

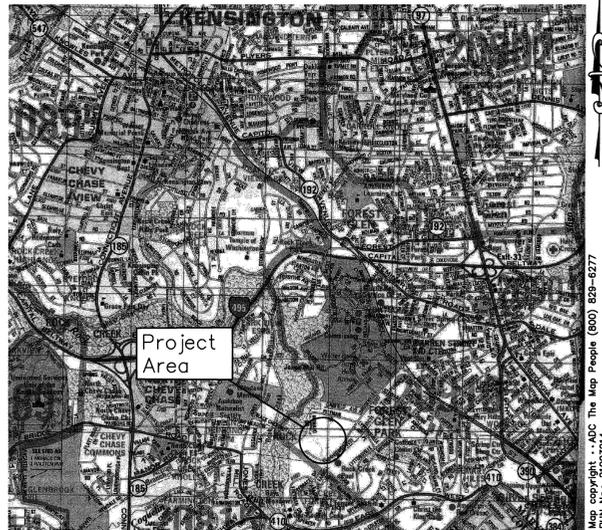
# BROOKVILLE BUS DEPOT STORMWATER MANAGEMENT POND MAINTENANCE MONTGOMERY COUNTY, MD

### LEGEND

|  |                      |  |                     |
|--|----------------------|--|---------------------|
|  | Stream               |  | Property Boundary   |
|  | Deciduous Tree       |  | Waters Of The U.S.  |
|  | Coniferous Tree      |  | Soils Boundary      |
|  | Critical Root Zone   |  | Tree Line           |
|  | Tree To Be Removed   |  | Wetland 25ft Buffer |
|  | Existing Contour     |  | Traverse Point      |
|  | Proposed Contour     |  | Light Pole          |
|  | Wetland Boundary     |  | Drawing             |
|  | Centerline           |  | Existing            |
|  | Limit of Disturbance |  | Proposed            |
|  | Silt Fence           |  | Invert              |
|  | Sanitary Sewer       |  | Elevation           |
|  | Existing Fence       |  | Study Point         |
|  |                      |  | BaySaver            |

### OTHER 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  | REQD | NOT REQD | PERMIT NO.  | EXPIRATION DATE | WORK RESTRICTION DATES |
| MCDPS Floodplain District   |      | X        |             |                 |                        |
| WATERWAYS/WETLAND(S):   |      |          |             |                 |                        |
| a. Corps of Engineers   |      | X        |             |                 |                        |
| b. MDE  |      | X        |             |                 |                        |
| c. MDE Water Quality Certification  |      | X        |             |                 |                        |
| MDE Dam Safety  |      | X        |             |                 |                        |
| N.P.D.E.S. NOTICE OF INTENT   | X    |          |             |                 | DATE FILED 2/16/11     |
| OTHER (LIST)  |      |          |             |                 |                        |
| a. NRI/FSD  |      | X        |             |                 |                        |
| b. FCP  | X    |          | MR-2004-801 |                 |                        |



### LOCATION MAP

Scale: 1"=2000'

### GENERAL NOTES

- All Construction Shall Be In Accordance With The Latest Edition Of The Standard Specifications Of Montgomery County And The Washington Suburban Sanitary Commission.
- This Plan Is Designed And Shall Be Constructed In Accordance With The 1994 Maryland Standards And Specifications For Soil Erosion And Sediment Control, The 2000 Maryland Stormwater Design Manual Volumes I & II And All Revisions There Of.
- Disturbed Areas Shall Be Seeded And Mulched.
- Prior To Vegetative Stabilization, All Disturbed Areas Must Be Topsoiled Per The Montgomery County "Standards and Specifications For Topsoil".
- Call "MISS-UTILITY" At (800) 257 7777 Forty-Eight (48) Hours Prior To Beginning Excavation To Determine The Location Of Existing Utilities.
- Repairs To Utilities Or Property Damaged As A Result Of A Contractor's Negligence Or Method Of Operation Must Be Made At The Contractor's Expense Before Proceeding With Construction.
- Grading Shall Be Done In Such A Manner As To Provide Positive Drainage, Unless Otherwise Indicated.
- Topographic Mapping Produced By EBA Engineering Dated September Of 2009 And Does Not Certify As To The Accuracy Of Proposed Or Future Items Which Are Added To This Drawing. The Meridian Source Of This Topographic Survey Is Based On The Maryland State Plane Coordinate System (NAD83/1981 HARN). All Distances Shown Hereon Are In U.S. Survey Feet. Elevations Refer To The National Geodetic Vertical Datum Of 1929 (NGVD 29). Survey Control Points Recovered And Used To Constrain This Survey Are:  
Station: Project Datum Control Point 898 Provided By Others  
Northing: 484,975.93  
Easting: 1,290,335.52  
Elevation: 280.85  
Description: Survey Point Set In Middle Of A Macadam Walk On East Side Of Extended Brookville Road. Located Northerly 59± From The End Of A Fuel Pump Island.
- Information Concerning Underground Utilities Was Based On Above-Ground Field Observation. All Underground Items Are To Be Considered Approximate Locations Only. It Is The Responsibility Of The Contractor To Field Verify Locations Of These Items Prior To Construction. Contact "Miss Utility" 48 Hours Prior To Any Ground Disturbing Activities.
- The Contractor Is Required To Maintain As-Built Red-Line Drawings During Construction. The Contractor Is Required To Follow The DPS "As-Built/Record Drawing Plan Review Checklist" And Submit All Necessary Information To Get As-Built Approved To The Engineer. As-Built Survey Including All Invert Elevations Of New Storm Drain Features Shall Be Provided To Engineer.

### INDEX OF DRAWINGS

| SHEET NO. | TITLE  |
|-----------|--|
| 1         | TITLE SHEET  |
| 2         | EXISTING SITE MAP  |
| 3         | EXISTING DRAINAGE AREA MAP                                   |
| 4         | PROPOSED SITE MAP  |
| 5         | SWM POND PLAN VIEW   |
| 6         | SWM POND PLANTING PLAN                                       |
| 7         | SWM POND NOTES   |
| 8         | PROPOSED SITE 1  |
| 9         | PROPOSED BMP SITE 2  |
| 10        | SITE 2 PLANTING PLAN   |
| 11        | BAYSAYER NOTES AND DETAILS                                   |
| 12        | BAYSAYER NOTES AND DETAILS                                   |
| 13        | OIL/GRIT CHAMBER DETAILS                                     |
| 14        | EROSION AND SEDIMENT CONTROL NOTES                           |
| 15        | EROSION AND SEDIMENT CONTROL PLAN & SEQUENCE OF CONSTRUCTION |

**DEPARTMENT OF PERMITTING SERVICES**  
RECEIVED  
NOV 12 2010  
KYLE KULL  
SEWER

File: Stormwater Management CONCEPT Request for Brookville Maintenance Depot  
BSE File #: 238485  
Trout Stream Zone: 17.47 Ac./INC & R-40  
Total Concept Area: 17.47  
Parcel(s): P116  
Watershed: Lower Rock Creek

Dear Mr. Green:  
Based on a review by the Department of Permitting Services Review Staff, the stormwater management concept for the above mentioned site is acceptable. There is no new construction being proposed under this concept. This project is to implement as many stormwater treatment options as feasible to improve the quality of the discharge from the pond into Rock Creek. CDPs will verify proper sediment control measures and the safe conveyance of flows through the proposed BMPs.

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

- Prior to permanent vegetative stabilization, all disturbed areas must be topsoiled per the latest Montgomery County Standards and Specifications for Topsoil.
- A detailed review of the stormwater management computations will occur at the time of detailed plan review.
- An engineered sediment control plan must be submitted for this development.
- All filtration media for manufactured best management practices, whether for new development or redevelopment, should consist of MDE approved media.
- Provide MCDPS with an as-built plan prior to closure of the permit.
- Show and label all existing stormwater structures.

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 4.0 is not required.

255 Rockville Pike, 3rd Floor • Rockville, Maryland 20850 • 240-777-5300 • 240-777-6250/3777  
www.montgomerycountymd.gov

The letter must appear on the sediment control/stormwater management plan at its initial submission. 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 require 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 David Kuykendall at 240-777-6532.

Richard R. Bush, Manager  
Water Resources Section  
Division of Land Development Services

RRB to CH228485 Brookville Maintenance Depot.DWG  
DC: SM File # 238485

PERMIT APPLICANT CONTACT:  
Montgomery County  
Department of Environmental Protection  
c/o Julio Liu  
255 Rockville Pike, Suite 120  
Rockville, Maryland 20850  
240-777-7762

WCD APPROVAL OF THIS PLAN MUST BE OBTAINED WITHIN ONE YEAR FROM THE DATE OF APPROVAL. IF THE PROJECT HAS NOT STARTED WITHIN THE YEAR, THE PROJECT WILL BE RE-EVALUATED. APPROVAL PAGES 1-15.

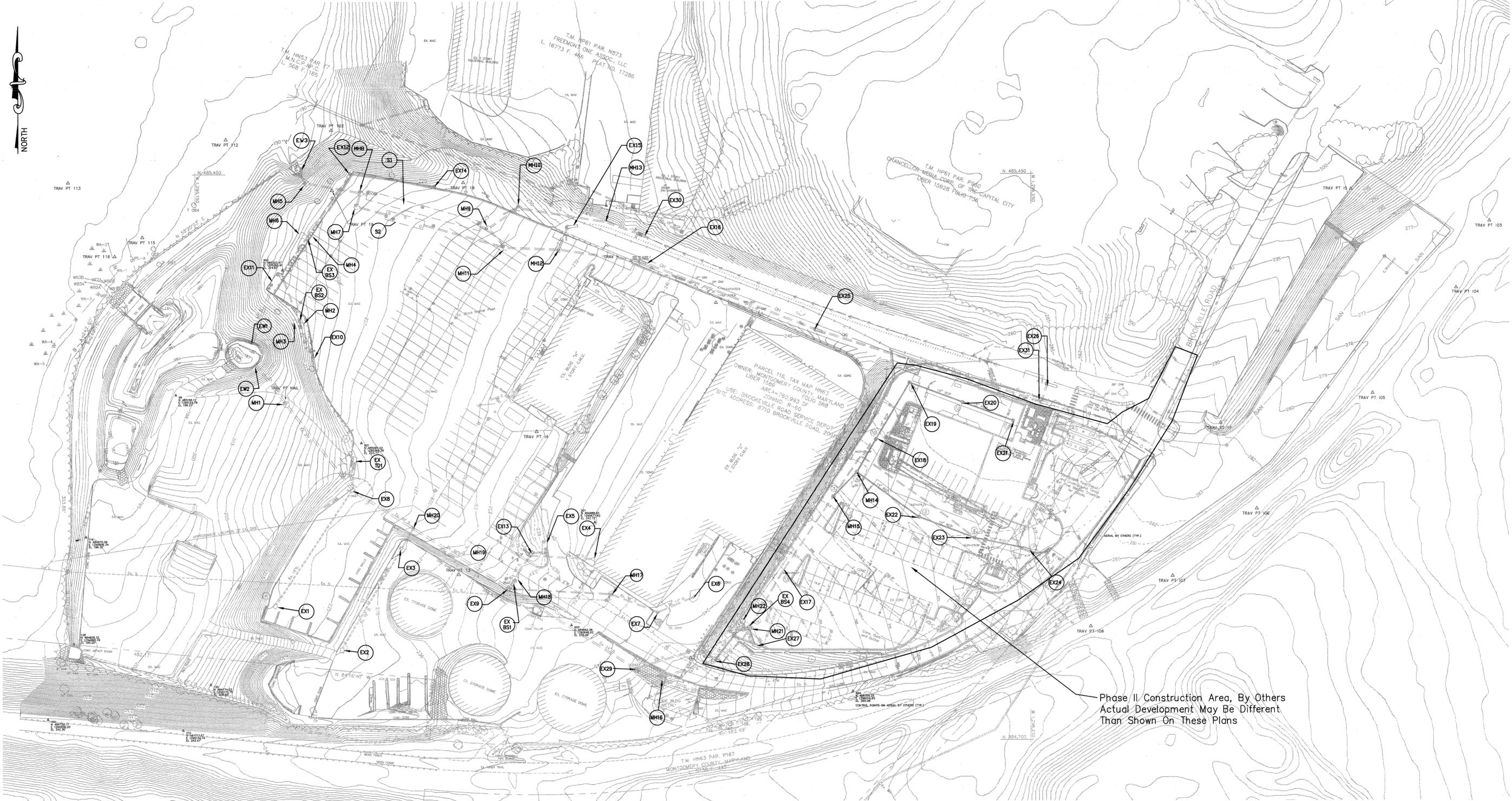
APPROVED FOR POND(S) BY  
MONTGOMERY GOIL CONSERVATION DISTRICT  
DISTRICT PROGRAM COORDINATOR  
DATE: 6/22/12

MCDPS 1 OF 15

|   |   |   |   |
|---|---|---|---|
| MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:   |   | NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.   |   |
| Stormwater Management:<br>Reviewed: BS C37, Penkret, et al<br>Date: 6-19-12<br>Approved: 6/19/12<br>Date: 238485<br>S.M. FILE NO.   | Sediment Control Technical Requirements:<br>Reviewed: 6-19-12<br>Date: 238485<br>Approved: 6/19/12<br>Date: | Administrative Requirements:<br>Reviewed: 6-19-12<br>Date: 238485<br>SEDDIMENT CONTROL POINT NO.  | MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE POINT HAS BEEN EXTENDED. |
| 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. 19546, EXPIRATION DATE: 02/18/2014. |   | DESIGNED BY: KMG, DRAWN BY: KMG, CHECKED BY: LN<br>BROOKVILLE BUS DEPOT<br>STORMWATER MANAGEMENT IMPROVEMENTS PROJECT<br>TITLE SHEET<br>JOSEPH PARK P116 L1589 F568<br>DATE: JUNE 2012, DRAWING 1 OF 15 |   |

**RUMMEL, KLEPPER & KAHL, LLP**  
CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MARYLAND 21217  
(410) 728-2900





**SURVEY CONTROLS**

| PT NO. | NORTHING  | EASTING    | ELEVATION | COMMENT   |
|--------|-----------|------------|-----------|-----------|
| 898    | 484975.93 | 1296335.52 | 280.80    | BY OTHERS |
| 899    | 484764.25 | 1296016.65 | 265.08    | BY OTHERS |
| 900    | 484852.38 | 1295646.62 | 242.49    |           |
| 221    | 484988.60 | 1295677.62 | 242.72    |           |
| 901    | 485094.03 | 1295369.59 | 223.77    |           |
| 135    | 484774.22 | 1295170.75 | 209.90    |           |
| 210    | 484713.57 | 1295134.14 | 243.47    |           |
| 159    | 484728.71 | 1294956.00 | 242.30    |           |
| 128    | 484828.32 | 1294990.19 | 195.20    |           |
| 119    | 484970.09 | 1295006.34 | 196.32    |           |
| 98     | 485158.12 | 1295124.78 | 196.27    |           |
| 902    | 485323.47 | 1295265.91 | 214.62    |           |

**PLAN VIEW**

Scale: 1"=50'

**RK&K**  
**RUMMEL, KLEPPER & KAHL, LLP**  
 CONSULTING ENGINEERS  
 81 MOSHER STREET  
 BALTIMORE, MARYLAND 21217  
 (410) 728-2900

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. 19546, EXPIRATION DATE: 02/18/2014.

| MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR: |  |
|---|--|
| Stormwater Management:<br><i>BS(3), ParkRetreat</i>               | Sediment Control Technical Requirements:<br><i>DIC/D 6-19-12</i> |
| Reviewed Date: <i>6-19-12</i>                                     | Reviewed Date: <i>6-19-12</i>                                    |
| Approved Date: <i>6-19-12</i>                                     | Approved Date: <i>6-19-12</i>                                    |
| <i>235-485</i>  |  |
| S.M. FILE NO.   |  |

| NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.   |                               |
|---|-------------------------------|
| Administrative Requirements:<br><i>235-486</i>  | Reviewed Date: <i>6-19-12</i> |
| Reviewed Date: <i>6-19-12</i>   | Reviewed Date: <i>6-19-12</i> |
| Approved Date: <i>6-19-12</i>   | Approved Date: <i>6-19-12</i> |
| 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 |                               |

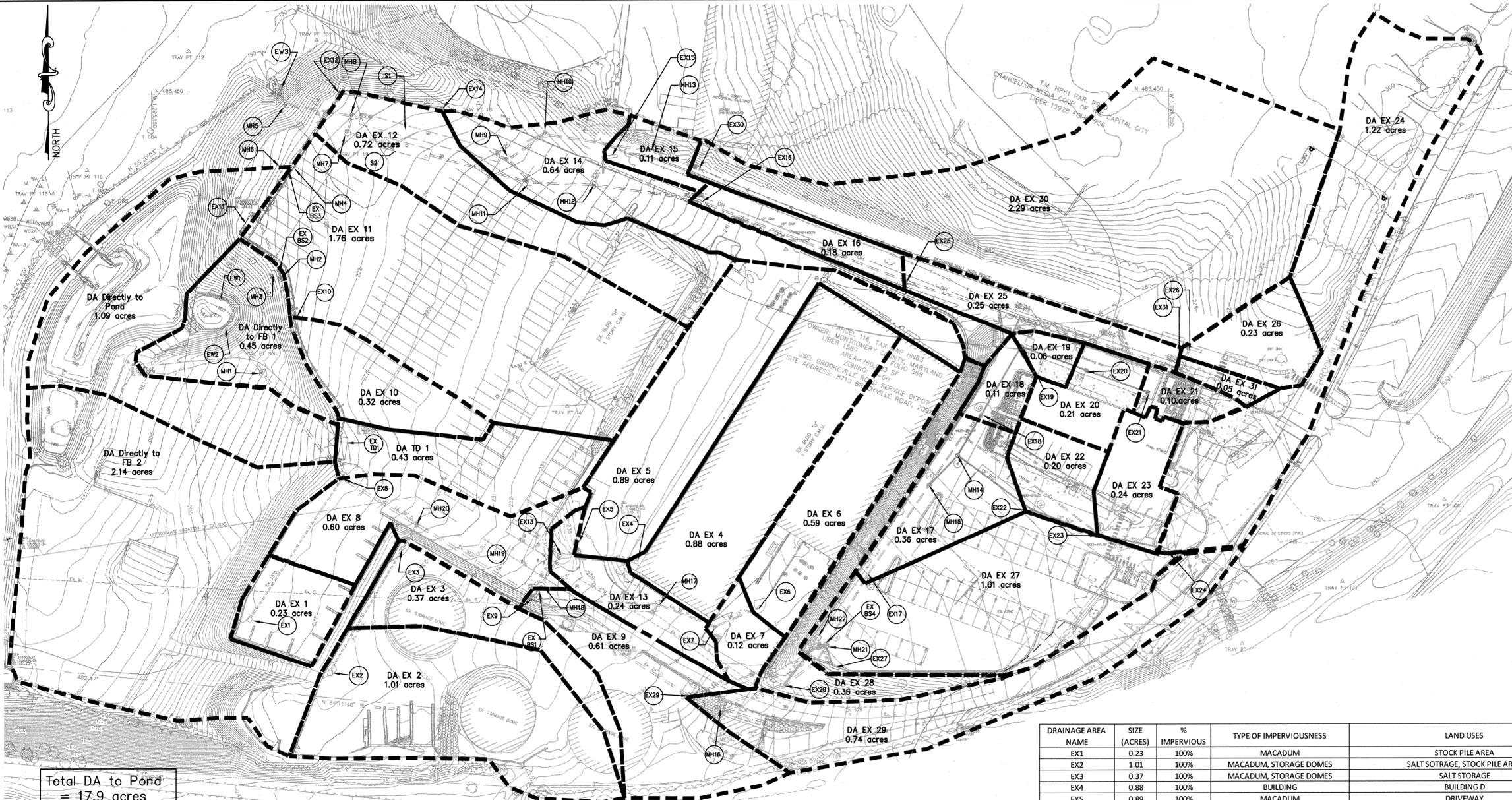
MONTGOMERY COUNTY  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 255 ROCKVILLE PIKE SUITE 120  
 ROCKVILLE, MARYLAND, 20850

Designed By KMG Drawn By KMG Checked By LN

BROOKVILLE BUS DEPOT  
 STORMWATER MANAGEMENT IMPROVEMENTS PROJECT

**EXISTING SITE MAP**

JOSEPH PARK P116 L1589 F568  
 Date: JUNE 2012 DRAWING 2 OF 15

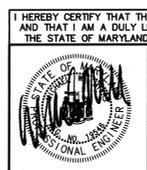


Total DA to Pond = 17.9 acres

PLAN VIEW  
Scale: 1"=50'

| DRAINAGE AREA NAME | SIZE (ACRES) | % IMPERVIOUS | TYPE OF IMPERVIOUSNESS      | LAND USES                                       | EXISTING BMPs                      | D/S DRAIN DIA. | U/S DRAIN DIA. | U/S INLET          |
|--------------------|--------------|--------------|-----------------------------|---|------------------------------------|----------------|----------------|--------------------|
| EX1                | 0.23         | 100%         | MACADUM                     | STOCK PILE AREA                                 | NONE                               | 15 IN.         | ----           | ----               |
| EX2                | 1.01         | 100%         | MACADUM, STORAGE DOMES      | SALT STORAGE, STOCK PILE AREA                   | NONE                               | 15 IN.         | ----           | ----               |
| EX3                | 0.37         | 100%         | MACADUM, STORAGE DOMES      | SALT STORAGE                                    | NONE                               | 15 IN.         | 15 IN.         | EX2                |
| EX4                | 0.88         | 100%         | BUILDING                    | BUILDING D                                      | NONE                               | 18 IN.         | ----           | ----               |
| EX5                | 0.89         | 100%         | MACADUM                     | DRIVEWAY  | TO OIL/GRIT SEPARATOR EX5          | 18 IN.         | 18 IN.         | EX7                |
| EX6                | 0.59         | 100%         | BUILDING AND CONCRETE       | BUILDING D, BUS ENTRANCE                        | NONE                               | 15 IN.         | ----           | ----               |
| EX7                | 0.12         | 100%         | CONCRETE                    | BUS ENTRANCE                                    | NONE                               | 18 IN.         | 15 IN.         | EX6                |
| EX8                | 0.60         | 100%         | MACADUM                     | DRIVEWAY, STORAGE                               | NONE                               | 30 IN.         | 15 IN., 30 IN. | TD1, EX1, EX3, EX9 |
| EX9                | 0.61         | 98%          | MACADUM, STORAGE DOMES      | DRIVEWAY, SALT STORAGE, EX. BUILDING            | NONE                               | 30 IN.         | 18 IN., 24 IN. | EX13, EX29         |
| EX10               | 0.32         | 100%         | MACADUM                     | BUS PARKING                                     | TO BS2, TO OIL/GRIT SEPARATOT EX11 | 15 IN.         | ----           | ----               |
| EX11               | 1.76         | 97%          | MACADUM, BUILDING           | BUS PARKING, BUILDING                           | TO OIL/GRIT SEPARATOR EX11         | 30 IN.         | 15 IN., 15 IN. | EX10, EX12         |
| EX12               | 0.72         | 97%          | MACADUM, BUILDING           | BUS PARKING, BUILDING                           | TO BS3, TO OIL/GRIT SEPARATOR EX11 | 15 IN.         | 15 IN.         | EX14               |
| EX13               | 0.24         | 100%         | MACADUM                     | PARKING, DRIVEWAY                               | TO BS1                             | 18 IN.         | 18 IN.         | EX5, EX14          |
| EX14               | 0.64         | 95%          | MACADUM                     | BUS PARKING, DRIVEWAY, OPEN SPACE               | TO BS3, TO OIL/GRIT SEPARATOR EX11 | 15 IN.         | ----           | ----               |
| EX15               | 0.11         | 0%           | ----                        | OPEN SPACE                                      | TO UNDERGROUND FILTER              | 15 IN.         | ----           | ----               |
| EX16               | 0.18         | 0%           | MACADUM                     | DRIVEWAY  | TO UNDERGROUND FILTER              | 15 IN.         | 15 IN.         | EX25               |
| EX17               | 0.36         | 100%         | MACADUM                     | PARKING   | TO BS4                             | 15 IN.         | 15 IN.         | EX18, EX22         |
| EX18               | 0.11         | 100%         | MACADUM                     | BUILDING LOT                                    | TO BS4                             | 15 IN.         | 15 IN.         | EX19               |
| EX19               | 0.06         | 100%         | MACADUM                     | BUILDING LOT                                    | TO BS4                             | 15 IN.         | 15 IN.         | EX20               |
| EX20               | 0.21         | 100%         | MACADUM, BUILDING           | BUILDING AND BUILDING LOT                       | TO BS4                             | 15 IN.         | 15 IN.         | EX21               |
| EX21               | 0.10         | 100%         | MACADUM, CONCRETE           | BUILDING LOT, TANK/GENERATOR STORAGE            | TO BS4                             | 15 IN.         | ----           | ----               |
| EX22               | 0.20         | 100%         | MACADUM, BUILDING, CONCRETE | BUILDING, CONCRETE PAD                          | TO BS4                             | 15 IN.         | 15 IN.         | EX23               |
| EX23               | 0.24         | 100%         | MACADUM, BUILDING           | BUILDING, DUMPSTER PAD                          | TO BS4                             | 15 IN.         | 15 IN.         | EX24               |
| EX24               | 1.22         | 52%          | MACADUM                     | BROOKVILLE ROAD, PROPOSED GAS STATION, DRIVEWAY | TO BS4                             | 15 IN.         | ----           | ----               |
| EX25               | 0.25         | 100%         | MACADUM                     | DRIVEWAY  | TO UNDERGROUND FILTER              | 15 IN.         | 15 IN.         | EX26               |
| EX26               | 0.23         | 25%          | MACAUM                      | DRIVEWAY, BROOKVILLE ROAD, PARKING, OPEN SPACE  | TO UNDERGROUND FILTER              | 15 IN.         | ----           | ----               |
| EX27               | 1.01         | 100%         | MACADUM                     | PARKING LOT                                     | TO BS4                             | 15 IN.         | ----           | ----               |
| EX28               | 0.36         | 0%           | ----                        | OPEN SPACE                                      | NONE                               | 24 IN.         | 24 IN.         | EX27, EX17         |
| EX29               | 0.74         | 82%          | MACADUM                     | DRIVEWAY, EXISTING GAS STATION                  | NONE                               | 24 IN.         | ----           | ----               |
| EX30               | 2.29         | 43%          | ----                        | OPEN SPACE                                      | TO UNDERGROUND FILTER              | 15 IN.         | ----           | ----               |
| EX31               | 0.05         | 100%         | MACADUM                     | DRIVEWAY  | TO UNDERGROUND FILTER              | 15 IN.         | 15 IN.         | EX26               |
| TD1                | 0.43         | 100%         | MACADUM                     | PARKING LOTS                                    | NONE                               | 15 IN.         | ----           | ----               |
| DIRECT TO POND     | 1.09         | 44%          | MACADUM                     | LEAF STORAGE AREA                               | NONE                               | ----           | ----           | ----               |
| DIRECT TO FB1      | 0.45         | 20%          | MACADUM                     | LEAF STORAGE AREA                               | NONE                               | ----           | ----           | ----               |
| DIRECT TO FB2      | 2.14         | 94%          | MACADUM                     | LEAF STORAGE AREA                               | NONE                               | ----           | ----           | ----               |

**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MARYLAND 21217  
(410) 728-2900



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. 19545, EXPIRATION DATE: 02/18/2014.

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management: *BSC37, Paul K. Trout*  
 Sediment Control Technical Requirements: *AP/12 6-19-12*  
 Administrative Requirements: *AP/12 6-19-12*  
 Approved: *238485* Date: *6/19/12*

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

Approved: *238486* Date: *6/19/12*  
 Approved: *238486* Date: *6/19/12*

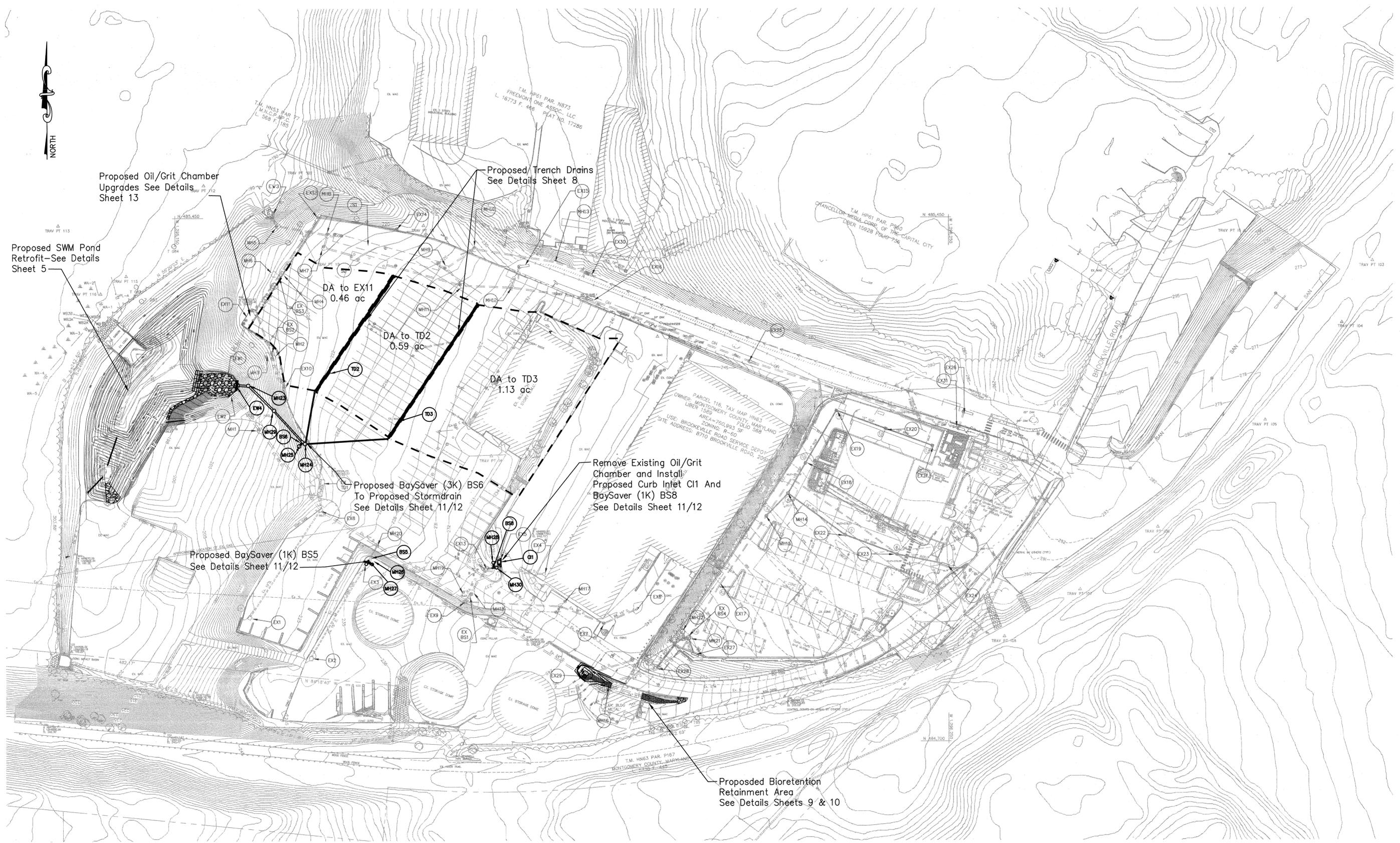
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION  
255 ROCKVILLE PIKE SUITE 120  
ROCKVILLE, MARYLAND, 20850

Designed By KMG Drawn By KMG Checked By LN

BROOKVILLE BUS DEPOT  
STORMWATER MANAGEMENT IMPROVEMENTS PROJECT

EXISTING DRAINAGE AREA MAP

JOSEPH PARK P116 L1589 F568  
Date: JUNE 2012 DRAWING 3 OF 15



PLAN VIEW  
Scale: 1"=50'

**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MARYLAND 21217  
(410) 728-2900

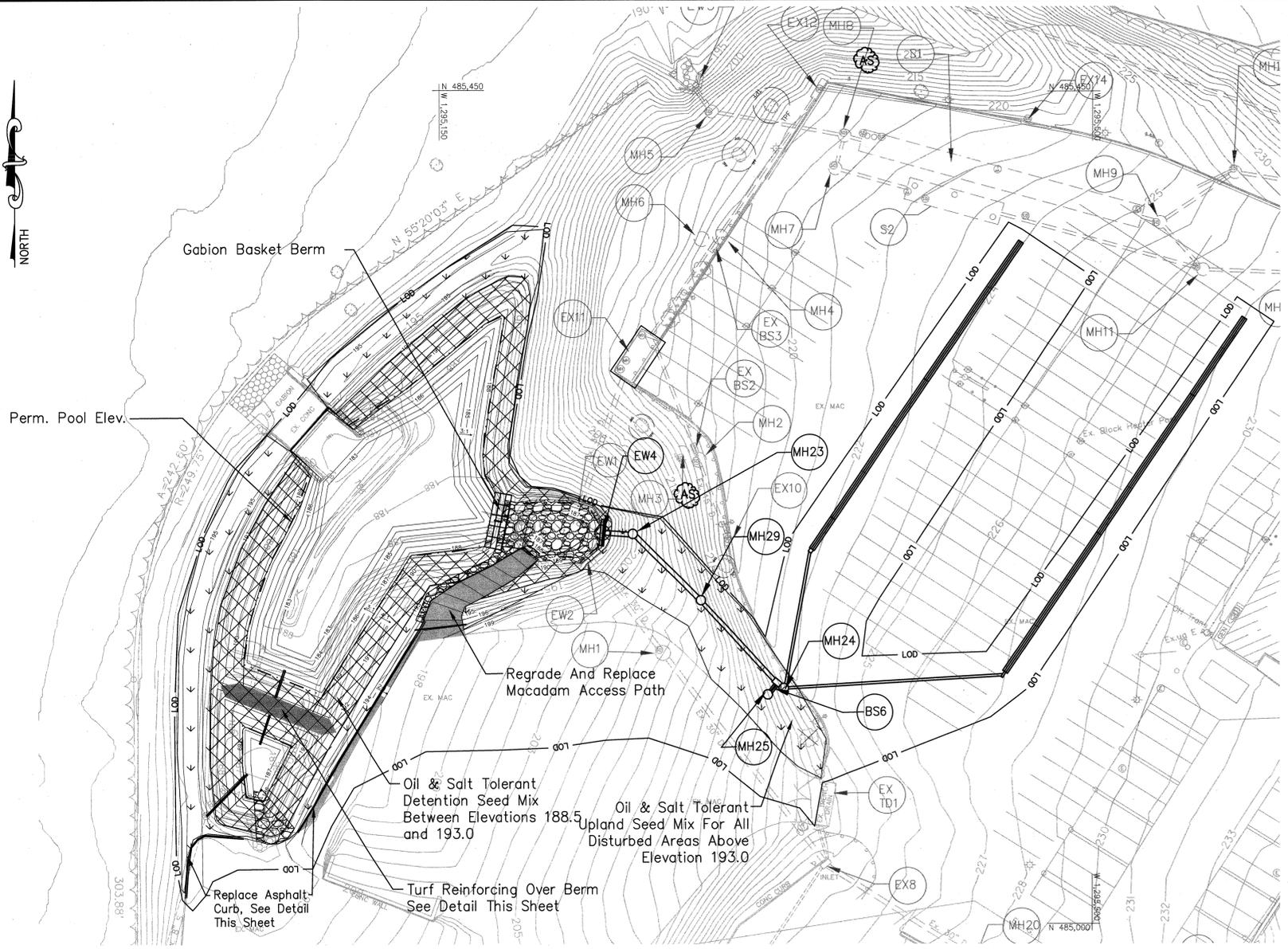
STATE OF MARYLAND  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19545, EXPIRATION DATE: 02/18/2014.

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:  
Stormwater Management: *BSCS, Pond Retrofit*  
Sediment Control Technical Requirements: *SMC 6-19-12*  
Administrative Requirements: *238486*  
Approved: *[Signature]* Date: *6/19/12*  
Approved: *[Signature]* Date: *6/19/12*  
Approved: *[Signature]* Date: *6/19/12*

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED FOR 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.

MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION  
255 ROCKVILLE PIKE SUITE 120  
ROCKVILLE, MARYLAND, 20850  
Designed By KMG Drawn By KMG Checked By LN  
BROOKVILLE BUS DEPOT  
STORMWATER MANAGEMENT IMPROVEMENTS PROJECT  
**PROPOSED SITE MAP**  
JOSEPH PARK P116 L1589 F568  
Date: JUNE 2012 DRAWING 4 OF 15





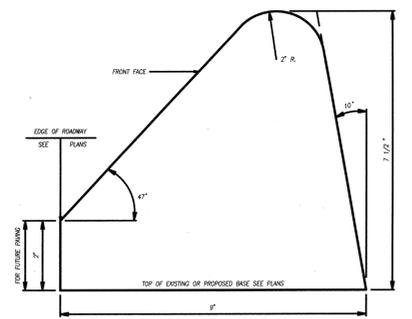
**PLAN VIEW**  
Scale: 1"=20'

| LANDSCAPE SCHEDULE |     |                |             |           |      |          |
|--------------------|-----|----------------|-------------|-----------|------|----------|
| KEY                | QTY | BOTANICAL NAME | COMMON NAME | CAL       | ROOT | SPACING  |
| AS                 | 2   | Acer saccharum | Sugar Maple | 2"-2 1/2" | B&B  | As Shown |

\*Spacing adhered to where possible based upon underground utilities and overhead light locations.

**LEGEND**

- Existing Deciduous Tree
- Proposed Shade Tree
- Tree To Be Removed
- Property Line
- 250 Existing Contour
- 250 Proposed Contour
- Limits Of Disturbance
- Existing Tree Line
- Oil & Salt Tolerant Detention Seed Mix
- Oil & Salt Tolerant Upland Seed Mix
- Turf Reinforcement



**STANDARD HOT MIX ASPHALT CURB**  
MD 615.01  
SCALE: NTS

*David Mitchell*  
DAVID MITCHELL  
REGISTERED LANDSCAPE ARCHITECT  
#3126

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. 19545, EXPIRATION DATE: 02/15/2014.

Area 0.47 acres

| OIL & SALT TOLERANT UPLAND SEED MIX |      |                                |                   |                 |
|-------------------------------------|------|--------------------------------|-------------------|-----------------|
| % FREQUENCY                         | LBS. | BOTANICAL NAME                 | COMMON NAME       | UNIT            |
| 5                                   | 0.5  | <i>Andropogon gerardii</i>     | Big Bluestem      | LB of Bulk Seed |
| 2                                   | 0.2  | <i>Eragrostis spectabilis</i>  | Purple Lovegrass  | LB of Bulk Seed |
| 10                                  | 1.0  | <i>Elymus virginicus</i>       | Virginia Wild Rye | LB of Bulk Seed |
| 13                                  | 1.2  | <i>Lolium multiflorum</i>      | Annual Ryegrass   | LB of Bulk Seed |
| 15                                  | 1.4  | <i>Festuca arundinaceae</i>    | Tall Fescue       | LB of Bulk Seed |
| 40                                  | 3.8  | <i>Schizachyrium scoparium</i> | Little Bluestem   | LB of Bulk Seed |
| 10                                  | 1.0  | <i>Sorghastrum nutans</i>      | Indiangrass       | LB of Bulk Seed |
| 5                                   | 0.5  | <i>Tridens flavus</i>          | Purple Top        | LB of Bulk Seed |
| 100 (TOTAL)                         | 9.6  |                                |                   |                 |

Seed at 20 lbs/acre

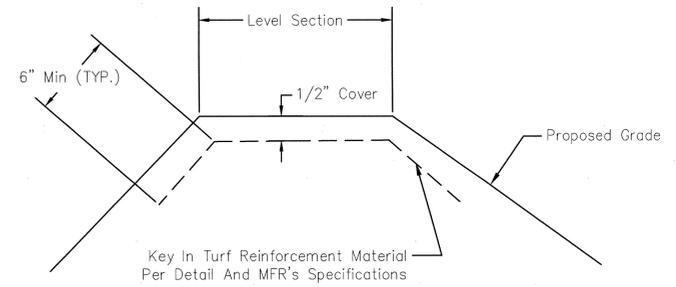
Area 0.31 acres

| OIL & SALT TOLERANT DETENTION SEED MIX |      |                             |                      |                 |
|--|------|-----------------------------|----------------------|-----------------|
| % FREQUENCY                            | LBS. | BOTANICAL NAME              | COMMON NAME          | UNIT            |
| 5                                      | 0.6  | <i>Agrostis alba</i>        | Redtop               | LB of Bulk Seed |
| 15                                     | 1.8  | <i>Carex vulpinoidea</i>    | Fox Sedge            | LB of Bulk Seed |
| 30                                     | 3.5  | <i>Elymus virginicus</i>    | Virginia Wild Rye    | LB of Bulk Seed |
| 15                                     | 1.8  | <i>Festuca arundinaceae</i> | Tall Fescue 'Fawn'   | LB of Bulk Seed |
| 25                                     | 2.9  | <i>Panicum clandestinum</i> | Deer Tongue 'Tioga'  | LB of Bulk Seed |
| 10                                     | 1.2  | <i>Puccinellia distans</i>  | Alkali Grass 'Fults' | LB of Bulk Seed |
| 100 (TOTAL)                            | 11.8 |                             |                      |                 |

Seed at 25 lbs/acre

**NOTES:**

- Contractor shall submit seed sources prior to seeding.
- All seeding shall be guaranteed for two years.
- All sediment and erosion protection features shall be installed and approved prior to grading. Location of all silt fence shall be field located with MCDEP inspectors.



- INSTALL THE MATERIAL PER THE MANUFACTURER'S INSTRUCTIONS INCLUDING SURFACE PREPARATION AND STAPLING. IT IS VERY IMPORTANT THAT THE MATERIAL BE INSTALLED IN GOOD CONTACT WITH THE GROUND WITH NO WRINKLES OR VOID SPACES BELOW THE FABRIC. STAPLES MUST BE PLACED IN A DIAMOND PATTERN APPROXIMATELY 18" APART.
- FILL VOIDS IN THE MATERIAL WITH TOPSOIL BEFORE SODDING OR SEEDING. DO NOT PLACE MORE THAN ONE HALF INCH (1/2") OF TOPSOIL OVER THE MATERIAL. THE MATERIAL MUST BE WITHIN THE ROOT ZONE FOR IT TO FUNCTION PROPERLY.
- MATERIAL MAY BE ENKAMAT 7010, ENKAMAT 7020, TENSAR TM-3000, PYRAMAT, OR OTHER MCDPS APPROVED EQUIVALENT, TO BE CONSIDERED AS AN EQUIVALENT, THE MATERIAL MUST BE A SINGLE, BONDED TURF REINFORCEMENT MATERIAL. PROPOSED ALTERNATIVES MUST BE APPROVED BY MCDPS IN WRITING PRIOR TO PLACEMENT.
- TURF REINFORCEMENT IS NOT MEANT TO SERVE AS AN EROSION CONTROL MAT. IF NECESSARY, A BIODEGRADABLE MATERIAL SUCH AS EXCELSIOR MAY BE PLACED OVER THE PREPARED SEED BED TO HOLD THE SEED IN PLACE. THE PURPOSE OF THE TURF REINFORCEMENT MATERIAL IS TO ADD STRENGTH TO THE ROOT SYSTEM AFTER GERMINATION.

**TURF REINFORCEMENT DETAIL**  
Scale: N.T.S.

**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MARYLAND 21217  
(410) 728-2900

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:

|  |   |   |
|--|---|---|
| Stormwater Management:<br><i>BSC(3), Paul Retradit</i> | Sediment Control Technical Requirements:<br><i>DAVID MITCHELL 6-19-12</i> | Administrative Requirements:<br><i>DAVID MITCHELL 6-19-12</i> |
| Reviewed Date: 6-19-12                                 | Reviewed Date: 6-19-12  | Reviewed Date: 6-19-12  |
| Approved Date: 6-19-12                                 | Approved Date: 6-19-12  | Approved Date: 6-19-12  |
| 238485   | 238486  | 238486  |

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.

MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION  
255 ROCKVILLE PIKE SUITE 120  
ROCKVILLE, MARYLAND, 20850

Designed By: *WMM* Drawn By: *IKMG* Checked By: *LN*

BROOKVILLE BUS DEPOT  
STORMWATER MANAGEMENT IMPROVEMENTS PROJECT

**SWM POND PLANTING PLAN**

JOSEPH PARK P116 L1589 F568

Date: JUNE 2012

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM, MSHA, AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

GENERAL SWM NOTES:  
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 DEPOSED 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 USE 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 PLACES 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 OF 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 IS 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:

- MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPES WITH PLYMERIC 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.

GENERAL SWM NOTES CONT'D:

MATERIALS -(ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES 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.

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 EXERCISED 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 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.

A. DRAINAGE DIAPHRAGMS

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

B. 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.

C. 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.

D. 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 WORK. 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 COMPACTION 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

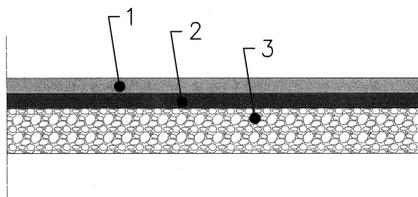
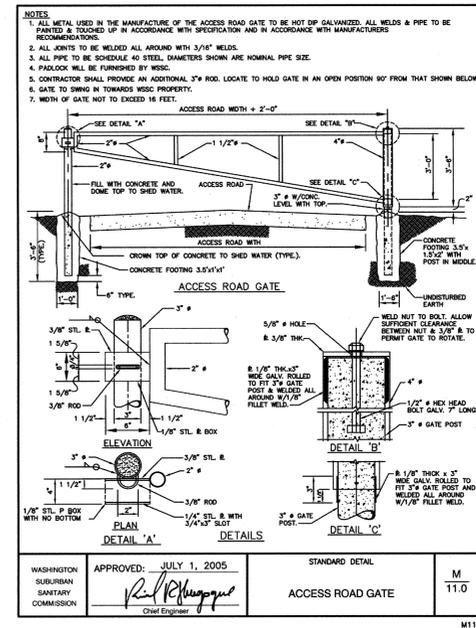
ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE MARYLAND SOIL CONSERVATION SERVICE 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.

| STAGE   | DESIGN ENGINEER (DE) | GEOTECHNICAL ENGINEER (GE) | COUNTY INSPECTOR | MNCPPC & OTHER |
|---|----------------------|----------------------------|------------------|----------------|
| 1. MANDATORY NOTIFICATION   | INITIAL DATE         | INITIAL DATE               | INITIAL DATE     | INITIAL DATE   |
| 1. Pre-construction meeting & field review of tree save flagging/line protection  |                      |                            |                  |                |
| 2. Sediment control installation  |                      |                            |                  |                |
| 3. Dewatering (DE) and stream diversion (DE)  |                      |                            |                  |                |
| 4. Clearing, grubbing, subgrade preparation   |                      |                            |                  |                |
| 5. Core trench excavation and dewatering, if required (DE)  |                      |                            |                  |                |
| 6. Core trench excavation, location (DE) or (GEO), location and compaction tests (GEO)  |                      |                            |                  |                |
| 7. Construction of principal roadway and riser:<br>7a. - Barrel class (ASTM C391) (DE)<br>- Pipe certification from supplier (DE)<br>- Pipe assembled in place on acceptable subgrade (GEO)<br>- Water-tight joints (DE)<br>- Articulated joint 4 feet from riser (DE)<br>- LIME compaction, soil material (GEO)<br>- Location, dimensions (DE)<br>7b. - Concrete cradle dimensions (DE)<br>- Concrete strength tests (GEO)<br>7c. - Anti-seep collars (location, collar dimensions and re-bar size) (DE)<br>- Concrete strength tests (GEO)<br>7d. - Filter diaphragm gradation and dimensions (if applicable) (GEO)<br>7e. - Riser footing subgrade (GEO), dimensions, re-bar (DE)<br>- Concrete strength tests (GEO) |                      |                            |                  |                |
| 7f. Present Riser:<br>- Shop drawings approved by DE, accepted by County<br>- Visual inspection of riser (for cracks, spalling, exposed steel, hoisted dimensions, homogeneity) (DE)<br>- Certification from supplier (DE)<br>- Water-tight joints (DE)<br>- Wall and opening dimensions per plan (DE)<br>7g. Cast-in-Place Riser:<br>- Wall and opening dimensions per plan (DE)<br>- Re-bar size, number, spacing acceptable (DE)<br>- Concrete testing and certification (GEO)<br>- Water-tight joints (DE)<br>- Filtration weathervanes (DE)<br>7h. Water-tight plate installation (DE). Note: may be delayed for SC purposes.  |                      |                            |                  |                |
| 8. Backfilling of principal roadway (GEO)   |                      |                            |                  |                |
| 9. Underdrain (if applicable) location (DE), pipe size (DE), filter cloth (DE), gravel (DE), field adjustments (GEO)  |                      |                            |                  |                |
| 10. Characterization work and pond outlet protection (DE) or (GEO)  |                      |                            |                  |                |
| 11. Diversion of stream through principal roadway (DE)  |                      |                            |                  |                |
| 12. Construction of embankment:<br>- LIME, description and material (GEO)<br>- Location, dimensions (DE)  |                      |                            |                  |                |
| 13. Construction of emergency spillway in cut (DE)  |                      |                            |                  |                |
| 14. Field verification of constructed contents (DE)   |                      |                            |                  |                |
| 15. Permanent vegetative stabilization, delivery tickets from supplier  |                      |                            |                  |                |
| 16. Submit record drawing and documentation (DE) and (GEO)  |                      |                            |                  |                |
| 17. Other items. (Get values to design spacing values, if required) (DE)  |                      |                            |                  |                |
| 18. Final inspection (DE) and (GEO)   |                      |                            |                  |                |

NOTES:  
1. Permitted 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) 777-6210  
2. See construction specifications in plan for detailed requirements.  
3. A copy of this completed checklist must be submitted as part of the stormwater management as-built package. MNCPPC Inspection Telephone: (301) 496-6711



2. 1/2" HOT ASPHALT SUPERPAVE FOR SURFACE 12.5 MM, PG 76-22, COMPACTION LEVEL 2
2. 2" HOT MIX ASPHALT SUPERPAVE FOR BASE 19.0 MM, PG 64-22, COMPACTION LEVEL 2
6. 6" GRADED AGGREGATE BASE

PAVEMENT DETAIL

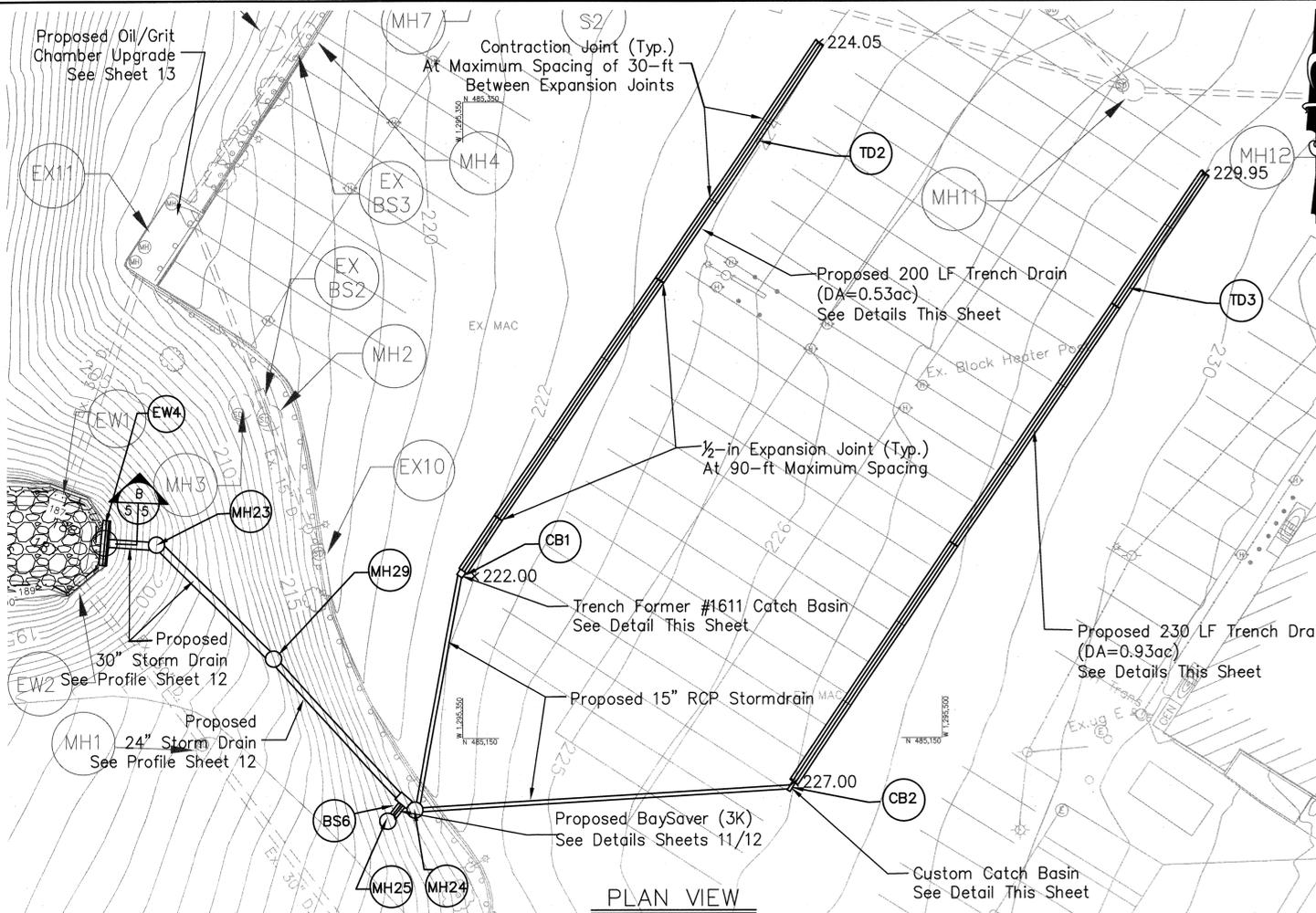
MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management: *BSC37, Paul Retford*  
Sediment Control Technical Requirements: *6-19-12*  
Administrative Requirements: *6-19-12*  
Reviewed Date: *238485*  
SEMENT CONTROL PERMIT NO.

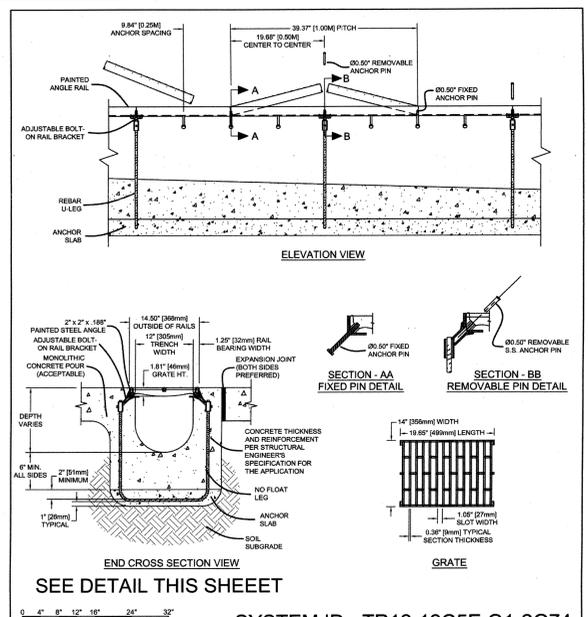
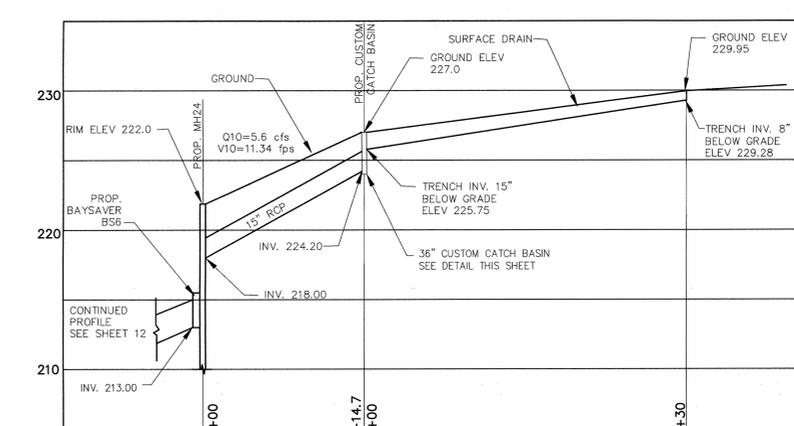
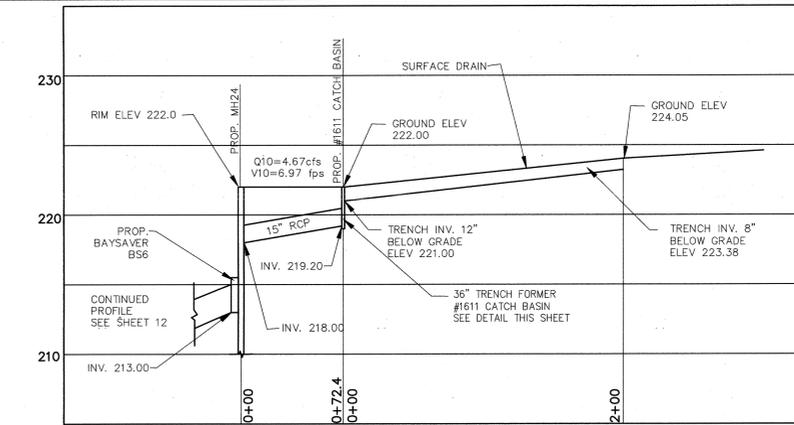
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

255 ROCKVILLE PIKE SUITE 120  
ROCKVILLE, MARYLAND, 20850  
Designed By: *KMG* Drawn By: *KMG* Checked By: *LN*  
BROOKVILLE BUS DEPOT  
STORMWATER MANAGEMENT IMPROVEMENTS PROJECT  
SWM POND NOTES  
JOSEPH PARK P116 11589 F568  
Date: JUNE 2012 DRAWING 7 OF 15

|  |          |      |    |
|--|----------|------|----|
| 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. 19545, EXPIRATION DATE: 02/18/2014. |          |      |    |
|  |          |      |    |
| Number   | Revision | Date | By |



**PLAN VIEW**  
Scale: 1"=20'



**ABLING**  
P.O. BOX 87 28100 ROCKFORD ROAD  
ROCKFORD, NC 28156  
(704) 985-1100

**SYSTEM ID - TR12-12C5E.G1-2G74**

**TRENCH FORMER MHD 12 SYSTEM**  
(FORMERLY MD300/MHD300)

FILE: **S-MHD 12-00** PART: **MHD 12**

Proprietary rights of ABT, Inc. are included in the information disclosed herein. The recipient, by accepting this document, agrees that neither this document nor the information disclosed herein nor any part thereof shall be copied, reproduced or transferred to others for manufacturing or for any other purpose except as specifically authorized in writing by ABT, Inc. (ES&L/ABT). The customer and the customer's architect, engineer, consultant and other professional are completely responsible for the selection, installation, and maintenance of any product purchased from ABT, and EXCEPT AS EXPRESSLY PROVIDED IN ABT'S STANDARD WARRANTIES, ABT MAKES NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE SUITABILITY, DESIGN, MERCHANTABILITY, OR FITNESS OF THE PRODUCT FOR CUSTOMER'S APPLICATION. Copies of ABT's standard warranties are available upon request.

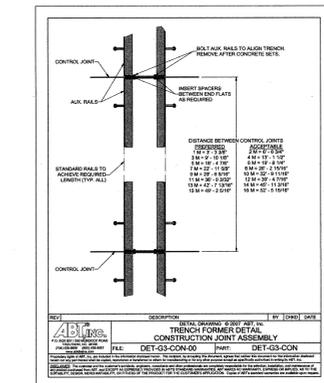
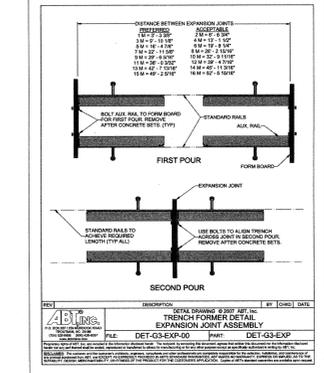
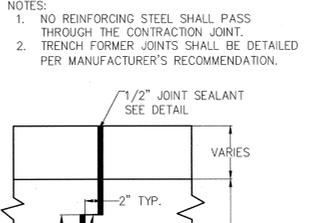
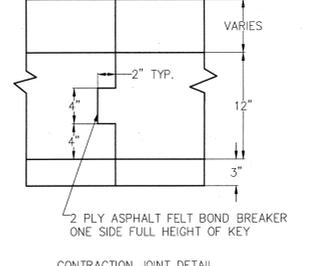
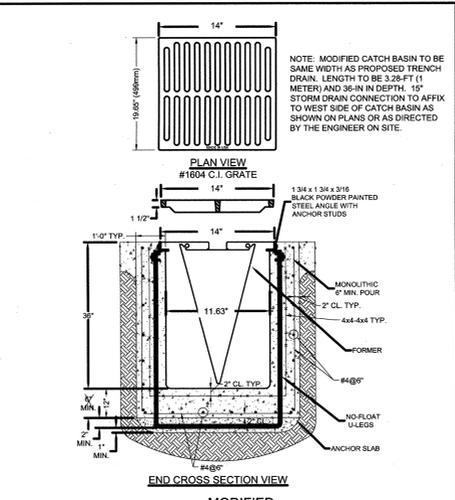
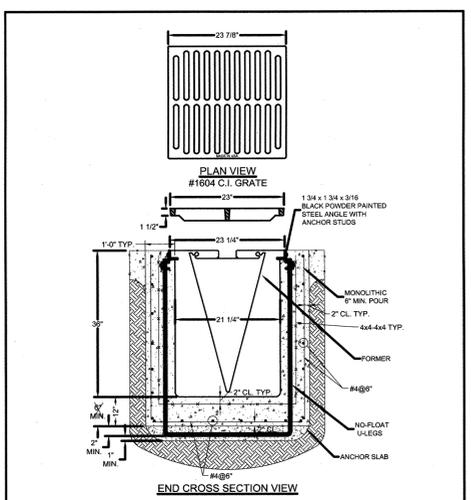
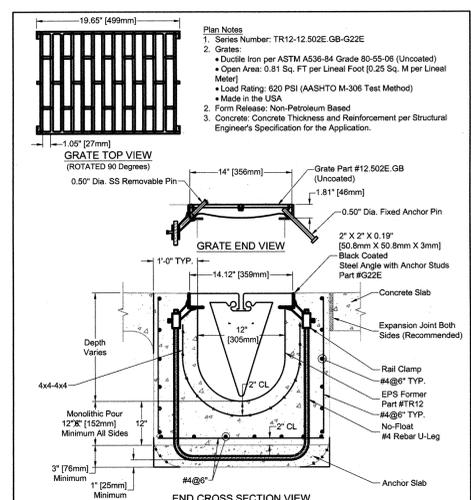
- NOTE:**
- TRENCH DRAINS TO BE SUPPLIED BY ABT, INC. (800-438-6057) OR APPROVED EQUIV. CONVEYANCE CRITERIA DIMENSIONS BASED UPON USE OF ABT, INC. PRODUCTS. APPROVED EQUIV. MUST MEET DETAIL AND TYPE OF STRUCTURE REFERS TO THE LATEST DESIGN STANDARDS OF MCDOT, STANDARD DETAILS OF THE WASHINGTON SUBURBAN SANITARY COMMISSION AND BOOK OF STANDARDS OF THE MARYLAND STATE HIGHWAY ADMINISTRATION, UNLESS OTHERWISE NOTED.
  - WHERE THE DROP ON THE MAIN LINE THROUGH A STRUCTURE CAN BE ACCOMMODATED BY AN INVERT SLOPE OF 1:11 OR FLATTER, A ROUNDED CHANNEL LINED WITH SEWER BRICK ON EDGE SHALL BE BUILT TO THE CROWN OF THE PIPES.
  - INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF THE UTILITIES BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS, WELL IN ADVANCE OF TRENCHING; IF CLEARANCES ARE LESS THAN SPECIFIED ON THIS PLAN OR LESS THAN 12" WHEN NOT SPECIFIED, CONTACT THE MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION'S INSPECTOR AND THE APPROPRIATE UTILITY OWNER BEFORE PROCEEDING WITH CONSTRUCTION.
  - WHERE ANY PART OF THE STORM DRAIN SYSTEM IS LOCATED IN A FILL SECTION, PROVIDE SELECT FILL MATERIAL COMPACTED TO 95% AASHTO T-99 DENSITY FROM APPROVED SUBGRADE TO THE STRUCTURE BOTTOM SLABS AND/OR THE PIPE BEDDING.
  - ALL STORM DRAIN PIPES SHALL BE INSTALLED WITH CLASS "C" BEDDING AS SHOWN ON MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION, "RCP SUPPORTING STRENGTH" LOADING CHARTS.
  - CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO BEGINNING EXCAVATION TO DETERMINE THE LOCATION OF EXISTING UTILITIES.
  - ALL STORM DRAIN PIPE SHALL BE REINFORCED CONCRETE PIPE, CLASS III MINIMUM, AND REQUIRED TO MEET MONTGOMERY COUNTY BEDDING CONDITIONS AS DESCRIBED IN THE GENERAL S/WM NOTES. PIPE JOINTS SHALL BE SEALED WITH O-RING RUBBER GASKETS.

- GENERAL NOTES FOR STORM DRAIN CONSTRUCTION:**
- ALL STORM DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE STANDARD SPECIFICATIONS OF THE MARYLAND STATE HIGHWAY ADMINISTRATION AND MONTGOMERY COUNTY.
  - TYPE OF STRUCTURE REFERS TO THE LATEST DESIGN STANDARDS OF MCDOT, STANDARD DETAILS OF THE WASHINGTON SUBURBAN SANITARY COMMISSION AND BOOK OF STANDARDS OF THE MARYLAND STATE HIGHWAY ADMINISTRATION, UNLESS OTHERWISE NOTED.
  - WHERE THE DROP ON THE MAIN LINE THROUGH A STRUCTURE CAN BE ACCOMMODATED BY AN INVERT SLOPE OF 1:11 OR FLATTER, A ROUNDED CHANNEL LINED WITH SEWER BRICK ON EDGE SHALL BE BUILT TO THE CROWN OF THE PIPES.
  - INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF THE UTILITIES BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS, WELL IN ADVANCE OF TRENCHING; IF CLEARANCES ARE LESS THAN SPECIFIED ON THIS PLAN OR LESS THAN 12" WHEN NOT SPECIFIED, CONTACT THE MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION'S INSPECTOR AND THE APPROPRIATE UTILITY OWNER BEFORE PROCEEDING WITH CONSTRUCTION.
  - WHERE ANY PART OF THE STORM DRAIN SYSTEM IS LOCATED IN A FILL SECTION, PROVIDE SELECT FILL MATERIAL COMPACTED TO 95% AASHTO T-99 DENSITY FROM APPROVED SUBGRADE TO THE STRUCTURE BOTTOM SLABS AND/OR THE PIPE BEDDING.
  - ALL STORM DRAIN PIPES SHALL BE INSTALLED WITH CLASS "C" BEDDING AS SHOWN ON MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION, "RCP SUPPORTING STRENGTH" LOADING CHARTS.
  - CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO BEGINNING EXCAVATION TO DETERMINE THE LOCATION OF EXISTING UTILITIES.
  - ALL STORM DRAIN PIPE SHALL BE REINFORCED CONCRETE PIPE, CLASS III MINIMUM, AND REQUIRED TO MEET MONTGOMERY COUNTY BEDDING CONDITIONS AS DESCRIBED IN THE GENERAL S/WM NOTES. PIPE JOINTS SHALL BE SEALED WITH O-RING RUBBER GASKETS.

- GENERAL NOTES FOR TRENCH DRAIN CONSTRUCTION:**
- TRENCH DRAIN CONSTRUCTION SHALL FOLLOW THE INSTALLATION INSTRUCTIONS AS PROVIDED BY THE MANUFACTURER AT WWW.ABTDRAINS.COM/INSTALLATION/INSTALLATION-MANUALS.ASPX
  - EXCAVATE TRENCH AREA LARGE ENOUGH TO ACCOMMODATE TRENCH FORMER FOAM TEMPLATE AND FORMING REQUIRED FOR CONCRETE POUR. TRENCH EXCAVATION SHALL BE KEPT TO MINIMUM NECESSARY SURFACE AREA AND SHALL NOT EXCEED THE LIMITS OF DISTURBANCE.
  - ALL CONCRETE AND REBAR SHALL CONFORM TO SPECIFICATIONS AS LISTED ON THE WEIR/WING WALL EXTENSION NOTES ON SHEET S.
  - ANY ABT, INC. REPRESENTATIVE SHALL BE ON SITE DURING TRENCH DRAIN INSTALLATION AND SHALL INSPECT AND GUIDE IN TRENCH DRAIN INSTALLATION.
  - NECESSARY FORMS SHALL BE PLACED IN TRENCH ALONG WITH TRENCH FORMER FORMS AND REBAR. CONSTRUCTION SHALL BEGIN AT THE DEEPEST END AND PROCEED UPSTREAM. POURS SHALL BE CONDUCTED AT NECESSARY INTERVALS TO PROVIDE NECESSARY JOINTS AS SPECIFIED ON THE PLANS. CONCRETE EXPANSION AND CONTRACTION JOINTS ARE SHOWN THIS SHEET. ABT, INC. TRENCH FORMER EXPANSION AND CONTRACTION JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND DETAILS AS PROVIDED BY THE MANUFACTURER.
  - STORM DRAIN CONNECTIONS SHALL BE MADE BY INSERTING THE UPSTREAM END OF STORM DRAIN INTO THE FOAM FORM PRIOR TO POURING THE CATCH BASIN. TD2'S CATCH BASIN (CB1) IS A STANDARD 36" DEEP CATCH BASIN AS SHOWN ON THE DETAIL THIS SHEET. THE STORM DRAIN CONNECTION IS MADE TO THE END OF THE CATCH BASIN. TD3'S CATCH BASIN (CB2) IS A CUSTOM FORMED BASIN WITH THE SAME WIDTH AS THE TRENCH DRAIN AND ONE STANDARD FORM IN LENGTH. THE CATCH BASIN IS 36" DEEP AND THE CONNECTION SHALL BE MADE FROM THE EAST SIDE RATHER THAN THE END SECTION. ONCE THE CONCRETE IS POURED AND SET AND THE FORM IS RELEASED, THE CONTRACTOR SHALL PERFORM ANY NECESSARY SEALING OR SAW CUTTING TO ENSURE A SMOOTH JOINT TRANSITION.
  - ONCE ALL CONCRETE IS POURED AND SET ANY REMAINING OPEN TRENCH AREAS SHALL BE BACKFILLED WITH APPROPRIATE ROAD SUBBASE MATERIAL AND THE ASPHALT SURFACE REPAIRED.

**TRENCH DRAIN LOCATIONS**

|             | NORTHING     | EASTING        |
|-------------|--------------|----------------|
| TD2 U/S End | 485,366.7495 | 1,295,462.2175 |
| TD2 D/S End | 485,202.6554 | 1,295,350.0587 |
| CB1         | 485,201.9392 | 1,295,349.5205 |
| TD3 U/S End | 485,327.2499 | 1,295,581.7303 |
| TD3 D/S End | 485,136.0876 | 1,295,453.5588 |
| CB2         | 485,134.7103 | 1,295,452.7018 |



**ABLING**  
MHD 12 - 12.502E GB-G22E  
SERIES: TR12 - 12.502E GB-G22E REV: 00

**TYPICAL TRENCH DRAIN CROSS-SECTION**

**Plan Notes:**

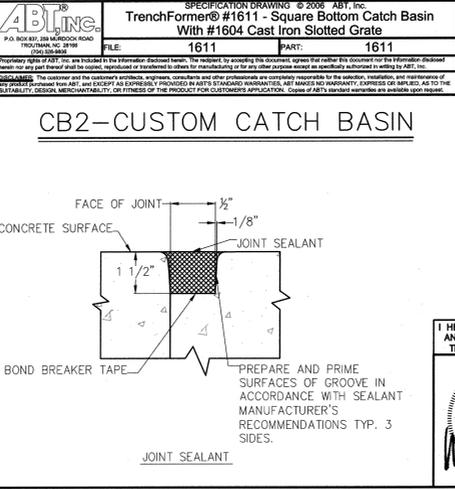
- Series Number: TR12-12.502E-GB-G22E
- Grates:
  - Ductile Iron per ASTM A536-84 Grade 80-55-06 (Uncoated)
  - Open Area: 0.81 Sq. FT per Linear Foot (0.25 Sq. Ft per Linear Meter)
  - Load Rating: 620 PSI (AASHTO M-300 Test Method)
  - Made in the USA
- Form Release: Non-Petroleum Based
- Concrete: Concrete Thickness and Reinforcement per Structural Engineer's Specification for the Application.

**ABLING**  
MHD 12 - 12.502E GB-G22E  
SERIES: TR12 - 12.502E GB-G22E REV: 00

**ABLING**  
SPECIFICATION DRAWING © 2006 ABT, Inc.  
**TrenchFormer® #1611 - Square Bottom Catch Basin With #1604 Cast Iron Slotted Grate**  
FILE: 1611 PART: 1611

**ABLING**  
SPECIFICATION DRAWING © 2006 ABT, Inc.  
**TrenchFormer® #1611 - Square Bottom Catch Basin With #1604 Cast Iron Slotted Grate**  
FILE: 1611 PART: 1611

**ABLING**  
SPECIFICATION DRAWING © 2006 ABT, Inc.  
**TrenchFormer® #1611 - Square Bottom Catch Basin With #1604 Cast Iron Slotted Grate**  
FILE: 1611 PART: 1611



**ABLING**  
SPECIFICATION DRAWING © 2006 ABT, Inc.  
**TrenchFormer® #1611 - Square Bottom Catch Basin With #1604 Cast Iron Slotted Grate**  
FILE: 1611 PART: 1611

**ABLING**  
SPECIFICATION DRAWING © 2006 ABT, Inc.  
**TrenchFormer® #1611 - Square Bottom Catch Basin With #1604 Cast Iron Slotted Grate**  
FILE: 1611 PART: 1611

**ABLING**  
SPECIFICATION DRAWING © 2006 ABT, Inc.  
**TrenchFormer® #1611 - Square Bottom Catch Basin With #1604 Cast Iron Slotted Grate**  
FILE: 1611 PART: 1611

**MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:**

Stormwater Management: **BSC (37) Paul Retford**

Sediment Control Technical Requirements: **6/19/12**

Administrative Requirements: **6/19/12**

Approved: **238486**

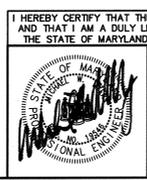
**MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
255 ROCKVILLE PIKE SUITE 120  
ROCKVILLE, MARYLAND, 20850

Designed By: **LN** Drawn By: **LN** Checked By: **LN**

**PROPOSED SITE 1**

**JOSEPH PARK P116 11589 F568**

Date: JUNE 2012 DRAWING 8 OF 15



Permanently Place 40 LF Of SHA MD 615.01 Standard Asphalt Curb With Min. Top Elevation 246.63

Remove Ex. 600 Sq-Ft Of Riprap And Replace With 220 Sq-Ft Of Soil Amendments, 24" Depth

Replace Ex. Inlet With SHA MD 381.01 Standard Yard Inlet With Inv. Elev 246.00

Place Riprap At Entrance Class I D50=9.5" d=19" L=10'

Ex. 24" Culvert To Remain

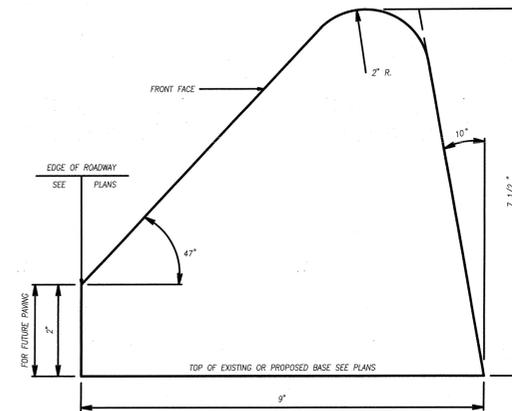
Remove Ex. 400 sq-ft Of Riprap And Replace With 24" Of Soil Amendments

**PLAN VIEW**

Scale: 1"=10'

**AMENDED SOILS NOTES:**

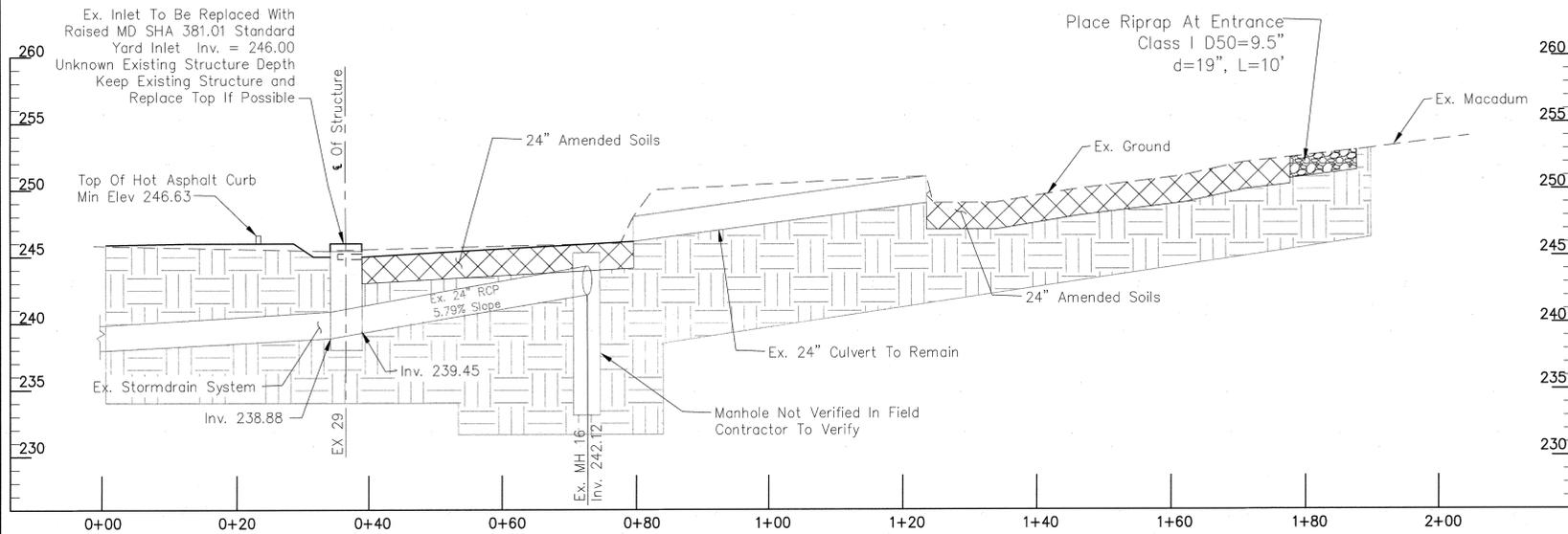
1. The Surface Mulch Layer Will Consist Of Standard Fine Shredded Aged Hardwood Mulch. The Mulch Should Be Applied Uniformly To A Depth Of 2 To 3 Inches. Yearly Replenishing May Be Necessary.
2. The Planting Media Shall Consist Of 1/3 Perlite Or Solite, 1/3 Compost And 1/3 Topsoil. The Perlite Shall Be Coarse Grade Horticultural Perlite. The Compost Shall Be High Grade Compost Free Of Stones And Partially Composed Woody Material. The Soil Shall Meet The Following Minimum Criteria: Contain No More Than 10% Clay, 30-55% Silt and 35-60% Sand. The Soil Shall Be Free Of Stones, Stumps, Roots Or Other Similar Objects Larger Than 2 Inches. The First Layer Of The Planting Media Shall Be Lightly Tilled To Mix It Into The Sand Layer, So Not To Create A Definite Boundary. The Planting Material Shall Be Flooded After Placement. Any Settlement That Occurs Shall Be Filled Back To The Design Elevation.



**MD 615.01 HOT ASPHALT CURB**

Scale: N.T.S

SYMBOL:



**PROFILE VIEW**

Scale: Hor. 1"=10'  
Ver. 1"=5'

MONTGOMERY COUNTY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
255 ROCKVILLE PIKE SUITE 120  
ROCKVILLE, MARYLAND, 20850

Designed By \_\_\_\_\_ Drawn By \_\_\_\_\_ Checked By LN

BROOKVILLE BUS DEPOT  
STORMWATER MANAGEMENT IMPROVEMENTS PROJECT

**PROPOSED  
BMP SITE 2**

JOSEPH PARK P116 L1589 F568  
Date: JUNE 2012 DRAWING 9 OF 15

**MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:**

Stormwater Management:  
*BSC37, Pankratov*  
*DNA 6-19-12*  
Approved Date  
*238485*  
S.M. FILE NO.

Sediment Control Technical Requirements:  
*DNA 6-19-12*  
Revised Date  
*WBE 6/21/12*  
Approved Date

Administrative Requirements:  
*238485*  
Revised Date  
238486  
SEEDING CONTROL POINT NO.

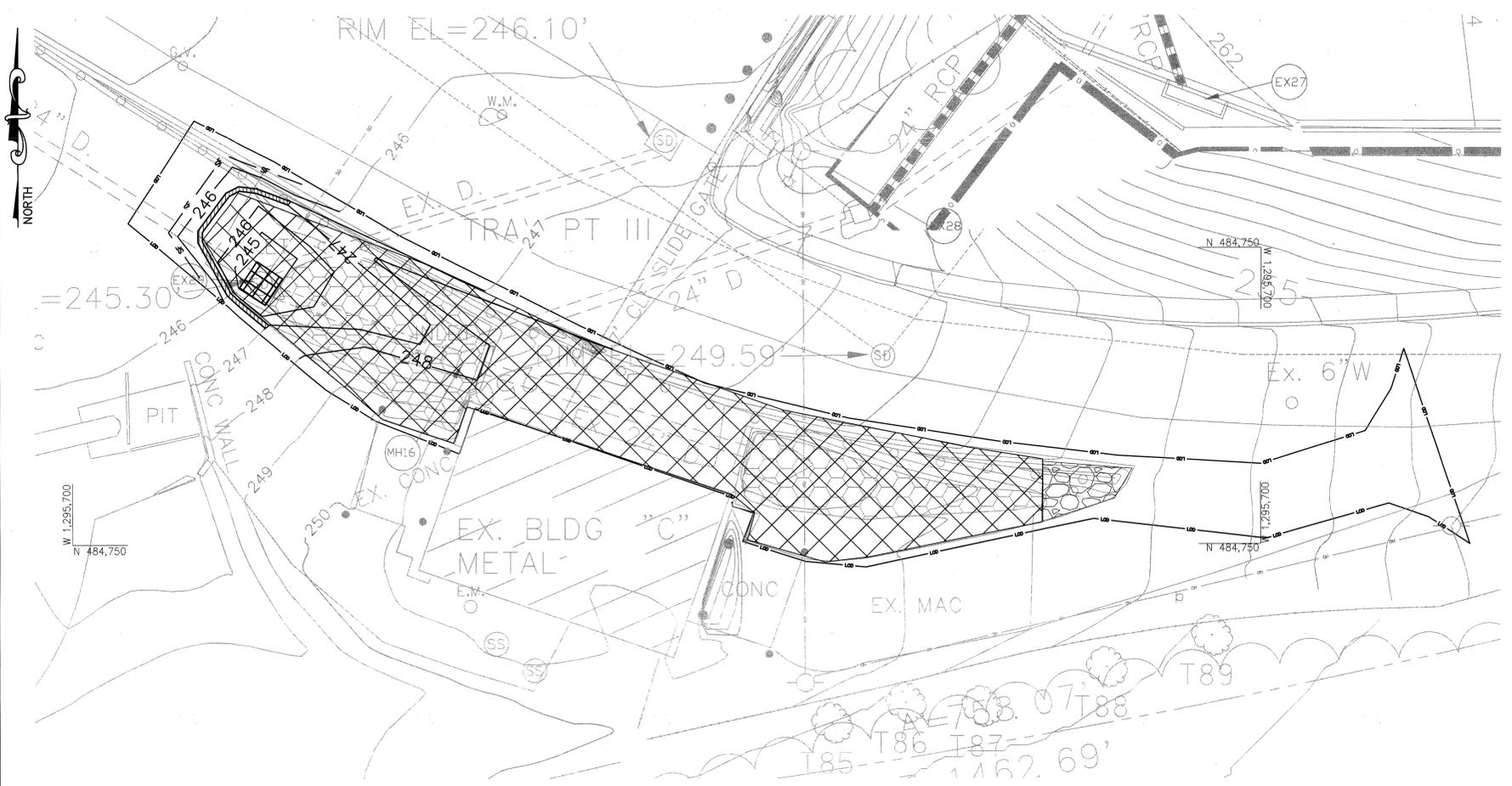
MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED

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. 19545, EXPIRATION DATE: 02/15/2014.

| Number | Revision | Date | By |
|--------|----------|------|----|
|        |          |      |    |
|        |          |      |    |
|        |          |      |    |



RUMMEL, KLEPPER & KAHL, LLP  
CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MARYLAND 21217  
(410) 728-2900



**PLAN VIEW**  
Scale: 1"=10'

**NOTES:**

1. Contractor shall submit seed sources prior to seeding.
2. All seeding shall be guaranteed for two years.
3. All sediment and erosion protection features shall be installed and approved prior to grading. Location of all silt fence shall be field located with MCDEP inspectors.

Area 0.07 acre

| OIL & SALT TOLERANT SEED MIX |      |                            |                    |                 |
|------------------------------|------|----------------------------|--------------------|-----------------|
| % FREQUENCY                  | LBS. | BOTANICAL NAME             | COMMON NAME        | UNIT            |
| 10                           | 0.3  | <i>Agrostis alba</i>       | Redtop             | LB of Bulk Seed |
| 70                           | 2.1  | <i>Festuca arundunacea</i> | Tall Fescue "Fawn" | LB of Bulk Seed |
| 10                           | 0.3  | <i>Lolium multiflorum</i>  | Annual Ryegrass    | LB of Bulk Seed |
| 10                           | 0.3  | <i>Puccinellia distans</i> | Alkali Grass       | LB of Bulk Seed |
| 100 (TOTAL)                  | 3.0  |                            |                    |                 |

Seed at 1 lbs/1,000 sq.ft.

**LEGEND**

- Existing Deciduous Tree
- Property Line
- 250 Existing Contour
- 250 Proposed Contour
- 100 Limits Of Disturbance
- Existing Tree Line
- Oil & Salt Tolerant Seed Mix

**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MARYLAND 21217  
(410) 728-2900

*David Mitchell*  
DAVID MITCHELL  
REGISTERED LANDSCAPE ARCHITECT  
#3126

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. 19546, EXPIRATION DATE: 02/18/2014.

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:

|  |   |
|--|---|
| Stormwater Management:<br><i>BSC37, Paul Kretz</i> | Sediment Control Technical Requirements:<br><i>DA/MLR 6-19-12</i> |
| Approved Date: <i>6/19/12</i>                      | Reviewed Date: <i>6-19-12</i>                                     |
| Approved Date: <i>6/19/12</i>                      | Approved Date: <i>6/19/12</i>                                     |
| S.M. FILE NO. <i>238485</i>                        |   |

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

Administrative Requirements:  
*DA/MLR 6-19-12*  
Reviewed Date: *6-19-12*  
*238486*  
SEEDING 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.

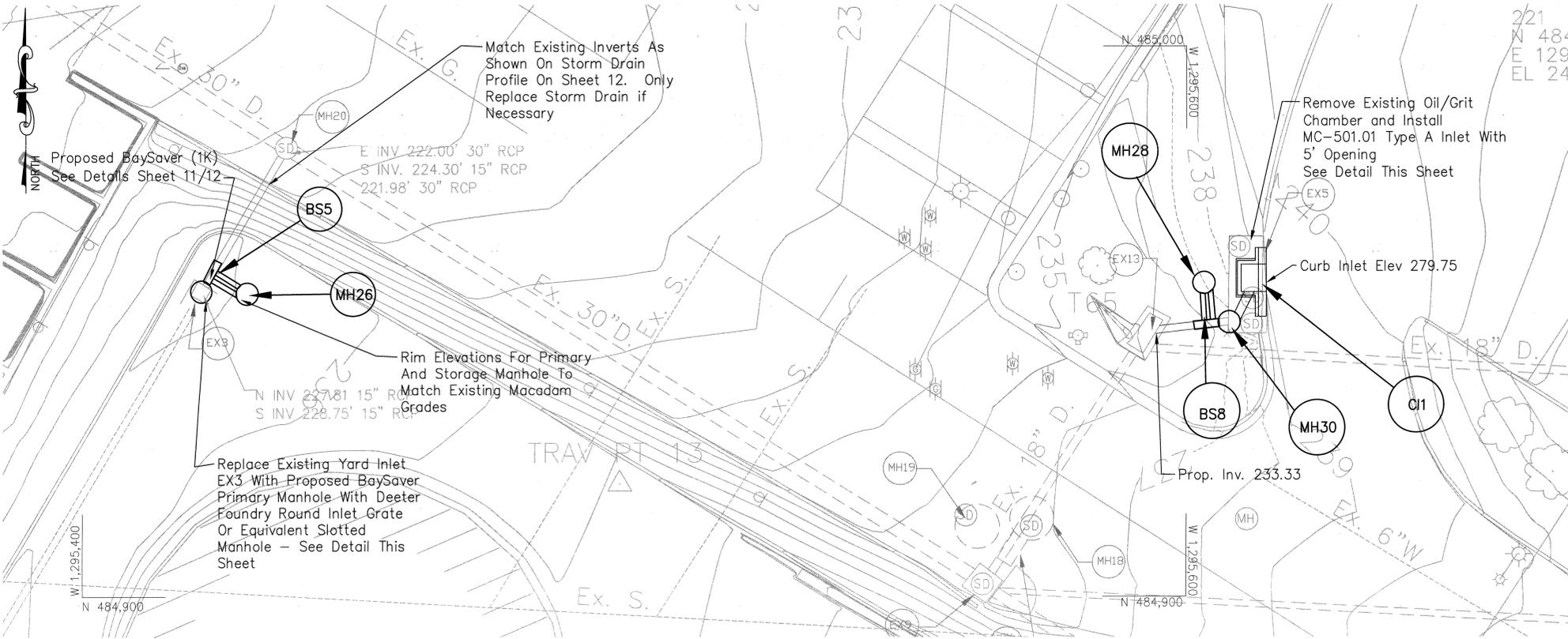
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION  
255 ROCKVILLE PIKE SUITE 120  
ROCKVILLE, MARYLAND, 20850

Designed By KMG Drawn By KMG Checked By LN

BROOKVILLE BUS DEPOT  
STORMWATER MANAGEMENT IMPROVEMENTS PROJECT

**SITE 2  
PLANTING PLAN**

JOSEPH PARK P116 L1589 F568  
Date: JUNE 2012 DRAWING 10 OF 15

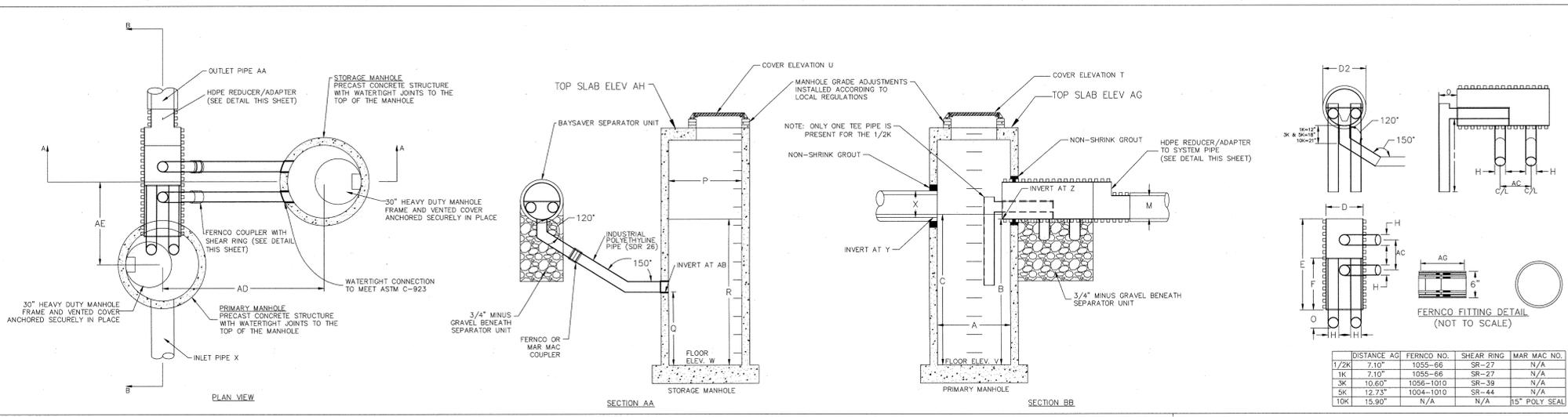


PLAN VIEW  
Scale: 1"=10'

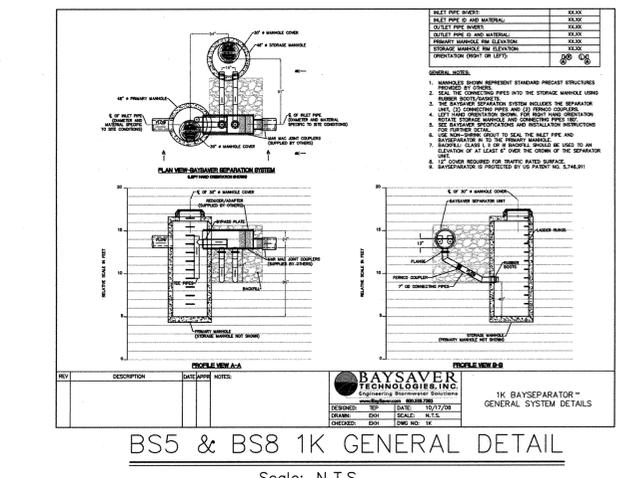
### BAYSAVER SYSTEM DIMENSIONS

| BAYSAVER                                  |  | BS-5      | BS-6      | BS-8      |
|---|--|-----------|-----------|-----------|
| DESCRIPTION                               |  | 1K System | 3K System | 1K System |
| <b>PRIMARY MANHOLE DIMENSIONS</b>         |  |           |           |           |
| A   | PRIMARY MANHOLE DIAMETER   | 48"       | 60"       | 48"       |
| B   | MANHOLE DEPTH BELOW OUTLET   | 8'-0"     | 8'-0"     | 8'-0"     |
| C   | MINIMUM FLUID DEPTH  | 8'-3"     | 8'-3"     | 8'-3"     |
| <b>STANDARD SEPARATOR UNIT DIMENSIONS</b> |  |           |           |           |
| D   | SEPARATOR UNIT ID  | 24"       | 36"       | 24"       |
| D2  | SEPARATOR UNIT OD  | 27.8"     | 39.8"     | 27.8"     |
| E   | SEPARATOR UNIT LENGTH  | 59.75"    | 59.75"    | 59.75"    |
| F   | BYPASS PLATE LENGTH  | 34.5"     | 34.5"     | 34.5"     |
| G   | WEIR/BYPASS PLATE THICKNESS  | 1/2"      | 1/2"      | 1/2"      |
| H   | TEE PIPE AND CONNECTING PIPE OD                                    | 7.125"    | 7.125"    | 7.125"    |
| I   | TEE PIPE LENGTH  | 47.38"    | 47.38"    | 47.38"    |
| J   | WEIR HEIGHT ABOVE INVERT   | 3"        | 3"        | 3"        |
| K   | BYPASS PLATE HEIGHT ABOVE INVERT                                   | 12"       | 12"       | 12"       |
| L   | WIDTH OF WEIR AT BASE  | 3"        | 3"        | 3"        |
| M   | OUTLET PIPE DIAMETER   | 15"       | 15"       | 18"       |
| N   | TEE PIPE INVERT HEIGHT ABOVE UNIT INVERT                           | 5"        | 5"        | 5"        |
| O   | TEE PIPE OVERHANG  | 12"       | 12"       | 12"       |
| <b>STORAGE MANHOLE DIMENSIONS</b>         |  |           |           |           |
| P   | STORAGE MANHOLE DIAMETER   | 48"       | 60"       | 48"       |
| Q   | MANHOLE DEPTH BELOW INLET/OUTLET                                   | 48"       | 48"       | 48"       |
| R   | FLUID DEPTH  | 8'-0"     | 8'-0"     | 8'-0"     |
| S   | TOTAL STORAGE VOLUME   | 200 CF    | 314 CF    | 200 CF    |
| <b>SYSTEM DIMENSIONS AND ELEVATIONS</b>   |  |           |           |           |
| T   | PRIMARY MANHOLE COVER ELEVATION                                    | 234.95    | 222.0     | 238.50    |
| U   | STORAGE MANHOLE COVER ELEVATION                                    | 234.65    | 220.0     | 237.50    |
| V   | PRIMARY MANHOLE FLOOR ELEVATION                                    | 220.75    | 205.0     | 225.50    |
| W   | STORAGE MANHOLE FLOOR ELEVATION                                    | 220.75    | 205.0     | 225.50    |
| X   | INLET PIPE ID AND MATERIAL   | 15" RCP   | 15" RCP   | 18" RCP   |
| Y   | INLET PIPE INVERT  | 228.75    | 218.0     | 233.83    |
| Z   | SEPARATOR UNIT INVERT  | 228.75    | 213.0     | 233.53    |
| AA  | OUTLET PIPE ID AND MATERIAL  | 15" RCP   | 24" RCP   | 18" RCP   |
| AB  | CONNECTING PIPE INVERT ELEVATION                                   | 224.75    | 209.0     | 229.58    |
| AC  | CONNECTION PIPE SPACING  | 18.9"     | 26"       | 18.9"     |
| AD  | STORAGE MANHOLE SIDE OFFSET  | 7'-7"     | 98"       | 7'-7"     |
| AE  | STORAGE MANHOLE DOWNSTREAM OFFSET                                  | 4'-8"     | 62"       | 4'-8"     |
| AF  | BAYSAVER SEPARATOR UNIT ORIENTATION (PLEASE SPECIFY RIGHT OR LEFT) |           |           |           |
| AG  | PRIMARY MANHOLE TOP OF SLAB ELEVATION                              | 233.90    | 221.25    | 237.75    |
| AH  | STORAGE MANHOLE TOP OF SLAB ELEVATION                              | 234.20    | 219.25    | 236.75    |

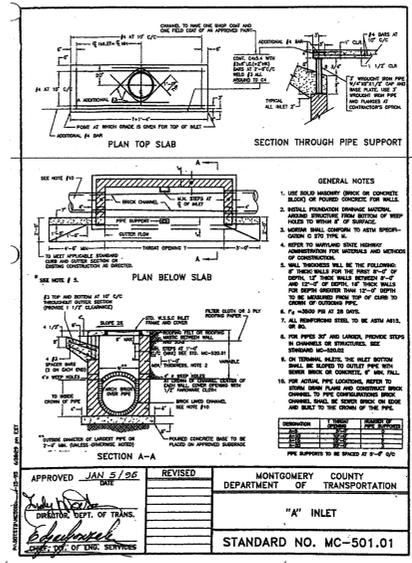
Note: Contractor to test pit to verify this information prior to BaySaver order.



| DISTANCE   | FERROCO NO. | SHEAR RING | MAR MAC NO.   |
|------------|-------------|------------|---------------|
| 1/2K 7.10" | 1055-66     | SR-27      | N/A           |
| 1K 7.10"   | 1055-66     | SR-27      | N/A           |
| 3K 10.60"  | 1056-1010   | SR-39      | N/A           |
| 5K 12.73"  | 1004-1010   | SR-44      | N/A           |
| 10K 15.90" | N/A         | N/A        | 15" POLY SEAL |



BS5 & BS8 1K GENERAL DETAIL  
Scale: N.T.S.



**Deeter foundry**

1986 CATCH BASIN INLET FRAMES, SOLID COVERS OR GRATES

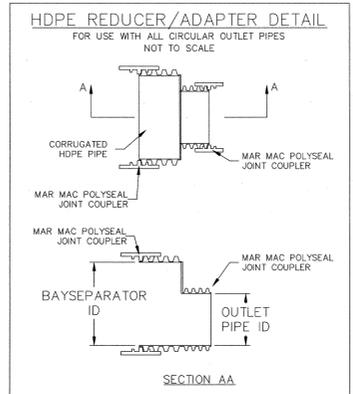
| Catalog Number | A  | B    | C     | E  | F    | G    | Open Area % |
|----------------|----|------|-------|----|------|------|-------------|
| 1986           | 30 | 1.58 | 28.12 | 32 | 5.12 | 1.36 | 273         |

Scale: N.T.S.

Note: An approved equal may be substituted that meets the above referenced dimensions.

BAYSAVERS Are To Be Installed With The Storm Drain System And Will Function As Secondary Sediment Control Devices.

Upon Completion Of Site Stabilization, Each BAYSAVER System Shall Be Flushed Clean And The Manholes Cleaned Out And Refilled With Clean Water.



- GENERAL CONSTRUCTION NOTES:**
- All Work Must Be Done With Regard For The Safety Of The Construction Crew.
  - All Work And Materials Must Comply With Applicable State And Local Regulations.
  - Know The Location And Depth Of Any Underground Utilities Before Excavation Begins.
  - System Manholes Must Be Cleaned Out After Site Is Completely Stabilized.
  - Nine (9) Inch Maximum Height For Manhole Frame. Secure Manhole Rim To The Top Slab (Use WSSC Detail S/4.3)

MCDPS 11 OF 15

**MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
255 ROCKVILLE PIKE SUITE 120  
ROCKVILLE, MARYLAND, 20850

Designed By KMG Drawn By KMG Checked By LN

BROOKVILLE BUS DEPOT  
STORMWATER MANAGEMENT IMPROVEMENTS PROJECT

## BAYSAVER NOTES AND DETAILS

JOSEPH PARK P116 L1589 F568

Date: JUNE 2012 DRAWING 11 OF 15

**MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:**

|   |  |  |
|---|--|--|
| Stormwater Management:<br><u>CS (3), Red Retrofit</u> | Sediment Control Technical Requirements:<br><u>DL 11/20/12-19-12</u> | Administrative Requirements:<br><u>DL 11/20/12-19-12</u> |
| Reviewed Date<br><u>11/20/12</u>                      | Reviewed Date<br><u>11/20/12</u>                                     | Reviewed Date<br><u>11/20/12</u>                         |
| Approved Date<br><u>11/20/12</u>                      | Approved Date<br><u>11/20/12</u>                                     | Approved Date<br><u>11/20/12</u>                         |

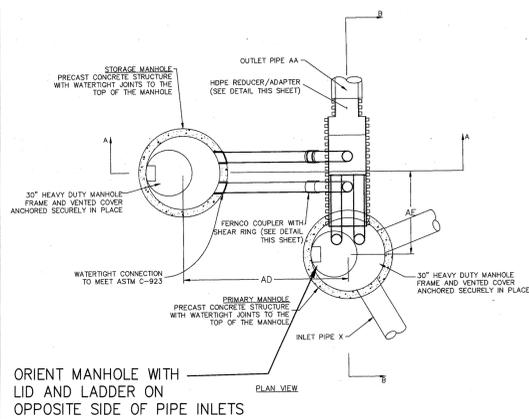
238485  
S.M. FILE NO.

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. 19546, EXPIRATION DATE: 02/19/2014.

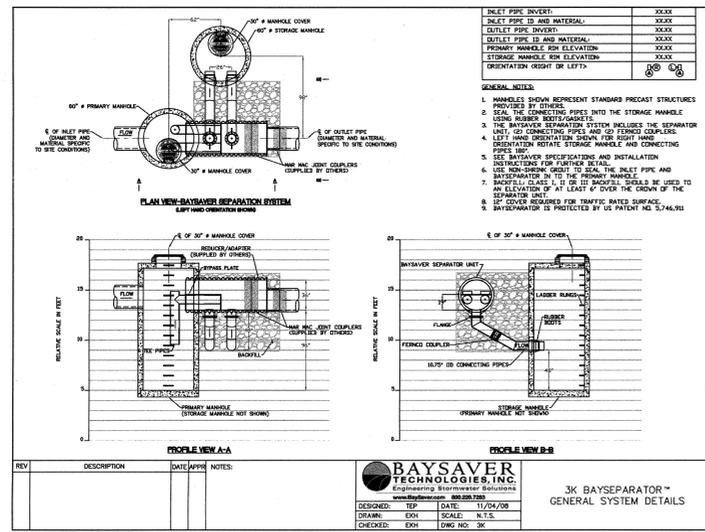
*[Signature]*  
Professional Engineer

| Number | Revision | Date | By |
|--------|----------|------|----|
|        |          |      |    |

**RUMMEL, KLEPPER & KAHL, LLP**  
CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MARYLAND 21217  
(410) 728-2900



BS-6 EXAMPLE PLAN



BS-6 3K GENERAL DETAIL

SEQUENCE OF CONSTRUCTION AND INSPECTOR'S CHECK-OFF LIST FOR DUAL MANHOLE SEPARATORS

| Stage<br>(X = Approval Required)  | Developer's/Engineer Approval |      | Inspector |      | Geotechnical Engineer |      |
|---|-------------------------------|------|-----------|------|-----------------------|------|
|   | Initials                      | Date | Initials  | Date | Initials              | Date |
| 1. Pre-Construction Meeting.  | X                             |      | X         |      | X                     |      |
| 2. Install Manholes and associated storm drainage:<br>a. Obtain approval of subgrade from Geotechnical Engineer. (Subgrade to have a minimum of 95% compaction) |                               |      |           |      | X                     |      |
| b. Installation of precast base, lower tank and lower piping.   | X                             |      | X         |      |                       |      |
| c. Backfill and min. 95% compaction around lower tank and lower piping.   |                               |      |           |      | X                     |      |
| d. Installation of precast middle section(s) with separator unit and remaining piping.  | X                             |      | X         |      |                       |      |
| e. Installation of precast top slab.  | X                             |      | X         |      |                       |      |
| f. Installation of adjustment rings and frame and cover.  | X                             |      | X         |      |                       |      |
| g. Installation of flowable fill or concrete backfill.  |                               |      |           |      | X                     |      |
| 3. Backfilling operation and compaction.  |                               |      |           |      | X                     |      |
| 4. Site is permanently stabilized. Sediment control measures removed and all sediment and debris removed from dual manhole separators.                          |                               |      | X         |      |                       |      |
| 5. Final inspection.  |                               |      | X         |      |                       |      |

GENERAL CONSTRUCTION NOTES:

- All Work Must Be Done With Regard For the Safety Of the Construction Crew.
- All Work And Materials Must Comply With Applicable State And Local Regulations.
- Know The Location And Depth Of Any Underground Utilities Before Excavation Begins.
- System Manholes Must Be Cleaned Out After Site Is Completely Stabilized.
- Nine (9) Inch Maximum Height For Manhole Frame. Secure Manhole Rim To The Top Slab (Use WSSC Detail S/4.3)

BAYSAYERS Are To Be Installed With The Storm Drain System And Will Function As Secondary Sediment Control Devices.

Upon Completion Of Site Stabilization, Each BAYSAYER System Shall Be Flushed Clean And The Manholes Cleaned Out And Refilled With Clean Water.

| BaySeparator Unit | BaySeparator Manhole Sizes (prim. x stor.) | Maximum Treatment (cfs) | Maximum Treatment (gpm) | Peak Design (cfs) |
|-------------------|--|-------------------------|-------------------------|-------------------|
| 1/2K BaySeparator | 48x48                                      | 1.1                     | 494                     | 8.5               |
| 1K BaySeparator   | 48x48<br>48x50<br>48x72<br>60x60           | 2.4                     | 1076                    | 10.0              |
| 3K BaySeparator   | 60x60<br>60x72<br>60x84<br>72x72           | 7.8                     | 3498                    | 30.0              |
| 5K BaySeparator   | 72x72<br>72x84<br>72x96<br>96x96           | 11.1                    | 4978                    | 50.0              |
| 10K BaySeparator  | 120x120                                    | 21.8                    | 9777                    | 100.0             |

BAYSAYERS MAINTENANCE

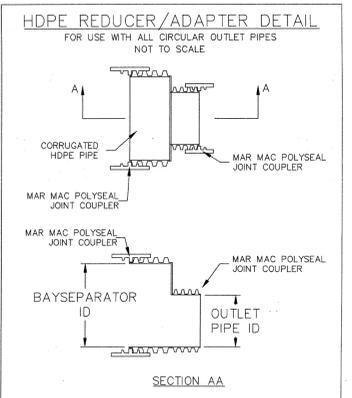
BAYSAYERS SYSTEMS MUST BE INSPECTED AND MAINTAINED PERIODICALLY. INSPECTION IS MADE BY CHECKING THE DEPTH OF SEDIMENT IN EACH MANHOLE WITH A GRADE STICK OR SIMILAR DEVICE. MAINTENANCE IS REQUIRED WHEN THE SEDIMENT DEPTH IN EITHER MANHOLE EXCEEDS 2 FEET. MINIMUM INSPECTION IS RECOMMENDED TWICE A YEAR TO MAINTAIN OPERATION AND FUNCTION OF BAYSAYER.

MAINTENANCE CONSISTS OF THE FOLLOWING:

- A. STORAGE MANHOLE**
- REMOVE THE ENTIRE VOLUME OF THE CONTAMINATED WATER BY VACUUM TRUCK.
  - CLEAN THE MANHOLE WALLS AND FLUSH OUT THE MANHOLE USING A HIGH PRESSURE HOSE AND REMOVE FLUSHING WATER BY VACUUM TRUCK. MAKE CERTAIN MANHOLE IS CLEAN.
- B. PRIMARY MANHOLE**
- USING A SUBMERSIBLE PUMP, PUMP THE CLEAN WATER FROM THE CENTER OF THE MANHOLE DIRECTLY INTO THE EMPTY STORAGE MANHOLE UNTIL THE WATER LEVEL FALLS TO 1 FOOT ABOVE THE SEDIMENT LAYER.
  - REMOVE THE SETTLED SEDIMENT AND REMAINING WATER BY VACUUM TRUCK.
  - CLEAN THE MANHOLE WALLS AND FLUSH OUT THE MANHOLE USING A HIGH PRESSURE HOSE AND REMOVE FLUSHING WATER BY VACUUM TRUCK. MAKE CERTAIN MANHOLE IS CLEAN.
  - CONTAMINATED MATERIAL REMOVED FROM THE MANHOLES MUST BE DISPOSED OF RESPONSIBLY AND LEGALLY BY THE OPERATOR OF THE VACUUM TRUCK.

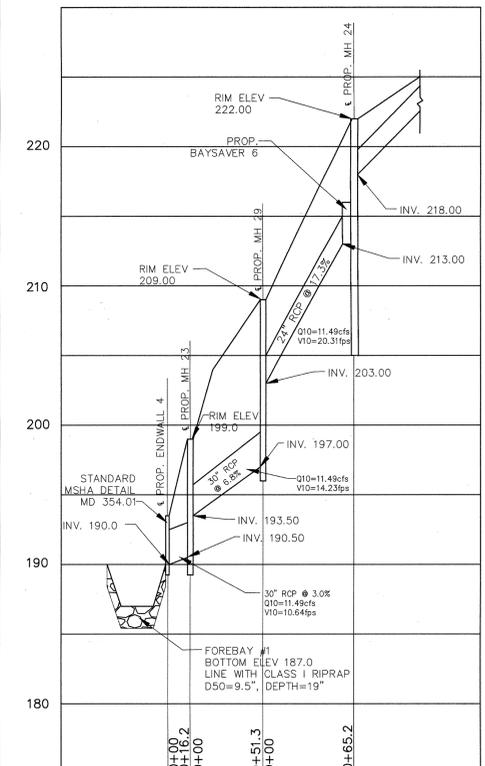
GENERAL CONSTRUCTION NOTES

- ALL WORK MUST BE DONE WITH REGARD FOR THE SAFETY OF THE CONSTRUCTION CREW.
- ALL WORK AND MATERIALS MUST COMPLY WITH APPLICABLE STATE AND LOCAL REGULATIONS.
- KNOW THE LOCATION AND DEPTH OF ANY UNDERGROUND UTILITIES BEFORE EXCAVATION BEGINS.



BAYSAYERS INSTALLATION INSTRUCTIONS

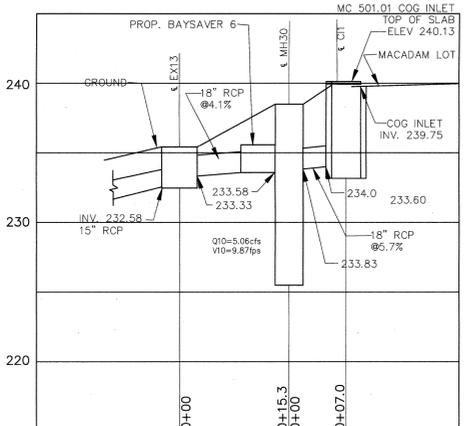
- EXCAVATION MUST PROVIDE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO STORAGE MANHOLE AND BAYSAYERS UNIT. INSTALL PRECAST DROP STRUCTURES ON SOLID GROUND AS VERIFIED BY A GEOTECHNICAL ENGINEER.
- VERIFY THE SUBGRADE ELEVATION AGAINST THE MANHOLE DIMENSIONS AND CONNECTING STORM DRAIN INVERTS.
- MAKING SURE THE BASES ARE LEVEL AND THE STORAGE MANHOLE OPENINGS ARE ALIGNED WITH THE SEPARATOR UNIT, INSTALL PRIMARY AND STORAGE MANHOLES. INSTALL WATER-TIGHT GASKETS ON BASE UNITS AND COAT WITH LUBRICATING GREASE (IF REQUIRED). INSTALL ADDITIONAL MANHOLE SECTIONS AS REQUIRED. SEAL LIFT HOLES WITH NON-SHRINK GROUT.
- BACKFILL BASE SECTIONS OF MANHOLES TO INVERT OF STORAGE MANHOLE CONNECTING PIPES. USING APPROVED BACKFILL MATERIAL, BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL AND COMPACT SHOULD BE MONITORED BY A GEOTECHNICAL ENGINEER.
- INSTALL BAYSAYERS UNIT AND CONNECTING PIPES. SEAL ALL CONNECTING JOINTS AND INSTALL SEPARATOR HOPE REDUCER/ADAPTER. CUT EXCESS LENGTH OFF CONNECTING PIPES INSIDE STORAGE MANHOLE.
- BACKFILL SEPARATOR UNIT AND MANHOLES. AREAS NOT ACCESSIBLE TO COMPACTION EQUIPMENT MUST BE BACKFILLED WITH 3/4" MINUS ANGULAR GRAVEL OR FLOWABLE FILL.
- INSTALL AND SET MANHOLE COVER GRADE ADJUSTMENT RINGS AS NECESSARY.
- INSTALL AND SET MANHOLE FRAME AND COVER UNITS.



STORM DRAIN PROFILE

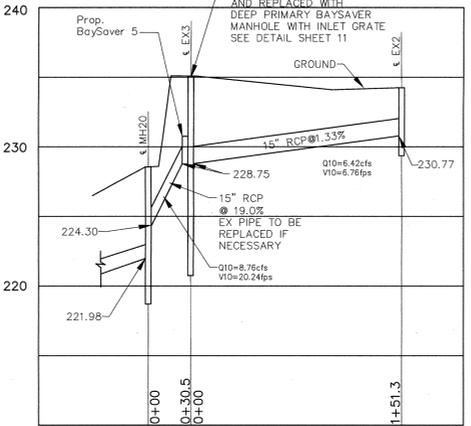
Scale: H: 1"=50'  
V: 1"=5'

NOTE: BAYSAYER 6 MAY NEED CUSTOM BEND OR ADAPTER IF STORM DRAIN CONNECTION CANNOT BE MADE AT ANGLE SHOWN.



STORM DRAIN PROFILE

Scale: H: 1"=10'  
V: 1"=5'



STORM DRAIN PROFILE

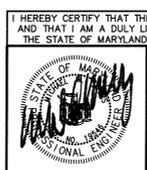
Scale: H: 1"=50'  
V: 1"=5'

DRAINAGE SCHEDULE - PIPE

| FROM MH | TO MH | DIA. | MATERIAL | LENGTH |
|---------|-------|------|----------|--------|
| TD 3    | MH 24 | 15"  | RCP      | 115'   |
| TD 2    | MH 24 | 15"  | RCP      | 73'    |
| BS 6    | MH 29 | 24"  | RCP      | 58'    |
| MH 29   | MH 23 | 30"  | RCP      | 52'    |
| MH 23   | EW 4  | 30"  | RCP      | 17'    |
| CI 1    | MH 30 | 18"  | RCP      | 5'     |
| MH 30   | EX 13 | 18"  | RCP      | 7'     |

DRAINAGE SCHEDULE - STRUCTURES

| STRUCTURE ID | NORTHING   | EASTING      | STRUCTURE TYPE                                | VERTICAL DEPTH (FT.) | TOP ELEV | INV. IN | INV. OUT |
|--------------|------------|--------------|---|----------------------|----------|---------|----------|
| EW 4         | 485,211.65 | 1,295,237.68 | ENDWALL MDSA DETAIL MD 354.01                 | N/A                  | 193.50   | 190.00  | 190.00   |
| MH 23        | 485,211.04 | 1,295,254.08 | 60" STANDARD WSSC MANHOLE S/1.1               | 9.75'                | 199.00   | 193.50  | 190.50   |
| MH 29        | 485,175.12 | 1,295,290.98 | 60" STANDARD WSSC MANHOLE S/1.1               | 13'                  | 209.00   | 203.00  | 197.00   |
| MH 25        | 485,124.01 | 1,295,326.43 | 60" STANDARD WSSC MANHOLE S/1.1               | 15'                  | 220.00   | 209.00  | 209.00   |
| MH 24        | 485,127.49 | 1,295,334.97 | 60" STANDARD WSSC MANHOLE S/1.1               | 17'                  | 222.00   | 218.00  | 213.00   |
| MH 26        | 484,955.05 | 1,295,430.09 | 48" STANDARD MANHOLE MC-515.01                | 14.20'               | 234.95   | 224.75  | 224.75   |
| EX 3         | 484,955.46 | 1,295,421.63 | 48" STANDARD MANHOLE MC-515.01 W/ GRATE INLET | 13.85'               | 234.65   | 228.75  | 228.75   |
| CI 1         | 484,958.04 | 1,295,611.25 | TYPE 'A' INLET - 5' OPENING MC-501.01         | 6.96'                | 240.13   | 239.75  | 234.00   |
| MH 28        | 484,957.01 | 1,295,603.08 | 48" STANDARD MANHOLE MC-515.01                | 12'                  | 237.50   | 229.58  | 229.58   |
| MH 30        | 484,949.86 | 1,295,607.62 | 48" STANDARD MANHOLE MC-515.01                | 13'                  | 238.50   | 233.83  | 233.58   |
| EX 29        | 484,794.20 | 1,295,731.47 | MDSA STANDARD MD 381.01 YARD INLET            | MATCH EXISTING       | 246.00   | 246.00  | 238.88   |



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. 19546, EXPIRATION DATE: 02/18/2014.

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management: *BS(32) Palkotrafit*  
Sediment Control Technical Requirements: *6-19-12*  
Administrative Requirements: *6-19-12*

Approved: *6/19/12*  
Date: *6/19/12*  
S.M. FILE NO. *238485*

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

Reviewed: *6-19-12*  
Date: *6-19-12*  
Reviewed: *6-19-12*  
Date: *6-19-12*  
Reviewed: *6-19-12*  
Date: *6-19-12*  
Reviewed: *6-19-12*  
Date: *6-19-12*

MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION  
255 ROCKVILLE PIKE SUITE 120  
ROCKVILLE, MARYLAND, 20850

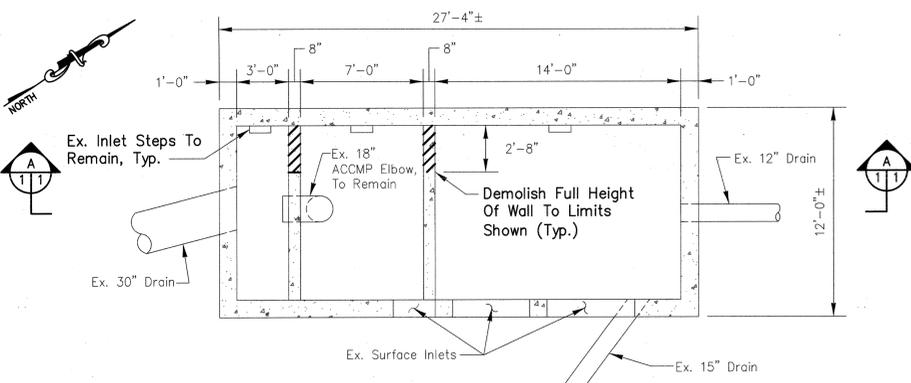
Designed By: *KMG* Drawn By: *KMG* Checked By: *LN*

BROOKVILLE BUS DEPOT  
STORMWATER MANAGEMENT IMPROVEMENTS PROJECT

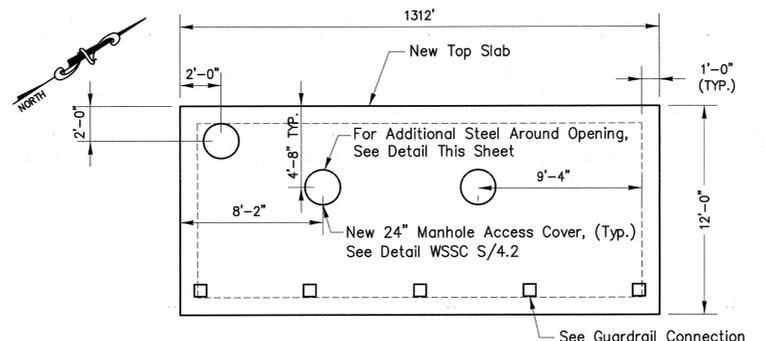
**BAYSAYER NOTES AND DETAILS**

JOSEPH PARK P116 L1589 F568

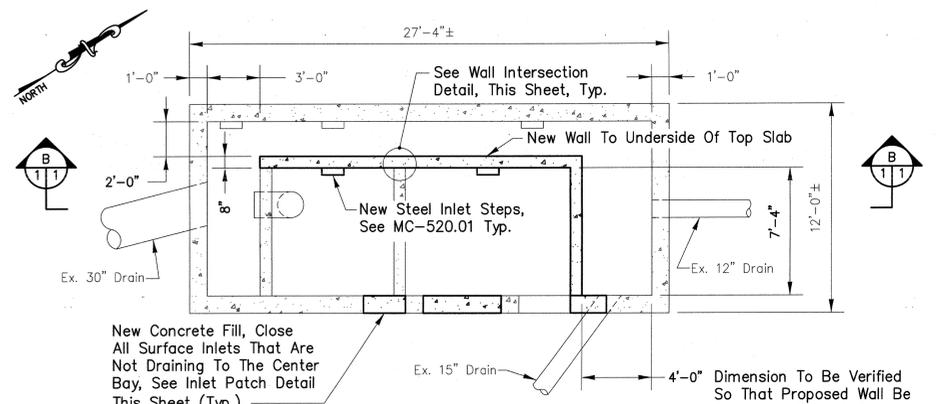
Date: JUNE 2012 DRAWING 12 OF 15



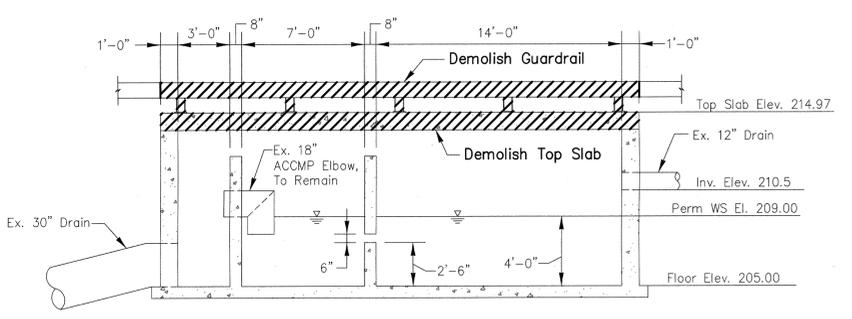
**DEMOLITION PLAN**  
Scale: 1/4" = 1'-0"



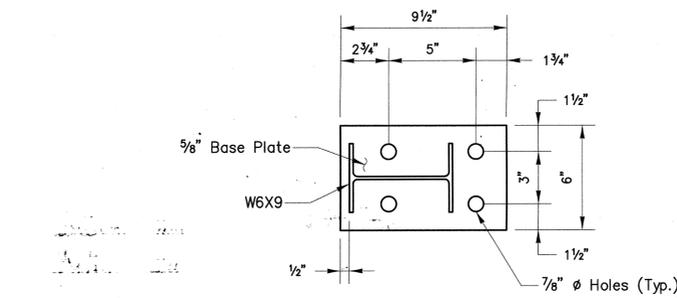
**TOP SLAB PLAN**  
Scale: 1/4" = 1'-0"



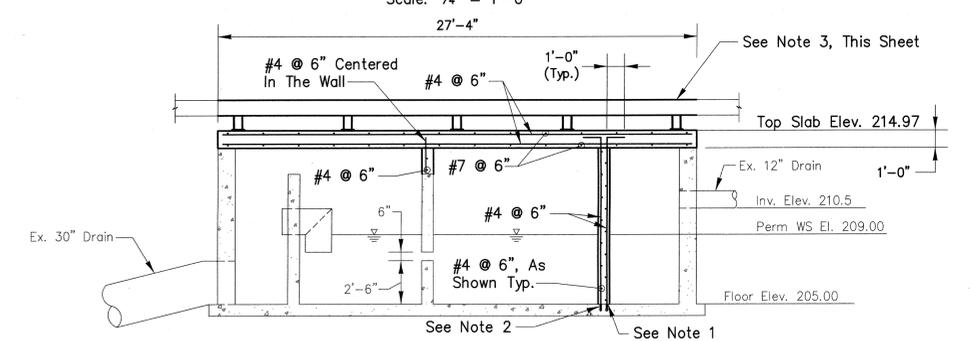
**PROPOSED PLAN**  
Scale: 1/4" = 1'-0"



**SECTION A**  
Scale: 1/4" = 1'-0"



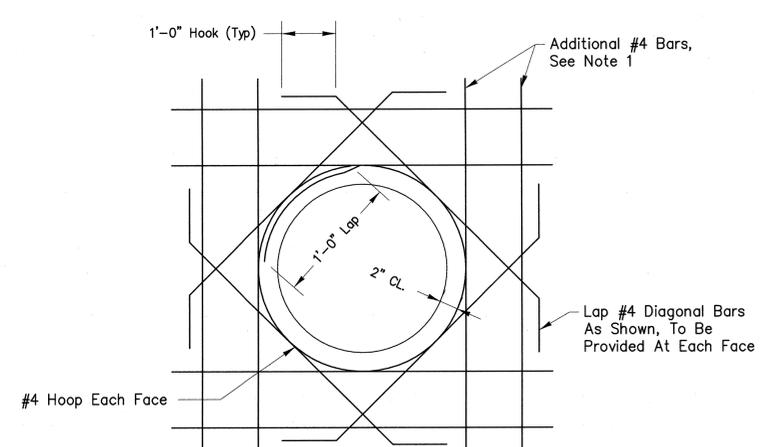
**GUARDRAIL CONNECTION DETAIL**  
NTS



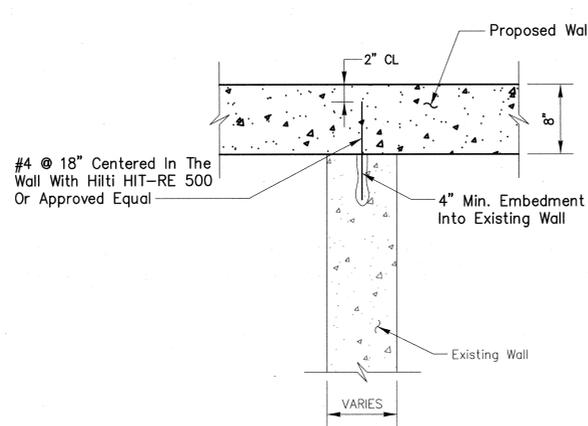
**SECTION B**  
Scale: 1/4" = 1'-0"

- NOTES:
1. Saw Cut Existing Concrete Wall Down To The Limits Shown On The Demolition Plan. Care Shall Be Taken To Preserve The Condition Of The Existing Structure Below The Limits Of Removal, Where Reinforcing Has Been Cut, Chip Bar Down To 2" Below Finished Surface And Cover With 10,000 psi Grout.

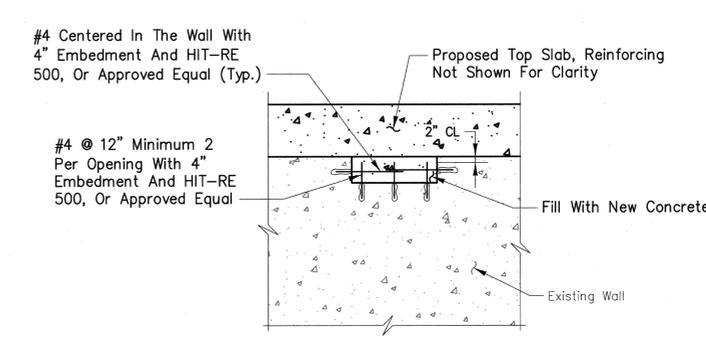
- NOTES:
1. Surface Of Existing Concrete Shall Be Roughened To A Full Amplitude Of 1/4" And Scrubbed With A Coarse Wire Brush To Remove All Loose Concrete And Laitance, And To Provide A Roughened Surface For Bonding New Concrete To Existing Concrete. Apply Bonding Agent To The Existing Concrete Per Manufacturer's Recommendations. Bonding Agent Shall Be "Sikadur 32 HI-MOD" Or Approved Equal.
  2. Drill And Anchor Reinforcing Steel 4" Into The Base Slab Using Hilti HIT-RE 500 Epoxy Adhesive Anchoring System OR Approved Equal.
  3. Guardrail Shall Conform To SHA Detail MD 605.27 With A Modified Connection As Shown On This Sheet. The Post Shall Be Minimum 3-Foot In Length. The Guardrail Will Not Conform To Standards And Is Not Intended To Protect Against Future Accidents.
  4. Greenstreak CJ-1020-2K Or Approved Equal Waterstop Shall Be Installed Per Manufacturer's Recommendations At All Locations Where New Concrete Will Be Placed Against Existing Concrete.
  5. Refer To Sheet 5 For Structural General Notes.



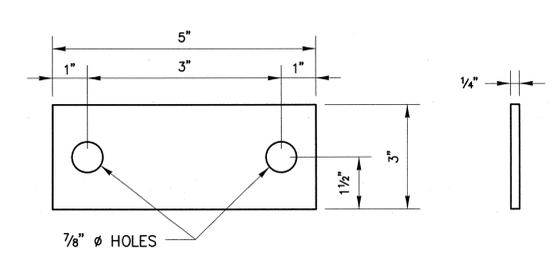
**ADDITIONAL STEEL AROUND OPENING**  
NTS



**WALL INTERSECTION DETAIL**  
NTS



**INLET PATCH DETAIL**  
NTS

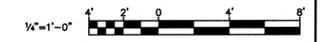


**ANCHOR PLATE DETAIL**  
NTS

- 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.

**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MARYLAND 21217  
(410) 728-2900

**STRUCTURAL CERTIFICATION**  
I HEREBY CERTIFY THAT THE STRUCTURAL DESIGN OF THIS STORMWATER MANAGEMENT FACILITY IS IN ACCORDANCE WITH APPLICABLE CODES AND THAT THE PLAN FOR THIS HAS BEEN DESIGNED FOR SPECIFIED LOADING(S) AS INDICATED HERON.  
*Brent S. Tremble* 6/12/2012  
Design Engineer Signature Date  
*Brent S. Tremble* 29928  
Printed Name Registration Number



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. 19546, EXPIRATION DATE: 02/18/2014.  
*[Signature]*  
Professional Engineer

| MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:  |  |
|--|--|
| Stormwater Management:<br><i>[Signature]</i> 6-19-12<br>Date   | Sediment Control Technical Requirements:<br><i>[Signature]</i> 6-19-12<br>Date |
| Administrative Requirements:<br><i>[Signature]</i> 6-19-12<br>Date   | 238486<br>SEDMENT CONTROL POINT NO.  |
| MCP'S APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED UNLESS THE POINT HAS BEEN EXERCISED. |  |
| Number   | Revision   |
| Date   | By   |

MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION  
255 ROCKVILLE PIKE SUITE 120  
ROCKVILLE, MARYLAND, 20850  
Designed By KMG Drawn By KMG Checked By LN  
BROOKVILLE BUS DEPOT  
STORMWATER MANAGEMENT IMPROVEMENTS PROJECT  
JOSEPH PARK P116 L1589 F568  
Date: JUNE 2012 DRAWING 13 OF 15

**ADDITIONAL STEEL AROUND OPENING**  
NTS

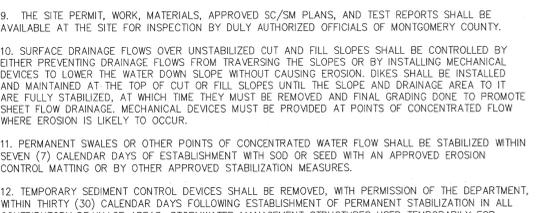
STANDARD EROSION AND SEDIMENT CONTROL NOTES

- 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.
- THE PERMITTEE MUST OBTAIN INSPECTION AND APPROVAL BY DPS AT THE FOLLOWING POINTS:
  - AT THE REQUIRED PRE-CONSTRUCTION MEETING.
  - FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES AND PRIOR TO ANY OTHER LAND DISTURBING ACTIVITY.
  - 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.
  - PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
  - PRIOR TO FINAL ACCEPTANCE.
- 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 PERMISSION FROM THE DEPARTMENT.
- THE PERMITTEE SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO TRAVELLED PUBLIC THOROUGHFARE(S). ALL MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARE(S) SHALL BE REMOVED IMMEDIATELY.
- THE PERMITTEE SHALL INSPECT PERIODICALLY AND MAINTAIN CONTINUOUSLY IN EFFECTIVE OPERATING CONDITION, ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIMES AS THEY ARE REMOVED WITH THE 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.
- ALL SEDIMENT BASINS, TRAP EMBANKMENTS, PERIMETER DIKES, AND ALL DISTURBED SLOPES STEEPER OR EQUAL TO 3:1 SHALL BE STABILIZED WITH SOD, SEED, AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES, WITHIN SEVEN (7) CALENDAR DAYS OF ESTABLISHMENT. ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE STABILIZED IMMEDIATELY. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.
- THE PERMITTEE SHALL APPLY SOD, SEED, AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS WITHIN FOURTEEN (14) 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. THAT EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED AND MAINTAINED TO PROTECT THOSE AREAS.
- 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 FOURTEEN (14) 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 MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE COMPLETED PRIOR TO THE FOLLOWING APRIL 15.
- THE SITE PERMIT, WORK MATERIALS, APPROVED SC/PM PLANS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MONTGOMERY COUNTY.
- SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVELING 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.
- PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITHIN SEVEN (7) CALENDAR DAYS OF ESTABLISHMENT WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED STABILIZATION MEASURES.
- TEMPORARY 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 THE TIME PERIOD AS WELL.
- 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 NON-MAINTENANCE 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.
- 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.
- 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.
- SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN TWENTY (20) FEET OF A BUILDING WHICH IS EXISTING OR UNDER CONSTRUCTION. NO BUILDING MAY BE CONSTRUCTED WITHIN TWENTY (20) FEET OF A SEDIMENT TRAP OR BASIN.
- ALL INLETS IN NON-SUMP AREAS SHALL HAVE ASPHALT BERMS INSTALLED AT THE TIME OF BASE PAVING ESTABLISHMENT.
- THE SEDIMENT CONTROL INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SEDIMENT CONTROL MEASURES, AS DEEMED NECESSARY.
- ALL TRAP ELEVATIONS ARE RELATIVE TO THE OUTLET ELEVATION, WHICH MUST BE ON EXISTING UNDISTURBED GROUND.
- VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- TEMPORARY SEDIMENT TRAP(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 VOLUME OF THE TRAP OR WHEN REQUIRED BY THE SEDIMENT CONTROL INSPECTOR.
- SEDIMENT REMOVED FROM TRAPS SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN.
- ALL SEDIMENT BASINS AND TRAPS MUST BE SURROUNDED WITH A WELDED WIRE SAFETY FENCE. THE FENCE MUST BE AT LEAST FORTY-TWO (42) INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN EIGHT (8) FEET, HAVE MESH OPENINGS NO GREATER THAN TWO (2) INCHES IN WIDTH AND FOUR (4) INCHES IN HEIGHT, WITH A MINIMUM OF FOURTEEN (14) GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED IN GOOD CONDITION AT ALL TIMES.
- NO EXCAVATION IN THE AREAS OF EXISTING UTILITIES IS PERMITTED UNLESS THEIR LOCATION HAS BEEN DETERMINED. CALL "MISS UTILITY" AT 1-800-257-7777, FORTY-EIGHT (48) HOURS PRIOR TO THE START OF WORK.
- OFF-SITE SPOIL OR BORROW AREAS MUST HAVE PRIOR APPROVAL BY DPS.
- 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:
  - 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
  - THE PUMP INTAKE MAY UTILIZE A REMOVABLE PUMPING STATION AND MUST DISCHARGE INTO AN UNDISTURBED AREA THROUGH A NON-EROSIVE OUTLET; OR
  - 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

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

TOPSOIL MUST BE APPLIED TO ALL PERVIOUS AREAS WITHIN THE LIMITS OF DISTURBANCE PRIOR TO PERMANENT STABILIZATION IN ACCORDANCE WITH MONTGOMERY COUNTY STANDARDS AND SPECIFICATIONS FOR TOPSOIL.



MISS UTILITY

Call "Miss Utility" at 1-800-257-7777, 48 hours prior to the start of work. The excavator must notify all public utility companies with under ground facilities in the area of proposed excavation and have those facilities located by the utility companies prior to commencing excavation. The excavator is responsible for compliance with requirements of Chapter 36A of the Montgomery County Code.

OWNER/PERMIT APPLICANT  
 Montgomery County  
 Department of Environmental Protection  
 255 Rockville Pike, Suite 120  
 Rockville, Maryland 20850

CONTACT  
 Amy Stevens  
 Stormwater Facility Maintenance Program Manager  
 Ph. 240-777-7766

PROPERTY  
 8710 Brookville Road  
 Silver Spring, Maryland 20910  
 Tax Map HN63, Parcel P116  
 L 1589 F, 568

NOTE: PRIOR TO VEGETATIVE STABILIZATION, ALL DISTURBED AREAS MUST BE TOPSOILED PER THE MONTGOMERY COUNTY "STANDARDS AND SPECIFICATIONS FOR TOPSOIL."

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition  
 Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose  
 To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies  
 This practice is limited to areas having 2:1 or flatter slopes.

For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

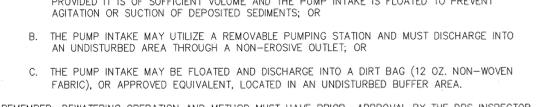
Construction and Material Specifications

Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications.

Topsoil Specifications - Soil to be used as topsoil must meet the following:

- 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.
- The subsoil shall be tilled to a minimum depth of 6 inches before placement of topsoil.
- 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 area and worked into the soil.
- Topsoil shall be tested and analyzed as per soil test recommendations.

- Topsoil Application.
- When topsoiling, maintain needed erosion and sediment control practices.
  - 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.
  - 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.



NOTES

- Stave gasket & corrugated connecting band recommended to insure 100% filter cloth and hardware cloth to rise.
- All filter cloth must be a 200-mesh screen the depth of the 100 mesh filter cloth. 1.0 sec., the 70 mesh filter cloth must have a minimum permeability of 1.0 sec., the longitudinal ends of the first tier of filter cloth must be folded to produce a lock seam.
- Only 16 Gauge Corrugated Metal Pipe (CMP) may be used for the riser. Corrugation must be 2-7/8" x 1/2".
- Perforations must be the "belly" of the corrugation.
- Perforations must be 3/4" diameter holes spaced 6" or center above the wet pool elevation.
- Inspection and approval of the riser and filter cloth and panels shall be required before placement of the entire structure.
- For riser taller than four feet (4'), earth fill may be used in lieu of stone above the wet pool elevation.
- Riser Diameter = 24"
- Outlet Elevation = 189.50
- Barral In. Elevation = 186.50
- Pond Bottom Elevation = 183.00



RUMMEL, KLEPPER & KAHL, LLP  
 CONSULTING ENGINEERS  
 81 MOSHER STREET  
 BALTIMORE, MARYLAND 21217  
 (410) 728-2900

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



LOCATION MAP  
 Scale: 1"=2000'

OWNER'S/DEVELOPER'S CERTIFICATION

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 the project.

Signature: Julia Liu  
 Date: 6/15/2012  
 Printed Name and Title: Julia Liu

DESIGN CERTIFICATION

I hereby certify that this plan has been prepared in accordance with the "1994 Maryland Standards and Specification of 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.

Signature: Michael Myers  
 Date: 6/16/12  
 Printed Name: Michael Myers  
 Registration Number: MD 19546

CERTIFICATION OF THE QUANTITIES

I hereby certify that the estimated total amount of excavation and fill as shown on these plans has been computed to 3,440 cubic yards of excavation, 1,550 cubic yards of fill and the total area to be disturbed as shown on these plans has been determined to be 96,132 square feet.

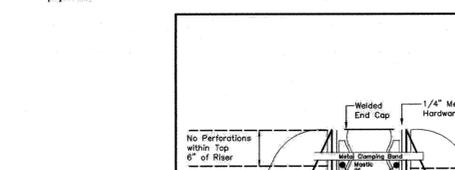
Signature: Michael Myers  
 Date: 6/16/12  
 Printed Name: Michael Myers  
 Registration Number: MD 19546

| ESTIMATED QUANTITIES |                         |                   |                           |
|----------------------|-------------------------|-------------------|---------------------------|
| ITEM                 | EXCAVATION (CUBIC YARD) | FILL (CUBIC YARD) | DISTURBED AREA (SQ. FEET) |
| POND                 | 1,730                   | 65                | 58,149                    |
| TRENCH DRAINS        | 240                     | 180               | 19,293                    |
| BIORETENTION         | 40                      | 15                | 4,553                     |
| BAYS/SAVERS          | 430                     | 390               | 3,282                     |
| STORM DRAINS         | 1000                    | 900               | 10,855                    |
| TOTAL                | 3,440                   | 1,550             | 96,132                    |

Note: Quantities are estimates and for estimating purposes only.

NOTES

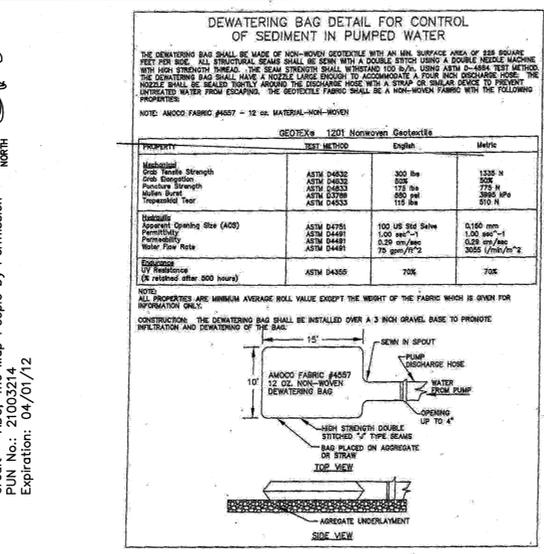
- Stave gasket & corrugated connecting band recommended to insure 100% filter cloth and hardware cloth to rise.
- All filter cloth must be a 200-mesh screen the depth of the 100 mesh filter cloth. 1.0 sec., the 70 mesh filter cloth must have a minimum permeability of 1.0 sec., the longitudinal ends of the first tier of filter cloth must be folded to produce a lock seam.
- Only 16 Gauge Corrugated Metal Pipe (CMP) may be used for the riser. Corrugation must be 2-7/8" x 1/2".
- Perforations must be the "belly" of the corrugation.
- Perforations must be 3/4" diameter holes spaced 6" or center above the wet pool elevation.
- Inspection and approval of the riser and filter cloth and panels shall be required before placement of the entire structure.
- For riser taller than four feet (4'), earth fill may be used in lieu of stone above the wet pool elevation.
- Riser Diameter = 24"
- Outlet Elevation = 189.50
- Barral In. Elevation = 186.50
- Pond Bottom Elevation = 183.00



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



CONSTRUCTION EXIT WITH CLEAN-OUT RACKS

Notes:  
 1. All finished timber shall be 2" x 4" struts.  
 2. A plastic seal shall be provided, as shown, to prevent sediment laden water escaping untreated beneath silt fence installation.  
 3. Silt fence fabric must be stretched taut and securely stapled to face of upright supports.  
 4. Nails used to secure boards to pavement shall be 20d x 4" struts length.  
 5. Application design and materials criteria shall be as stated in the Maryland Standards and Specifications for Soil Erosion and Sediment Control.

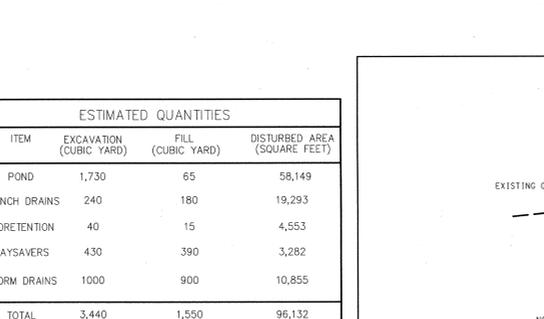


SILT FENCE

Silt Fence Design Criteria

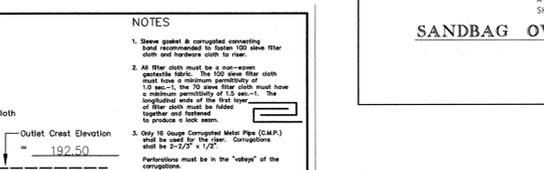
| Slope Steepness   | (Maximum) Slope Length | (Maximum) Silt Fence Length |
|-------------------|------------------------|-----------------------------|
| Flatter than 50:1 | unlimited              | unlimited                   |
| 50:1 to 10:1      | 125 feet               | 1,000 feet                  |
| 10:1 to 5:1       | 100 feet               | 750 feet                    |
| 5:1 to 3:1        | 80 feet                | 500 feet                    |
| 3:1 to 2:1        | 40 feet                | 250 feet                    |
| 2:1 and steeper   | 20 feet                | 125 feet                    |

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



CONSTRUCTION SPECIFICATIONS

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:  
 Tensile Strength: 50 lb/ft (min.)  
 Tensile Modulus: 20 lb/ft (min.)  
 Flow Rate: 0.3 gal/1/2" minute (max.)  
 Filtration Efficiency: 75% (min.)  
 Test: MSMT 509  
 Test: MSMT 509  
 Test: MSMT 322  
 Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.



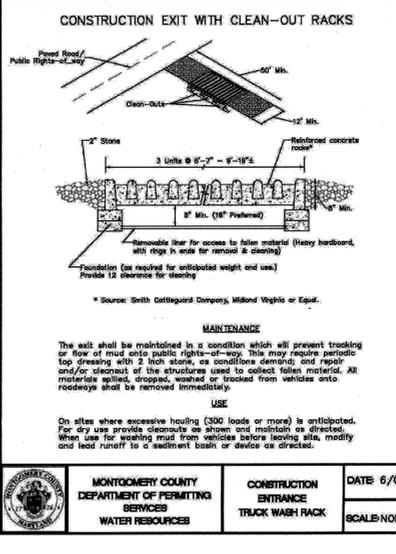
CONSTRUCTION SPECIFICATION

- Length - minimum of 50' (30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground. Single family residence to use geotextile prior to placing stone. The plan approval authority may not require.
- Stone - crushed aggregate (2" to 3"), or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES WATER RESOURCES

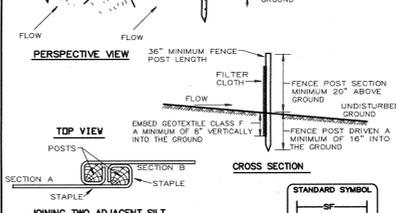
MODIFIED DEWATERING DEVICE FOR SEDIMENT TRAPS, SEDIMENT BASINS AND STORMWATER MANAGEMENT PONDS

DATE: Feb. 1997  
 REVISION: May 1997  
 SCALE: NONE



NOTES

- SANDBAGS SHALL CONSIST OF MATERIALS WHICH ARE RESISTANT TO ULTRA-VIOLET RADIATION, TEARING AND PUNCTURE, AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILLER MATERIAL.
- PLASTIC SHEETING SHALL CONSIST OF POLYETHYLENE OR OTHER MATERIAL WHICH IS IMPERVIOUS AND RESISTANT TO PUNCTURE AND TEARING.
- SHEETING FROM AN UPSTREAM SECTION OF THE DIVERSION SHALL BE OVERLAPPED A MINIMUM OF 12 INCHES WITH THE DOWNSTREAM SECTION. ALSO, SHEETING SHALL BE WRAPPED OVER AND THEN UNDER THE TOP SANDBAG.

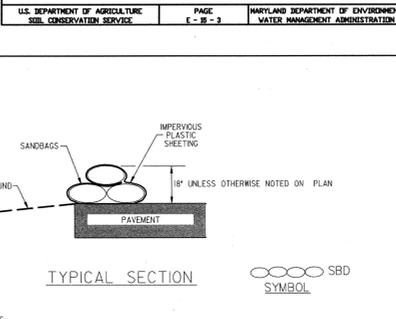


SILT FENCE

Silt Fence Design Criteria

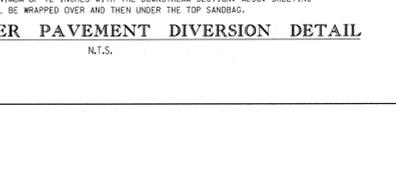
| Slope Steepness   | (Maximum) Slope Length | (Maximum) Silt Fence Length |
|-------------------|------------------------|-----------------------------|
| Flatter than 50:1 | unlimited              | unlimited                   |
| 50:1 to 10:1      | 125 feet               | 1,000 feet                  |
| 10:1 to 5:1       | 100 feet               | 750 feet                    |
| 5:1 to 3:1        | 80 feet                | 500 feet                    |
| 3:1 to 2:1        | 40 feet                | 250 feet                    |
| 2:1 and steeper   | 20 feet                | 125 feet                    |

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



CONSTRUCTION SPECIFICATION

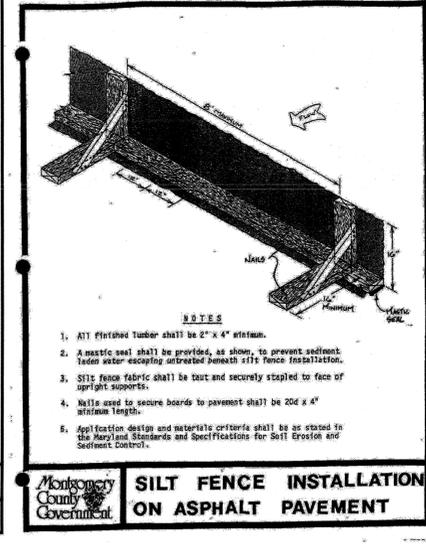
- Length - minimum of 50' (30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground. Single family residence to use geotextile prior to placing stone. The plan approval authority may not require.
- Stone - crushed aggregate (2" to 3"), or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.



MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES WATER RESOURCES

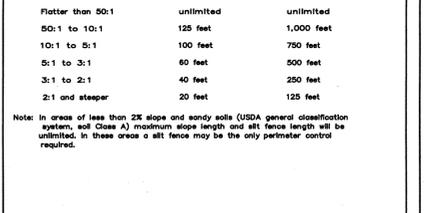
MODIFIED DEWATERING DEVICE FOR SEDIMENT TRAPS, SEDIMENT BASINS AND STORMWATER MANAGEMENT PONDS

DATE: Feb. 1997  
 REVISION: May 1997  
 SCALE: NONE



CONSTRUCTION SPECIFICATIONS

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:  
 Tensile Strength: 50 lb/ft (min.)  
 Tensile Modulus: 20 lb/ft (min.)  
 Flow Rate: 0.3 gal/1/2" minute (max.)  
 Filtration Efficiency: 75% (min.)  
 Test: MSMT 509  
 Test: MSMT 509  
 Test: MSMT 322  
 Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

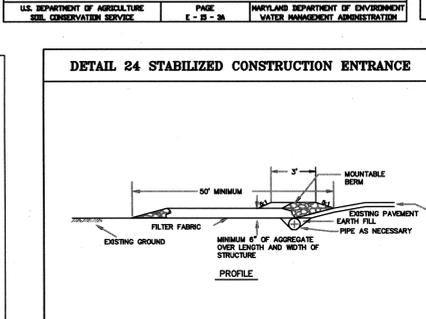


SILT FENCE

Silt Fence Design Criteria

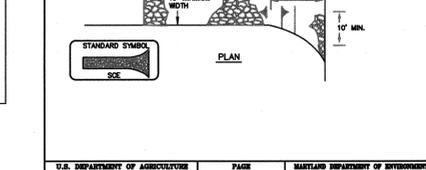
| Slope Steepness   | (Maximum) Slope Length | (Maximum) Silt Fence Length |
|-------------------|------------------------|-----------------------------|
| Flatter than 50:1 | unlimited              | unlimited                   |
| 50:1 to 10:1      | 125 feet               | 1,000 feet                  |
| 10:1 to 5:1       | 100 feet               | 750 feet                    |
| 5:1 to 3:1        | 80 feet                | 500 feet                    |
| 3:1 to 2:1        | 40 feet                | 250 feet                    |
| 2:1 and steeper   | 20 feet                | 125 feet                    |

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



CONSTRUCTION SPECIFICATION

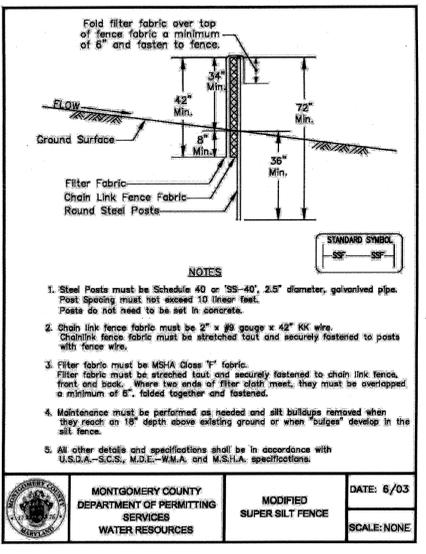
- Length - minimum of 50' (30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground. Single family residence to use geotextile prior to placing stone. The plan approval authority may not require.
- Stone - crushed aggregate (2" to 3"), or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.



MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES WATER RESOURCES

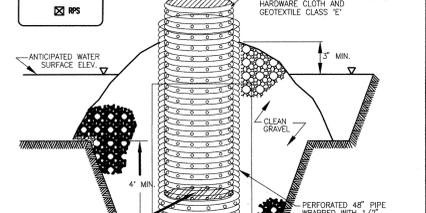
MODIFIED DEWATERING DEVICE FOR SEDIMENT TRAPS, SEDIMENT BASINS AND STORMWATER MANAGEMENT PONDS

DATE: Feb. 1997  
 REVISION: May 1997  
 SCALE: NONE



CONSTRUCTION SPECIFICATIONS

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:  
 Tensile Strength: 50 lb/ft (min.)  
 Tensile Modulus: 20 lb/ft (min.)  
 Flow Rate: 0.3 gal/1/2" minute (max.)  
 Filtration Efficiency: 75% (min.)  
 Test: MSMT 509  
 Test: MSMT 509  
 Test: MSMT 322  
 Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

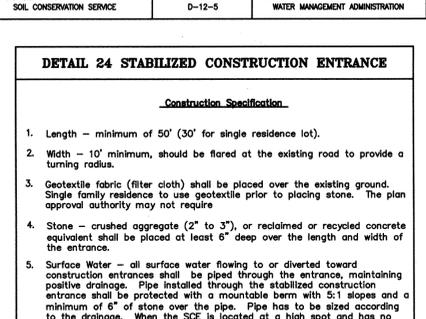


SILT FENCE

Silt Fence Design Criteria

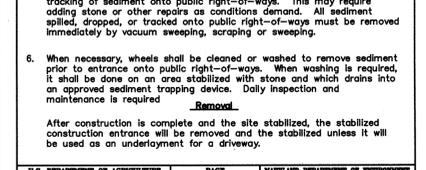
| Slope Steepness   | (Maximum) Slope Length | (Maximum) Silt Fence Length |
|-------------------|------------------------|-----------------------------|
| Flatter than 50:1 | unlimited              | unlimited                   |
| 50:1 to 10:1      | 125 feet               | 1,000 feet                  |
| 10:1 to 5:1       | 100 feet               | 750 feet                    |
| 5:1 to 3:1        | 80 feet                | 500 feet                    |
| 3:1 to 2:1        | 40 feet                | 250 feet                    |
| 2:1 and steeper   | 20 feet                | 125 feet                    |

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



CONSTRUCTION SPECIFICATION

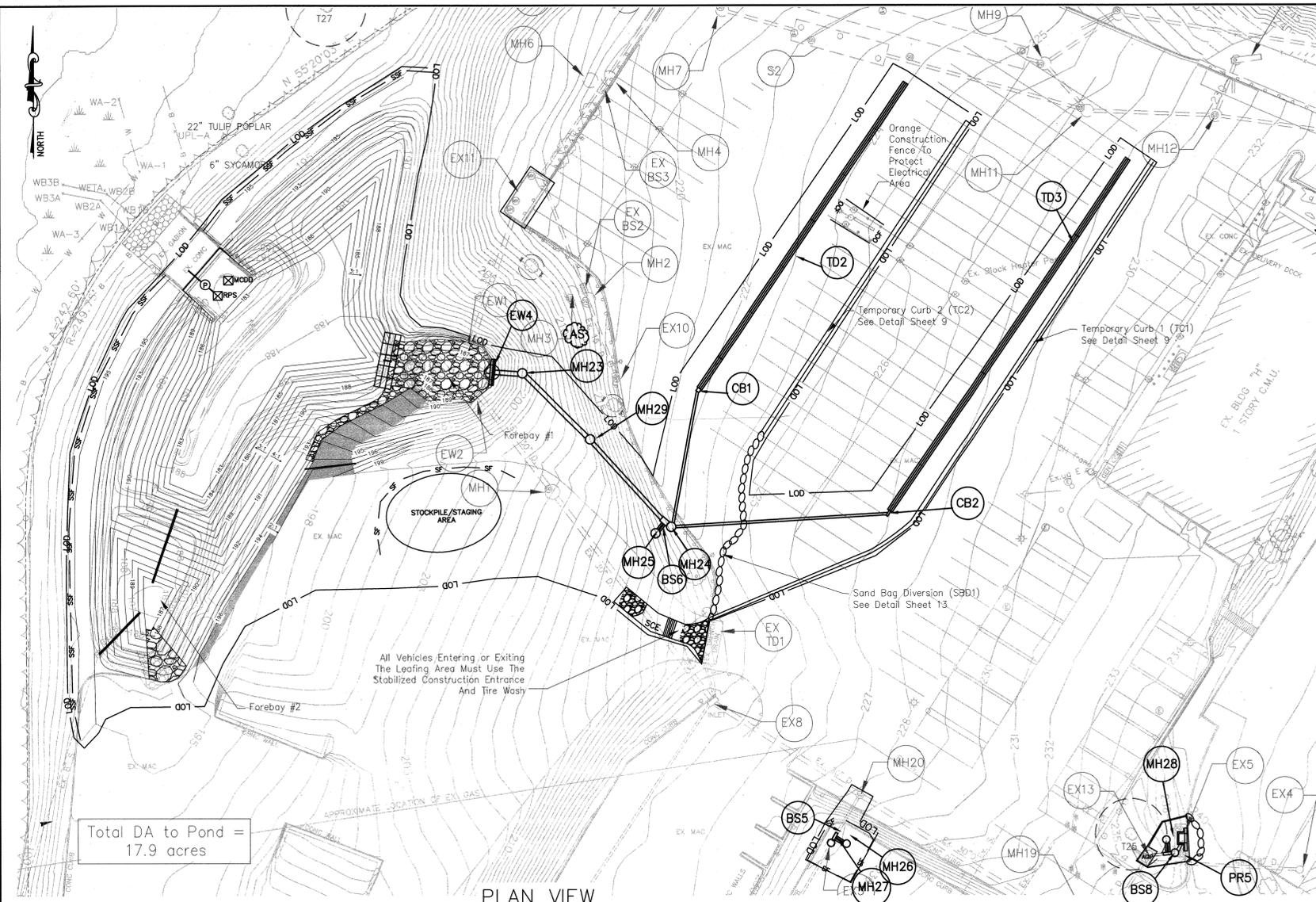
- Length - minimum of 50' (30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground. Single family residence to use geotextile prior to placing stone. The plan approval authority may not require.
- Stone - crushed aggregate (2" to 3"), or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.



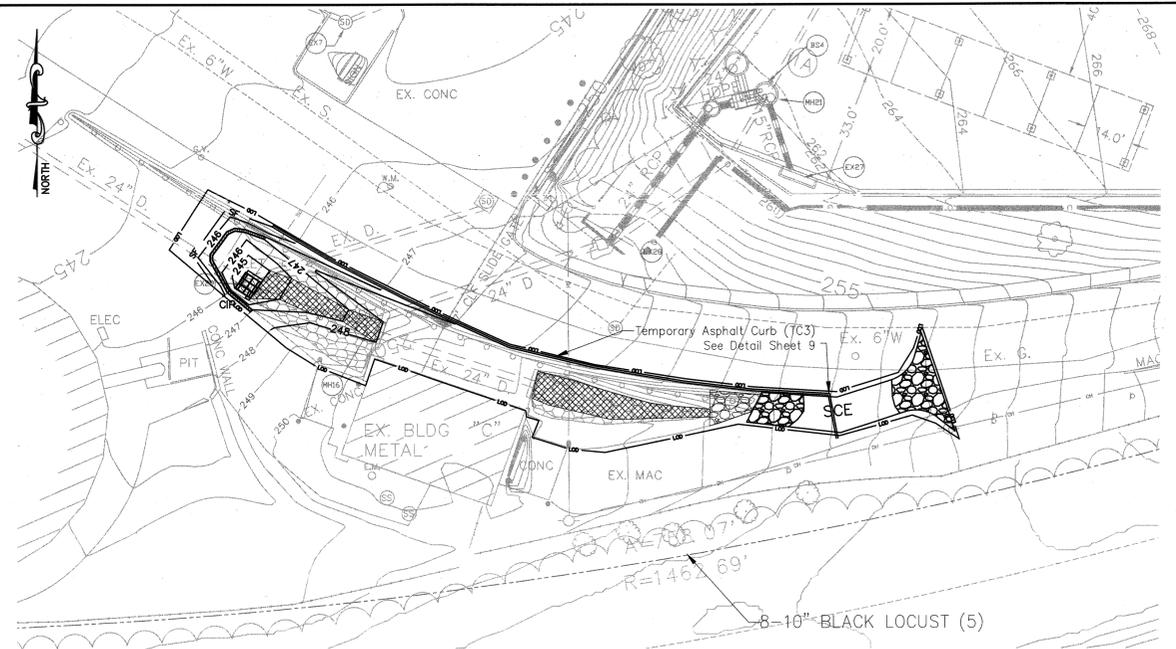
MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES WATER RESOURCES

MODIFIED DEWATERING DEVICE FOR SEDIMENT TRAPS, SEDIMENT BASINS AND STORMWATER MANAGEMENT PONDS

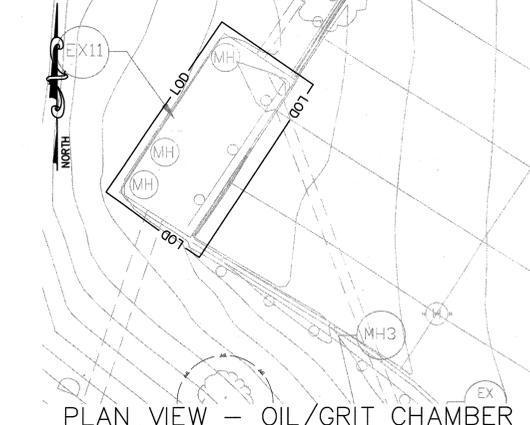
DATE: Feb. 1997  
 REVISION: May 1997  
 SCALE: NONE



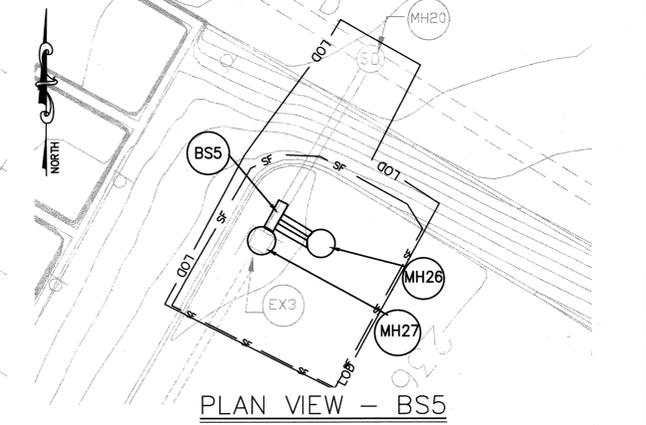
PLAN VIEW  
Scale: 1"=30'



PLAN VIEW - SITE 2  
Scale: 1"=20'



PLAN VIEW - OIL/GRIT CHAMBER  
Scale: 1"=10'



PLAN VIEW - BS5  
Scale: 1"=10'

SEQUENCE OF CONSTRUCTION

- 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) 777-6210 (48 Hours Notice), The Owners Representative, And The Site Engineer.
- The Limits Of Disturbance Must Be Field Marked Prior To Clearing Of Trees, Installation Of Sediment Control Measures, Construction, Or Other Land Disturbing Activities.

SITE 2 - GRASS SWALE

- At Site 2, Clear And Grade For Installation Of Sediment Control Devices.
- Test Pit For Accurate Inverts For Existing Inlet 29 And Surrounding Storm Drains. It Is The Contractors Responsibility To Field Locate Any Existing Utilities.
- Install All Sediment Control Devices Except For At Grade Inlet Protection. Silt Fence Should Be Installed On The Existing Asphalt Per Standard Details. Temporary Asphalt Berm Shall Be Installed According To Plans To Prevent Drainage From Entering The Project Area.
- Once The Sediment Control Devices Are Installed, The Permittee Must Obtain Written Approval From The MCDPS Inspector Before Proceeding With Any Additional Clearing, Grubbing, Or Grading.
- In One Clear Day, Replace Existing Inlet With At Grade Inlet According To Plans (Sheeting And Shoring May Be Required). Once Completed Install At Grade Inlet Protection For New Inlet 29.
- Remove All Existing Riprap And Replace With Amended Soils As Per Plan. Place New Riprap At Top Of Swale.
- Seed And Plant Areas According To The Landscaping Plan.
- Stabilize All Disturbed Areas.
- Replace Silt Fence With Permanent Asphalt Curb As Shown On Plans.
- Obtain Written Approval From MCDPS Inspector And Remove All Sediment Control Devices.

PROPOSED BAYSAVER 8

- Install All Sediment Control Devices.
- Install Sandbag Diversion (SBD3) On Pavement Allocating Adequate Space For Equipment Usage And Maintaining At Minimum A 15-ft Wide Travel Lane For Vehicle Access To And From The Maintenance Garage.
- Once The Sediment Control Devices Are Installed, The Permittee Must Obtain Written Approval From MCDPS Inspector Before Proceeding With Any Additional Clearing, Grubbing, Or Grading.
- Vacuum Remove Standing Water From And Remove Existing Oil/Grit Chamber At EX 5. Remove Existing 18" Storm Drain Connecting Oil/Grit Chamber To EX 13. Sheeting And Shoring May Be Required.
- Install C11, The COG Inlet And MH30, The Primary Manhole As Shown On Plans. Install 1K BaySaver And Storage Manhole According To BaySaver Installation Instructions And Details.
- Install 18" RCP Storm Drain Pipe To Connect Primary Manhole To EX 13.
- Backfill And Grade Area To Return Grade To Previous Elevations.
- Permanently Stabilize All Disturbed Areas.
- Replace Any Asphalt Or Curb Removed Or Damaged During Construction To Match Original Conditions.
- Obtain Written Approval From MCDPS Inspector And Remove All Sediment Control Devices.

PROPOSED BAYSAVER 5

- Test Pit To Verify All Storm Drain Inverts And Utility Locations.
- Install All Sediment Control Devices.
- Once The Sediment Control Devices Are Installed, The Permittee Must Obtain Written Approval From MCDPS Inspector Before Proceeding With Any Additional Clearing, Grubbing, Or Grading.
- During A Predicted Period Of Dry Weather Long Enough To Complete The Proposed Work, Remove Existing Inlet 3 And Replace With Primary Manhole With Gate Inlet, Install BaySaver And Storage Manhole According To BaySaver Installation Instructions And Details. Backfilling And Stabilizing Disturbed Areas At The End Of Each Working Day. Sheeting And Shoring May Be Required. Repave And Stabilize All Disturbed Areas.
- Obtain Written Approval From MCDPS Inspector And Remove All Sediment Control Devices.
- Once The Drainage Area Is Stabilized, The Storm Drain System Must Be Flushed.

STORMWATER MANAGEMENT POND AND TRENCH DRAINS

- Test Pit To Verify All Storm Drain Inverts And Utility Locations.
- Install Stabilized Construction Entrance Downslope Of Existing Trench Drain 1 (TD1) With Wash Racks. All Trucks Accessing The Pond Must Cross Through This Entrance. Obtain Written Approval From MCDPS Inspector Prior To Continuing With Work.
- Dewater Entire SWM Pond Through To Portable Sediment Tank Located On Concrete Pad Downstream Of The Weir.
- Once The Pond Is Dewatered Install Montgomery County Dewatering Device And Connect To Low Flow Outlet Through Weir. Also Install Removable Pump Station At Location Shown On Plan. If Water Enters The Pond At Anytime During Construction, The Pond Must Be Dewatered Before Starting Work. Perform Work During Expected Period Of Dry Weather.
- During A Predicted Period Of Dry Weather, Install EW4, MH23 And The 24" Storm Drain Connecting Them. Backfill And Stabilize At The End Of Each Day.
- In One Clear Day, Dredge And Regrade Forebay 1 Including New Berm With Replacement 12" D.I.P. Place Class II Riprap Protection. Stabilize All Disturbed Areas At The End Of The Day. Once Grading Is Completed, Pave New Access Ramp To Forebay As Shown On Plans.
- During A Period Of Predicted Dry Weather, Excavate And Install Storm Drain From MH23 Up To BaySaver 6. Install BaySaver According To BaySaver Installation Instructions And Specifications. Temporarily Plug All Access Points To The BaySaver. Backfill And Stabilize At The End Of Each Working Day. Sheeting And Shoring May Be Required.
- In One Clear Day, Dredge And Regrade Forebay 2 Including The New Berm And Replacement 8" D.I.P. With Gate Valve And Connect To Existing Sanitary Sewer. Once Installed, Gate Is To Be Closed. Place Riprap As Shown On Plans. Stabilize Disturbed Area At The End Of The Day.
- Install Concrete Weir Addition According To Plans.
- During A Period Of Predicted Dry Weather, Dredge And Regrade Existing Pond According To Plans. Stabilize All Disturbed Areas At The End Of Each Working Day. If Water Enters The Pond, The Pond Must Be Dewatered Prior To Starting Work.
- Plant And Stabilize Pond According To Plans.
- Once Pond Is Permanently Stabilized, Repave Disturbed Asphalt, Install Permanent Asphalt Berm, And Install Access Gate As Shown On Plans.
- Install Temporary Curb 1 (TC1) Along Center Of Bus Lane Directing Flow To Existing Trench Drain 1 (TD1).
- Begin Installation Of TD3 Working Upstream To Downstream. An ABT, Inc. Representative Should Be On Site For The Installation Of The Trench Drains. Wrap And Cover Any Finished Trench Drain With Minimum 4ML Plastic Sheeting And Secure With Sand Bags To Block Flow From Entering Trench Drain. Backfill And Stabilize At The End Of Each Working Day. Bus Traffic Can Be Maintained Through The Back Of The Lot.
- Install Temporary Curb 2 (TC2).
- Begin Installation Of TD2 Working Upstream To Downstream. An ABT, Inc. Representative Should Be On Site For The Installation Of The Trench Drains. Wrap And Cover Any Finished Trench Drain With Minimum 4ML Plastic Sheeting And Secure With Sand Bags To Block Flow From Entering

- Trench Drain. Backfill And Stabilize At The End Of Each Working Day. Bus Traffic Can Be Maintained Through The Center Aisle, Over TC1.
- In One Clear Day, Install 15" Storm Drain Connections From BaySaver 6 To Trench Drain 3. Backfill And Stabilize Any Disturbed Area.
- In One Clear Day, Place Sand Bag Diversion 1 (SBD1) Directing Flow To Existing TD1, And Install 15" Storm Drain Connections From BaySaver 6 To Trench Drain 2. Backfill And Stabilize Any Disturbed Area.
- Remove Plastic Sheeting From Trench Drains. Repave And Replace Any Disturbed Pavement And Curbs.
- Obtain Written Approval From MCDPS Inspector And Remove All Sediment Control Devices.
- Once The Drainage Area Is Stabilized, The Storm Drain System Must Be Flushed.
- As Built Drawings To Be Submitted For Review And Approval.

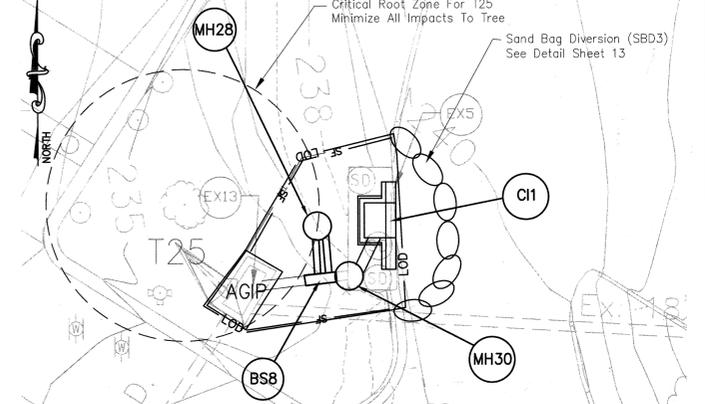
OIL/GRIT CHAMBER MODIFICATIONS

- All Equipment Shall Remain On Paved Areas.
- During A Period Of Predicted Dry Weather Long Enough To Complete The Proposed Work, Dewater The Permanent Pool Within The Oil/Grit Chamber.
- Begin Demolishing Of Existing Chamber According To Demolition Plan.
- Verify All Invert Locations And Elevations. Verify Locations Of Surface Inlets. If Any Discrepancies, Notify Engineer For Possible Modifications To Plan.
- Install Additional Baffle Walls And Steps As Shown On Plans.
- Once All Work Inside The Chamber Is Complete, Pour New Top Slab Over Chamber Opening.
- Patch Existing Surface Openings As Shown On Plans Or As Directed By The Engineer.
- As Built Drawings To Be Submitted For Review And Approval.

BaySavers Must Be Cleaned Following The Flushing Of The Storm Drain System Following Construction.

Due To Space Constraints On Site All LODs Assume The Contractor Shall Sheet And Shore During Construction As Necessary.

The Contractor is required to maintain as-built red-line drawings during construction. The Contractor is required to follow the DPS "As-Built/Record Drawing Plan Review Checklist" and submit all necessary information to get as-builts approved to the Engineer. As-built survey including all invert elevation of new stormdrain features shall be provided to Engineer.



PLAN VIEW - BS8  
Scale: 1"=10'

**RUMMEL, KLEPPER & KAHL, LLP**  
CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MARYLAND 21217  
(410) 728-2900

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. 19546, EXPIRATION DATE: 02/18/2014.

MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION PERMITTING SERVICES APPROVED FOR:

|  |  |
|--|--|
| Stormwater Management:<br><i>BS (C3), Redacted</i>   | Sediment Control Technical Requirements:<br><i>6-19-12</i> |
| <i>2/28/12</i><br>Date<br><i>2/28/12</i><br>Approved | <i>2/28/12</i><br>Date<br><i>2/28/12</i><br>Approved       |
| <i>238485</i><br>S.M. FILE NO.                       |  |

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

Administrative Requirements:  
*6-19-12*  
Reviewed Date  
*238486*  
SEDEMENT CONTROL POINT NO.

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

MCDPS 15 OF 15

MONTGOMERY COUNTY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
255 ROCKVILLE PIKE SUITE 120  
ROCKVILLE, MARYLAND, 20850

Designed By KMG Drawn By KMG Checked By LN

BROOKVILLE BUS DEPOT  
STORMWATER MANAGEMENT IMPROVEMENTS PROJECT  
EROSION AND SEDIMENT CONTROL PLAN

JOSEPH PARK P116 11589 F568  
Date: JUNE 2012 DRAWING 15 OF 15