= 14.3% LL= 39 PI= 11 % Passing #200= 28.3 Dry and Caved at 3-ft at 0-hrs	3	
								4	
			S-3	3-5 5-4	4.0-6.0	18	NMC= 32.1% LL= 41 PI= 13 % Passing #200= 44.8	5	
								6	
			S-4	2-3 4-4	6.0-8.0	18	NMC= 26.2% LL= 37 PI= 8 % Passing #200= 35.8	7	
		Moist, Brown, SAND						8	
			S-5	5-7 11-14	8.0-10.0	18		9	
		Tan, Brown, Black and Gray						10	
			S-6	5-14 16-26	10.0-12.0	20	NMC= 16.7% % Passing #200= 35.9	11	
								12	
12.0	380.30	Bottom of Boring @ 12 feet.						13	
								14	

DRAFT

SB-74-3

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/13/2015 Date
254973
S.M. FILE NO.

Sediment Control Technical Requirements
Reviewed 8/12/15 Date
Approved 8/13/2015 Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed 8/12/15 Date
258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By:
MBM		DMH
Engineer	Date	Checked By:
DEA		DMH
Drawn by	Date	Checked By:

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. 16493
Expiration Date 05/16/2015

STATE OF MARYLAND · DAVID E. ANDERSON · 16493 · PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL
Project Manager 5-14-15 Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON ____

REVISIONS

Rev. No.	Date	Description

Soil Borings RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: N.T.S.

SC/SWM
SHT. # 48 of 49

PARK CODE: C10 PLAN SCANNED: FINAL SCANNED:
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BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 09:59 AM
FILE: \\pallsrv04\jobs\2009\09050_tcc\ES-CM SWM Contract RC-C\RC-74\cadd\plans\pSB-0003_RC74.dgn

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)

Boring No. RC-74 B-11 Station/Offset ____ Coordinates N 527341 E 1270625

Boring By E2CR, INC

Surface Elevation 391.8 Date Started 9/23/10
Date Completed 9/23/10

Driller J. Sies
Rig Type CME 450
Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
		0	9/23/10

Boring and Sampling Conforms to AASHTO:
T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Dry to Moist, Brown, fine SAND, Trace Stone	S-1	1-3 6-7	0.0- 2.0	14	
		Moist, Brown, Tan and Black	S-2	4-5 7-8	2.0- 4.0	18	Dry and Caved at 2-ft at 0-hrs NMC= 21.8% LL= 37 PI= 10 % Passing #200= 35.2
		Moist, Brown, Tan and Black, Trace Silt	S-3	5-6 9-11	4.0- 6.0	18	NMC= 18.5% LL= 34 PI= 8 % Passing #200= 49.7
		Moist, Brown, Tan, fine SAND, Silt	S-4	3-4 8-9	6.0- 8.0	18	NMC= 19.6% LL= 31 PI= 10 % Passing #200= 46.1
		Brown, Tan and Black	S-5	6-8 10-14	8.0- 10.0	20	
12.0	379.80	Moist, Brown, Tan and Black, SAND, Silt	S-6	3-7 10-12	10.0- 12.0	18	NMC= 19.7% LL= 28 PI= 5 % Passing #200= 52.4
		Bottom of Boring @ 12 feet.					

DEPTH	CASING BLOWS / FOOT
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

DRAFT

SHA 73.0-46
8-25-2000

MARYLAND STATE HIGHWAY ADMINISTRATION
FOUNDATIONS BORING LOG

Sheet 1 of 1
Boring ____ of 280

Contract No. AX3765J60 Project Description ICC CM-ES-CS: Crabs Branch (RC-74)

Boring No. RC-74 B-12 Station/Offset ____ Coordinates N 527291 E 1270966

Boring By E2CR, INC

Surface Elevation 388.8 Date Started 9/23/10
Date Completed 9/23/10

Driller J. Sies
Rig Type CME 450
Rig No. ____
Drive Hammer 140 LB.
Casing Auger Size 3.25 IN.
Size of Core ____ IN.
Size of Bit OD ____ IN.
Core Barrel Type ____
Auger Depth ____

WATER TABLE

Depth Below Surface		Time (hours)	Date
Depth	Elev.		
		0	9/23/10

Boring and Sampling Conforms to AASHTO:
T-206, T-207

DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	SPOON SAMPLE NO.	SPOON BLOWS	SPOON DEPTH	RECOVERY SPT (in) or Rock Core (%)	REMARKS
		Moist, Brown, Dark Brown, fine SAND, Silt	S-1	2-3 4-8	0.0- 2.0	16	
2.0	386.80	Moist, Brown, SILT, Trace fine Sand	S-2	4-4 5-10	2.0- 4.0	18	NMC= 23.5% LL= 35 PI= 9 % Passing #200= 60 Dry and Caved at 2.8-ft at 0-hrs
4.0	384.80	Moist, Brown, fine SAND, Silt, Traca Stone	S-3	9-7 7-7	4.0- 6.0	18	NMC= 29.4% LL= 35 PI= 7 % Passing #200= 56
			S-4	2-4 7-7	6.0- 8.0	18	NMC= 25.6% LL= 34 PI= 13 % Passing #200= 50.5
		Moist, Brown, Tan, SAND	S-5	4-7 14-15	8.0- 10.0	16	
12.0	376.80	Moist, Brown, Tan and Black, SAND, Silt	S-6	7-11 12-16	10.0- 12.0	18	NMC= 21.1% LL= 29 PI= 5 % Passing #200= 44.2
		Bottom of Boring @ 12 feet.					

DEPTH	CASING BLOWS / FOOT
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

DRAFT

SB-74-4

MONTGOMERY COUNTY DEPT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:
NO SWM REVIEW, SAFE CONVEYANCE AND MD378 CONFORMANCE ONLY
Reviewed 8/12/15 Date
Approved 8/13/2015 Date
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Sediment Control Technical Requirements
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Approved 8/14/2015 Date

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

Administrative Requirements:
Reviewed 8/12/15 Date
258116
SEDIMENT CONTROL PERMIT NO.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED.

RK&K
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PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

DESIGN

Landscape Architect	Date	Checked By:
Architect	Date	Checked By:
MBM		DMH
Engineer	Date	Checked By:
DEA		DMH
Drawn by	Date	Checked By:

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. 16493

Expiration Date 05/16/2015

STATE OF MARYLAND — DAVID E. ALLEN — 16493 — REGISTERED PROFESSIONAL ENGINEER

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
9500 Brunett Avenue
Silver Spring, Maryland 20901
(301) 495-2535

REVIEW AND APPROVAL

Project Manager 5/14/15 Date
Construction Manager Date
Park Manager Date

ISSUED FOR PROCUREMENT ON ____

REVISIONS

Rev. No.	Date	Description

Soil Borings RC-74

CRABBS BRANCH STREAM VALLEY PARK - SWM RETROFIT

SCALE: N.T.S.

SC/SWM
SHT. # 49 of 49

PARK CODE: C10 PLAN SCANNED: FINAL SCANNED:
C:_XX_DATA\Standard Cover Sheet for Drawings.dwg Model Plotted By: dblack, 2/17/2010 3:28 PM, ----
BY: $USERNAME$

PLOTTED: Friday, May 08, 2015 AT 10:00 AM
FILE: \\balrv04\v2005\2005\05050_icc\ES-CM SWM Contract RC-C\RC-74\cadd\plans\pSB-0004_RC74.dgn