CONSTRUCTION PLAN

STORMWATER MANAGEMENT AND SEDIMENT CONTROL

MAPLE LAWN FARMS
Westside District - Area 1

Parcels B-1 through B-5, Non-Buildable Parcels 'I', 'J', &'K', and Open Space Lots 1 through 4

GENERAL NOTES:

1. Zoning: Site is being developed under MXD-3 regulations, per ZB995M, approved on 2/8/01 and ZB-1039M approved 03/20/06 and the Comprehensive Zoning Plan dated 02/02/04. Underlying Zoning is RR-DEO and the Comp Lite Zoning Regulation Amendments dated 07/28/06.
2. The previous Department of Planning and Zoning file numbers: S 01-17, S-06-16, ZB-995M, ZB-1039M, PB-353, PB-378, WP-01-111, WP-03-02, P-02-012, P-05-07, P-07-18, F-03-07, F-04-055, F-04-113, F-05-073, F-05-078, F-05-112, F-05-138, F-05-178, F-06-140, F-07-37, F-07-183, F-08-54, F-08-55, F-09-97, SDP-03-06, SDP-04-044, SDP-04-049, SDP-04-096, SDP-05-08, SDP-05-36, SDP-05-47, SDP-06-67, SDP-07-43, WP-02-54, WP-05-12, WP-07-122, and WP-08-04.
3. This project is in conformance with the latest Howard County standards unless waivers have been approved.
4. The Cemetery Inventory Maps do not show any cemeteries within the project limits. The existing cemetery once located on the Wessel Property was relocated under WP-05-12.
5. The Scenic Roads Map does not indicate any scenic roads within or adjacent to the project limits.
6. This property was brought into the Metropolitan District on July 2, 2007.
7. This area of development has both public and private roads, which have been denoted on the plan.
8. Site Analysis

Gross Site Area:	605.3 Acres ±
Total Area of Site:	90.60 Acres ±
Area of Open Space:	26.65 Acres ±
Area of 100 Yr Floodplain:	1.22 Acres ±
Area of Roadway (Public):	1.91 Acres ±
Area of Roadway (Private):	0.00 Acres ±
Area of Employment Parcels:	30.69 Acres ±
No. of Employment Parcels:	5 parcels
Area of Non-Buildable Parcels:	31.35 Acres ±
No. Non-Buildable Parcels:	3 parcels

9. Open Space Requirements:
   Minimum Open Space Requirement for Project is 35%. Total Open Space Required: 31.71 Acres ± (35%)
   Total Open Space Provided: 26.65 Acres ± (29.4%)
   Recreational Open Space Required: 2.67 Acres (10%)
   Recreational Open Space Provided: 4.76 Acres (17.9%)
   (See Chart on F-08-54)
   Excess open space area from previous phases is being used to fulfill the minimum open space requirement for this phase.
10. Soils data was taken from the Soil Survey of Howard County, Maryland issued July 1968.
11. Contours shown were taken from aerial topography prepared during March 1997 by 3DI and then updated by grade checks performed by Gutschick, Little & Weber, P. A. Contours shown in Parcel C-18, C-19, C-20, and C-22 are per SDP-07-43. Boundary information shown is based upon a field survey prepared by Gutschick, Little, and Weber, P.A. on or about June, 2001.
12. Wetland delineation by Exploration Research, Inc. approved by the Corps of of Engineers JD 63787-3 on 03/15/06. Notice of intent to issue a permit is covered by MDE Tracking #01-NT-0344/200165421.
13. The 100-year flood plain limits were determined by the floodplain study prepared by Gutschick, Little and Weber, P.A. as part of P-03-01 and P-07-18.
14. Horizontal and vertical datum is based on Howard County Station 46BC and 46BD.
15. Existing utilities were taken from available Howard County records.
16. Public water and sewer to be utilized:
    Existing Water Contract Number: 44-3505-D, 24-4062-D
    Existing Sewer Contract Numbers: 24-4062-D, 20-3506-D
17. Traffic Study was prepared and submitted as part of S 06-16, which was signed by the Planning Board on 02/20/07.
18. Perennial stream buffers are determined by land use adjoining the open space (i.e. Employment = 50' buffer, Residential = 75' buffer). All uses adjoining an intermittent stream = 50' buffer.
19. * Stormwater Management, for both quality and quantity, for the development proposed by these plans will be satisfied by two regional facilities being constructed under these plans and an existing facility constructed under F-03-07. The existing facility and the facility on Open Space Lot 3 will be publicly owned and maintained. The facility on Open Space Lot 2 will be privately owned and maintained. The recharge requirments for this development will be provided in privately owned and maintained facilities on Parcel J. The recharge facilities will be an infiltration trenches and constructed with this plan set.
20. The residential lots, parcels and employment use structures developed or proposed on the original 507 acre tract for Maple Lawn Farms are grandfathered to the Fourth Edition of the Subdivision and Land Development Regulations as developed under S-01-17, PB Case 353 and ZB Case No. 995M. However, the proposed residential and employment uses that are to be developed under the Amended CSP, S-06-16 and ZB Case No. 1039M for the former Wessel and Oliver properties are subject to the amended Fifth Edition of the Subdivision and Land Development Regulations per Council Bill No. 45-2003 and the Zoning Regulations per Council Bill No. 75-2003.
21. As stated in the Decision and Order for this plan, The Planning Board shall review and approve site development plans for all single family attached and multi-family residential uses, and all employment and open space use development for the subject Maple Lawn Farms project. All of the improvements that were necessary for the Maple Lawn Farms project to be in compliance with the funding test evaluation restrictions enunciated by the Zoning Board on page 22-23 of its decision on the PDP have been constructed.
22. No grading, removal of vegetative cover or trees, or placement of new structures is permitted within limits of wetlands, streams or their required buffers, and 100 year flood plain areas, except as permitted under WP-02-54, WP-03-02, and WP-03-120.
23. Open space lots may contain active recreational facilities as allowed by the approved Comprehensive Development Criteria.
24. Phasing for this project is in accordance with the Decision and Order for Zoning Board Case No. ZB-995M & ZB-1039M and the Decision and Order for PB Case No. 353 (Comprehensive Sketch Plan, S-01-17) and No. 378 (Comprehensive Sketch Plan, S-06-16).
25. Development for this phase will be done in accordance with the Comprehensive Development Criteria approved with S-01-17, S-06-16, PB-353, AND PB-378.
26. The transportation and transit design will be implemented as outlined in the Petitioner's Exhibit 55 as submitted as part of ZB995M.
27. A Noise Study was prepared by Wildman & Associates for S 01-17, (approved by Planning Board on August 8, 2001), and updated by Wilson T. Ballard company in May 2006 for S-06-16 (approved by Planning Board on February 20, 2007).
28. The limits of this submission do not include moderate income housing units.
29. For soil types, descriptions and limitations, see S 01-17, and S-06-16.
30. The Forest Conservation requirements per section 16.1202 of the Howard County Code and the Forest Conservation Manual for Phase 6b of this project with 2.49 acres of retention, 4.20 acres of reforestation, and 5.71 acres of afforestation planting for a total obligation of 9.91 acres will be fulfilled with of 11.22 acres of afforestation and reforestation planting, which leaves 5.32 acres of excess afforestation planting and retention being done in advance as forest conservation credit for future phases of this project. See F-08-54.
31. The 75' Tree Conflict easement shown on these plans grants PEPCO the right to enter the easement for the purpose of cutting down, trimming, removing and/or keeping cut all trees which may interfere with any towers, poles, structures, wires, cables, conduits or other improvements within the PEPCO R/W, as per Liber 2305 Folio 33.
32. Minimum building setback restrictions from public roads and property lines will be provided in accordance with the Comprehensive Development Criteria approved for this project under S-06-16, PB-378 and ZB-1039M.
33. The shared access and parking requirement for Parcels "B-1" thru "B-5" is covered by Section 10.11. Access and Parking Easements in "Amended and Restated Declaration of Covenants, Condition and Restrictions for Maple Lawn Commercial Association, Inc." and recorded among the land records of Howard County, Maryland in liber 7419 at folio 230.
34. All storm drain outside of Public Right-of-ways shall be privately owned and maintained.
35. The retaining wall shown on Open Space Lot 2 shall be privately owned and maintained.
36. If Non-Buildable Par. 'I' is not resubdivided to residential lots, the SWM facility on Open Space Lot 3 will become privately and maintained.

WP-01-111
On May 2, 2001, WP-01-111 was granted for the following:
- Additional points of access allowed onto Sanner Road other than those permitted by 16.119(f)(1), subject to further analysis and approvals at later plan stages.
- Residential lots are allowed to front on neighborhood parks instead being limited frontage on public R/W's as in 16.120(c)(2), subject to adequate private alley access.

WP-02-54
On April 2, 2002, WP 02-54 was granted, allowing the following:
1. Development within a 100 year floodplain, and
2. Grading and removal of vegetative cover within a 25' wetland buffer and a 50' stream buffer.

The approval is subject to the following conditions:
1. The waiver petition approval pertains to the limits of disturbance to the wetlands, stream channel, and floodplain areas identified within the proposed employment district located in the southeast portion of Parcel C-2.
2. MDE waterway construction approval is required prior to road plan approval.
3. All grading, clearing and filling disturbances within the 100 year floodplain, wetlands, stream channel and their required buffers are subject to obtaining all necessary Water Quality Certificates and Permits from the Maryland Departments of the Environment Natural Resources and the U.S. Army Corps of Engineers, and prior to commencement of any grading disturbances. Reference the approved permits, certificates or tracking numbers on all future plan and permit submittals.
4. The Phase I stream channel mitigation and restoration plan shall be implemented for this project as proposed and shown on the Petitioner's Waiver Petition Plan Exhibit "E".

WP-03-02
On Oct. 11,2002, WP-03-02 was granted to allow:
- Grading within the 75' stream buffer and floodplain as shown on the revised grading exhibit submitted 9/6/02 (waiver from Section 16.116 (a)(2)(ii) and Section 16.115 (c)(2) respectively.
- Elimination of truncation at right-of-way corners of residential lots and other parcel corners at right-of-ways where necessary to achieve the traditional neighborhood design (waiver from Section 16.119 (e)(5).

The disturbance within the floodplain and stream buffer is subject to obtaining the necessary permits from MDE and DNR. Elimination of the truncations is subject to having adequate sight and intersection distance as determined by the DPZ, Development Engineering Division.

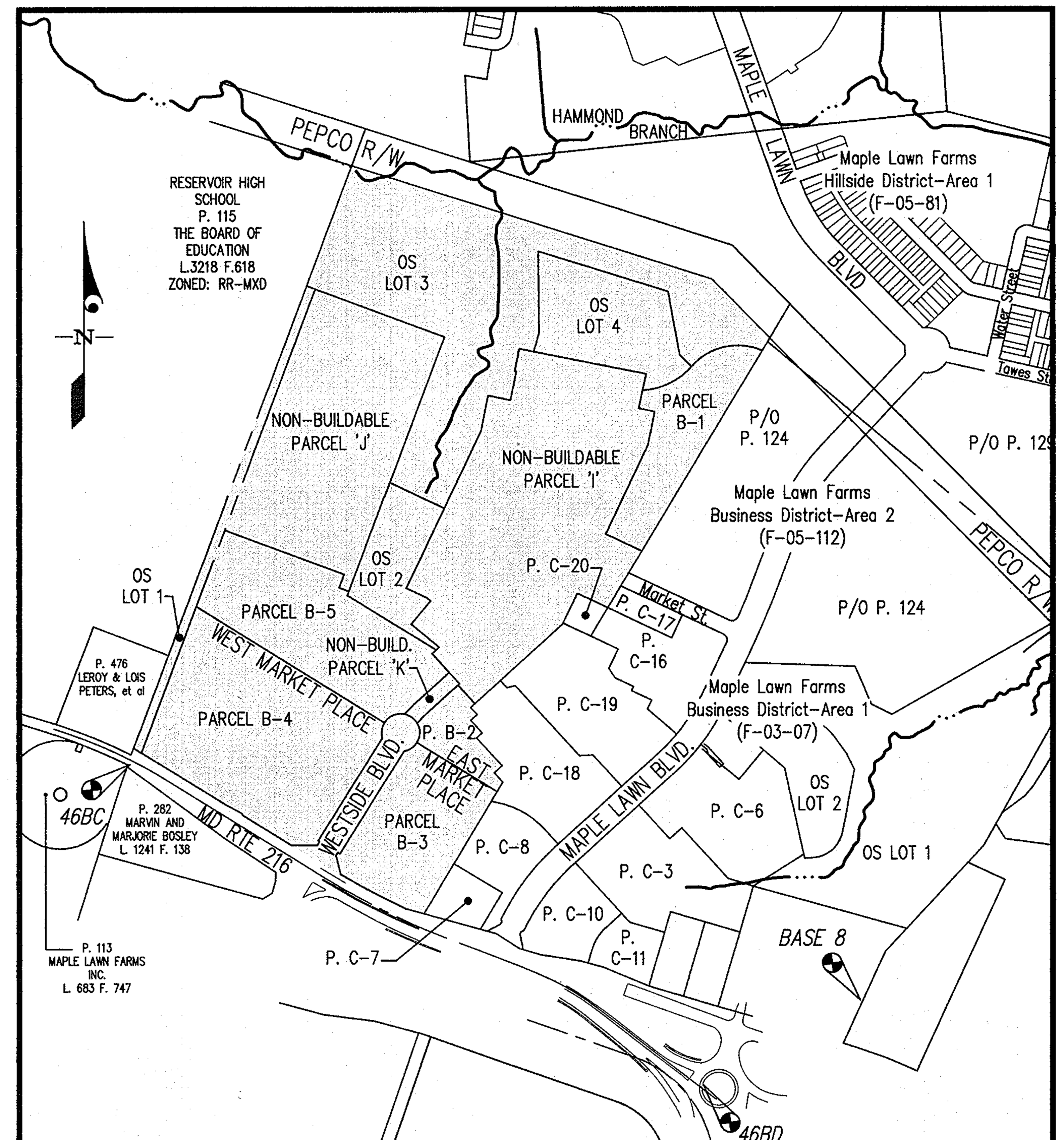
WP-05-012
On August 20, 2004, WP 05-12 was granted, allowing the following:
1. Development or subdivision in a cemetery (waiver from Section 16.1304)
2. Removal of Human Remains from a cemetery prior to development (waiver from Section 16.1306)

WP-07-122
Waiver request from Section 16.146 - requirement for a Preliminary Plan prior to the Plat approval, was approved by the Department of Planning and Zoning under the conditions of WP-07-122(****), which was granted on June 19, 2007 subject to the following conditions:
1. Compliance with the src comments issued for the Final Plan, F-07-183 and the red-line revision of SDP-05-36.
2. Compliance with the comments dated June 14, 2007 from Development Engineering Division:
   1. Added Parcel C-20 to purpose note.
   2. Approved because it does not have an effect on Stormwater Management, or APFO.
   3. This plan only allows for the construction of an addition of a parking lot.

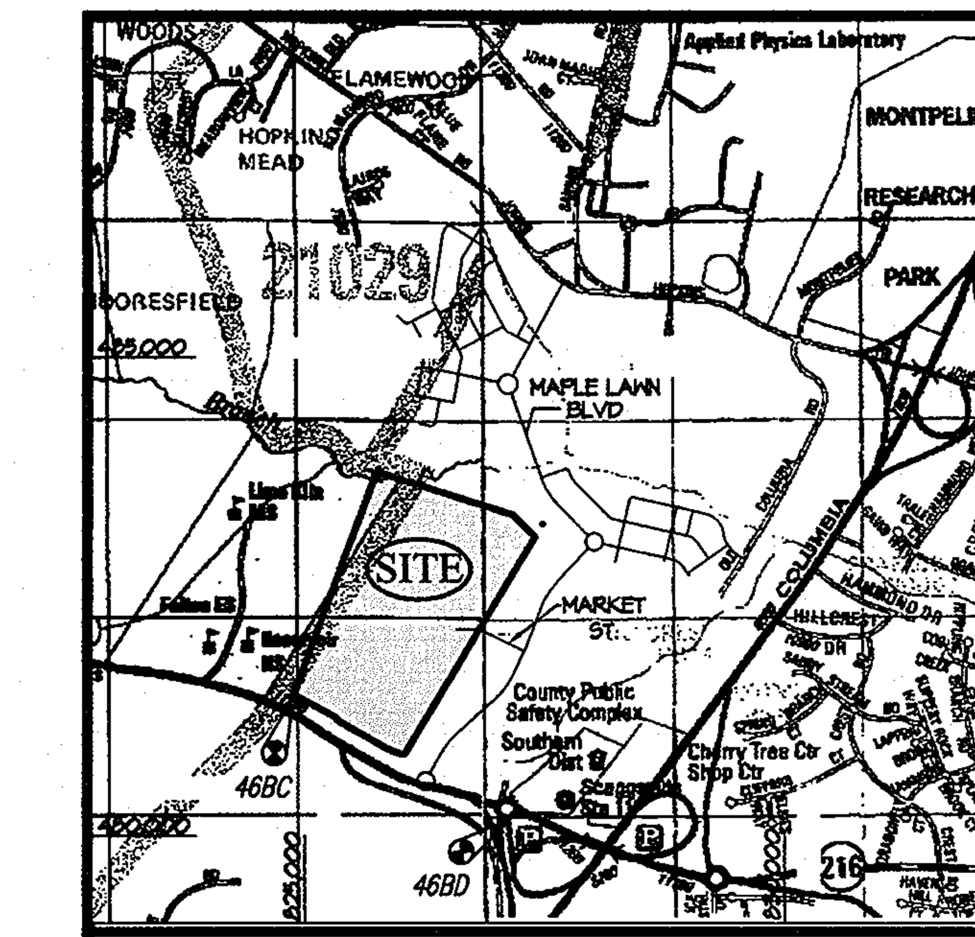
WP-08-04
On August 8, 2007, WP-08-04 was granted to waive Section 16.121(e)(1) which requires open space lots (Open Space Lots 1 thru 4) to have a minimum of 40 feet of frontage onto a public road for access by pedestrians and maintenance vehicles.

The approval is subject to the following conditions:
1. Bollard markers or some form of permanent signage shall be installed at the public or private road frontages to identify pedestrian and vehicular access to Open Space Lots 1 thru 4 and for Open Space Lots 2 and 4 at the SWM access easement to identify maintenance vehicle access to the SWM facilities.
2. Subject to the SRC comments issued for Preliminary Plan, F-07-18.
3. The minimum public road frontage for HOA Open Space Lot 2 shall be increased in width from the 19 feet presently proposed on the waiver plan exhibit to a minimum of 20 feet in width.
4. A 20' wide minimum unrestricted public or private road access must be provided to serve as an entranceway leading into HOA Open Space Lot 4 (future HOA recreational ball fields) to accommodate pedestrian access and periodic access for maintenance and emergency vehicles.
5. The processing of this waiver request for the minimum open space frontage requirements for Open Space Lots 1 thru 4 as shown on P-07-18 shall be considered as a temporary deferral of the public or private frontage requirement until the final subdivision plans are submitted for this project.

* See General Note 36 For Condition On SWM Facility Located On Open Space Lot 3.



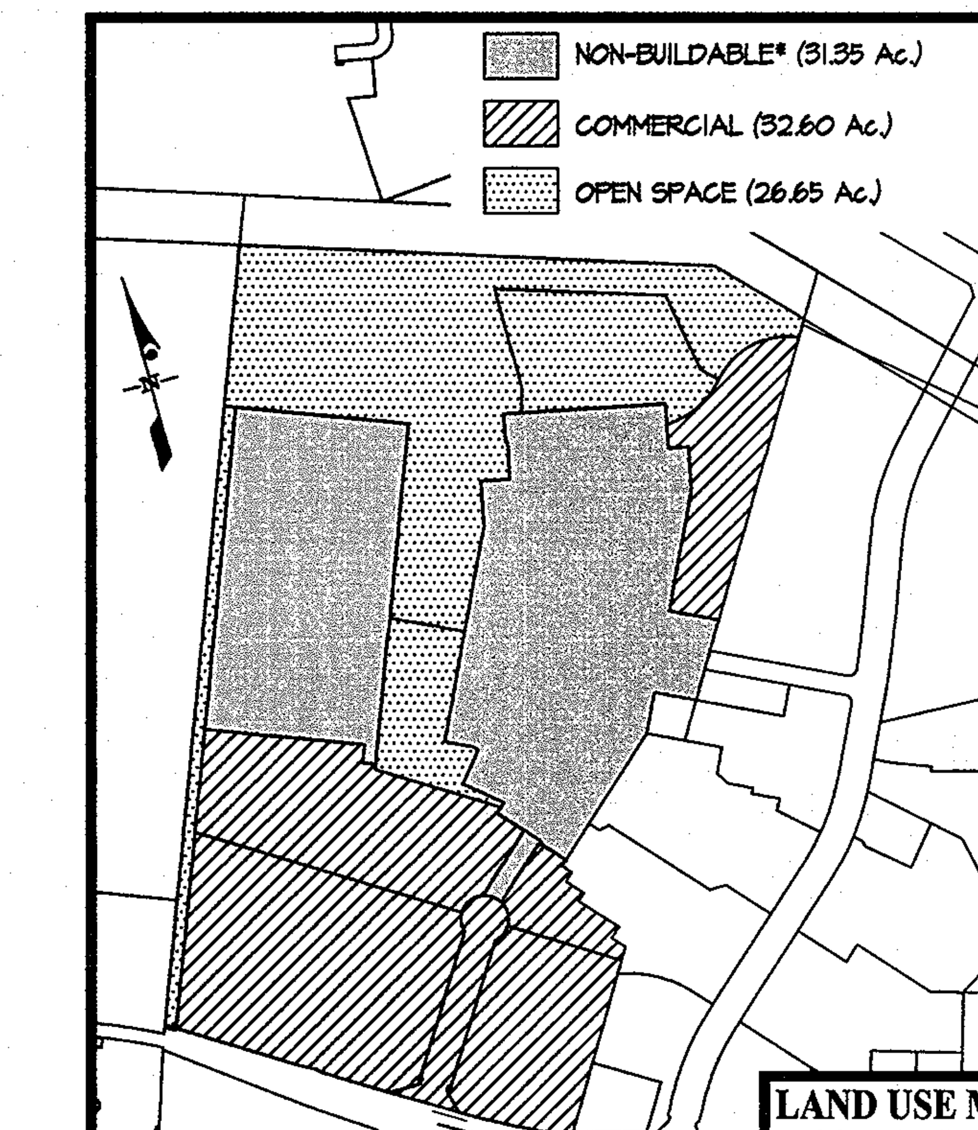
LOCATION PLAN
SCALE: 1"=400'



VICINITY MAP
SCALE: 1" = 2000'

BENCHMARKS
46BC ELEV. = 472.16 N = 554,925.13 E=1,337,205.77
STANDARD DISC ON CONCRETE MONUMENT
46BD ELEV. = 451.17 N = 553,656.76 E=1,339,461.55
STANDARD DISC ON CONCRETE MONUMENT

ADC MAP 18 - GRIDS K5 & K6, ADC MAP 19 - GRIDS A5 & A6



LAND USE MAP
SCALE: 1"=600'

* - NON-BUILDABLE ACREAGE INCLUDES ACREAGE WHICH WILL BE CONVERTED TO COMMERCIAL, OTHER RESIDENTIAL, AND OPEN SPACE LAND USES IN THE FUTURE.

LEGEND
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING TREELINE
- EXISTING SANITARY SEWER (EX. 8"S.)
- EXISTING WATERLINE (EX. 8"W.)
- EXISTING FIRE HYDRANT
- PROPOSED STORM DRAIN
- STRUCTURE NUMBER (MH 20)
- CONCRETE SIDEWALK
- PROPOSED CROSSWALK
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- FUTURE CURB LINE
- 100 YEAR FLOODPLAIN (FP)
- LIMIT OF WETLAND
- WETLAND AREA
- STREAM BUFFER (SB)
- WETLAND BUFFER (WB)
- FOREST CONSERVATION EASEMENT
- CENTERLINE OF STREAM
- STEEP SLOPES - 25% AND GREATER
- STEEP SLOPES - 15% TO 25%
- 15' NO-WOODY VEGETATION ZONE

SHEET INDEX

THIS PLAN SET (F-08-55) AND F-08-54 REPRESENT ALL THE WORK CALLED FOR ON P-07-18, AND ARE MEANT TO BE REVIEWED AND APPROVED TOGETHER. THE REASON FOR THE DUAL SET OF PLANS IS THE DIFFERENTIAL TIMES FOR DEDICATING THE SWM FACILITIES FROM THE REST OF THE PUBLIC IMPROVEMENTS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 6/15/09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 6/26/09
Chief, Development Engineering Division — Date 6.19.9

GLW GUTSCHICK LITTLE & WEBER, P.A.
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DATE	REVISION	BY	APP'R.
8/31/09	3 Revise Index per plan changes		
6/11/09	2 SHEET INDEX UPDATED AND GENERAL NOTE 19 REVISED (REPLACEMENT SHEET)	dds	
07/01/01	1 REV. FOREST CONESRVATION NOTE PER F-08-72 CHANGES		

PREPARED FOR:
G&R / WESSEL LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2010
6-2-09

ELECTION DISTRICT No. 5

REVISED COVER SHEET
(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)
MAPLE LAWN FARMS
WESTSIDE DISTRICT - AREA 1
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JUNE, 2009	41-21&22 46-3	1 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

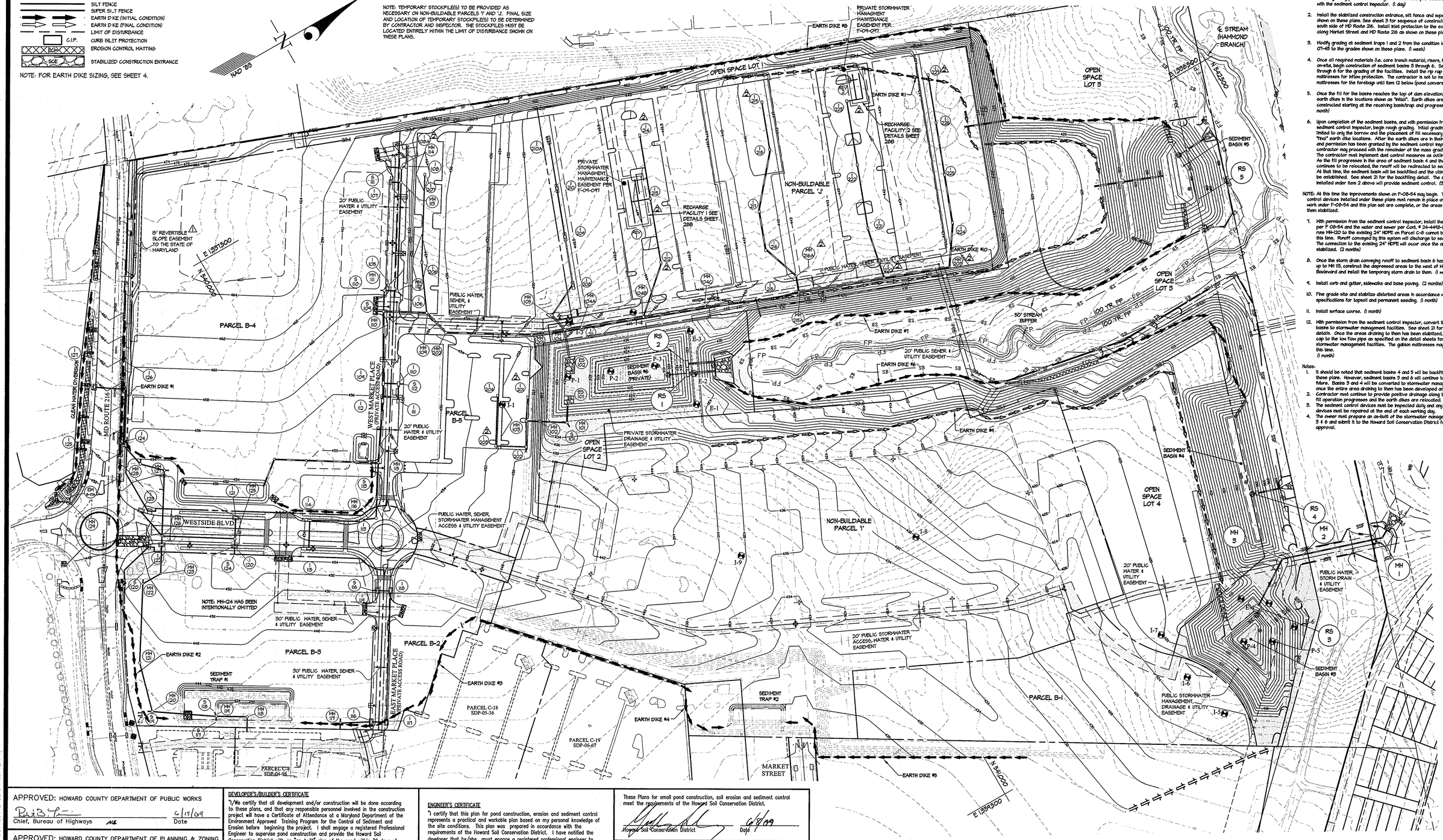
LEGEND

- SILT FENCE
- SUPER SILT FENCE
- EARTH D KE (INITIAL CONDITION)
- EARTH D KE (FINAL CONDITION)
- LIMIT OF DISTURBANCE
- C.I.P. CURB INLET PROTECTION
- ECM EROSION CONTROL MATTING
- SCE STABILIZED CONSTRUCTION ENTRANCE

NOTE: FOR EARTH DIKE SIZING, SEE SHEET 4.

NOTE: TEMPORARY STOCKPILE(S) TO BE PROVIDED AS NECESSARY ON NON-BUILDABLE PARCELS 'I' AND 'J'. FINAL SIZE AND LOCATION OF TEMPORARY STOCKPILE(S) TO BE DETERMINED BY CONTRACTOR AND INSPECTOR. THE STOCKPILES MUST BE LOCATED ENTIRELY WITHIN THE LIMIT OF DISTURBANCE SHOWN ON THESE PLANS.

NAD 83



Sequence of Construction (On-Site)

1. Obtain grading permit and arrange for an on-site pre-construction meeting with the sediment control inspector. (1 day)
2. Install the stabilized construction entrance, silt fence and super silt fence as shown on these plans. See sheet 3 for sequence of construction along the south side of MD Route 216. Install inlet protection to the existing inlets along Market Street and MD Route 216 as shown on these plans. (1 week)
3. Modify grading at sediment traps 1 and 2 from the condition left under SDP 07-48 to the grades shown on these plans. (1 week)
4. Once all required materials (i.e. core trench material, risers, forms, etc.) are on-site, begin construction of sediment basins 3 through 6. See sheets 3 through 6 for the grading of the facilities. Install the rip rap and gabion mattresses for inflow protection. The contractor is not to install the gabion mattresses for the forebays until item 12 below (pond conversion). (6 weeks)
5. Once the fill for the basins reaches the top of dam elevation, install the earth dikes in the locations shown as "initial". Earth dikes are to be constructed starting at the receiving basin/trap and progressing uphill. (1 month)
6. Upon completion of the sediment basins, and with permission from the sediment control inspector, begin rough grading. Initial grading must be limited to only the borrow and the placement of fill necessary to establish "final" earth dike locations. After the earth dikes are in their final location, and permission has been granted by the sediment control inspector, the contractor may proceed with the remainder of the mass grading operations. The contractor must implement dust control measures as outlined on sheet 4. As the fill progresses in the area of sediment basin 4 and the earth dike continues to be relocated, the runoff will be redirected to sediment basin 3. At that time, the sediment basin will be backfilled and the ultimate grades will be established. See sheet 21 for the backfilling detail. The super silt fence installed under item 2 above will provide sediment control. (5 months)

NOTE: At this time the improvements shown on F-08-54 may begin. The sediment control devices installed under these plans must remain in place until all of the work under F-08-54 and this plan set are complete, or the areas draining to them stabilized.

7. With permission from the sediment control inspector, install the storm drains per F 08-54 and the water and sewer per Cont. # 24-4418-D. Storm drain line MH-120 to the existing 24" HDPE on Parcel C-18 cannot be installed at this time. Runoff conveyed by this system will discharge to sediment trap #1. The connection to the existing 24" HDPE will occur once the area has been stabilized. (2 months)
8. Once the storm drain conveying runoff to sediment basin 6 has been installed up to MH 115, construct the depressed areas to the west of Westside Boulevard and install the temporary storm drain to them. (1 week)
9. Install curb and gutter, sidewalks and base paving. (2 months)
10. Fine grade site and stabilize disturbed areas in accordance with the specifications for topsoil and permanent seeding. (1 month)
11. Install surface course. (1 month)
12. With permission from the sediment control inspector, convert the sediment basins to stormwater management facilities. See sheet 21 for the conversion details. Once the areas draining to them has been stabilized, install the end cap to the low flow pipe as specified on the detail sheets for the stormwater management facilities. The gabion mattresses may be installed at this time. (1 month)

Notes:

1. It should be noted that sediment basins 4 and 5 will be backfilled as part of these plans. However, sediment basins 3 and 6 will continue to be used in the future. Basins 3 and 4 will be converted to stormwater management facilities once the entire area draining to them has been developed and stabilized.
2. Contractor must continue to provide positive drainage along the dikes as the fill operation progresses and the earth dikes are relocated.
3. The sediment control devices must be inspected daily and any damage to the devices must be repaired at the end of each working day.
4. The owner must prepare an as-built of the stormwater management facilities 3 & 6 and submit it to the Howard Soil Conservation District for review and approval.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 6/15/09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 6/22/09

Chief, Development Engineering Division — Date 6.19.9

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Signature of Developer/Builder — Date 6-2-09

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Engineer's Signature — Date 6-2-09

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — Date 6/8/09

GLW GUTSCHICK LITTLE & WEBER, P.A.
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3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
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DATE	REVISION	BY	APP'R.
06/03/09	⚠ COUNTOURS, CURB, & SD REVISED IN PARCELS 'B-5' & 'J'. RECHARGE FACILITIES 1 & 2 ADDED(REPLACEMENT SHEET)	dds	
07/01/08	⚠ REV. SD PER F-08-54 CHANGES & ADDED REVERTIBLE SLOPE EASEMENT		

PREPARED FOR:
G&R / WESSEL LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2010

REVISED OVERALL SEDIMENT CONTROL PLAN

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

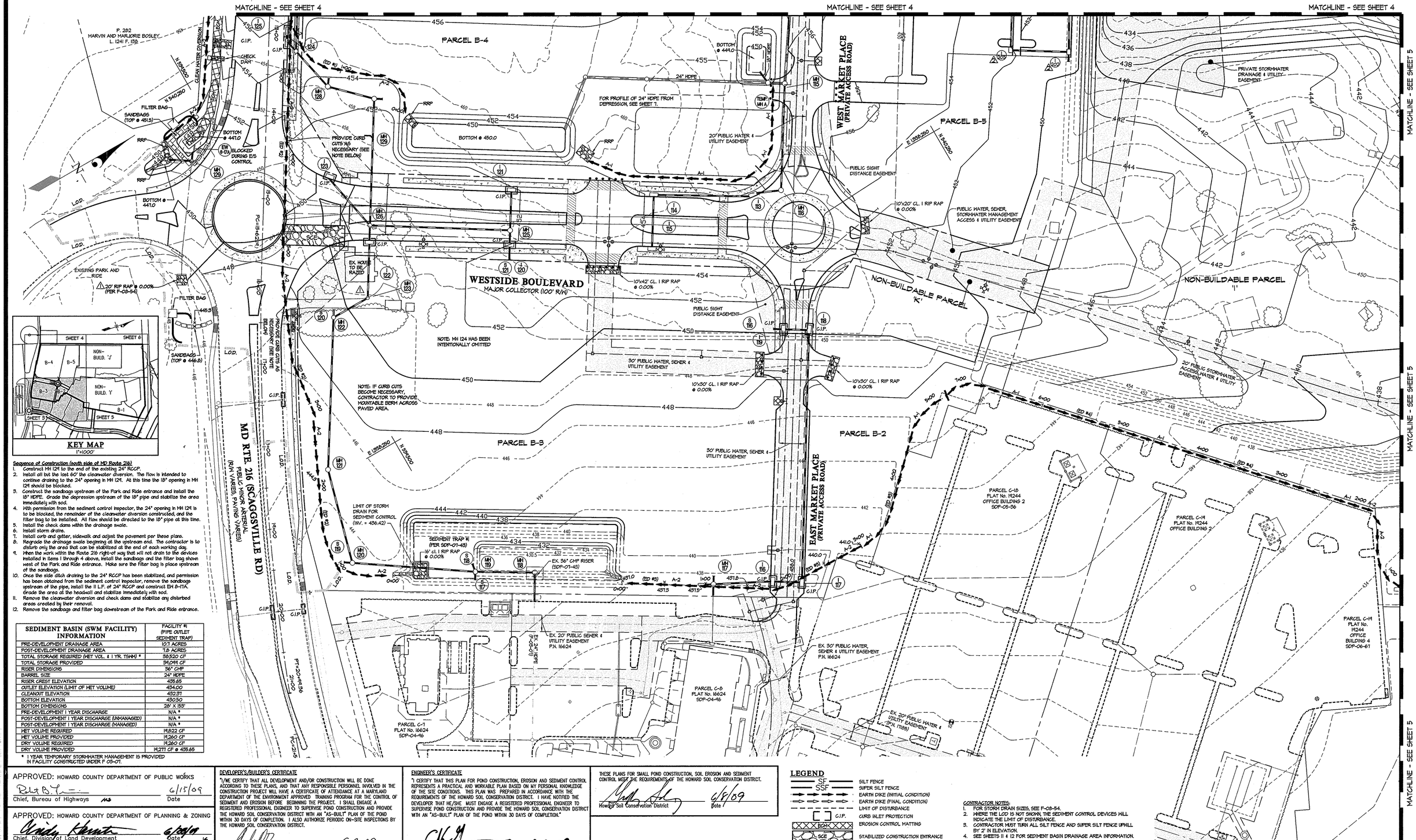
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JUNE, 2009	41-21&22 46-3	2 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55



KEY MAP
1"=1000'

Sequence of Construction (south side of MD Route 216)

1. Construct MH 124 to the end of the existing 24" RCCP.
2. Install all but the last 60' the clearwater diversion. The flow is intended to continue draining to the 24" opening in MH 124. At this time the 18" opening in MH 124 should be blocked.
3. Construct the sandbags upstream of the Park and Ride entrance and install the 18" HDPE. Grade the depression upstream of the 18" pipe and stabilize the area immediately with sod.
4. With permission from the sediment control inspector, the 24" opening in MH 124 is to be blocked, the remainder of the clearwater diversion constructed, and the filter bag to be installed. All flow should be directed to the 18" pipe at this time.
5. Install the check dams within the drainage swale.
6. Install storm drains.
7. Install curb and gutter, sidewalk and adjust the pavement per these plans.
8. Regrade the drainage swale beginning at the upstream end. The contractor is to disturb only the area that can be stabilized at the end of each working day.
9. When the work within the Route 216 right-of way that will not drain to the devices installed in items 1 through 4 above, install the sandbags and the filter bag shown west of the Park and Ride entrance. Make sure the filter bag is place upstream of the sandbags.
10. Once the side ditch draining to the 24" RCCP has been stabilized, and permission has been obtained from the sediment control inspector, remove the sandbags upstream of the pipe, install the 11 L.F. of 24" RCCP and construct EH 8-11A. Grade the area at the headwall and stabilize immediately with sod.
11. Remove the clearwater diversion and check dams and stabilize any disturbed areas created by their removal.
12. Remove the sandbags and filter bag downstream of the Park and Ride entrance.

SEDIMENT BASIN (SWM FACILITY) INFORMATION	FACILITY #1 (PIPE OUTLET SEDIMENT TRAP)
PRE-DEVELOPMENT DRAINAGE AREA	10.7 ACRES
POST-DEVELOPMENT DRAINAGE AREA	7.8 ACRES
TOTAL STORAGE REQUIRED (WET VOL. & 1 YR. TSHM) *	38,520 CF
TOTAL STORAGE PROVIDED	39,099 CF
RISER DIMENSIONS	36" CMP
BARREL SIZE	24" HDPE
RISER CREST ELEVATION	455.65
OUTLET ELEVATION (LIMIT OF WET VOLUME)	434.00
CLEANOUT ELEVATION	453.31
BOTTOM ELEVATION	430.50
BOTTOM DIMENSIONS	28' X 155'
PRE-DEVELOPMENT 1 YEAR DISCHARGE	N/A *
POST-DEVELOPMENT 1 YEAR DISCHARGE (UNMANAGED)	N/A *
POST-DEVELOPMENT 1 YEAR DISCHARGE (MANAGED)	N/A *
WET VOLUME REQUIRED	14,822 CF
WET VOLUME PROVIDED	19,260 CF
DRY VOLUME REQUIRED	19,260 CF
DRY VOLUME PROVIDED	14,271 CF @ 439.65

* 1 YEAR TEMPORARY STORMWATER MANAGEMENT IS PROVIDED IN FACILITY CONSTRUCTED UNDER F 08-07.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 6/15/09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 6/29/09

Chief, Development Engineering Division — Date 6.19.09

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Developer/Builder — Date 6-2-09

ENGINEER'S CERTIFICATE

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

Engineer's Signature — Date 6-2-09

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Howard Soil Conservation District — Date 6/8/09

LEGEND

- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- EARTH DIKE (INITIAL CONDITION)
- EARTH DIKE (FINAL CONDITION)
- LIMIT OF DISTURBANCE
- C.I.P. — CURB INLET PROTECTION
- ECM — EROSION CONTROL MATTING
- SCE — STABILIZED CONSTRUCTION ENTRANCE

CONTRACTOR NOTES:

1. FOR STORM DRAIN SIZES, SEE F-08-54.
2. WHERE THE LOD IS NOT SHOWN, THE SEDIMENT CONTROL DEVICES WILL INDICATE THE LIMIT OF DISTURBANCE.
3. CONTRACTOR MUST TURN ALL SILT FENCE AND SUPER SILT FENCE UPHILL BY 2' IN ELEVATION.
4. SEE SHEETS 11 & 12 FOR SEDIMENT BASIN DRAINAGE AREA INFORMATION.

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/Va: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-92)\06081S03-06.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
06/03/09	2 COUNTOURS, CURB, & SD REVISED IN PARCELS 'B-5' AND 'J'. (REPLACEMENT SHEET)	dds	
07/01/08	1 REV SD. PER F-08-54 CHANGES & REV RIP-RAP LENGTH PER SHA COMMENTS		

PREPARED FOR:
G&R / WESSEL LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975
EXPIRATION DATE: MAY 26, 2010

REVISED **SEDIMENT CONTROL PLAN**

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	MXD-3	06081
DATE	TAX MAP – GRID	SHEET
JUNE, 2009	41-21&22 46-3	3 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55

Earth Dike Treatment - EARTH DIKE #1					
START STA.	END STA.	% SLOPE	AREA	TOTAL AREA	TREATMENT
4+50.00	2+00.00	3.47%	0.97 AC.	0.97 AC.	A-2
2+00.00	0+00.00	1.04%	0.71 AC.	1.68 AC.	A-2

Earth Dike Treatment - EARTH DIKE #2					
START STA.	END STA.	% SLOPE	AREA	TOTAL AREA	TREATMENT
8+00.00	6+00.00	3.81%	0.24 AC.	0.24 AC.	A-2
6+00.00	4+00.00	2.12%	0.99 AC.	1.23 AC.	A-2
4+00.00	2+00.00	1.24%	1.14 AC.	2.97 AC.	A-2
2+00.00	0+00.00	1.47%	0.42 AC.	3.39 AC.	A-2

Earth Dike Treatment - EARTH DIKE #3					
START STA.	END STA.	% SLOPE	AREA	TOTAL AREA	TREATMENT
5+25.00	3+00.00	2.10%	0.45 AC.	0.45 AC.	A-1
3+00.00	1+00.00	0.91%	1.60 AC.	2.05 AC.	A-2
1+00.00	0+00.00	0.50%	1.01 AC.	3.06 AC.	A-2

Earth Dike Treatment - EARTH DIKE #4					
START STA.	END STA.	% SLOPE	AREA	TOTAL AREA	TREATMENT
1+25.00	4+00.00	2.01%	0.73 AC.	0.73 AC.	A-1
4+00.00	2+00.00	2.27%	0.52 AC.	1.25 AC.	A-1
2+00.00	0+00.00	1.65%	0.42 AC.	1.67 AC.	A-2

Earth Dike Treatment - EARTH DIKE #5					
START STA.	END STA.	% SLOPE	AREA	TOTAL AREA	TREATMENT
6+35.00	4+00.00	1.50%	0.25 AC.	0.25 AC.	A-1
4+00.00	2+00.00	0.50%	0.44 AC.	0.69 AC.	A-1
2+00.00	0+00.00	0.50%	0.33 AC.	1.02 AC.	A-1

Earth Dike Treatment - EARTH DIKE #6					
START STA.	END STA.	% SLOPE	AREA	TOTAL AREA	TREATMENT
14+00.00	12+00.00	1.09%	2.36 AC.	2.36 AC.	A-1
12+00.00	10+00.00	3.07%	2.90 AC.	5.25 AC.	A-3
10+00.00	8+00.00	2.13%	4.66 AC.	9.92 AC.	B-1
8+00.00	6+00.00	0.80%	1.32 AC.	11.24 AC.	ENGINEERED
6+00.00	4+00.00	0.50%	1.15 AC.	12.40 AC.	ENGINEERED
4+00.00	2+00.00	0.50%	0.34 AC.	12.74 AC.	ENGINEERED
2+00.00	0+00.00	0.50%	0.49 AC.	13.23 AC.	ENGINEERED

NOTE: FOR ENGINEERED SWALE DETAIL, SEE SHEET 7.

SEDIMENT BASIN (SWM FACILITY) INFORMATION	BASIN #6
PRE-DEVELOPMENT DRAINAGE AREA	27.0 ACRES
POST-DEVELOPMENT DRAINAGE AREA	25.8 ACRES
TOTAL STORAGE REQUIRED (WET VOLUME & 1 YR. TSWM)	147,244 C.F.
TOTAL STORAGE PROVIDED	200,159 C.F.
RISER DIMENSIONS	2-15'x6'
BARREL SIZE	2-42"
RISER CREST ELEVATION	424.75
OUTLET ELEVATION (LIMIT OF WET VOLUME)	424.00
CLEANOUT ELEVATION	419.75
BOTTOM ELEVATION	415.50
BOTTOM DIMENSIONS	55'x175'
PRE-DEVELOPMENT 1 YEAR DISCHARGE	6.24 CFS
POST-DEVELOPMENT 1 YEAR DISCHARGE (UNMANAGED)	66.24 CFS
POST-DEVELOPMENT 1 YEAR DISCHARGE (MANAGED)	5.64 CFS @ 426.75
WET VOLUME REQUIRED (D.A. x 1800 CF)	48,600 CF
WET VOLUME PROVIDED	101,314 CF
DRY VOLUME REQUIRED (D.A. x 1800 CF)	48,600 CF
DRY VOLUME PROVIDED	48,600 CF @ 425.41

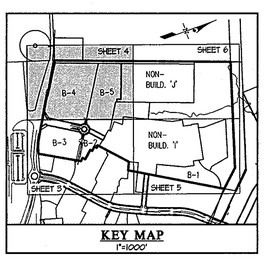
Earth Dike Treatment - EARTH DIKE #7					
START STA.	END STA.	% SLOPE	AREA	TOTAL AREA	TREATMENT
11+25.00	10+00.00	0.50%	0.42 AC.	0.42 AC.	A-1
10+00.00	8+00.00	2.50%	0.82 AC.	1.23 AC.	A-2
8+00.00	6+00.00	1.27%	1.94 AC.	3.18 AC.	A-2
6+00.00	4+00.00	4.93%	0.98 AC.	4.16 AC.	A-2
4+00.00	2+00.00	3.74%	1.16 AC.	5.32 AC.	A-2
2+00.00	0+00.00	1.00%	0.52 AC.	5.84 AC.	B-1

Earth Dike Treatment - EARTH DIKE #8					
START STA.	END STA.	% SLOPE	AREA	TOTAL AREA	TREATMENT
14+50.00	12+00.00	3.66%	0.25 AC.	0.25 AC.	A-2
12+00.00	10+00.00	1.77%	1.41 AC.	1.66 AC.	A-2
10+00.00	8+00.00	1.10%	0.74 AC.	2.40 AC.	A-2
8+00.00	6+00.00	6.01%	0.33 AC.	2.73 AC.	A-3
6+00.00	4+00.00	5.14%	2.21 AC.	4.94 AC.	A-3
4+00.00	2+00.00	1.15%	1.11 AC.	6.05 AC.	B-1
2+00.00	0+00.00	10.14%	0.36 AC.	6.42 AC.	B-1

Earth Dike Treatment - EARTH DIKE #9					
START STA.	END STA.	% SLOPE	AREA	TOTAL AREA	TREATMENT
16+50.00	14+00.00	2.98%	1.19 AC.	1.19 AC.	A-1
14+00.00	12+00.00	3.61%	0.93 AC.	2.09 AC.	A-2
12+00.00	10+00.00	0.80%	2.54 AC.	4.64 AC.	A-2
10+00.00	8+00.00	0.50%	2.20 AC.	6.84 AC.	B-1
8+00.00	6+00.00	0.75%	0.41 AC.	7.25 AC.	B-1
6+00.00	4+00.00	0.50%	0.62 AC.	7.87 AC.	B-1
4+00.00	2+00.00	0.75%	1.43 AC.	9.30 AC.	B-1
2+00.00	0+00.00	6.00%	0.86 AC.	10.15 AC.	B-2

Earth Dike Treatment - EARTH DIKE #10					
START STA.	END STA.	% SLOPE	AREA	TOTAL AREA	TREATMENT
10+75.00	8+00.00	2.26%	2.43 AC.	2.43 AC.	A-2
8+00.00	6+00.00	1.01%	3.21 AC.	5.63 AC.	B-1
6+00.00	4+00.00	3.65%	1.05 AC.	6.69 AC.	B-1
4+00.00	2+00.00	4.50%	0.50 AC.	7.18 AC.	B-1
2+00.00	0+00.00	1.56%	0.21 AC.	7.46 AC.	B-1

Earth Dike Treatment - EARTH DIKE #11					
START STA.	END STA.	% SLOPE	AREA	TOTAL AREA	TREATMENT
10+81.00	8+00.00	1.41%	0.76 AC.	0.76 AC.	A-1
8+00.00	6+00.00	1.16%	1.00 AC.	1.76 AC.	A-1
6+00.00	4+00.00	0.92%	0.46 AC.	2.22 AC.	A-2
4+00.00	2+00.00	6.35%	0.61 AC.	2.83 AC.	A-2
2+00.00	0+00.00	1.61%	0.21 AC.	3.04 AC.	A-2



KEY MAP
1"=1000'

CONTRACTOR NOTES:
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2. WHERE THE LOD IS NOT SHOWN, THE SEDIMENT CONTROL DEVICES WILL INDICATE THE LIMIT OF DISTURBANCE.
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LEGEND
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- EARTH DIKE (INITIAL CONDITION)
- EARTH DIKE (FINAL CONDITION)
- LIMIT OF DISTURBANCE
- C.I.P. — CURB INLET PROTECTION
- ECM — EROSION CONTROL MATTING
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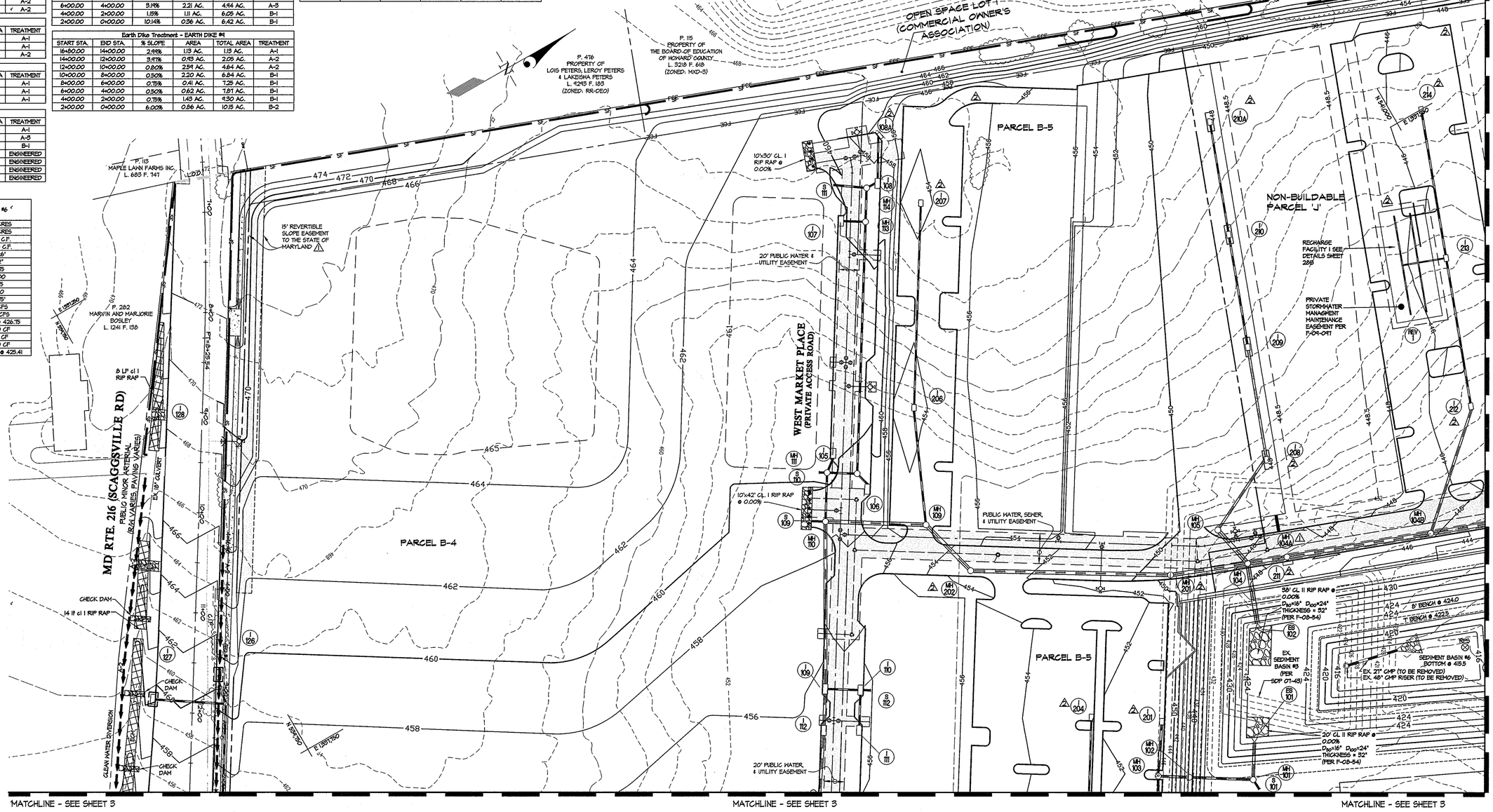

	MH-101 THRU ES-101	MH-104 THRU ES-102
PIPE DIAMETER	24"	48"
PIPE LENGTH	34 LF	57 LF
PIPE SLOPE	1.00%	1.25%
Q_c	24.6 cfs	174.4 cfs
Q_{10}	20.0 cfs	167.1 cfs
V_{10}	8.8 ft/sec.	13.3 ft/sec.
D_{10}	1.36'	3.12'
RIPRAP TYPE	class II	class II
RIPRAP LENGTH	20 LF	30 LF

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 6/15/09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 6/29/09 V3

Chief, Development Engineering Division — Date 6.19.09

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Engineer's Signature — Date 6-2-09

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Howard Soil Conservation District — Date 6/8/09

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SCE)\06081SC03-06.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
06/03/09	2 CONTOURS, CURB, & SD REVISED IN PARCELS 'B-5' & 'J'. RECHARGE FACILITY 1 ADDED (REPLACEMENT SHEET)	dds	
07/01/08	1 REV SD PER F-08-54 CHANGES & ADDED REVERTIBLE SLOPE ESMT.		

PREPARED FOR:
G&R / WESSEL LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

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REVISED **SEDIMENT CONTROL PLAN**

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JUNE, 2009	41-21&22 46-3	4 OF 32

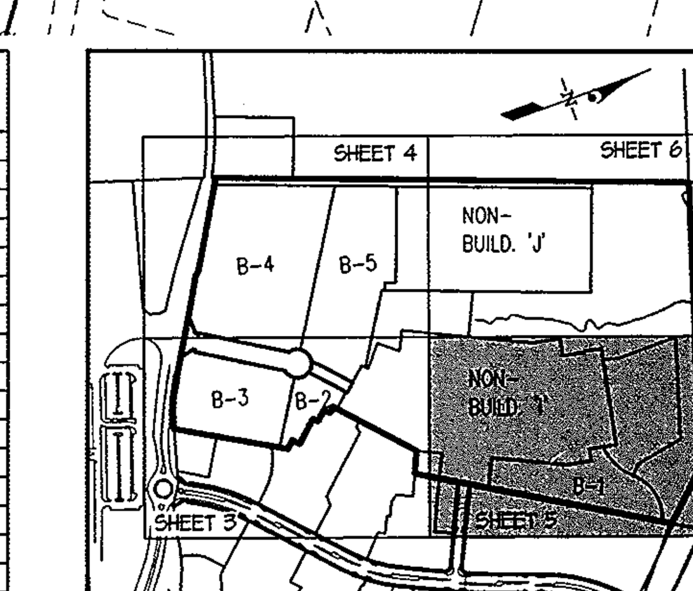
THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55


MATCHLINE - SEE SHEET 6
MATCHLINE - SEE SHEET 3
OPEN SPACE LOT 4 (HOMEOWNER'S ASSOCIATION)
OPEN SPACE LOT 3 (HOWARD COUNTY, MARYLAND)
NON-BUILDABLE PARCEL 'I'
PARCEL B-1
20' PUBLIC STORMWATER ACCESS, WATER & UTILITY EASEMENT
20' PUBLIC WATER & UTILITY EASEMENT
SEDIMENT TRAP #2 (EX. SEDIMENT TRAP #3 FROM SDP-07-43)
BOTTOM @ 425.0
EX. 21" CMP RISER
PARCEL C-20 PLAT No. 19244
PARCEL C-16 PLAT No. 19244
PARCEL C-17 PLAT No. 19244 (FUTURE RESIDENTIAL)
P/O P. 124 G & R MAPLE LAWN (K), LLC L.4256 F.250
CONTRACTOR TO BORROW ONLY MATERIAL NECESSARY TO ESTABLISH "FINAL" EARTH DIKE LOCATION PRIOR TO PROCEEDING WITH THE REMAINDER OF THE MASS GRADING OPERATIONS.
DEWATERING DEVICE
BOTTOM OF BASIN @ 386.0
SEDIMENT BASIN #3
30' cl. II RIPRAP @ 0.00% D_{50}=16" D_{100}=24" BLANKET THICKNESS =32"
PORTION OF SUPER SILT FENCE TO BE RELOCATED PRIOR TO ALLOWING RUNOFF FROM BASIN #4
15' NO-WOODY VEGETATION ZONE
150' PEPCO R/W
TEMPORARY SWALE
NORTH

SEDIMENT BASIN (SWM FACILITY) INFORMATION	FACILITY #2 (PIPE OUTLET SEDIMENT TRAP FAC. #3 UNDER SDP-07-43)	BASIN #3	BASIN #4
PRE-DEVELOPMENT DRAINAGE AREA	4.0 ACRES	6.0 ACRES	22.6 ACRES
POST-DEVELOPMENT DRAINAGE AREA	5.2 ACRES	23.4 ACRES	19.6 ACRES
TOTAL STORAGE REQUIRED (WET VOL.& 1 YR. TSWM) *	18,720 CF	157,335 C.F.	123,028 C.F.
TOTAL STORAGE PROVIDED	19,009 CF	157,692 C.F.	123,480 C.F.
RISER DIMENSIONS	27" CMP	15' x 6'	84" CMP
BARREL SIZE	21" CMP	42"	33"
RISER CREST ELEVATION	429.40	401.15	393.75
OUTLET ELEVATION (LIMIT OF WET VOLUME)	427.55	393.90	389.30
CLEANOUT ELEVATION	426.35	389.95	387.15
BOTTOM ELEVATION	425.00	386.00	385.00
BOTTOM DIMENSIONS	27'x110'	VARIES	16'x292'
PRE-DEVELOPMENT 1 YEAR DISCHARGE	N/A *	1.39 CFS	2.52 CFS
POST-DEVELOPMENT 1 YEAR DISCHARGE (UNMANAGED)	N/A *	58.62 CFS	46.71 CFS
POST-DEVELOPMENT 1 YEAR DISCHARGE (MANAGED)	N/A *	1.41 CFS @ 401.13	2.42 CFS @ 393.70
WET VOLUME REQUIRED	9,360 CF	42,120 CF	40,680 CF
WET VOLUME PROVIDED	9,649 CF	42,471 CF	41,132 CF
DRY VOLUME REQUIRED	9,360 CF	42,120 CF	40,680 CF
DRY VOLUME PROVIDED	9,360 CF @ 429.40	42,120 CF @ 397.51	40,680 CF @ 383.98

* 1 YEAR TEMPORARY STORMWATER MANAGEMENT IS PROVIDED IN FACILITY CONSTRUCTED UNDER F 03-07.



KEY MAP
1"=1000'

LEGEND

- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- EARTH DIKE (INITIAL CONDITION)
- EARTH DIKE (FINAL CONDITION)
- LIMIT OF DISTURBANCE
- C.I.P. — CURB INLET PROTECTION
- ECM — EROSION CONTROL MATTING
- TEMPORARY SWALE

CONTRACTOR NOTES:

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APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2/15/08

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Signature of Developer/Builder — Date 1-11-08

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"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

Engineer's Signature — Date 1-11-08

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Howard Soil Conservation District — Date 1/22/08

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Natural Resources Conservation Service — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081SC03-06.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.

PREPARED FOR:
G & R / Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975
EXPIRATION DATE: MAY 26, 2008

SEDIMENT CONTROL PLAN

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

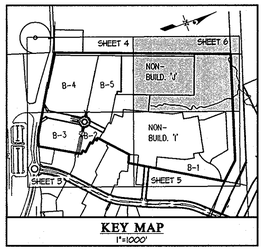
WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JAN., 2008	41-21&22 46-3	5 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54



KEY MAP
1"=1000'

PIPE SLOPE DRAIN INFORMATION	PSD-1	PSD-2	PSD-3	PSD-4
DRAINAGE AREA	3.1 AC.	2.2 AC.	4.3 AC.	2.4 AC.
PIPE DIAMETER (QTY. - SIZE)	2 - 24"	1 - 21"	2 - 24"	1 - 21"
UPPER INVERT OF PIPE	435.0	420.5	423.5	435.5
LOWER INVERT OF PIPE	411.0	378.0	344.0	426.0
PIPE LENGTH	104 LF	161 LF	156 LF	44 LF
TOP OF EARTH DIKE	434.0	424.0	427.5	434.0

NOTE:
1. SEE PIPE SLOPE DRAIN DETAIL, SHEET 8
2. ANCHORING TO BE PROVIDED A MINIUM OF EVERY 10'. (SEE ANCHORING DETAIL, SHEET 8.

LEGEND

SF	SILT FENCE
SSF	SUPER SILT FENCE
	EARTH DIKE (INITIAL CONDITION)
	EARTH DIKE (FINAL CONDITION)
	LIMIT OF DISTURBANCE
C.I.P.	CURB INLET PROTECTION
ESM	EROSION CONTROL MATTING
SCE	STABILIZED CONSTRUCTION ENTRANCE

CONTRACTOR NOTES:
1. FOR STORM DRAIN SIZES, SEE F-08-54.
2. WHERE THE LOD IS NOT SHOWN, THE SEDIMENT CONTROL DEVICES WILL INDICATE THE LIMIT OF DISTURBANCE.
3. CONTRACTOR MUST TURN ALL SILT FENCE AND SUPER SILT FENCE UPHILL BY 2' IN ELEVATION.
4. SEE SHEETS 11 & 12 FOR SEDIMENT BASIN DRAINAGE AREA INFORMATION.

SEDIMENT BASIN (SWM FACILITY) INFORMATION	BASIN #5
PRE-DEVELOPMENT DRAINAGE AREA	13.4 ACRES
POST-DEVELOPMENT DRAINAGE AREA	17.7 ACRES
TOTAL STORAGE REQUIRED (WET VOLUME & 1 YR. TSHM)	121,834 C.F.
TOTAL STORAGE PROVIDED	122,046 C.F.
RISER DIMENSIONS	20"x48"
BARREL SIZE	36"
RISER CREST ELEVATION	387.25
OUTLET ELEVATION (LIMIT OF WET VOLUME)	381.60
CLEANOUT ELEVATION	378.80
BOTTOM ELEVATION	378.00
BOTTOM DIMENSIONS	VARIES
PRE-DEVELOPMENT 1 YEAR DISCHARGE	0.95 CFS
POST-DEVELOPMENT 1 YEAR DISCHARGE (UNMANAGED)	42.01 CFS
POST-DEVELOPMENT 1 YEAR DISCHARGE (MANAGED)	0.74 CFS @ 387.04
WET VOLUME REQUIRED (D.A. x 1800 CF)	31,860 CF
WET VOLUME PROVIDED	33,520 CF
DRY VOLUME REQUIRED (D.A. x 1800 CF)	31,860 CF
DRY VOLUME PROVIDED	31,860 CF @ 383.48

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Developer/Builder — Date: 6-2-09

ENGINEER'S CERTIFICATE

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

Engineer's Signature — Date: 6-2-09

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Howard Soil Conservation District — Date: 6/8/09

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date: 6/15/09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date: 6/26/09

Chief, Development Engineering Division — Date: 6-19-9

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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DATE	REVISION	BY	APP'R.
06/03/09	2 CONTOURS, CURB, & SD REVISED IN PARCELS 'B-5' & 'J'. RECHARGE FAC 2 ADDED (REPLACEMENT SHEET)	dds	
07/01/08	1 REV SD PER F-08-54 CHANGES & REV PIPE SIZES IN SWM BASINS #5 & #6		

PREPARED FOR:
G&R / WESSEL LLC
SUITE 300 WOODHOLME CENTER
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PROFESSIONAL CERTIFICATION

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REVISED **SEDIMENT CONTROL PLAN**

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

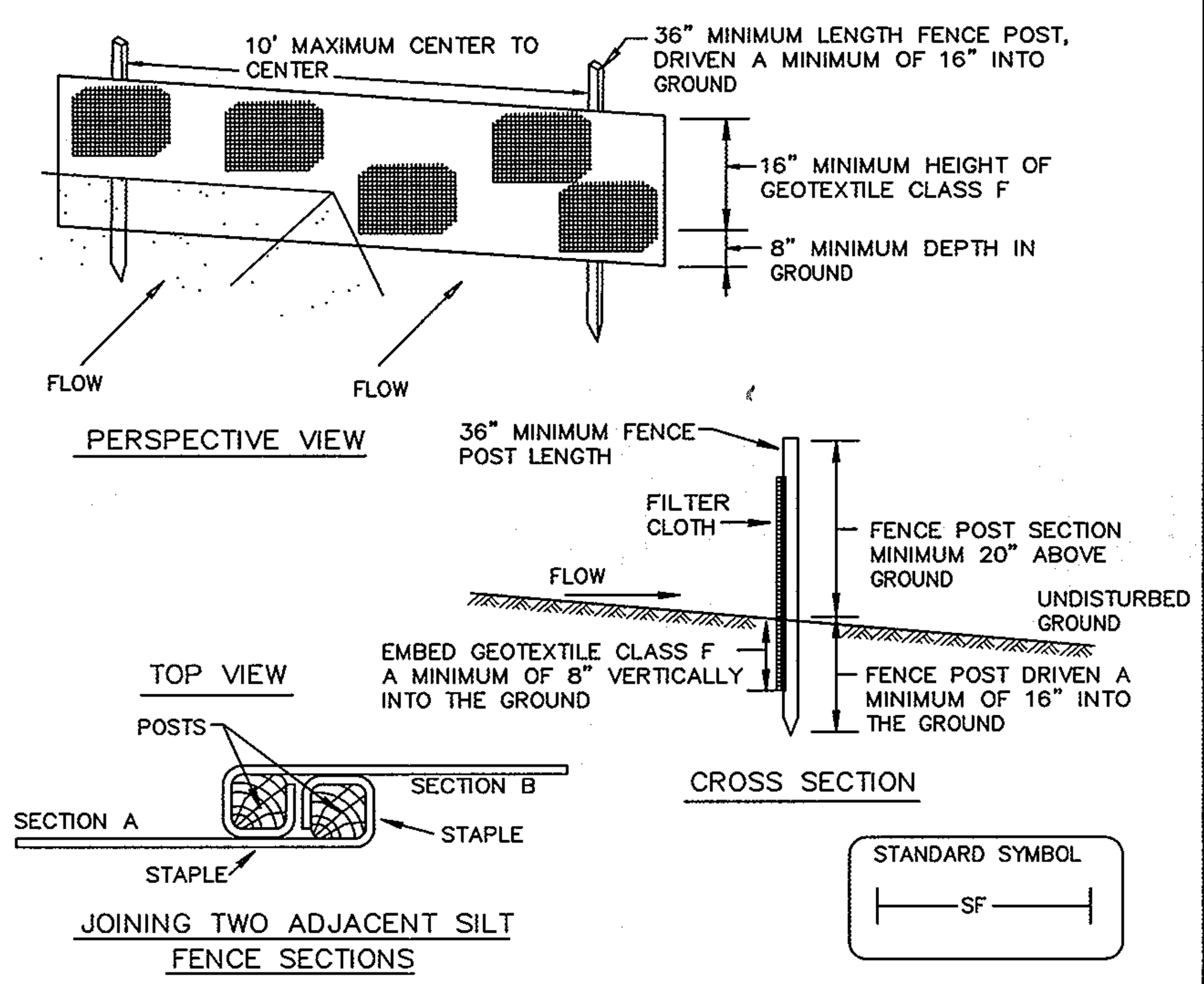
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JUNE, 2009	41-21&22 46-3	6 OF 32

F-08-55

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

DETAIL 22 – SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

2. 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:

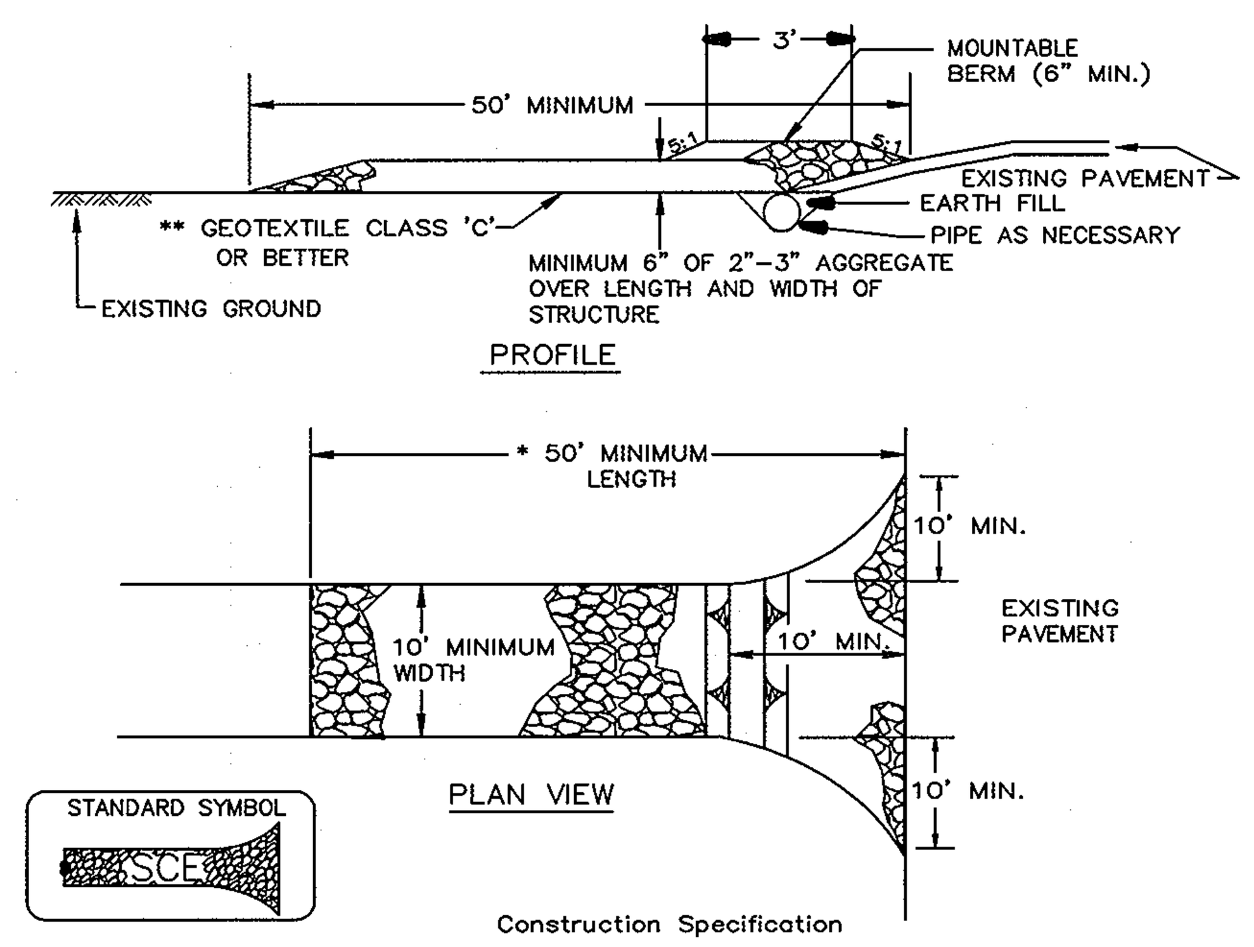
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft ²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 15 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).

2. Width – 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

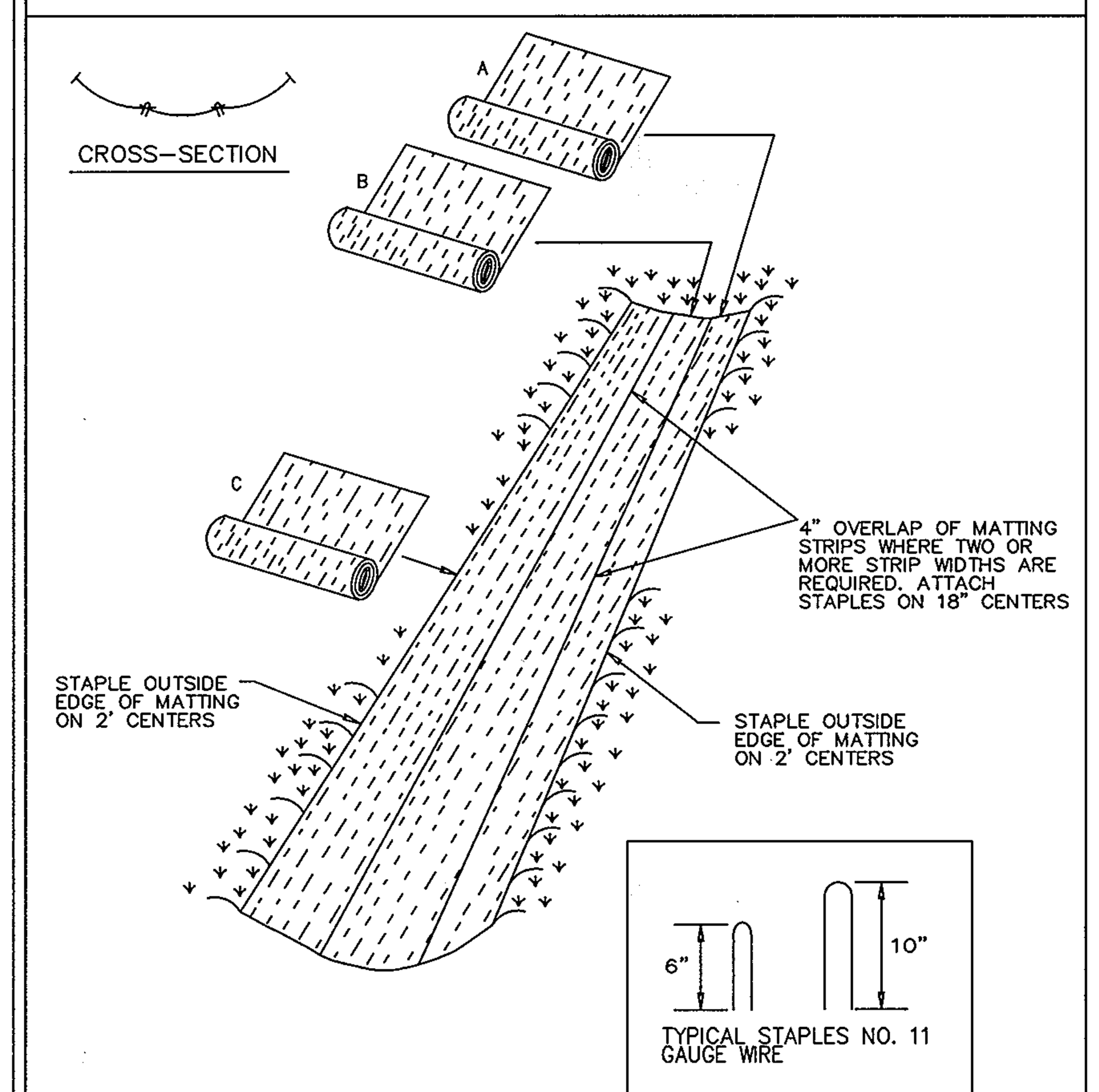
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. 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. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F – 17 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 30 – EROSION CONTROL MATTING



Construction Specifications

1. Key–in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross–section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".

2. Staple the 4" overlap in the channel center using an 18" spacing between staples.

3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.

4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.

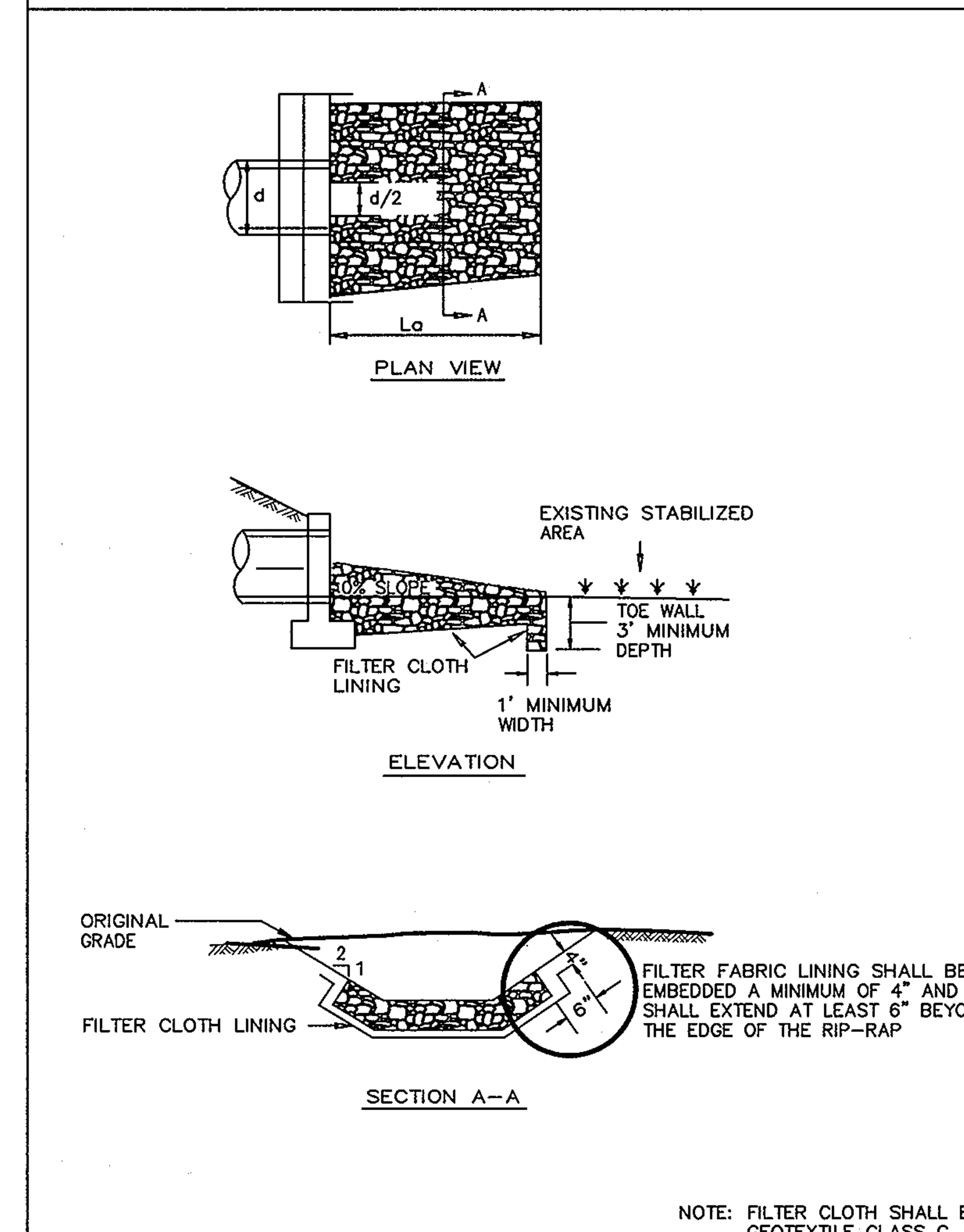
5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed–in.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE G – 22 – 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 27 – ROCK OUTLET PROTECTION III



NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

Construction Specifications

1. The subgrade for the filter, riprap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.

2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip–rap or filter.

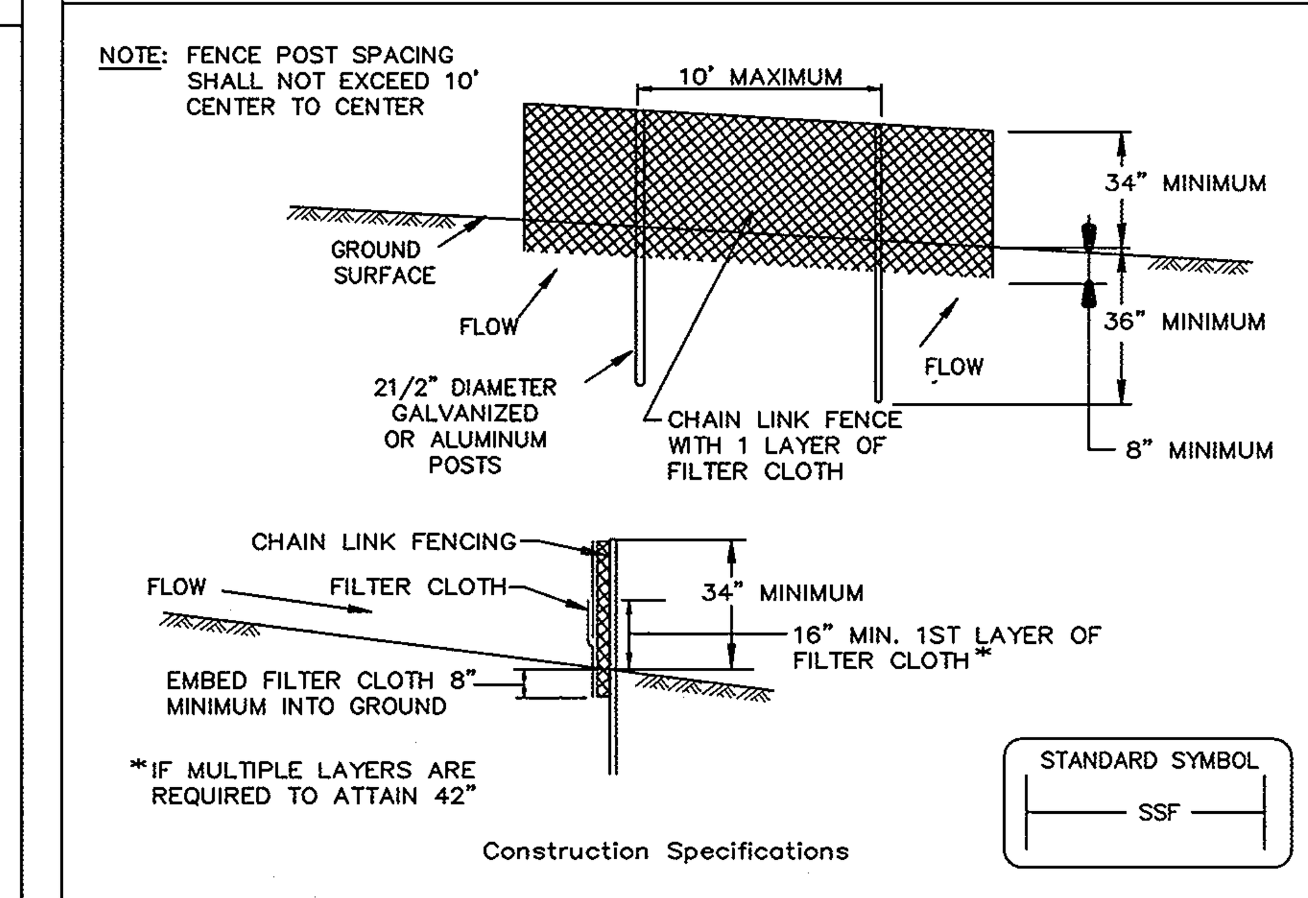
3. Geotextile shall be protected from punching, cutting,or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.

4. Stone for the rip–rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip–rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F – 18 – 10	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 – SUPER SILT FENCE



Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

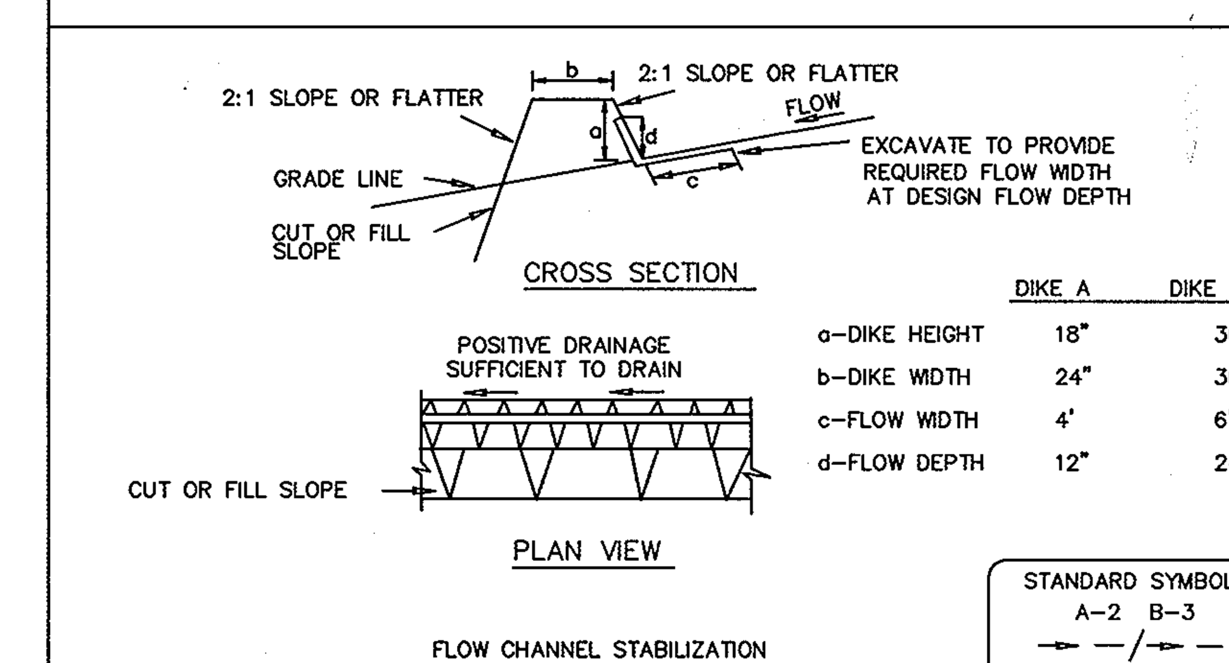
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

7. Filter cloth 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 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft ²/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H – 26 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 1 – EARTH DIKE



	DIKE A	DIKE B
a–DIKE HEIGHT	18"	30"
b–DIKE WIDTH	24"	36"
c–FLOW WIDTH	4'	6'
d–FLOW DEPTH	12"	24"

STANDARD SYMBOL
A–2 B–3

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" – 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non–erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

6. Fill shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A – 1 – 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

I. Incremental Stabilization - Cut Slopes

i. All cut slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.

ii. Construction sequence (Refer to Figure 3 below):

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.

b. Perform phase 1 excavation, dress, and stabilize.

c. Perform phase 2 excavation, dress, and stabilize. Overseed phase 1 areas as necessary.

d. Perform final phase excavation, dress, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

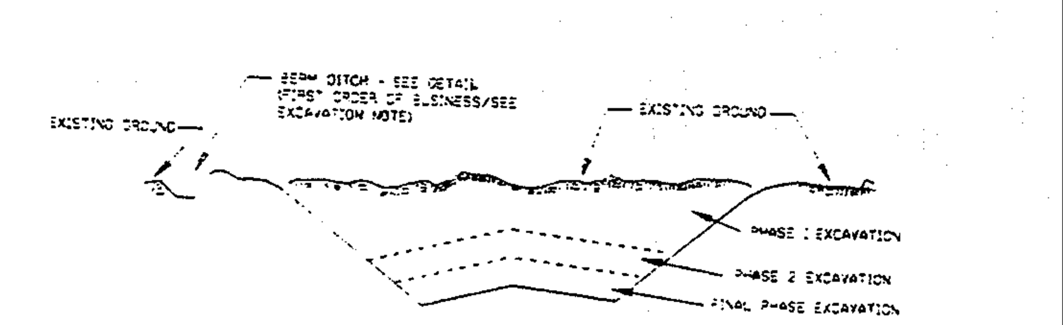


Figure 4 Incremental Stabilization - Cut

G-20-6

1994

J. Incremental Stabilization of Embankments - Fill Slopes

i. Embankments shall be constructed in lifts as prescribed on the plans.

ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15', or when the grading operation ceases as prescribed in the plans.

iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.

iv. Construction sequence: Refer to Figure 4 (below).

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct Slope Silt Fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.

b. Place phase 1 embankment, dress and stabilize.

c. Place phase 2 embankment, dress and stabilize.

d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

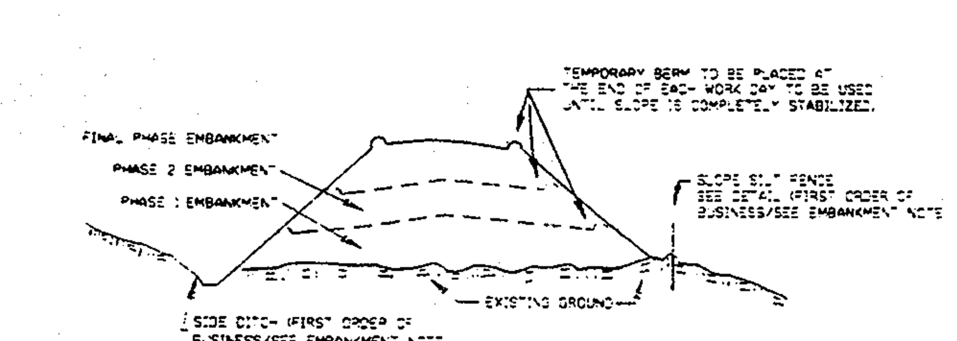
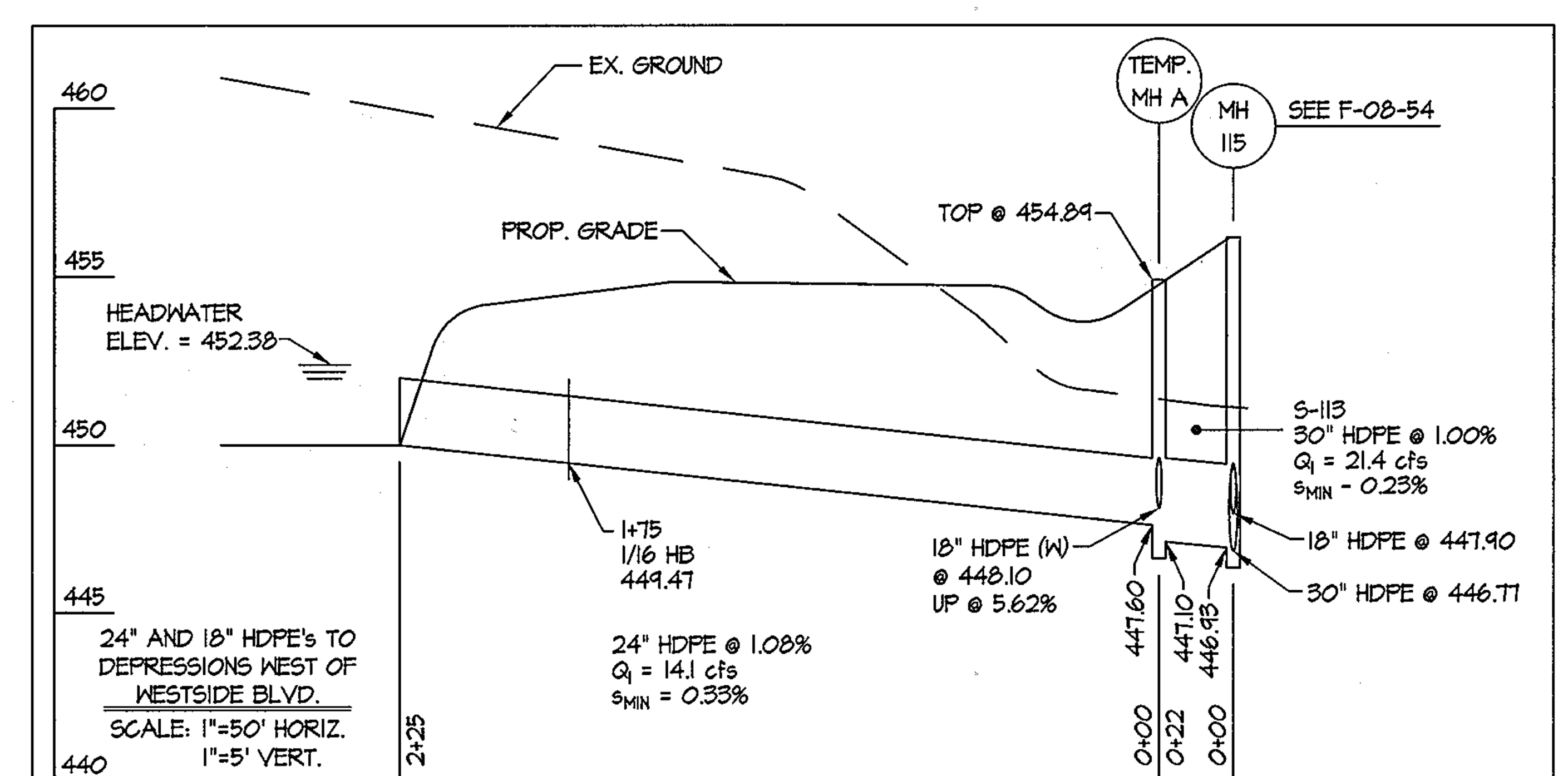
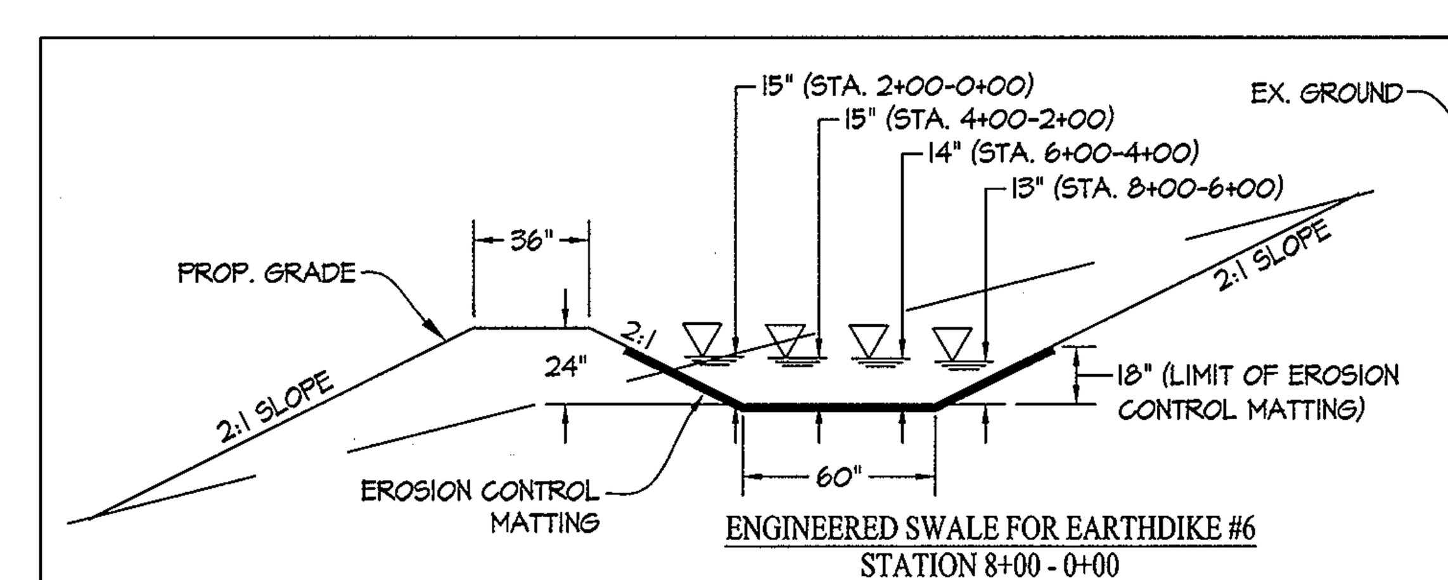


Figure 5 Incremental Stabilization - Fill

G-20-7

1994





ENGINEERED SWALE FOR EARTHDIKE #6
STATION 8+00 - 0+00
SCALE: 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2/15/08

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Signature of Developer/Builder — Date 1-11-08

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Engineer's Signature — Date 1-11-08

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — Date 1/22/08

~~These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.~~

Natural Resources Conservation Service — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
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DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410–484–8400

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SEDIMENT CONTROL DETAILS AND NOTES

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

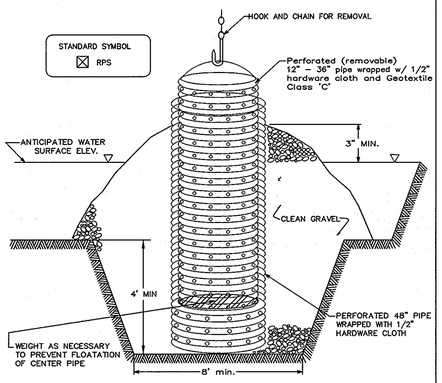
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP – GRID	SHEET
JAN., 2008	41-21&22 46-3	7 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55

DETAIL 20A – REMOVABLE PUMPING STATION



ELEVATION

Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.

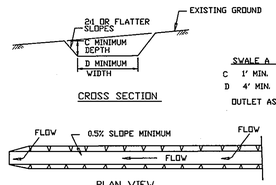
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.

3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.

4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE D – 12 – 5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 2 – TEMPORARY SWALE



CROSS SECTION

SWALE	A	B
C	1' MIN.	1' MIN.
D	4' MIN.	6' MIN.

OUTLET AS REQUIRED

PLAN VIEW

DRAINAGE AREA = 10 ac (MAX)
SLOPE = 10% (MAX)

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

STANDARD SYMBOL
A – 2 / B – 3

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4"–7" stone or recycled concrete equivalent pressed into soil in a minimum 7" layer.

Construction Specifications

1. All temporary swales shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed stabilized area at a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the swale.

5. The swale shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

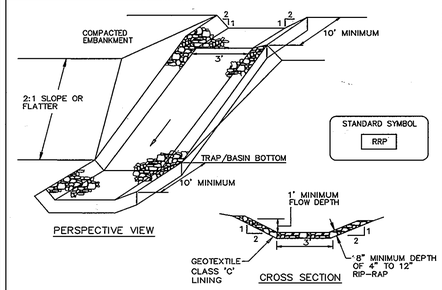
6. Fill, if necessary, shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the swale.

8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 2 – 4	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 5 – RIP–RAP INFLOW PROTECTION



PERSPECTIVE VIEW

CROSS SECTION

Construction Specifications

1. Rip–rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip– rap to a depth of 18".

2. Filter cloth shall be installed under all rip–rap. Filter cloth shall be Geotextile Class C.

3. Entrance and exit sections shall be installed as shown on the detail section.

4. Rip–rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.

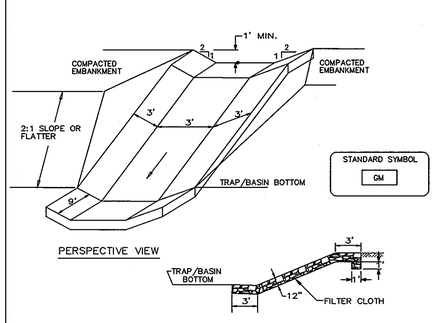
5. Gabion Inflow Protection may be used in lieu of Rip–rap Inflow Protection.

6. Rip–rap should blend into existing ground.

7. Rip–rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B – 6 – 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 6 – GABION INFLOW PROTECTION



PERSPECTIVE VIEW

PROFILE ALONG CENTERLINE

Construction Specifications

1. Gabion inflow protection shall be constructed of 9' x 3' x 9" gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.

2. Geotextile Class C shall be installed under all gabion baskets.

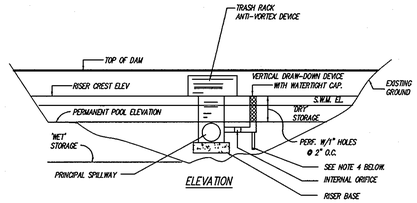
3. The stone used to fill the gabion baskets shall be 4" – 7".

4. Gabions shall be installed in accordance with manufacturers recommendations.

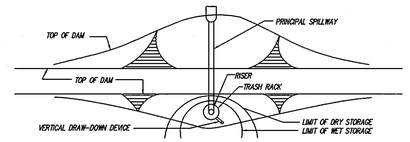
5. Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B – 7 – 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

BASIN DRAWDOWN SCHEMATIC VERTICAL DRAWDOWN DEVICE



ELEVATION



PLAN VIEW

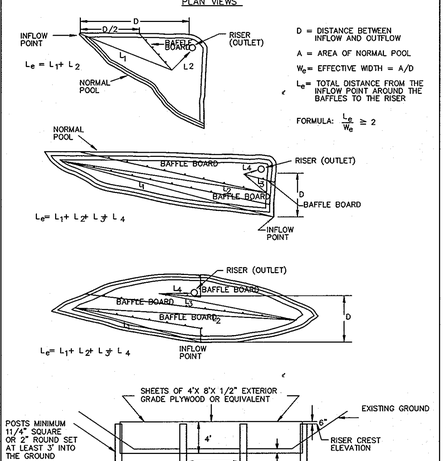
CONSTRUCTION SPECIFICATIONS

1. Perforations in the draw–down device may not extend into the wet storage.
2. The total area of the perforations must be greater than 4 times the area of the internal orifice.
3. The perforated portion of the draw–down device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.
4. Provide support of draw–down device to prevent sagging and flotation. An acceptable preventative measure is to stake both sides of draw–down device with 1" stool angle, or 1" by 4" square or 2" round wooden posts set 3' minimum into the ground then fishing them to the device by wrapping with 12 gauge minimum wire.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 18 – 38	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 – SEDIMENT BASIN BAFFLES

PLAN VIEWS



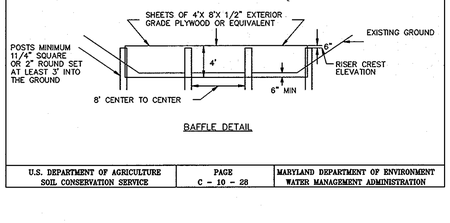
D = DISTANCE BETWEEN INFLOW AND OUTFLOW

A = AREA OF NORMAL POOL

W_e = EFFECTIVE WIDTH = A/D

L_e = TOTAL DISTANCE FROM THE INFLOW POINT AROUND THE BAFFLES TO THE RISER

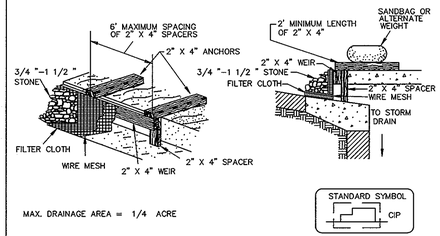
FORMULA: $\frac{L_e}{W_e} \geq 2$



BAFFLE DETAIL

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 10 – 28	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23C CURB INLET PROTECTION (COG OR COS INLETS)



MAX. DRAINAGE AREA = 1/4 ACRE

STANDARD SYMBOL
CIP

Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

6. Form the 1/2 " x 1/2 " wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4 " x 1 1/2 " stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

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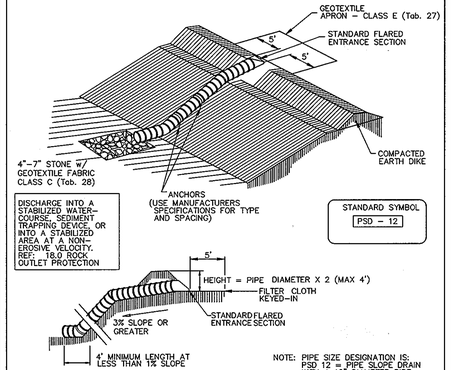
DETAIL 4 – PIPE SLOPE DRAIN



NOTE: PIPE SIZE DESIGNATION IS: PSD 12 = PIPE SLOPE DRAIN WITH A 12" DIAMETER PIPE

* OUTLET AT PERMANENT POOL ELEV. WHEN OUTLETTING INTO TRAPS AND BASINS

Table 6 Design Criteria for Pipe Slope Drain

Size	Pipe/Tubing Diameter (D) in	Maximum Drainage Area (Acres)
PSD–12	12	0.5
PSD–18	18	1.5
PSD–21	21	2.5
PSD–24	24	3.5
PSD–24 (2–PIPES WITH 4'–0" BETWEEN)	24	5.0

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PIPE SLOPE DRAIN

Construction Specifications – Pipe Slope Drain

1. The Pipe Slope Drain (PSD) shall have a slope of 3 percent or steeper.

2. The top of the earth dike over the inlet pipe shall be at least 2 times the pipe diameter measured at the invert of the pipe.

3. Flexible tubing is preferred. However, corrugated metal pipe or equivalent PVC pipe can be used. All connections shall be watertight.

4. A flared end section shall be attached to the inlet end of pipe with a watertight connection. Filter cloth shall be placed under the inlet of the pipe slope drain and shall extend out 5' from the inlet. The filter cloth shall be "keyed in" on all sides.

5. The Pipe Slope Drain shall be securely anchored to the slope by staking at the grommets provided. Spacing for anchors shall be as provided by manufacturer's specification. In no case shall less than two (2) anchors be provided, equally spaced along the length of pipe. These details should be provided by pipe suppliers.

6. The soil around and under the pipe and end section shall be hand tamped in 4 inch lifts to the top of the earth dike.

7. All pipe connections shall be watertight.

8. Whenever possible where a PSD drains an unstabilized area, it shall outlet into a sediment trap or basin. If this is not possible then the slope drain will discharge into a stable conveyance that leads to a sediment trap or basin. When discharging into a trap or basin the PSD shall discharge at the same elevation as the wet pool elevation. The discharge from the PSD must be as far away from the sediment control outlet as possible.

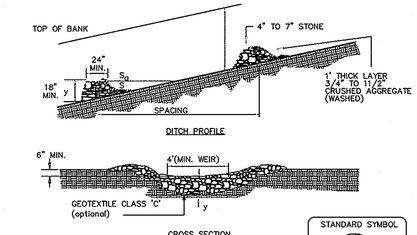
9. When the drainage area is stabilized, the PSD shall discharge onto a stabilized area at a non–erosive velocity.

10. Inspection and any required maintenance shall be performed periodically and after each rain event.

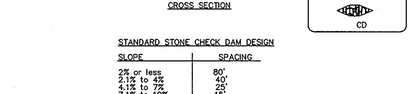
11. The inlet must be kept open at all times.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B – 5 – 4A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 7 – STONE CHECK DAM



DITCH PROFILE



CROSS SECTION

STANDARD SYMBOL
CD

STANDARD STONE CHECK DAM DESIGN

SLOPE	SPACING
2% or less	80'
2.1% to 4%	40'
4.1% to 7%	25'
7.1% to 10%	15'
over 10%	use lined waterway design

Construction Specifications

1. Swales and ditches shall be prepared in accordance with the construction specifications described in Section A–2, Standards and Specifications for Temporary Swale.

2. The check dam shall be constructed of 4"–7" stone. The stone shall be placed so that it completely covers the width of the channel and keyed into the channel banks.

3. The top of the check dam shall be constructed so the the center is approximately 6" lower than the outer edges, forming a weir that water can flow across.

4. The maximum height of the check dam at the center shall not exced 2".

5. The upstream sideof the check dam shall be lined with approximately 1" of 3/4" to 11/2" crushed aggregate.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B – 8 – 5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/5/08

Chief, Development Engineering Division — Date 2/15/08

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as–built" plan of the pond within 30 days of completion. I also authorize periodic on–site inspections by the Howard Soil Conservation District.

Signature of Developer/Builder — Date 1-11-08

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as–built" plan of the pond within 30 days of completion."

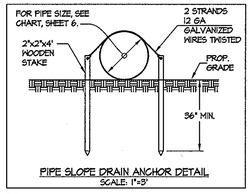
Engineer's Signature — Date 1-11-08

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — Date 1/22/08

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Natural Resources Conservation Service — Date



PIPE SLOPE DRAIN ANCHOR DETAIL
SCALE: 1"=3'

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301–421–4024 BALT: 410–880–1820 DC/VA: 301–989–2524 FAX: 301–421–4186

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM–SC)\06081SC–DET07–09.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410–484–8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2008

STATE OF MARYLAND — CHARLES R. GUTSCHICK — REG. NO. 12975 — PROFESSIONAL ENGINEER

SEDIMENT CONTROL DETAILS AND NOTES

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT – AREA 1

PARCELS B–1 THROUGH B–5, OPEN SPACE LOTS 1 THROUGH 4 AND NON–BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD–3	06081
DATE	TAX MAP – GRID	SHEET
JAN., 2008	41–21&22 46–3	8 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F–08–54

F–08–55

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM–SC)\06081SC–DET07–09.dwg 1/11/2008 12:56:39 PM EST

SEDIMENT CONTROL NOTES

1. A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (410) 131-1880
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes and perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. I, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51), sod (Sec. 54), temporary seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization, with mulch alone, can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:

Total Area of Site	:	90.4 Acres
Area Disturbed	:	79.0 Acres
Area to be roofed or paved	:	2.7 Acres
Area to be vegetatively stabilized	:	76.1 Acres
Total Cut	:	400,000 Cu. Yds.
Total Fill	:	400,000 Cu. Yds.
Off-site waste/borrow location	:	N/A

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment control must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.
10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
11. Trenches for the construction of utilities is limited to 3 pipe lengths or that which shall be backfilled and stabilized within one working day whichever is shorter.

PERMANENT SEEDING NOTES

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules

1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 unreaform fertilizer (9 lbs/1000 sq ft).

2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.

Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).

Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs./1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

DUST CONTROL

Definition
Controlling dust blowing and movement on construction sites and roads.

Purpose
To prevent blowing and movement of dust from exposes soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.

Conditions Where Practice Applies
This practice is applicable to areas subject to dust blowing and movements where on and off-site damage is likely without treatment.

SPECIFICATIONS
Temporary Methods

1. Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or tacked to prevent blowing.
2. Vegetative Cover - See standards for temporary vegetative cover.
3. Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaces about 12" apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.
4. Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.
5. Barriers - Solid board fences, silt fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.
6. Calcium Chloride - Apply at rates that will keep surface moist. May need retreatment.

Permanent Methods

1. Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.
2. Topsoiling - Covering with less erosive soil materials. See standards for topsoiling.
3. Stone - Cover surface with crushed stone or coarse gravel.

STANDARD 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

I. This practice is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplied of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.
II. 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

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the respective soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.
   i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by a agronomist or soil scientist and approved by the appropriate approval authority. 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.
   ii. Topsoil must be free of plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
   iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate if 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
II. For sites having disturbed areas under 5 acres:
   i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
III. For sites having disturbed areas over 5 acres:
   i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
      a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
      b. Organic content of topsoil shall be not less than 1.5 percent by weight.
      c. Topsoil having soluble salt greater than 500 parts per mill shall not be used.
      d. No sod or seed shall be placed on soil which has been with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of photo-toxic materials.

      Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
   ii. Place topsoil (if required) and apply soil amendments as specified in 2.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
V. Topsoil Application
   i. When topsoilling, maintain needed erosion and sediment control practices such as diversion, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
   ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
   iii. Topsoil shall be uniformly distributed in a 4' -8' layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoilling or other operations shall be corrected in order to prevent the formation of depressions or water.
   iv. Topsoil shall not be placed while the topsoil or subsoil is 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.
VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
   i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
      a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
      b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
      c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
   iv. Composted sludge shall be amended with a potassium fertilizer applied at a rate of 4lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding. MD-VA Pub. #1 , Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

BEST MANAGEMENT PRACTICES

for working in nontidal wetlands, wetland buffers, waterways, and 100-year floodplains

1. No excess fill, construction material, or debris shalbe stockpiles or stored in nontidal wetlands, non-tidal wetland buffers, waterways, or 100 year floodplain.
2. Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year flood plain.
3. Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
4. Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
5. Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
6. Rectify any nontidal wetlands, wetland buffers, waterways or 100-year floodplain temporarily impacted by any construction.
7. All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species:
   - Annual Rye Grass (lolium multiflorum)
   - Millet (setaria italica)
   - Barley (hordeum species)
   - Oats (sp.)
   - Rye (secale cereale)

   These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the nontidal wetlands and waterways division. Kentucky 31 fescue shall not be utilized in wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
8. After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
9. To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream

   Use I waters: in stream work shall be conducted during the period march 1 through june 15, inclusive, during any year.
10. Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
11. Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.

PLANTING NOTES

1. Riparian areas may be planted as soon as reasonable to do so. Late winter- early spring plantings are preferred. Earliest planting dates will vary from year to year but planting may generally begin as soon as the ground is no longer frozen. Alternate planting dates may be considered as condition warrants.
2. Soil amendments and fertilization recommendations will be made based upon the results of soil analysis for nitrogen, phosphorus, potassium, organic matter content and pH. If required, fertilizer will be provided using a slow release, soluble 16-8-16 analysis designed to last 5-8 years contained in polyethylene perforated bags such as manufactured by ADCO Works, P.O. Box 310 Hollins, N.Y. 11423 or approved equal.
3. Plant materials will be planted in accordance with the Planting Distribution Diagram, Planting Details and plant schedule.
4. Plant material shall be nursery grown and inspected prior to planting. Plants not conforming to the American Standard for Nursery Stock specifications for size, form, vigor, or roots, or due to trunk wounds, breakage, desiccation, insect or disease must be replaced.
5. Planting stock must be protected from desiccation at all times prior to planting. Materials held for planting shall be moistened and placed in cool shaded areas until ready for placement.
6. Newly planted trees may require watering at least once per week during the first growing season depending on rainfall in order to get established. The initial planting operation should allow for watering during installation to completely soak backfill material.
7. Planting holes should be excavated to a minimum diameter of 2.5 to 3 times the diameter of the root ball or container. Mechanical angering is preferred with scarification of the sides of each hole.
8. Mulch shall be applied in accordance with the diagram provided and shall consist of composted, shredded hardwood bark mulch, free of wood alcohol.
9. One hundred per cent (100 %) survival of riparian buffer plantings shall be guaranteed for one (1) year. Replacement plantings shall be provided after first year's growing season.

CONSTRUCTION NOTES/SPECIFICATIONS

1. The contractor shall install appropriate sediment and erosion control devices before project. All work to be performed at the direction of the stream restoration specialist and these drawings.
2. The foundation area shall be cleared of trees, stumps, roots, sod, loose rock, or other objectionable material.
3. The cross-section shall be excavated to the neat lines and grades as shown on the plans. Over-excavated areas shall be backfilled with moist soil compacted to the density of the surrounding material.
4. No abrupt deviations from the design grade or horizontal alignment shall be permitted unless authorized by the ERI Stream Restoration Specialist.
5. Filter, bedding, and rock rip-rap shall be placed to line and grade in the manner specified.
6. Construction operations shall be done in such a manner that erosion, air, and water pollution will be minimized and held within legal limits. The completed job shall present a workmanlike appearance. All disturbed areas shall be vegetated or otherwise protected against soil erosion.
7. Filter cloth shall be placed beneath rip-rap where indicated. The filter cloth shall consist of either woven or no-woven monofilament fiber and shall conform to the ASTM D 1771, ASTM D 1682, Having a thickness of 20-60 Mils, and a grab strength of 90-120 LBS.
8. All boulders shall be well graded selected Class III Rip-rap boulders, natural in color and pre-approved by the Stream Restoration Specialist.
9. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
10. The rock or gravel shall conform to the specified grading limits when installed.
11. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
12. Stone and boulders for the rip-rap may be placed by equipment. It shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the small stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works. Exact placement will be required as directed by the ERI Stream Specialist in the field.
13. The stone shall be placed so that it blends in with the existing grade. If the stone is placed too high, then the flow will be forced out of the channel and scour adjacent to the stone will occur.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED RETENTION POND

ROUTINE MAINTENANCE (BY COMMERCIAL OWNER'S ASSOCIATION)

1. THE FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE (BY COMMERCIAL OWNER'S ASSOCIATION)

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPOES SHALL BE RPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENACE OPERATIONS.
2. SEDIMENT SHALL BE REMOVED FROM THE POND AND FOREBAY NO LATER THAN WHEN THE CAPACITY OF THE POND IS HALF FULL OR WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

HOWARD SOIL CONSERVATION DISTRICT OPERATION, MAINTENANCE, AND INSPECTION NOTE

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN THE USDA,SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS,OR ASSIGNS SHALLL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

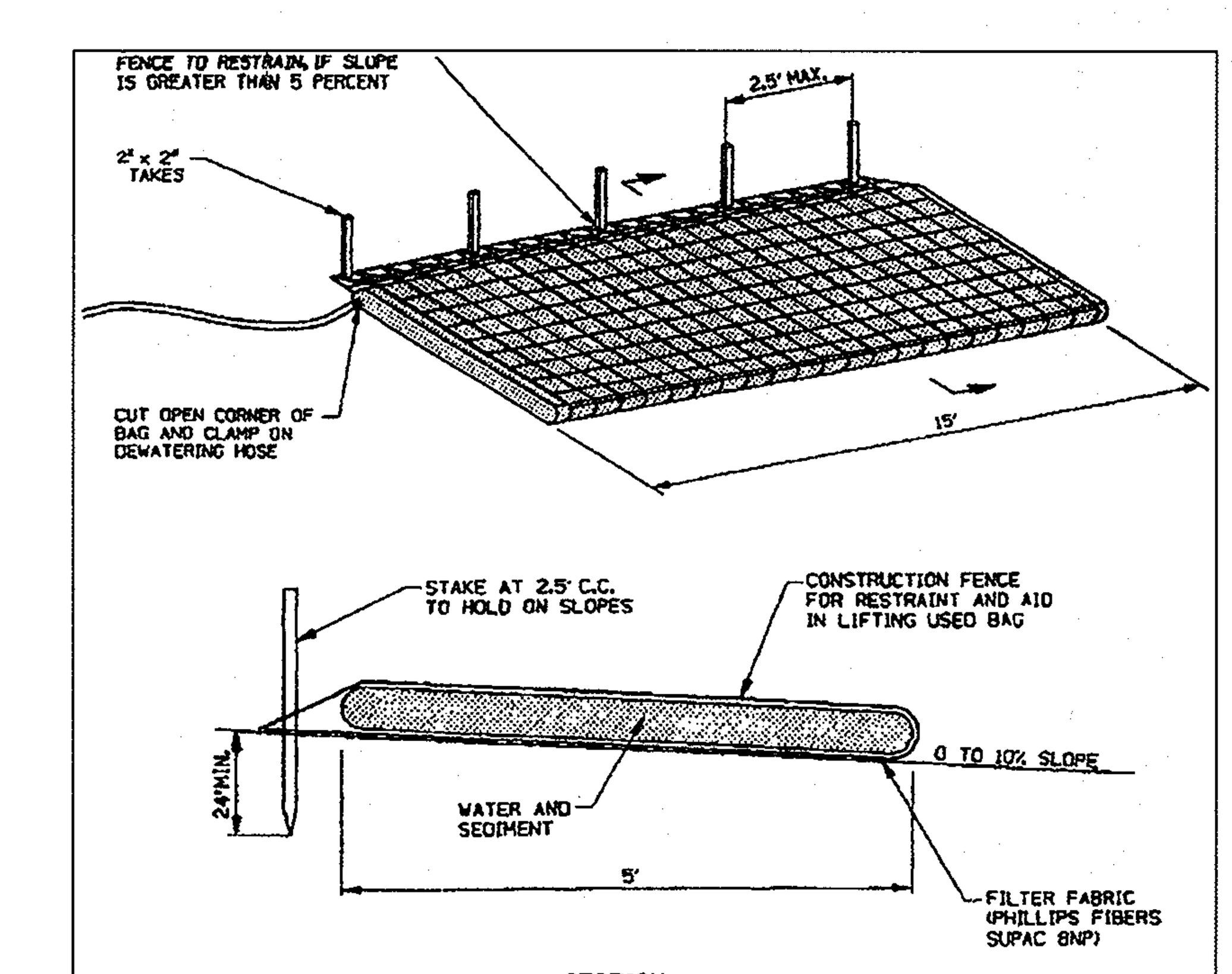
OPERATION AND MAINTENANCE SCHEDULE FOR PUBLICLY OWNED AND MAINTAINED RETENTION POND

ROUTINE MAINTENANCE (BY H.O.A.)

1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPED OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
3. DEBRIS AND LITTLER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET AREA SHELL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE (BY COUNTY)

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHELL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENT SHALL BE REMOVED FROM THE POND, AND FOREBAY, NO LATER THEN WHEN THE CAPACITY OF THE POND, IS HALF-FULL OF SEDIMENT OR WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.



SECTION

NOTES:

1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. WIDTH AND LENGTH SHALL BE AS SHOWN IN THE TABLE.
3. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
4. FILTER BAG SHALL NOTE BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
5. DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.

AVAILABLE FROM:
INDIAN VALLEY INDUSTRIES, INC.
P.O. BOX 810
JOHNSON CITY, NEW YORK 13790
(800) 659-5111

FILTER BAG
TEMPORARY EROSION CONTROL MEASURE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — 2-1-08 — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — 2/15/08 — Date
Chief, Development Engineering Division — 2/15/08 — Date

DEVELOPER'S/BUILDER'S CERTIFICATE
"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."
Signature of Developer/Builder — 1-11-08 — Date

ENGINEER'S CERTIFICATE
"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."
Engineer's Signature — 1-11-08 — Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
Howard Soil Conservation District — 1/22/08 — Date

~~These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.~~
Natural Resources Conservation Service — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081SC-DET07-09.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975
EXPIRATION DATE: MAY 26, 2008

SEDIMENT CONTROL DETAILS AND NOTES
(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)
MAPLE LAWN FARMS
WESTSIDE DISTRICT - AREA 1
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JAN., 2008	41-21&22 46-3	9 OF 32

F-08-55

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

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NORTH

P. 115
PROPERTY OF
THE BOARD OF EDUCATION
OF HOWRAD COUNTY
L. 3218 F. 618
(ZONED: MXD-3)

OPEN SPACE LOT 1
(TO BE CONVEYED TO
HOMEOWNER'S ASSOC.)
(1.5804 AC.)

P. 436
PROPERTY OF
LOIS PETERS, LEROY PETERS
& LAKEISHA PETERS
L. 4283 F. 183
(ZONED: RR-DEO)

E 551280
N 540250

P. 282
MARVIN AND
MARJORIE BOSLEY
L. 1241 F. 158

MD ROUTE 216 (SCAGGSVILLE RD)

PARCEL B-4

PARCEL B-5

NON-BUILDABLE
PARCEL J

OPEN SPACE LOT 3
(TO BE CONVEYED
TO HOWARD COUNTY,
MARYLAND)

SWM FACILITY #6
(PRIVATELY OWNED)

OPEN SPACE
LOT 2
(TO BE
CONVEYED TO
COMMERCIAL
OWNER'S
ASSOC.)

E 1354000
N 540000

NON-BUILDABLE
PARCEL I

WESTSIDE BOULEVARD

NON-BUILDABLE
PARCEL K

PARCEL B-3

PARCEL B-2

OPEN SPACE
LOT 4
(TO BE
CONVEYED TO
HOMEOWNER'S
ASSOC.)

SWM FACILITY #5
(PUBLICLY OWNED)

PARCEL B-1

PARCEL C-18
PLAT No. 19244
SDP-05-36

PARCEL C-19
PLAT No. 19244
SDP-06-67

PARCEL
C-20
PLAT No.
19244

MARKET STREET

PARCEL C-16
PLAT No.
19244

PARCEL C-17
(FUTURE
RESIDENTIAL)

N 540250
E 1354000

DRAINAGE AREA ACCOUNTED FOR
IN THE DESIGN OF FACILITY
CONSTRUCTED UNDER F-03-07.

DRAINAGE AREA ACCOUNTED FOR
IN THE DESIGN OF FACILITY
CONSTRUCTED UNDER F-05-112.

PARCEL C-7
PLAT No. 16624
SDP-04-96

PARCEL C-8
PLAT No. 16624
SDP-04-96

LEGEND

- OPEN SPACE
- COMMERCIAL
- RESIDENTIAL
- ROAD R/W
- DRAINAGE DIVIDE
- SWM POND

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-07

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2/15/08

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\06067\06081\FINALS (SWM-SC)\06081LAND USE.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 17975
EXPIRATION DATE: MAY 26, 2008

STATE OF MARYLAND — CHARLES E. GUTSCHICK — REG. NO. 17975 — PROFESSIONAL ENGINEER

LAND USE PLAN

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4
AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	MXD-3	06081
DATE	TAX MAP – GRID	SHEET
JAN., 2008	41-21&22 46-3	10 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55

SOILS CHART

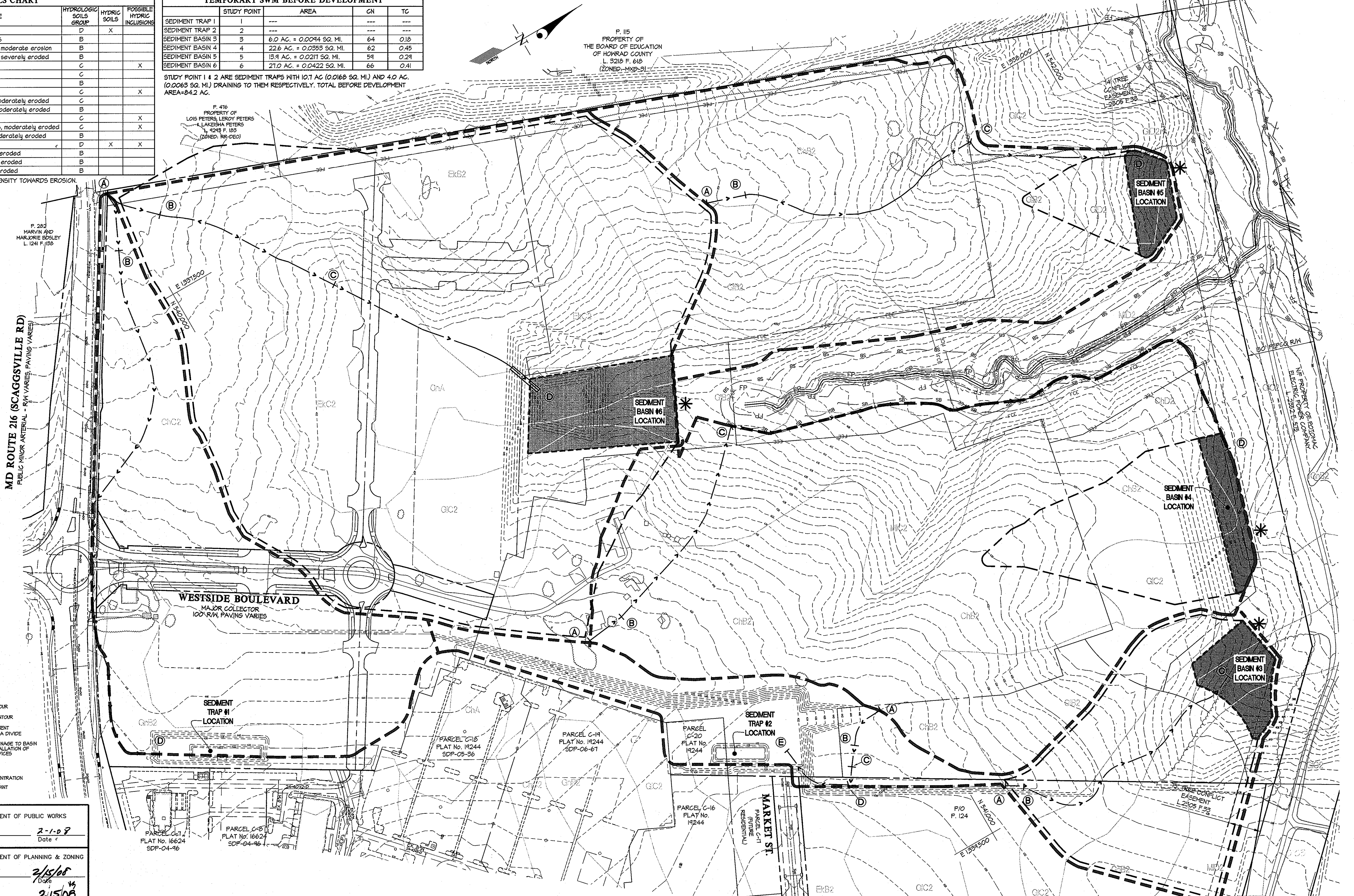
SOIL TYPE	SOIL NAME	HYDROLOGIC SOILS GROUP	HYDRIC SOILS	POSSIBLE HYDRIC INCLUSIONS
Ba	Baile Silt Loam	D	X	
CgB2*	Chester gravely silt loam, 3-8%	B		
ChC2	Chester silt loam, 8-15% slope, moderate erosion	B		
ChC3	Chester silt loam, 8-15% slope, severely eroded	B		
Co	Codorus silt loam,	C		X
CuB*	Comus silt loam	C		
Cs	Comus silt loam	B		
DeA	Delanco silt loam, 0-3% slope	C		X
EkB2*	Elioak silt loam, 3-8% slope, moderately eroded	C		
EnB2*	Elsinboro loam, 3-8% slopes, moderately eroded	B		
GnA	Glenville silt loam, 0-3%	C		X
GnB2*	Glenville silt loam, 3-8% slopes, moderately eroded	C		X
GlC2*	Glenelg loam, 3-8% slopes, moderately eroded	B		
Ha	Hatboro silt loam	D	X	X
MlB2*	Manor loam, 3-8%, moderately eroded	B		
MlC2	Manor loam, 8-15%, moderately eroded	B		
MlD3*	Manor loam, 15-25%, severely eroded	B		

* SOILS WITH A MODERATE TO HIGH PROPENSITY TOWARDS EROSION.

TEMPORARY SWM BEFORE DEVELOPMENT

	STUDY POINT	AREA	CN	TC
SEDIMENT TRAP 1	1	---	---	---
SEDIMENT TRAP 2	2	---	---	---
SEDIMENT BASIN 3	3	6.0 AC. = 0.0094 SQ. MI.	64	0.18
SEDIMENT BASIN 4	4	22.6 AC. = 0.0353 SQ. MI.	62	0.45
SEDIMENT BASIN 5	5	13.9 AC. = 0.0217 SQ. MI.	59	0.29
SEDIMENT BASIN 6	6	27.0 AC. = 0.0422 SQ. MI.	66	0.41

STUDY POINT 1 & 2 ARE SEDIMENT TRAPS WITH 10.7 AC (0.0168 SQ. MI.) AND 4.0 AC. (0.0063 SQ. MI.) DRAINING TO THEM RESPECTIVELY. TOTAL BEFORE DEVELOPMENT AREA=84.2 AC.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2/15/08

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L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081DAM-EX.dwg | DES. DEV | DRN. KLP | CHK. DEV

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TEMPORARY SWM DRAINAGE AREA MAP - PRE-DEVELOPMENT

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

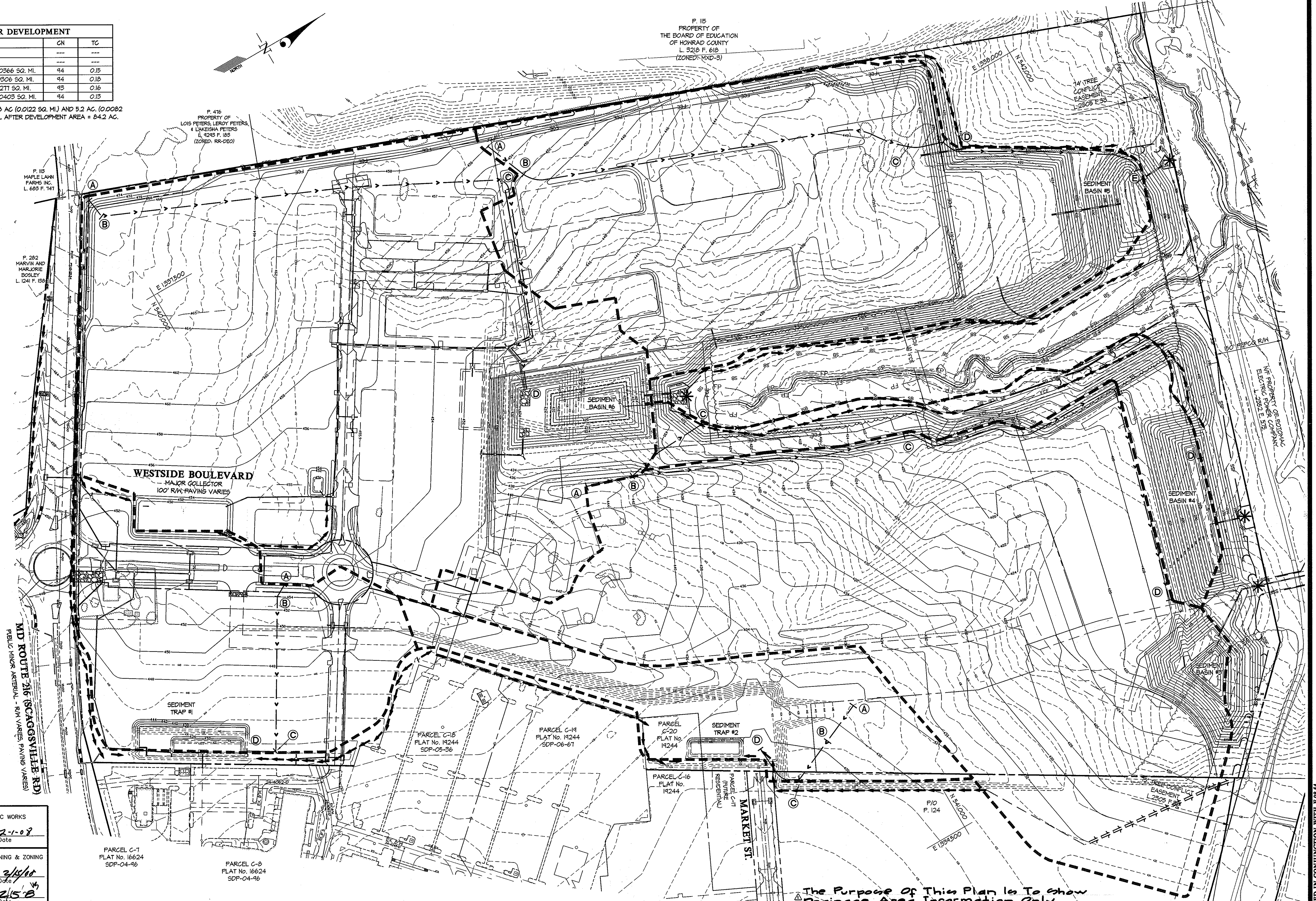
SCALE	ZONING	G. L. W. FILE No.
1" = 100'	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JAN., 2008	41-21&22 46-3	11 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55

TEMPORARY SWM AFTER DEVELOPMENT				
	STUDY POINT	AREA	CN	TC
SEDIMENT TRAP 1	1	---	---	---
SEDIMENT TRAP 2	2	---	---	---
SEDIMENT BASIN 3	3	23.4 AC. = 0.0366 SQ. MI.	94	0.15
SEDIMENT BASIN 4	4	19.6 AC. = 0.0306 SQ. MI.	94	0.18
SEDIMENT BASIN 5	5	17.7 AC. = 0.0277 SQ. MI.	93	0.16
SEDIMENT BASIN 6	6	25.8 AC. = 0.0403 SQ. MI.	94	0.13

STUDY POINT 1 & 2 ARE SEDIMENT TRAPS WITH 7.8 AC (0.0122 SQ. MI.) AND 5.2 AC. (0.0082 SQ. MI.) DRAINING TO THEM RESPECTIVELY. TOTAL AFTER DEVELOPMENT AREA = 84.2 AC.



△ The Purpose Of This Plan Is To Show Drainage Area Information Only.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature] 2-1-08
Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

[signature] 2/15/08
Chief, Division of Land Development — Date

[signature] 2/15/08
Chief, Development Engineering Division — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081DAM-PROP.dwg | DES. DEV | DRN. KLP | CHK. DEV

DATE	REVISION	BY	APP'R.
07/01/08	△ added purpose note		

PREPARED FOR:
G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2008

TEMPORARY SWM DRAINAGE AREA MAP - POST-DEVELOPMENT

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 100'	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JAN., 2008	41-21&22 46-3	12 OF 32

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F-08-55

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081DAM-PROP.dwg 1/10/2008 11:09:35 AM EST

STORMWATER MANAGEMENT VOLUMES				
	FACILITY #3		FACILITY #6	
DESIGN CRITERIA ITEM	REQUIRED	PROVIDED	REQUIRED	PROVIDED
WATER QUALITY VOLUME	21,699 c.f.	25,502 c.f.	89,913 c.f.	101,514 c.f.
RECHARGE VOLUME	3,303 c.f.	SEE NOTE 5 BELOW	14,110 c.f.	SEE NOTE 5 BELOW
CHANNEL PROTECTION	37,087 c.f.	40,801 c.f. @ 399.10	164,624 c.f.	185,130 c.f. @ 429.38

STORMWATER MANAGEMENT SUMMARY				
	FACILITY #3		FACILITY #6	
DESIGN CRITERIA ITEM	BEFORE DEV.	AFTER DEV.	BEFORE DEV.	AFTER DEV.
DRAINAGE AREA	11.8 ac.	11.8 ac.	35.2 ac.	35.2 ac.
CURVE NUMBER	58	86	58	94
TIME OF CONCENTRATION	0.24 Hr.	0.17 Hr.	0.31 Hr.	0.14 Hr.

NOTES:

1. FACILITY #3 WILL BE PRIVATELY OWNED & MAINTAINED. AN OPEN SPACE LOT WILL BE CONVEYED TO THE HOME OWNER'S ASSOCIATION.
2. FACILITY #6 WILL BE OWNED & MAINTAINED. AN OPEN SPACE LOT WILL BE CONVEYED TO THE COMMERCIAL OWNER'S ASSOCIATION.
3. BOTH FACILITIES WILL BE P2 WET PONDS WITH EXTENDED DETENTION.
4. BOTH FACILITIES WILL HAVE AN 'A' POND CLASSIFICATION.
5. THE VOLUME WILL BE PROVIDED IN AN INFILTRATION TRENCH TYPE FACILITY ON A FUTURE SITE DEVELOPMENT PLAN. THE FACILITY WILL SATISFY THE STORAGE REQUIREMENTS FOR BOTH FACILITY 3 AND 6.

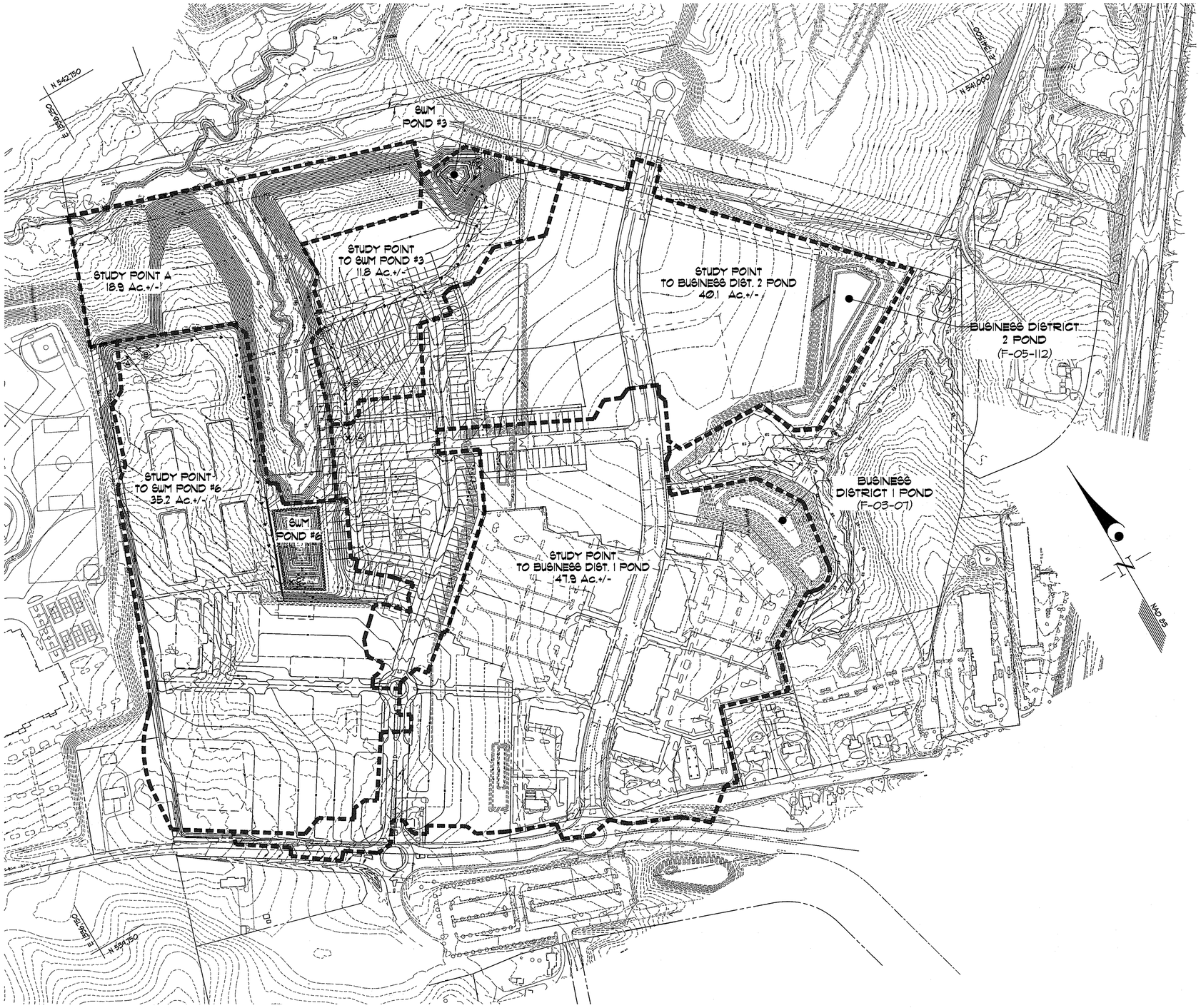
PERMANENT SWM SUMMARY			
FACILITY #3			
	Before	Unmanaged	Managed
1 YR	0.66 c.f.s.	20.09 c.f.s.	0.34 c.f.s. @ 399.10
2 YR	2.71 c.f.s.	21.69 c.f.s.	2.45 c.f.s. @ 399.35
10 YR	14.30 c.f.s.	52.50 c.f.s.	43.17 c.f.s. @ 399.74
100 YR	32.66 c.f.s.	80.04 c.f.s.	72.63 c.f.s. @ 399.97
FACILITY #6			
	Before	Unmanaged	Managed
1 YR	1.63 c.f.s.	84.91 c.f.s.	1.64 c.f.s. @ 429.38
2 YR	7.97 c.f.s.	113.75 c.f.s.	9.70 c.f.s. @ 429.81
10 YR	40.22 c.f.s.	190.18 c.f.s.	139.40 c.f.s. @ 430.40
100 YR	89.34 c.f.s.	273.56 c.f.s.	270.19 c.f.s. @ 430.78

TOP OF DAM @ FACILITY #3 = 404.1
TOP OF DAM @ FACILITY #6 = 433.0

PERMANENT SWM SUMMARY (CLOGGED)			
FACILITY #3			
	Before	Unmanaged	Managed
1 YR	0.66 c.f.s.	20.09 c.f.s.	16.36 c.f.s. @ 399.54
2 YR	2.71 c.f.s.	21.69 c.f.s.	24.27 c.f.s. @ 399.60
10 YR	14.30 c.f.s.	52.50 c.f.s.	46.05 c.f.s. @ 399.77
100 YR	32.66 c.f.s.	80.04 c.f.s.	70.19 c.f.s. @ 399.95
FACILITY #6			
	Before	Unmanaged	Managed
1 YR	1.63 c.f.s.	84.91 c.f.s.	73.73 c.f.s. @ 430.17
2 YR	7.97 c.f.s.	113.75 c.f.s.	103.68 c.f.s. @ 430.29
10 YR	40.22 c.f.s.	190.18 c.f.s.	173.00 c.f.s. @ 430.51
100 YR	89.34 c.f.s.	273.56 c.f.s.	250.91 c.f.s. @ 430.72

TEMPORARY SWM SUMMARY			
BASIN #3			
	Before	Unmanaged	Managed
1 YR	1.39 c.f.s.	58.62 c.f.s.	1.41 c.f.s. @ 401.13
2 YR	3.41 c.f.s.	74.69 c.f.s.	18.11 c.f.s. @ 401.40
10 YR	12.13 c.f.s.	124.45 c.f.s.	106.34 c.f.s. @ 402.08
BASIN #4			
	Before	Unmanaged	Managed
1 YR	2.52 c.f.s.	46.77 c.f.s.	2.42 c.f.s. @ 343.70
2 YR	6.51 c.f.s.	59.67 c.f.s.	16.21 c.f.s. @ 344.12
10 YR	27.64 c.f.s.	100.01 c.f.s.	71.68 c.f.s. @ 344.83
BASIN #5			
	Before	Unmanaged	Managed
1 YR	0.95 c.f.s.	42.01 c.f.s.	0.74 c.f.s. @ 387.09
2 YR	3.60 c.f.s.	54.02 c.f.s.	7.16 c.f.s. @ 387.34
10 YR	17.14 c.f.s.	91.65 c.f.s.	68.51 c.f.s. @ 387.92
BASIN #6			
	Before	Unmanaged	Managed
1 YR	6.24 c.f.s.	66.34 c.f.s.	5.64 c.f.s. @ 426.75
2 YR	13.28 c.f.s.	84.46 c.f.s.	6.58 c.f.s. @ 427.55
10 YR	43.32 c.f.s.	141.13 c.f.s.	13.39 c.f.s. @ 429.80

TOP OF DAM @ BASIN 3 = 404.1
TOP OF DAM @ BASIN 4 = 346.9
TOP OF DAM @ BASIN 5 = 390.0
TOP OF DAM @ BASIN 6 = 433.0



LEGEND

------358------	EXISTING CONTOURS
——358——	PROPOSED CONTOURS
	DRAINAGE DIVIDES
→—→—→	TIME OF CONCENTRATION (POST-DEVELOPMENT)
(A)	T_c STUDY POINT

STORMWATER MANAGEMENT AREAS (POST-DEVELOPMENT)

STUDY POINT TO SWM POND #6	35.2 AC.±
STUDY POINT TO SWM POND #3	11.8 AC.±
STUDY POINT TO BUSINESS DIST. 1 POND (F-03-07)	47.9 AC.±
STUDY POINT TO BUSINESS DIST. 2 POND (F-05-112)	40.1 AC.±
STUDY POINT A	18.9 AC.±
TOTAL DRAINAGE AREA	153.9 AC.±

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2/15/08

⚠ The Purpose Of This Plan Is To Show Drainage Area Information Only.

GLW GUTSCHICK LITTLE & WEBER, P.A.

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DATE	REVISION	BY	APP'R.
01/01/08	⚠ added purpose note		

PREPARED FOR:
G&R/Wooseal LLC
SUITE 300 WOODHOLME CENTER
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ATTN: CHARLIE O'DONOVAN
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PROFESSIONAL CERTIFICATION

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ULTIMATE STORMWATER MANAGEMENT OVERALL DRAINAGE AREA MAP

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

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1"=200'	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JAN., 2008	41-21&22 46-3	13 OF 32

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F-08-55

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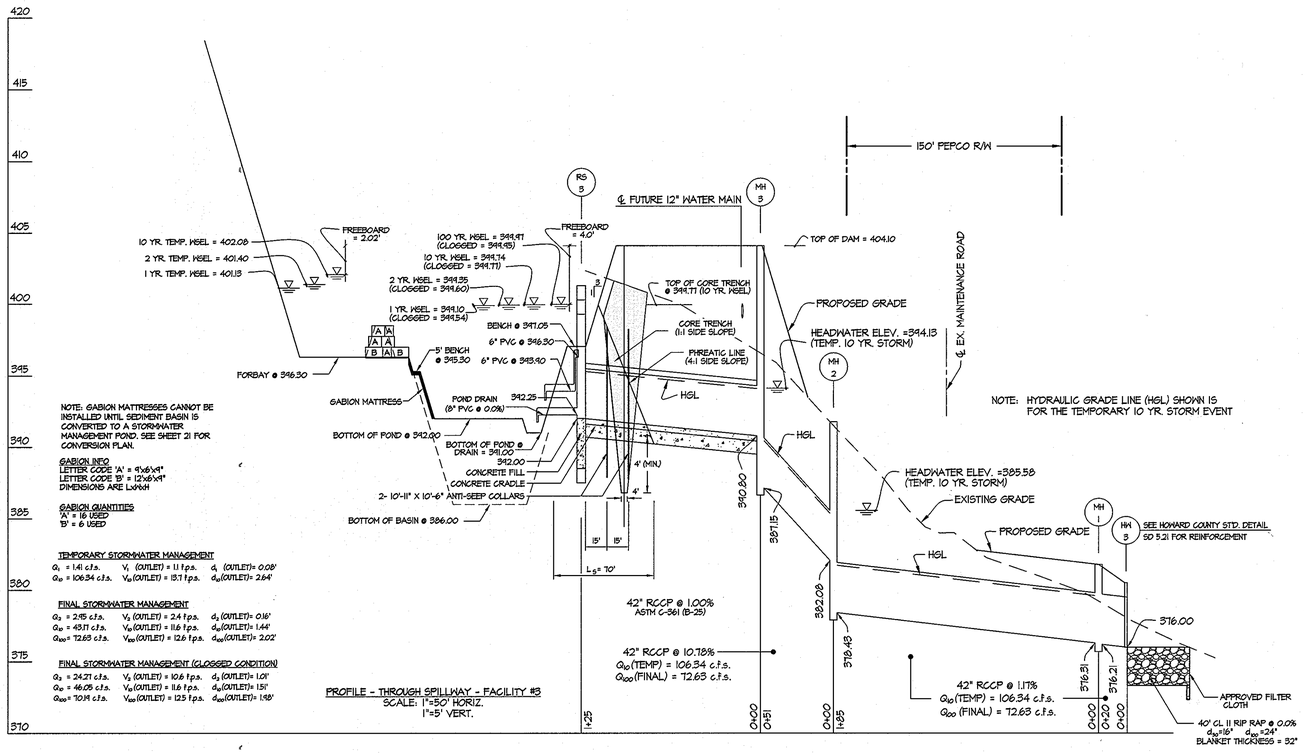


NOTE: GABION MATTRESSES CANNOT BE INSTALLED UNTIL SEDIMENT BASIN 15 CONVERTED TO A STORMWATER MANAGEMENT POND. SEE SHEET 21 FOR CONVERSION PLAN.

GABION INFO
LETTER CODE 'A' = 9'x6'x9"
LETTER CODE 'B' = 12'x6'x9"
DIMENSIONS ARE LxWxH

GABION QUANTITIES
'A' = 16 USED
'B' = 6 USED

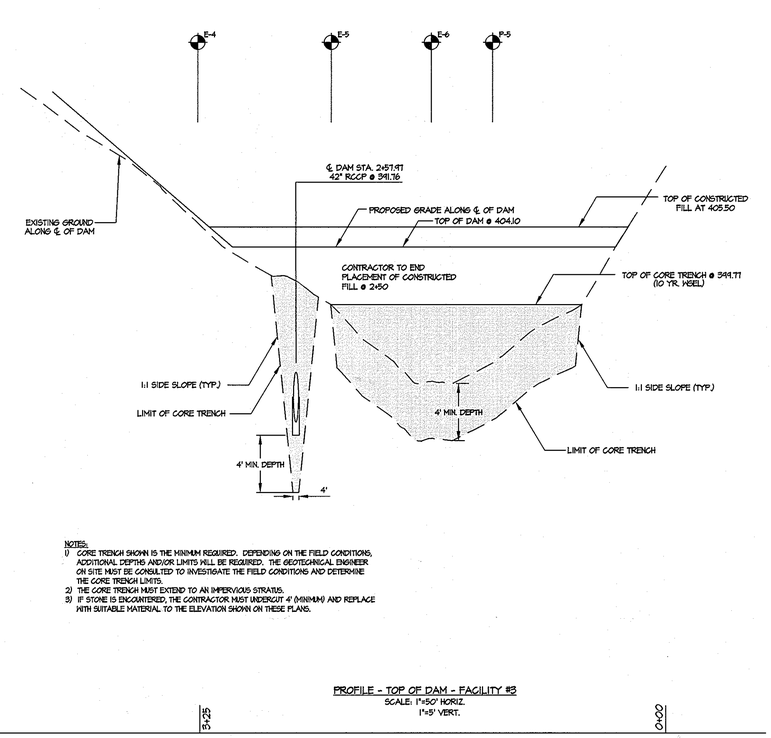
TEMPORARY STORMWATER MANAGEMENT
Q_1 = 1.41 c.f.s. V_1 (OUTLET) = 1.1 f.p.s. d_1 (OUTLET)= 0.08'
Q_{10} = 106.34 c.f.s. V_{10}(OUTLET) = 15.1 f.p.s. d_{10}(OUTLET)= 2.64'

FINAL STORMWATER MANAGEMENT
Q_2 = 2.95 c.f.s. V_2 (OUTLET) = 2.4 f.p.s. d_2 (OUTLET)= 0.16'
Q_{10} = 43.11 c.f.s. V_{10}(OUTLET) = 11.6 f.p.s. d_{10}(OUTLET)= 1.44'
Q_{100}= 72.63 c.f.s. V_{100}(OUTLET) = 12.6 f.p.s. d_{100}(OUTLET)= 2.02'

FINAL STORMWATER MANAGEMENT (CLOGGED CONDITION)
Q_2 = 24.21 c.f.s. V_2 (OUTLET) = 10.6 f.p.s. d_2 (OUTLET)= 1.01'
Q_{10} = 46.09 c.f.s. V_{10}(OUTLET) = 11.6 f.p.s. d_{10}(OUTLET)= 1.51'
Q_{100}= 70.91 c.f.s. V_{100}(OUTLET) = 12.5 f.p.s. d_{100}(OUTLET)= 1.98'

PROFILE - THROUGH SPILLWAY - FACILITY #3
SCALE: 1"=50' HORIZ.
1"=5' VERT.

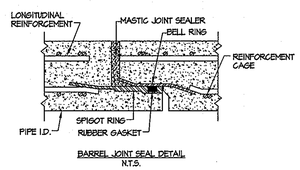
NOTE: HYDRAULIC GRADE LINE (HGL) SHOWN IS FOR THE TEMPORARY 10 YR. STORM EVENT



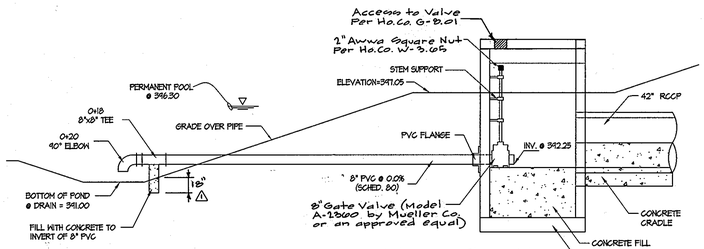
NOTES:
1) CORE TRENCH SHOWN IS THE MINIMUM REQUIRED. DEPENDING ON THE FIELD CONDITIONS, ADDITIONAL DEPTHS AND/OR LIMITS WILL BE REQUIRED. THE GEOTECHNICAL ENGINEER ON SITE MUST BE CONSULTED TO INVESTIGATE THE FIELD CONDITIONS AND DETERMINE THE CORE TRENCH LIMITS.
2) THE CORE TRENCH MUST EXTEND TO AN IMPERVIOUS STRATUS.
3) IF STONE IS ENCOUNTERED, THE CONTRACTOR MUST UNDERCUT 4' (MINIMUM) AND REPLACE WITH SUITABLE MATERIAL TO THE ELEVATION SHOWN ON THESE PLANS.

PROFILE - TOP OF DAM - FACILITY #3
SCALE: 1"=50' HORIZ.
1"=5' VERT.

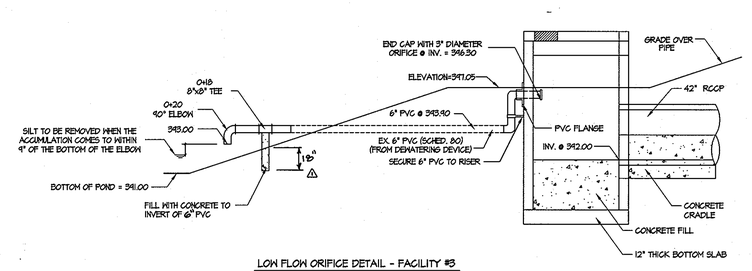
NOTES:
1. WEIR OPENINGS WILL BE PROVIDED ON THE FRONT, REAR AND BOTH SIDES OF THE RISER.
2. CONTRACTOR MUST PROVIDE RUBBER GASKETS AT THE PIPE JOINTS ALONG THE 36" RCCP.
3. THE FIRST PIPE JOINT MUST BE WITHIN 4 FEET OF THE RISER STRUCTURE.
4. CONTRACTOR MUST USE A MASTIC GROUT WHERE THE 36" RCCP CONNECTS TO THE RISER.



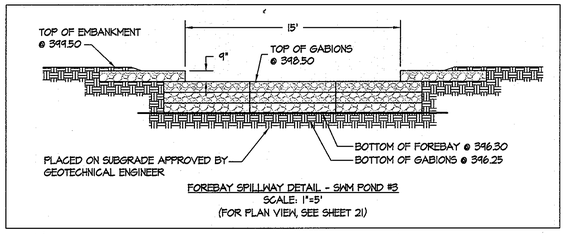
BARREL JOINT SEAL DETAIL
N.T.S.



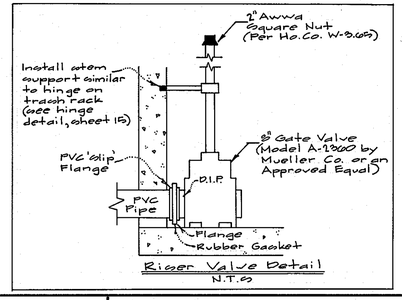
POND DRAIN PROFILE
SCALE: 1"=5'



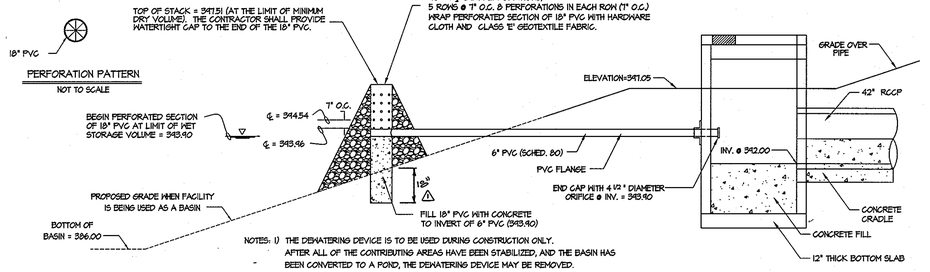
LOW FLOW ORIFICE DETAIL - FACILITY #3
SCALE: 1"=5'



FOREBAY SPILLWAY DETAIL - SWM POND #3
SCALE: 1"=5'
(FOR PLAN VIEW, SEE SHEET 21)



Riser Valve Detail
N.T.S.



NOTES: 1) THE DEWATERING DEVICE IS TO BE USED DURING CONSTRUCTION ONLY. AFTER ALL OF THE CONTRIBUTING AREAS HAVE BEEN STABILIZED, AND THE BASIN HAS BEEN CONVERTED TO A POND, THE DEWATERING DEVICE MAY BE REMOVED.

2) THE CONTRACTOR IS TO TEMPORARILY BLOCK THE 6" PVC (@ INV. = 346.30) UNTIL THE BASIN HAS BEEN CONVERTED TO A STORMWATER MANAGEMENT POND. AT THAT TIME THE 6" PVC @ 346.30 WILL BE OPENED AND THE 6" PVC (@ INV. = 343.90) WILL BE PERMANENTLY BLOCKED.

TEMPORARY DEWATERING DEVICE DETAIL - FACILITY #3
SCALE: 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/5/08

Chief, Development Engineering Division — Date 2/5/08

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Signature of Developer/Builder — Date 1-11-08

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Engineer's Signature — Date 1-11-08

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — Date 1/22/08

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Natural Resources Conservation Service — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
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L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081SWM01.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
07/01/08	⚠ added dimensions, rev pond drain profile & added riser valve det.		

PREPARED FOR:
G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
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ATTN: CHARLIE O'DONOVAN
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STATE OF MARYLAND — CHARLES R. GUTSCHICK — 12975 — REGISTERED PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT DETAILS AND NOTES - SWM POND 3

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

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JAN., 2008	41-21&22 46-3	14 OF 32

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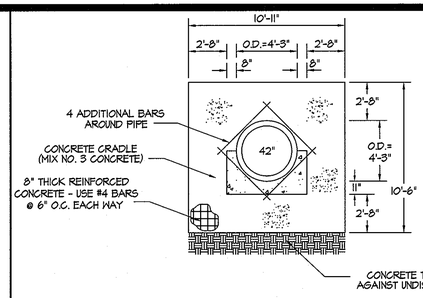
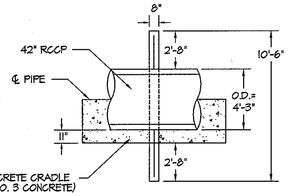
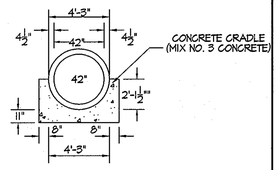


ANTI-SEEP COLLAR DETAILS

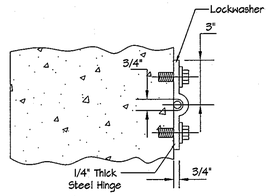
SCALE: 1"= 5'





CONCRETE CRADLE DETAIL

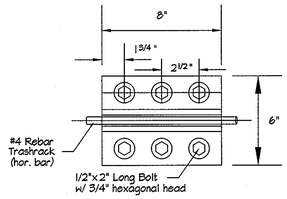
SCALE: 1"= 5'



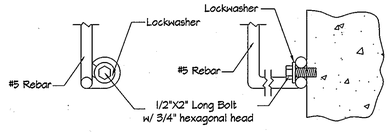
SIDE VIEW

HINGE DETAIL

Not to Scale



FRONT VIEW



DETAIL FOR SECURING TRASH RACK

Not to Scale

Note: Trash rack mountings to be galvanized after fabrication.

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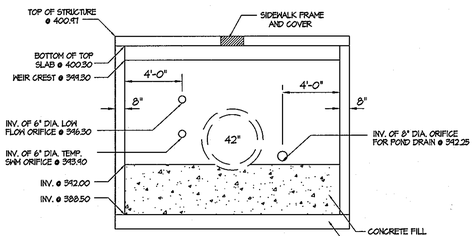
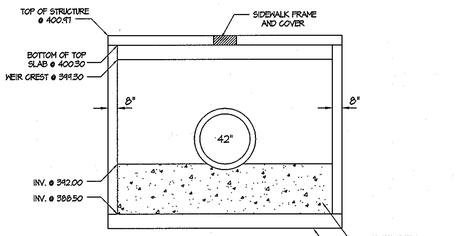


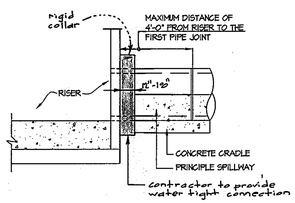
FRONT OF RS-3

SCALE: 1"=5'



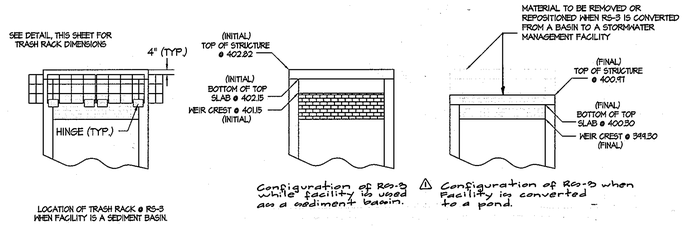
REAR OF RS-3

SCALE: 1"=5'



DETAIL FOR CONNECTING PRINCIPAL SPILLWAY TO RISER STRUCTURE

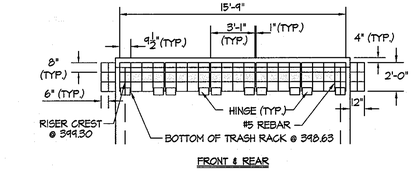
SCALE: 1"= 5'



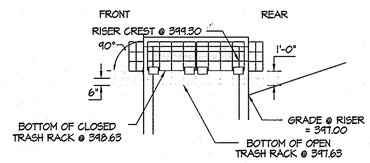
LOCATION OF TRASH RACK @ RS-3 WHEN FACILITY IS A SEDIMENT BASIN.

RISER MODIFICATION DETAIL

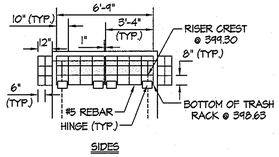
SCALE: 1"= 5'



FRONT & REAR



GRADE AT OPEN TRASH RACK

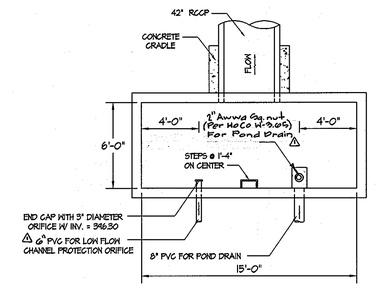


SIDES

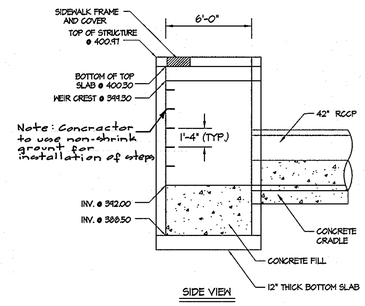
NOTES:
1. TRASH RACK MOUNTINGS TO BE GALVANIZED AFTER FABRICATION
2. REBAR MUST BE GALVANIZED AND PAINTED BATTLESHIP GRAY.

TRASH RACK DETAILS

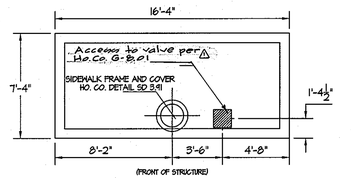
SCALE: 1"= 5'



(FRONT OF STRUCTURE)



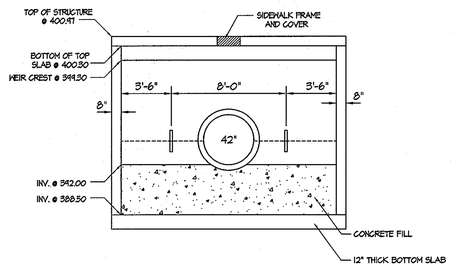
SIDE VIEW

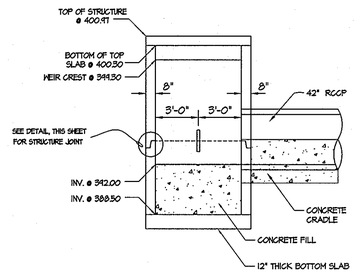


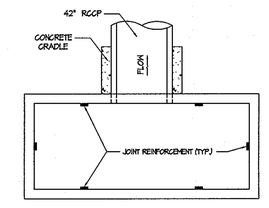
(FRONT OF STRUCTURE)

DETAILS FOR LOCATION OF STEPS AND MANHOLE FRAME AND COVER

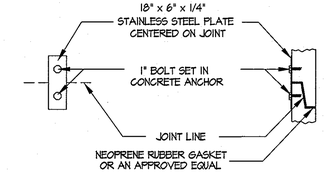
SCALE: 1"=5'







(FRONT OF STRUCTURE)



JOINT REINFORCEMENT DETAIL

SCALE: 1"= 2'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2/15/08

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Signature of Developer/Builder — Date 1-11-08

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Engineer's Signature — Date 1-11-08

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — Date 1/22/08

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Natural Resources Conservation Service — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS

3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866

TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\06067\06081\FINALS (SWM-SC)\06081SWM01.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
01/21/08	⚠ replaced handwheel & valve accesses per Ho.Co. comments & rev. notes		

PREPARED FOR:

G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2008

STATE OF MARYLAND — CHARLES O'DONOVAN — 12975 — REGISTERED PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT DETAILS AND NOTES - SWM POND 3

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

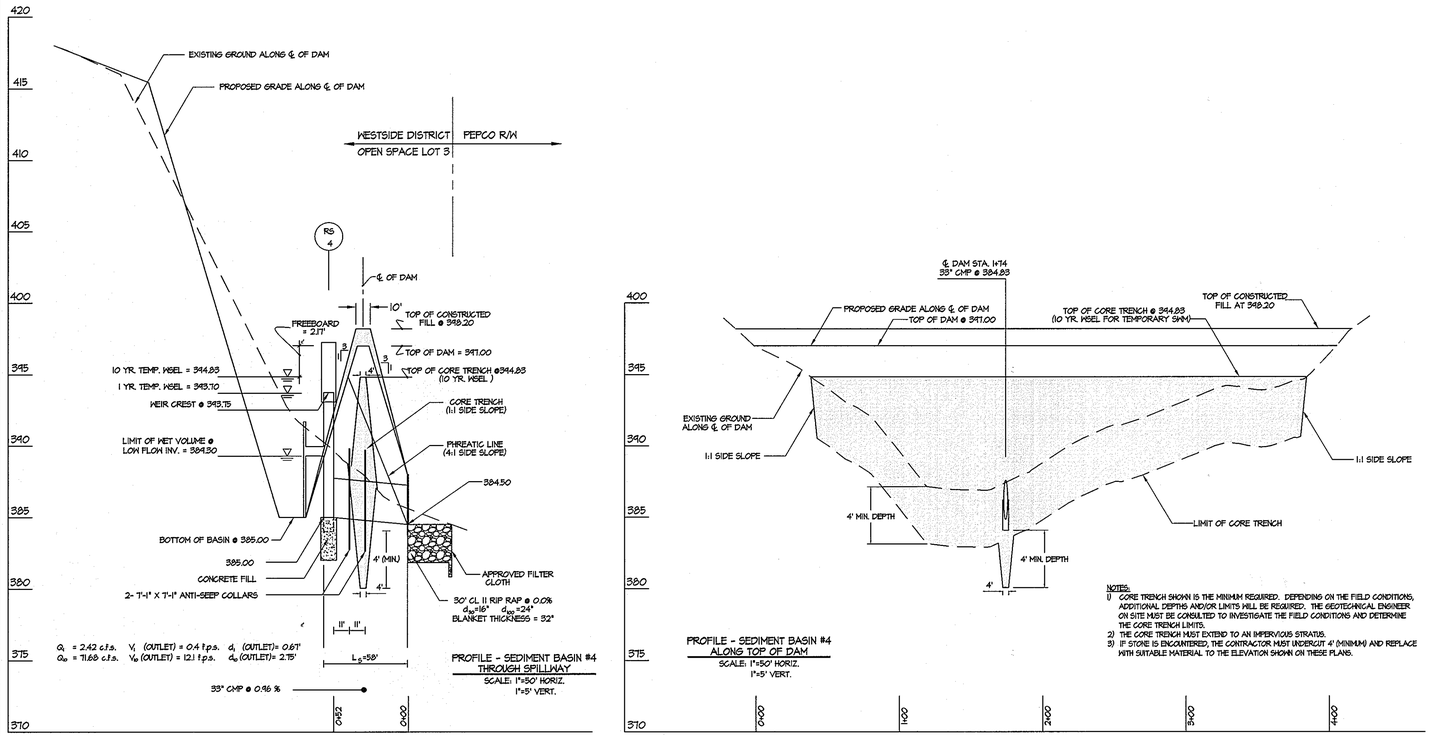
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JAN., 2008	41-21&22 46-3	15 OF 32

F-08-55

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

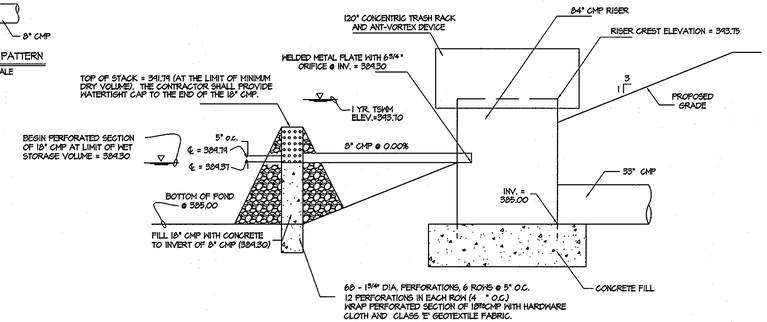


PROFILE - SEDIMENT BASIN #4 THROUGH SPILLWAY
SCALE: 1"=50' HORIZ.
1"=5' VERT.

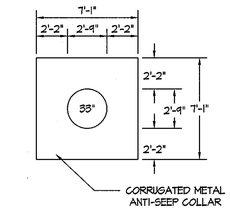
PROFILE - SEDIMENT BASIN #4 ALONG TOP OF DAM
SCALE: 1"=50' HORIZ.
1"=5' VERT.

NOTES:
1) CORE TRENCH SHOWN IS THE MINIMUM REQUIRED. DEPENDING ON THE FIELD CONDITIONS, ADDITIONAL DEPTHS AND/OR LIMITS WILL BE REQUIRED. THE GEOTECHNICAL ENGINEER ON SITE MUST BE CONSULTED TO INVESTIGATE THE FIELD CONDITIONS AND DETERMINE THE CORE TRENCH LIMITS.
2) THE CORE TRENCH MUST EXTEND TO AN IMPERVIOUS STRATUS.
3) IF STONE IS ENCOUNTERED, THE CONTRACTOR MUST UNDERCUT 4' (MINIMUM) AND REPLACE WITH SUITABLE MATERIAL TO THE ELEVATION SHOWN ON THESE PLANS.

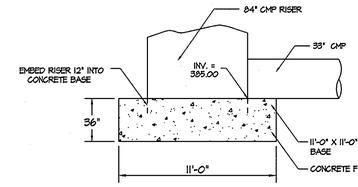
PERFORATION PATTERN
NOT TO SCALE



TEMPORARY DEWATERING DEVICE DETAIL - FACILITY #4
SCALE: 1" = 5'

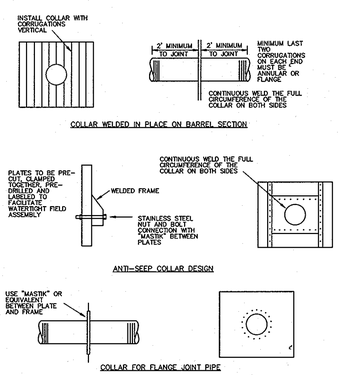


ANTI-SEEP COLLAR DETAILS
SCALE: 1"= 5'



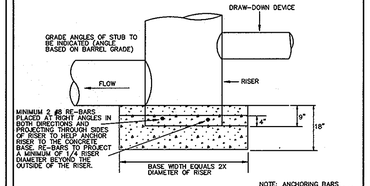
CONCRETE BASE DETAIL
SCALE: 1"= 5'

DETAIL 14 - TYPICAL ANTI-SEEP COLLARS



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE C - 10 - 24 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 15 - RISER BASE DETAIL



Construction Specifications

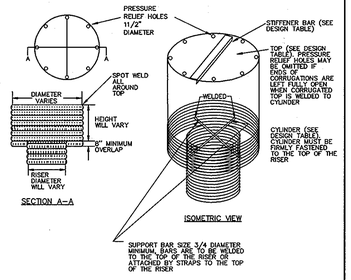
The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers 10" or less in height are:

1. A concrete base 18" thick with the riser embedded 9" in the base.
2. A 1/4" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2' of stone, gravel, or compacted earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.

Note: For risers greater than ten feet high computations shall be made to design a base which will prevent floatation. The minimum factor of safety shall be 1.20 (downward forces ÷ 1.20 x upward forces).

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE C - 10 - 25 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

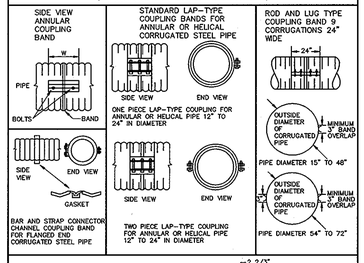
DETAIL 16 - CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE C - 10 - 26 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 17 - TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE

(ALL CONNECTOR BANDS REQUIRE NEOPRENE GASKETS)



NOTE: UNDER NO CIRCUMSTANCES WILL THE DIMPLE (UNIVERSAL) CONNECTOR BAND BE ACCEPTABLE FOR USE IN ANY SEDIMENT CONTROL OR STORMWATER MANAGEMENT STRUCTURE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE C - 10 - 27 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2/15/08

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Signature of Developer/Builder — *Date* 1-11-08

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Howard Soil Conservation District — *Date* 1/22/08

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Natural Resources Conservation Service — *Date*

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
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L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081SWM01.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R Maxwell LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

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STATE OF MARYLAND — CHARLES E. GUTSCHICK — REG. NO. 12975 — PROFESSIONAL ENGINEER

TEMPORARY STORMWATER MANAGEMENT DETAILS AND NOTES - SWM BASIN 4

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

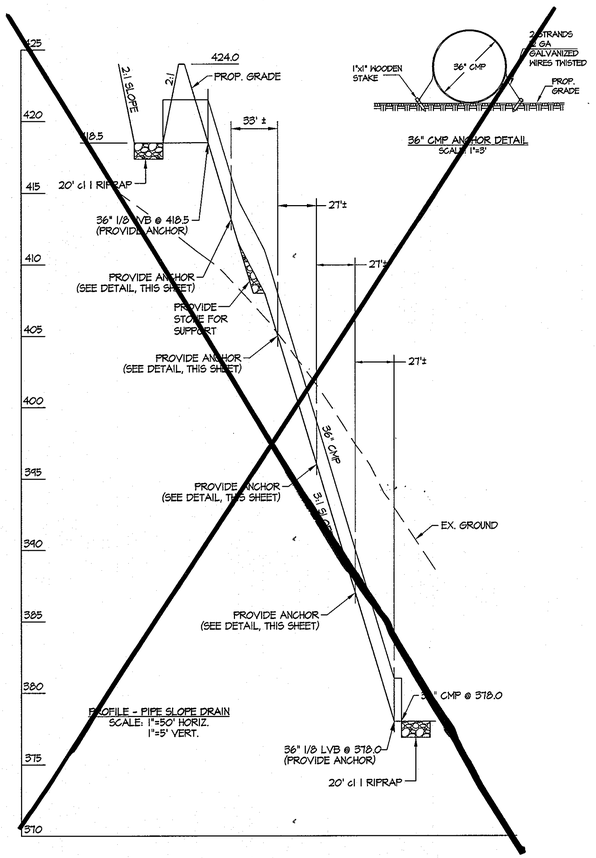
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'F', 'J', AND 'K'

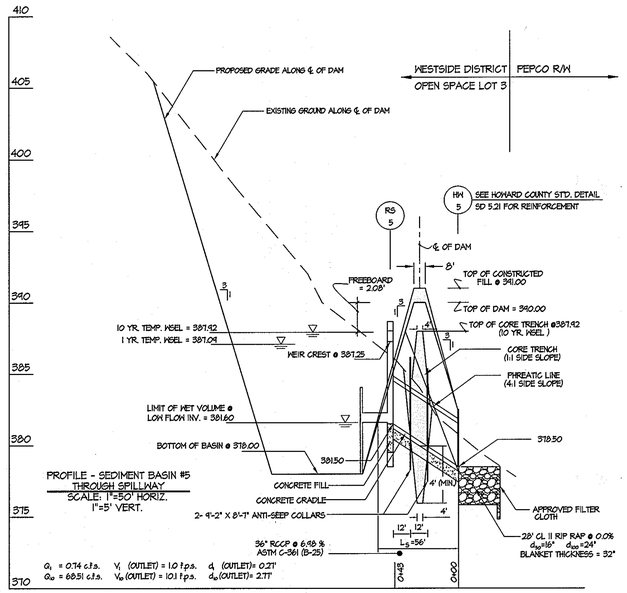
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JAN., 2008	41-21&22 46-3	16 OF 32

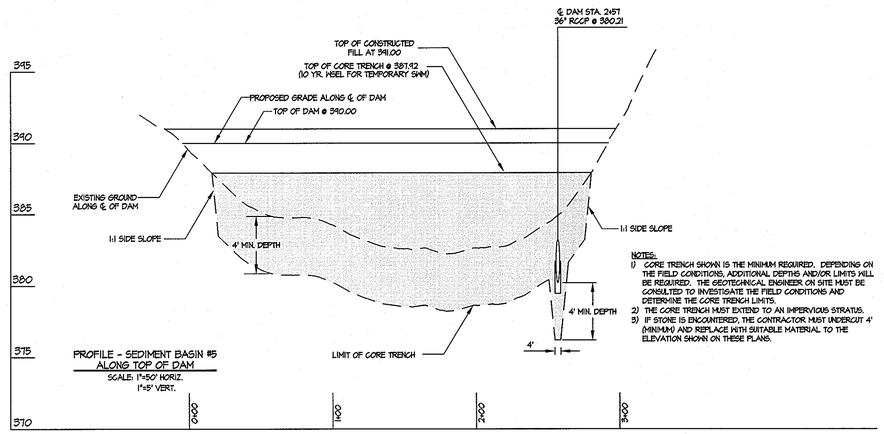
THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55





PROFILE - SEDIMENT BASIN #5
THROUGH SPILLWAY
SCALE: 1"=50' HORIZ.
1"=5' VERT.



PROFILE - SEDIMENT BASIN #5
ALONG TOP OF DAM
SCALE: 1"=50' HORIZ.
1"=5' VERT.

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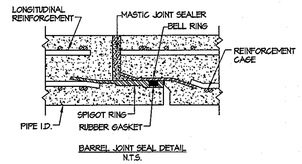
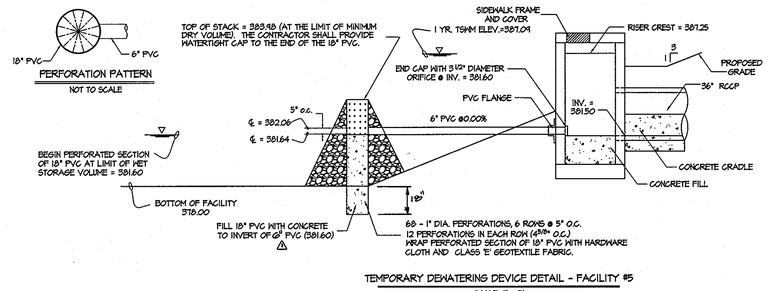
3) IF STONE IS ENCOUNTERED, THE CONTRACTOR MUST UNDERCUT 4' (MINIMUM) AND REPLACE WITH SUITABLE MATERIAL TO THE ELEVATION SHOWN ON THESE PLANS.

NOTES:
1. WEIR OPENINGS WILL BE PROVIDED ON THE FRONT, REAR AND BOTH SIDES OF THE RISER.
2. CONTRACTOR MUST PROVIDE RUBBER GASKETS AT THE POPE JOINTS ALONG THE 36" RCCP.
3. THE FIRST PIPE JOINT MUST BE WITHIN 4 FEET OF THE RISER STRUCTURE.
4. CONTRACTOR MUST USE A MASTIC GROUT WHERE THE 36" RCCP CONNECTS TO THE RISER.



BARREL JOINT SEAL DETAIL
N.T.S.



TEMPORARY DEWATERING DEVICE DETAIL - FACILITY #5
SCALE: 1" = 5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-7-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2/15/08

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Howard Soil Conservation District — Date 1/22/08

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Natural Resources Conservation Service — Date

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CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081SWM01.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
07/01/08	Δ removed pipe drain profile; rev callouts & pipe size & added dimension		

PREPARED FOR:
G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2008

STATE OF MARYLAND — CHARLES E. GUTSCHICK — 12975 — REGISTERED PROFESSIONAL ENGINEER

TEMPORARY STORMWATER MANAGEMENT DETAILS AND NOTES - SWM BASIN 5

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

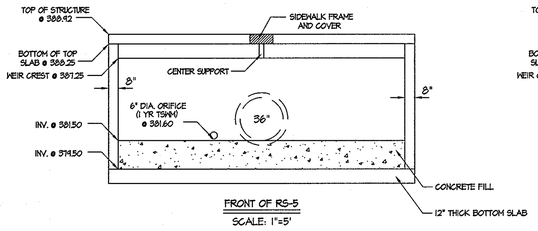
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4
AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JAN., 2008	41-21&22 46-3	17 OF 32

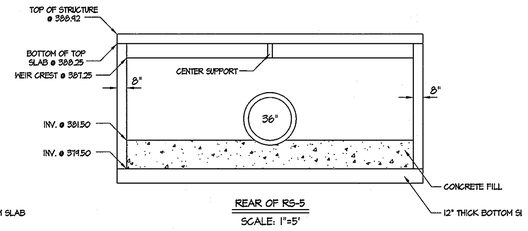
THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55



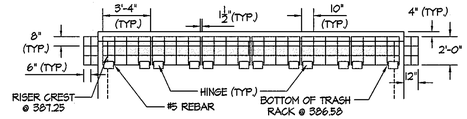
FRONT OF RS-5

SCALE: 1"=5'

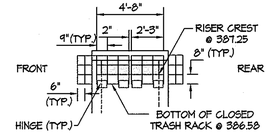


REAR OF RS-5

SCALE: 1"=5'



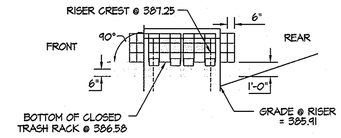
FRONT & REAR



SIDES

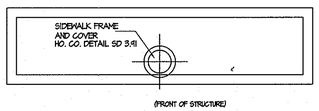
TRASH RACK DETAILS

SCALE: 1"= 5'

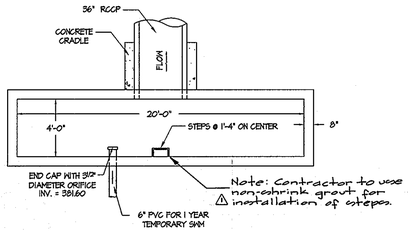


GRADE AT
OPEN TRASH RACK

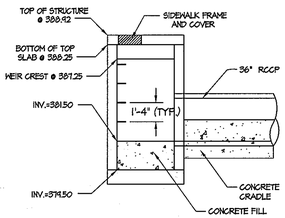
NOTES:
1. TRASH RACK MOUNTINGS TO BE GALVANIZED AFTER FABRICATION
2. REBAR MUST BE GALVANIZED AND PAINTED BATTLESHIP GRAY.



(FRONT OF STRUCTURE)



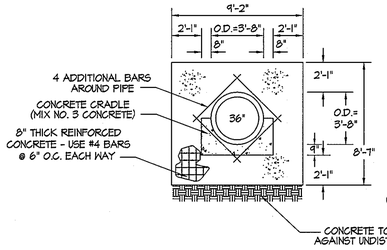
PLAN VIEWS



SIDE VIEW

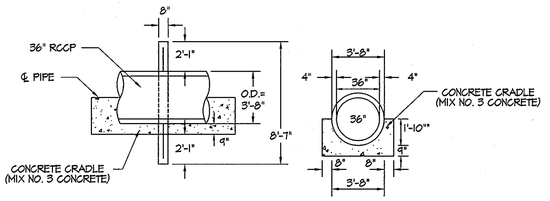
DETAILS FOR LOCATION OF STEPS AND MANHOLE FRAME AND COVER (RS-5)

SCALE: 1"=5'



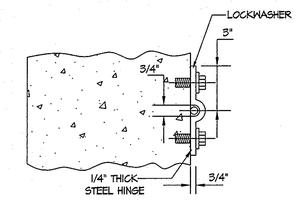
ANTI-SEEP COLLAR DETAILS

SCALE: 1"= 5'



CONCRETE CRADLE DETAIL

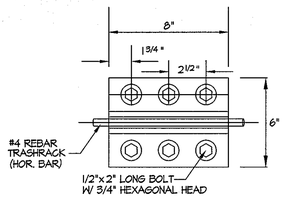
SCALE: 1"= 5'



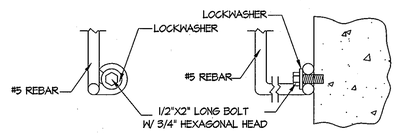
SIDE VIEW

HINGE DETAIL
NOT TO SCALE

NOTE: TRASH RACK MOUNTINGS TO BE GALVANIZED AFTER FABRICATION.

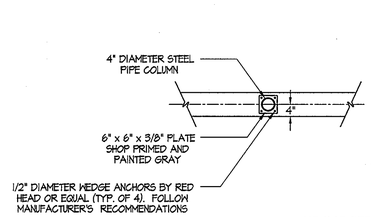


FRONT VIEW



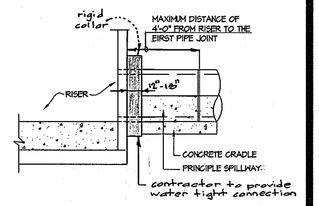
DETAIL FOR SECURING TRASH RACK
Not to Scale

NOTE: TRASH RACK MOUNTINGS TO BE GALVANIZED AFTER FABRICATION.



TOP SLAB SUPPORT DETAIL

SCALE: 1"=2'



DETAIL FOR CONNECTING PRINCIPAL SPILLWAY TO RISER STRUCTURE

SCALE: 1"= 5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/5/08

Chief, Development Engineering Division — Date 2/15/08

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Signature of Developer/Builder — *Date* 1-11-08

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Engineer's Signature — *Date* 1-11-08

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — *Date* 1/22/08

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Natural Resources Conservation Service — *Date*

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081SWM01.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
01/01/08	⚠ added non-shrink grout note to riser detail		

PREPARED FOR:
G & R / Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975
EXPIRATION DATE: MAY 28, 2008

STATE OF MARYLAND — CHARLES O'DONOVAN — No. 12975 — REGISTERED PROFESSIONAL ENGINEER

TEMPORARY STORMWATER MANAGEMENT DETAILS AND NOTES - SWM BASIN 5

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

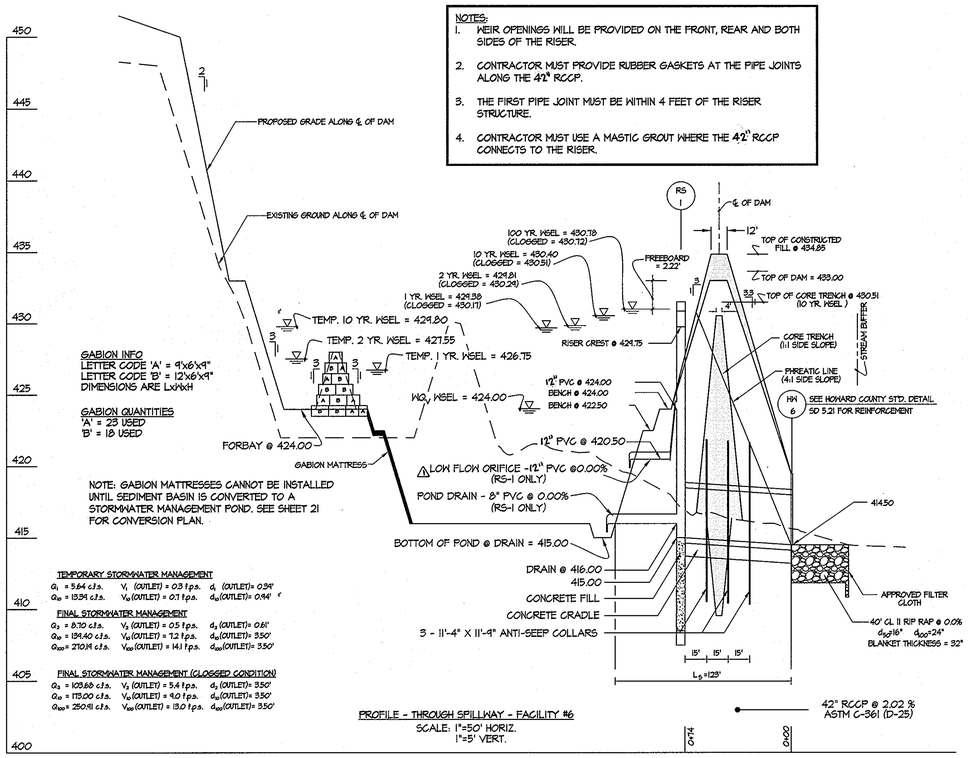
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JAN., 2008	41-21&22 46-3	18 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55

NOTES:
1. WEIR OPENINGS WILL BE PROVIDED ON THE FRONT, REAR AND BOTH SIDES OF THE RISER.
2. CONTRACTOR MUST PROVIDE RUBBER GASKETS AT THE PIPE JOINTS ALONG THE 42" RCCP.
3. THE FIRST PIPE JOINT MUST BE WITHIN 4 FEET OF THE RISER STRUCTURE.
4. CONTRACTOR MUST USE A MASTIC GROUT WHERE THE 42" RCCP CONNECTS TO THE RISER.

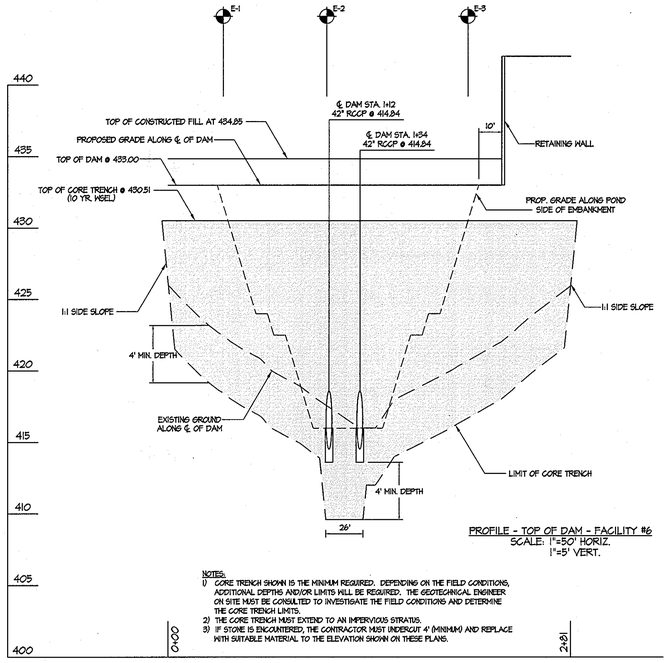


PROFILE - THROUGH SPILLWAY - FACILITY #6
SCALE: 1"=50' HORIZ.
1"=5' VERT.

TEMPORARY STORMWATER MANAGEMENT
Q_1 = 9.64 c.f.s. V_1 (OUTLET) = 0.9 f.p.s. d_1 (OUTLET)= 0.34'
Q_{10} = 13.34 c.f.s. V_{10} (OUTLET) = 0.7 f.p.s. d_{10}(OUTLET)= 0.41'

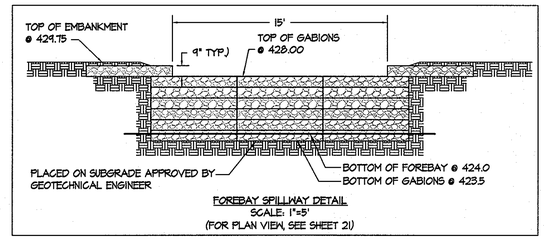
FINAL STORMWATER MANAGEMENT
Q_2 = 8.70 c.f.s. V_2 (OUTLET)= 0.5 f.p.s. d_2 (OUTLET)= 0.61'
Q_{10} = 134.40 c.f.s. V_{10}(OUTLET) = 7.2 f.p.s. d_{10}(OUTLET)= 3.50'
Q_{100}= 210.14 c.f.s. V_{100} (OUTLET) = 14.1 f.p.s. d_{100}(OUTLET)= 3.50'

FINAL STORMWATER MANAGEMENT (CLOGGED CONDITION)
Q_2 = 103.86 c.f.s. V_2 (OUTLET) = 5.4 f.p.s. d_2 (OUTLET)= 3.50'
Q_{10} = 173.00 c.f.s. V_{10} (OUTLET) = 9.0 f.p.s. d_{10}(OUTLET)= 3.50'
Q_{100}= 250.91 c.f.s. V_{100} (OUTLET) = 13.0 f.p.s. d_{100}(OUTLET)= 3.50'

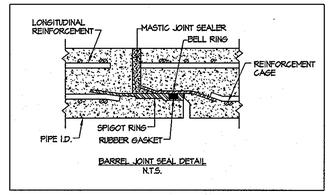


PROFILE - TOP OF DAM - FACILITY #6
SCALE: 1"=50' HORIZ.
1"=5' VERT.

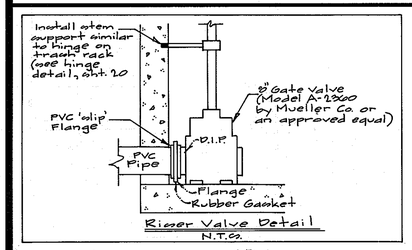
NOTES:
1) CORE TRENCH SHOWN IS THE MINIMUM REQUIRED. DEPENDING ON THE FIELD CONDITIONS, ADDITIONAL DEPTHS AND/OR LIMITS WILL BE REQUIRED. THE GEOTECHNICAL ENGINEER ON SITE MUST BE CONSULTED TO INVESTIGATE THE FIELD CONDITIONS AND DETERMINE THE CORE TRENCH LIMITS.
2) THE CORE TRENCH MUST EXTEND TO AN IMPERVIOUS STRATUS.
3) IF STONE IS ENCOUNTERED, THE CONTRACTOR MUST INDERCUT 4' (MINIMUM) AND REPLACE WITH SUITABLE MATERIAL TO THE ELEVATION SHOWN ON THESE PLANS.



FOREBAY SPILLWAY DETAIL
SCALE: 1"=5'
(FOR PLAN VIEW, SEE SHEET 21)

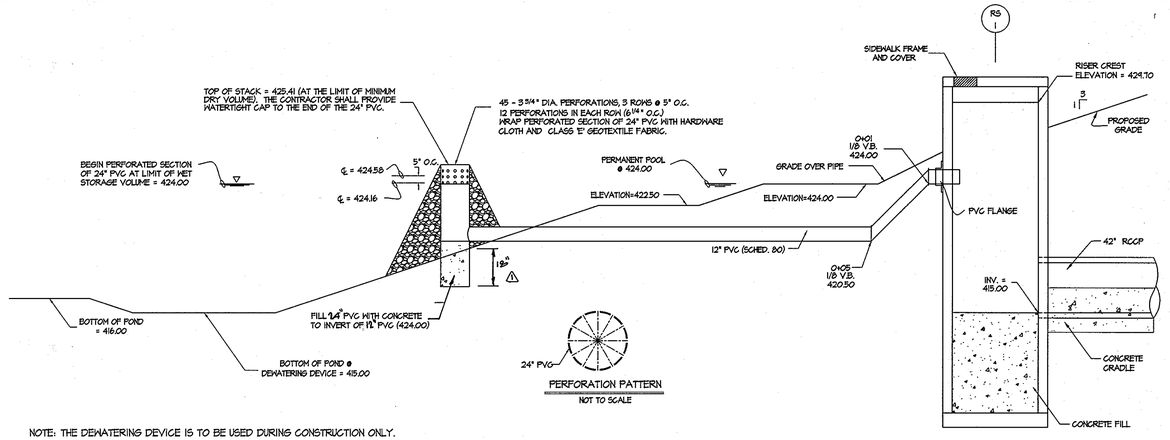


BARREL JOINT SEAL DETAIL
N.T.S.



Riser Valve Detail
N.T.S.

POND DRAIN PROFILE
SCALE: 1"=5'



PERFORATION PATTERN
NOT TO SCALE

NOTE: THE DEWATERING DEVICE IS TO BE USED DURING CONSTRUCTION ONLY. AFTER ALL OF THE CONTRIBUTING AREAS HAVE BEEN STABILIZED, AND THE BASIN HAS BEEN CONVERTED TO A POND, THE DEWATERING DEVICE MAY BE REMOVED. IN ADDITION TO REMOVING THE DEWATERING DEVICE, THE 12" PVC MUST BE EXTENDED A MINIMUM OF 5' AND AN END CAP NEEDS TO BE INSTALLED WITH A 5/4" DIA. ORIFICE.

TEMPORARY DEWATERING DEVICE DETAIL - FACILITY #6
SCALE: 1" = 5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 2/15/08
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Signature of Developer/Builder — Date 1-11-08

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Howard Soil Conservation District — Date 1/22/08

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Natural Resources Conservation Service — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
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L:\2000\DRAWINGS\03667\06081\FINALS (SWM-SC)\06081SWM01.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
07/01/08	⚠ rev. pipe sizes; added riser valve detail; added dimensions		

PREPARED FOR:
G & R / Weswel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

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EXPIRATION DATE: MAY 26, 2008

STATE OF MARYLAND — CHARLES R. O'DONOVAN — No. 12975 — REGISTERED PROFESSIONAL ENGINEER

STORMWATER MANAGEMENT DETAILS AND NOTES - SWM BASIN 6

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'F', 'F', AND 'K'

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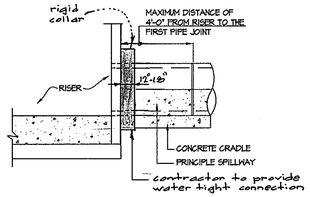
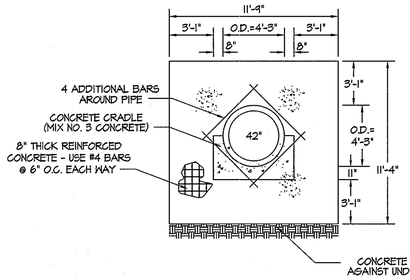
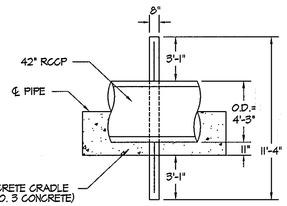
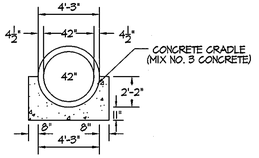


DETAIL FOR CONNECTING PRINCIPAL SPILLWAY TO RISER STRUCTURE
SCALE: 1"= 5'

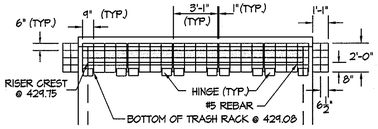


ANTI-SEEP COLLAR DETAILS
SCALE: 1"= 5'

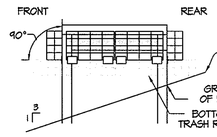




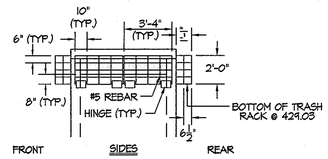
CONCRETE CRADLE DETAIL
SCALE: 1"= 5'



FRONT

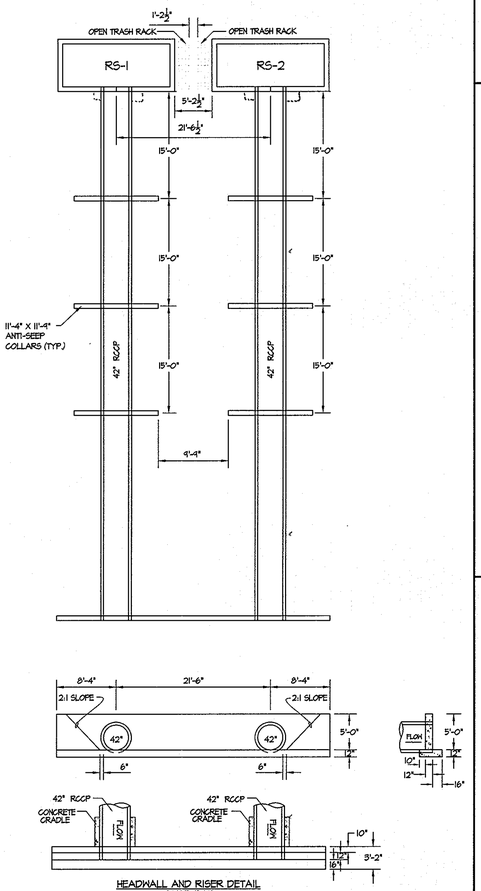


GRADE AT OPEN TRASH RACK

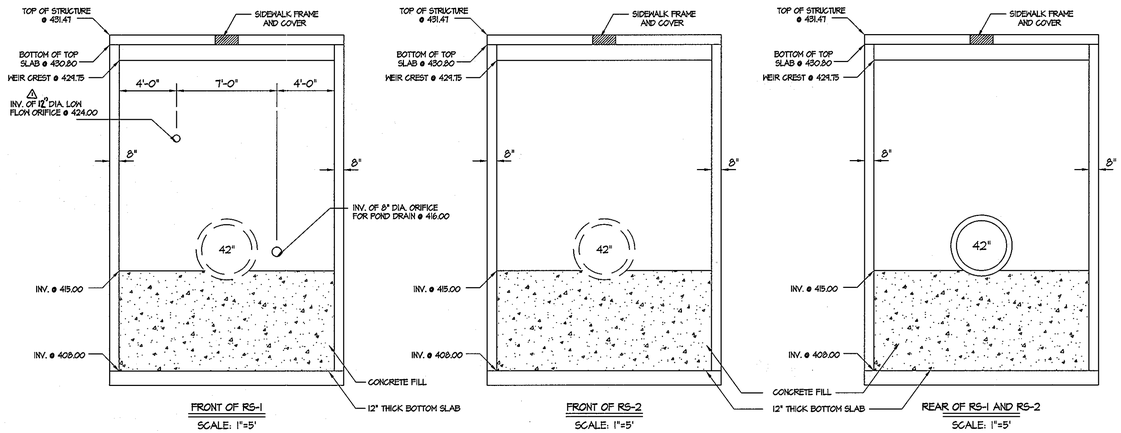


NOTES.
1. TRASH RACK MOUNTINGS TO BE GALVANIZED AFTER FABRICATION
2. REBAR MUST BE GALVANIZED AND PAINTED BATTLESHIP GRAY.

TRASH RACK DETAILS
SCALE: 1"= 5'



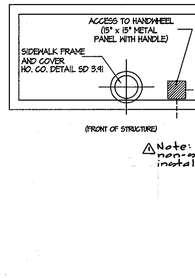
HEADWALL AND RISER DETAIL
SCALE: 1"=10'



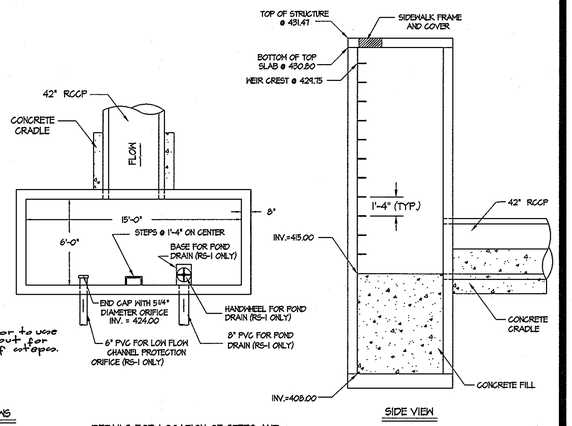
FRONT OF RS-1
SCALE: 1"=5'

FRONT OF RS-2
SCALE: 1"=5'

REAR OF RS-1 AND RS-2
SCALE: 1"=5'



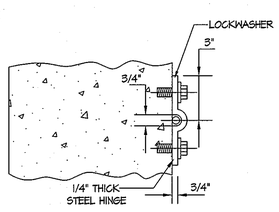
PLAN VIEWS



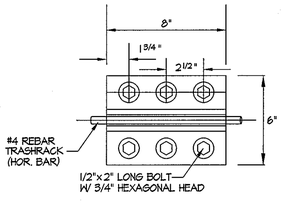
SIDE VIEW

DETAILS FOR LOCATION OF STEPS AND MANHOLE FRAME AND COVER (RS-1 AND RS-2)
SCALE: 1"=5'

HEADWALL AND RISER DETAIL
SCALE: 1"=10'



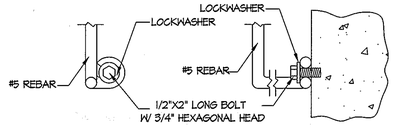
SIDE VIEW



FRONT VIEW

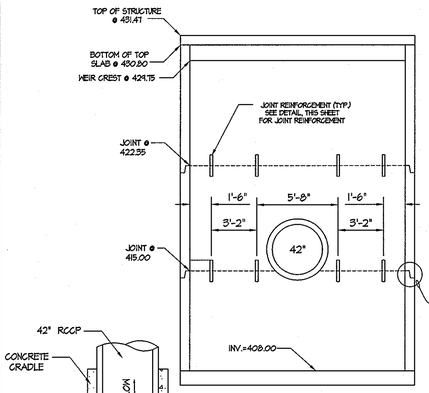
HINGE DETAIL
NOT TO SCALE

NOTE: TRASH RACK MOUNTINGS TO BE GALVANIZED AFTER FABRICATION.



DETAIL FOR SECURING TRASH RACK
Not to Scale

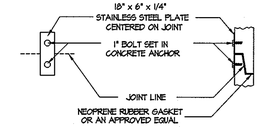
NOTE: TRASH RACK MOUNTINGS TO BE GALVANIZED AFTER FABRICATION.



(FRONT OF STRUCTURE)

NOTES:
1. CONTRACTOR TO WRAP RISER STRUCTURES WITH FILTER CLOTH TO ELEVATION 427.00
2. JOINT REINFORCEMENT (STRAPPING) SHALL BE LOCATED ON THE INSIDE OF THE STRUCTURES.

JOINT REINFORCEMENT (STRAPPING) DETAIL
SCALE: 1"= 5'



JOINT REINFORCEMENT DETAIL
SCALE: N.T.S.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2/15/08

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Signature of Developer/Builder — Date 1-11-08

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Engineer's Signature — Date 1-11-08

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — Date 1/22/08

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Natural Resources Conservation Service — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.
01/01/08	⚠ rev. low flow orifice diameter; added step installation note		

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081SWM01.dwg | DES. DEV | DRN. AWL | CHK. DEV

PREPARED FOR:
G&R/Weawel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2008

STATE OF MARYLAND — JOSEPH E. GUTSCHICK — 12975

STORMWATER MANAGEMENT DETAILS AND NOTES - SWM BASIN 6

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

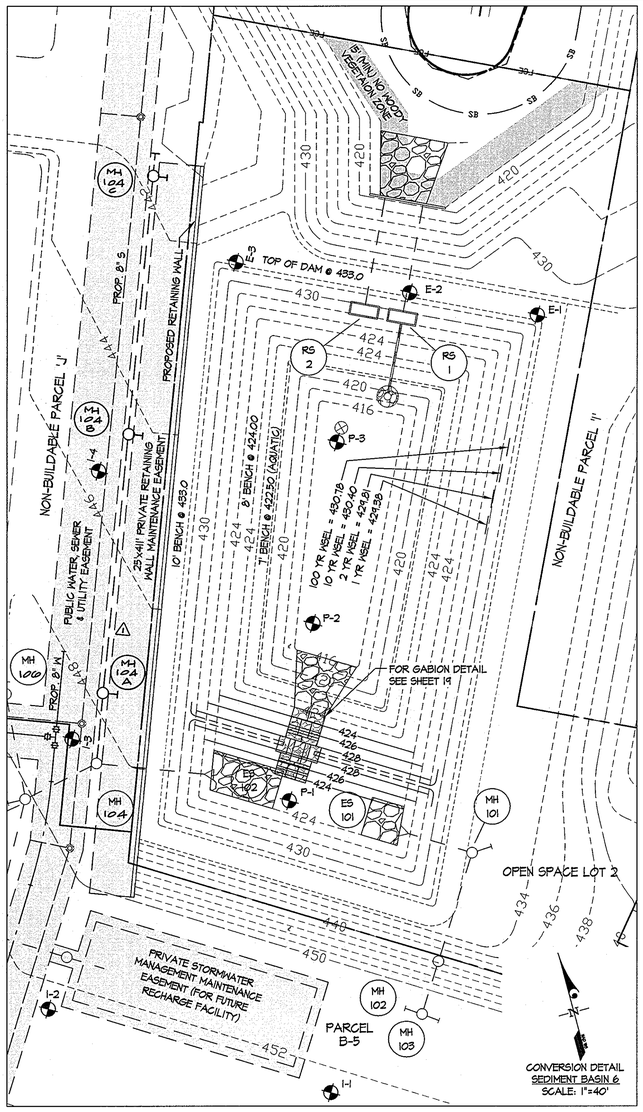
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

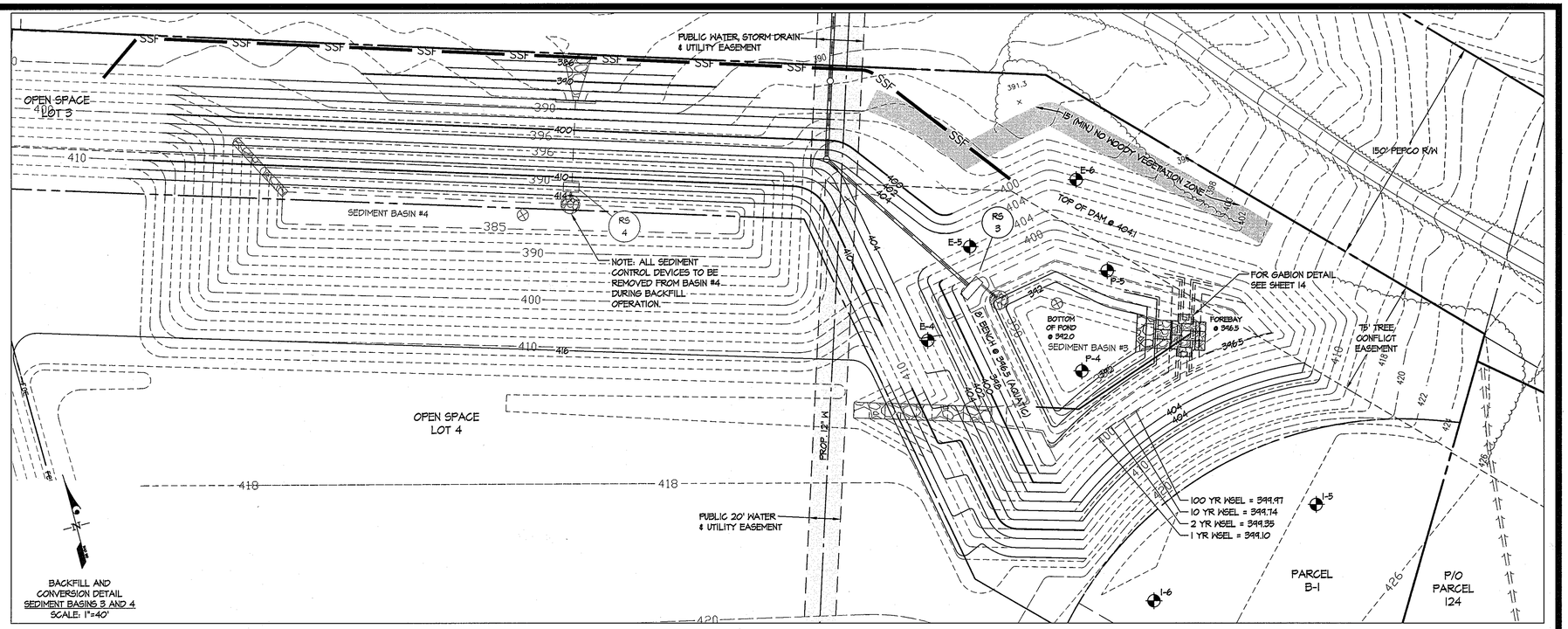
SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP – GRID	SHEET
JAN., 2008	41-21&22 46-3	20 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

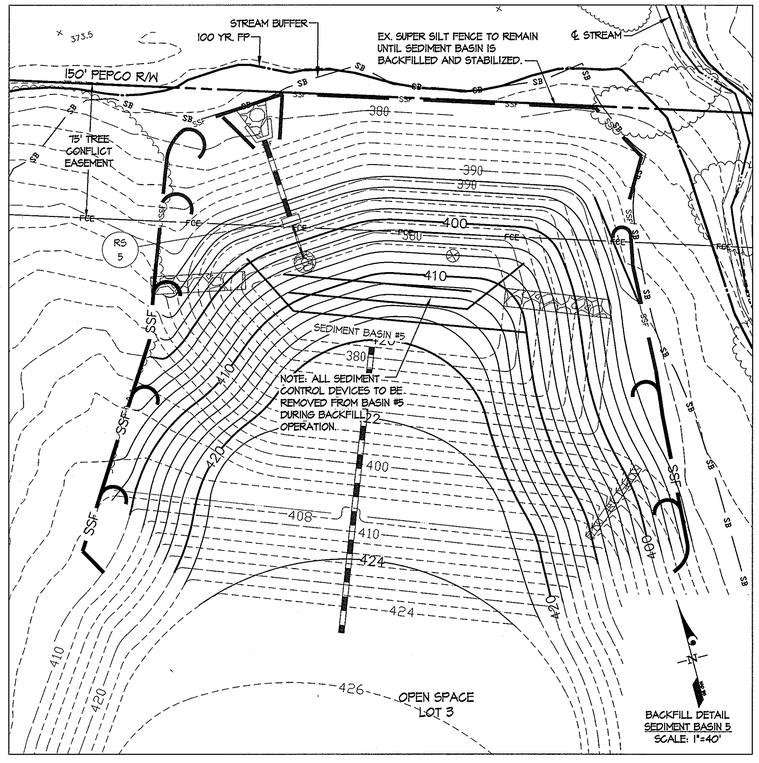
F-08-55



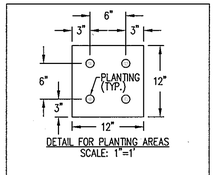
CONVERSION DETAIL
SEDIMENT BASIN 6
SCALE: 1"=40'



BACKFILL AND CONVERSION DETAIL
SEDIMENT BASINS 3 AND 4
SCALE: 1"=40'



BACKFILL DETAIL
SEDIMENT BASIN 5
SCALE: 1"=40'



DETAIL FOR PLANTING AREAS
SCALE: 1"=1'

CONTRACTOR TO PROVIDE ONE OR MORE OF THE FOLLOWING FOR AQUATIC BENCH: (MIN. 4 PER SQ. FT, 6" O.C.)
- WATER LILY
- DEEP WATER DUCK POTATO
- SAGO POND PLANT
- WILD CELERY
- REDHEAD GRASS

PLANT TYPE MAY BE DEPENDENT UPON AVAILABILITY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2.15.08

DEVELOPER'S/BUILDER'S CERTIFICATE

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Signature of Developer/Builder — Date 1-11-08

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Engineer's Signature — Date 1-11-08

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — Date 1/25/08

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Natural Resources Conservation Service — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\06067\ARBY\FINALS (SWM-SC)\06081SWM-CONVERSION01-03.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
01/10/08	Δ rev. storm drain per F-08-54 changes; corrected MH callouts		

PREPARED FOR:
G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2008

STATE OF MARYLAND — CHARLES E. O'DONOVAN — 12975 — REGISTERED PROFESSIONAL ENGINEER

BASINS 3 THRU 6 BACKFILL, CONVERSION, AND SEDIMENT CONTROL PLAN

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP – GRID	SHEET
JAN., 2008	41-21&22 46-3	21 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55

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OPERATION AND MAINTENANCE SCHEDULE FOR PUBLICLY OWNED AND MAINTAINED RETENTION POND #3

ROUTINE MAINTENANCE (BY HOMEOWNER'S ASSOCIATION)

1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPED OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
3. DEBRIS AND LITTLER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE (BY HOWARD COUNTY)

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENT SHALL BE REMOVED FROM THE POND AND FOREBAY NO LATER THEN WHEN THE CAPACITY OF THE POND IS HALF-FULL OF SEDIMENT OR WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

NOTE:
POND #3 WILL BE OWNED AND MAINTAINED BY HOWARD COUNTY
POND #6 WILL BE OWNED AND MAINTAINED BY THE COMMERCIAL OWNER'S ASSOCIATION.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED RETENTION POND #6

ROUTINE MAINTENANCE (BY COMMERCIAL OWNER'S ASSOCIATION)

1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPED OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
3. DEBRIS AND LITTLER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE (BY COMMERCIAL OWNER'S ASSOCIATION)

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENT SHALL BE REMOVED FROM THE POND AND FOREBAY NO LATER THEN WHEN THE CAPACITY OF THE POND IS HALF-FULL OF SEDIMENT OR WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

HOWARD SOIL CONSERVATION DISTRICT OPERATION, MAINTENANCE AND INSPECTION NOTE

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN THE USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds facility number 1& 3. All references to ASTM and AASHTO specifications apply to the most recent version.

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 20 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.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

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 6", frozen or other objectionable materials. Fill material for the center of the embankment 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 placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8-inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions 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 heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained 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.

When required by the reviewing agency the minimum required density 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).

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 a minimum of four feet. The height shall extend up to at least the 10-year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

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 needs to 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" or greater over pipe.

Structure backfill may be flowable fill meeting the requirements of 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 6" (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" 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 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 structure or pipe unless there is a compacted fill of 24" 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 other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe – All of the following criteria shall apply for corrugated metal pipe:

1. Materials –(Polymer Coated steel pipe) – Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M–245 & M–246 with watertight coupling bands or flanges.

Materials – (Aluminum Coated Steel Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M–274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M–190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials – (Aluminum Pipe) – This pipe and its 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 M–190 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 and coatings 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 connection 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 bandwidth. 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, prepunched 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. 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 "Structure Backfill".

6. Other details (anti–seep collars, valves, etc.) shall be as shown on the drawings.

Plastic Pipe – The following criteria shall apply for plastic pipe:

1. Materials – PVC pipe shall be PVC–1120 or PVC–1220 conforming to ASTM D–1785 or ASTM D–2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" – 10" inch pipe shall meet the requirements 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.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

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 various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching.

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.

OPERATION AND MAINTENANCE

An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance and major repairs needs to be retained in a file. The issuance of a Maintenance and Repair Permit for any repairs or maintenance that involves the modification of the dam or spillway from its original design and specifications is required. A permit is also required for any repairs or reconstruction that involve a substantial portion of the structure. All indicated repairs are to be made as soon as practical.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 2/15/08
Chief, Development Engineering Division — Date 2/15/08

DEVELOPER'S/BUILDER'S CERTIFICATE
"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
Signature of Developer/Builder — Date 1-11-08

ENGINEER'S CERTIFICATE
"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."
Engineer's Signature — Date 1-11-08

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
Howard Soil Conservation District — Date 1/22/08

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
Natural Resources Conservation Service — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081SWM22.dwg	DES. DEV	DRN. KLP	CHK. DEV

DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R / Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2008

STORMWATER MANAGEMENT NOTES
(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)
MAPLE LAWN FARMS
WESTSIDE DISTRICT - AREA 1
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
NO SCALE	MXD-3	06081
DATE	TAX MAP – GRID	SHEET
JAN., 2008	41-21&22 46-3	22 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081SWM22.dwg 1/10/2008 12:44:56 PM EST

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Maple Lawn - Wessel Property — Boring No.: E-1
Location: Howard County, Maryland — Job #: 06685A

SAMPLER — Datum: — Hammer Wt. 140 lbs. — Hole Diameter 6" — Foreman: L. Smith
Surf. Elev. 422.70 Ft. — Hammer Drop 30 in. — Rock Core Diameter: — Inspector:
Date Started 11/26/06 — Pipe Size 2 in. — Boring Method HSA — Date Completed 11/26/06

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve 10 30 50
420 / 0		Brown, moist, soft, micaceous sandy silt (ML)	Topsoil-6"	16"		1-1-3	4	
417 / 3		Reddish brown, moist, loose to medium dense, micaceous silty sand to sandy silt (SM-ML)	No groundwater encountered while drilling	18"		4-4-4	8	
414 / 6				14"		3-4-5	9	
411 / 9				12"		4-4-6	10	
408 / 12				15"		4-5-6	11	
406 / 14				14"		5-7-8	15	
403 / 17								
400 / 20								
397 / 23								
394 / 26								
392 / 28								
389 / 31								
386 / 34								
383 / 37								
381 / 39								
378 / 42		Bottom of boring @ 15.0'						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

	AT COMPLETION	GROUND WATER	CAVE IN DEPTH
	Dry ft.	Dry ft.	10.0 ft.
	AFTER 24 HRS.	Dry ft.	10.0 ft.
	AFTER ___ HRS.	ft.	ft.

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Maple Lawn - Wessel Property — Boring No.: E-2
Location: Howard County, Maryland — Job #: 06685A

SAMPLER — Datum: — Hammer Wt. 140 lbs. — Hole Diameter 6" — Foreman: L. Smith
Surf. Elev. 417.74 Ft. — Hammer Drop 30 in. — Rock Core Diameter: — Inspector:
Date Started 11/24/06 — Pipe Size 2 in. — Boring Method HSA — Date Completed 11/24/06

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve 10 30 50
418 / 0		Brown, moist, soft to medium stiff, micaceous sandy silt (ML)	Topsoil-6"	13"		1-2-2	4	
415 / 3		Brown, moist, medium dense to very dense, micaceous silty sand to sandy silt (SM-ML)		13"		2-3-3	6	
412 / 6				13"		4-5-6	11	
409 / 9				13"		8-6-7	13	
406 / 12			Groundwater encountered @ 11.5' while drilling	13"		11-17-27	44	
404 / 14				13"		19-21-32	53	
401 / 17								
398 / 20								
395 / 23								
392 / 26								
390 / 28								
387 / 31								
384 / 34								
381 / 37								
379 / 39								
376 / 42		Bottom of boring @ 15.0'						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

	AT COMPLETION	GROUND WATER	CAVE IN DEPTH
	Dry ft.	8.0 ft.	10.0 ft.
	AFTER 24 HRS.	7.0 ft.	8.0 ft.
	AFTER ___ HRS.	ft.	ft.

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Maple Lawn - Wessel Property — Boring No.: E-3
Location: Howard County, Maryland — Job #: 06685A

SAMPLER — Datum: — Hammer Wt. 140 lbs. — Hole Diameter 6" — Foreman: L. Smith
Surf. Elev. 420.80 Ft. — Hammer Drop 30 in. — Rock Core Diameter: — Inspector:
Date Started 11/24/06 — Pipe Size 2 in. — Boring Method HSA — Date Completed 11/24/06

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve 10 30 50
421 / 0		Brown to light brown, moist to damp, soft to stiff, micaceous sandy silt (ML)	Topsoil-6"	10"		1-2-2	4	
418 / 3		Light brown, moist, medium dense to very dense, micaceous silty sand to sandy silt (SM-ML)	Sample 2 contains trace rock fragments	13"		3-5-11	17	
415 / 6				13"		3-4-4	8	
412 / 9			Groundwater encountered @ 8.0' while drilling	13"		4-5-9	14	
409 / 12				13"		16-18-26	44	
407 / 14				13"		16-34-51	85	
404 / 17								
401 / 20								
398 / 23								
395 / 26								
393 / 28								
390 / 31								
387 / 34								
384 / 37								
382 / 39								
379 / 42		Bottom of boring @ 15.0'						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

	AT COMPLETION	GROUND WATER	CAVE IN DEPTH
	Dry ft.	8.5 ft.	10.5 ft.
	AFTER 24 HRS.	8.5 ft.	8.0 ft.
	AFTER ___ HRS.	ft.	ft.

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Maple Lawn - Wessel Property — Boring No.: E-4
Location: Howard County, Maryland — Job #: 06685A

SAMPLER — Datum: — Hammer Wt. 140 lbs. — Hole Diameter 6" — Foreman: L. Smith
Surf. Elev. 405.72 Ft. — Hammer Drop 30 in. — Rock Core Diameter: — Inspector:
Date Started 12/06/06 — Pipe Size 2 in. — Boring Method HSA — Date Completed 12/06/06

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve 10 30 50
406 / 0		Brown, moist, soft, micaceous sandy silt (ML)	Topsoil-6"	6"		1-2-3	5	
403 / 3		Brown to light brown, moist, loose to dense, micaceous silty sand to sandy silt (SM-ML)	No groundwater encountered while drilling	6"		2-2-3	5	
400 / 6				12"		2-3-3	5	
397 / 9				8"		3-4-5	9	
394 / 12				6"		6-12-19	31	
392 / 14				14"		4-4-7	11	
389 / 17								
386 / 20								
383 / 23								
380 / 26								
378 / 28								
375 / 31								
372 / 34								
369 / 37								
367 / 39								
364 / 42		Bottom of boring @ 15.0'						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

	AT COMPLETION	GROUND WATER	CAVE IN DEPTH
	Dry ft.	Dry ft.	8.0 ft.
	AFTER 24 HRS.	Dry ft.	8.0 ft.
	AFTER ___ HRS.	ft.	ft.

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Maple Lawn - Wessel Property — Boring No.: E-5
Location: Howard County, Maryland — Job #: 06685A

SAMPLER — Datum: — Hammer Wt. 140 lbs. — Hole Diameter 6" — Foreman: L. Smith
Surf. Elev. 400.33 Ft. — Hammer Drop 30 in. — Rock Core Diameter: — Inspector:
Date Started 12/07/06 — Pipe Size 2 in. — Boring Method HSA — Date Completed 12/07/06

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve 10 30 50
401 / 0		Brown, moist, soft, micaceous sandy silt (ML)	Topsoil-6"	8"		1-2-3	5	
398 / 3		Brown, moist, loose to very dense, micaceous silty sand to sandy silt (SM-ML)	No groundwater encountered while drilling	10"		2-2-3	5	
395 / 6				10"		3-2-4	6	
392 / 9				13"		9-10-24	34	
390 / 11				13"		17-18-22	40	
387 / 14				14"		21-19-40	59	
384 / 17								
381 / 20								
378 / 23								
375 / 26								
373 / 28								
370 / 31								
367 / 34								
364 / 37								
362 / 39								
359 / 42		Bottom of boring @ 15.0'						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

	AT COMPLETION	GROUND WATER	CAVE IN DEPTH
	Dry ft.	Dry ft.	7.5 ft.
	AFTER 24 HRS.	Dry ft.	7.5 ft.
	AFTER ___ HRS.	ft.	ft.

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Maple Lawn - Wessel Property — Boring No.: E-6
Location: Howard County, Maryland — Job #: 06685A

SAMPLER — Datum: — Hammer Wt. 140 lbs. — Hole Diameter 6" — Foreman: L. Smith
Surf. Elev. 393.48 Ft. — Hammer Drop 30 in. — Rock Core Diameter: — Inspector:
Date Started 12/07/06 — Pipe Size 2 in. — Boring Method HSA — Date Completed 12/07/06

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve 10 30 50
394 / 0		Brown, moist to damp, soft to stiff, micaceous sandy silt, trace roots (ML)	Topsoil-6"	6"		1-2-2	4	
391 / 3		Tan, moist, medium dense, silty sand and gravel (GM-SM)	No groundwater encountered while drilling	16"		2-2-2	4	
389 / 5		Gray, moist, medium dense to very dense, silty sand (SM)		6"		1-7-11	18	
386 / 8				14"		7-10-12	22	
383 / 11				12"		8-9-11	20	
381 / 13				12"		18-34-35	69	
378 / 16								
375 / 19								
372 / 22								
369 / 25								
367 / 27								
364 / 30								
361 / 33								
358 / 36								
356 / 38								
353 / 41		Bottom of boring @ 15.0'						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

	AT COMPLETION	GROUND WATER	CAVE IN DEPTH
	Dry ft.	Dry ft.	9.0 ft.
	AFTER 24 HRS.	Dry ft.	8.0 ft.
	AFTER ___ HRS.	ft.	ft.

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Maple Lawn - Wessel Property — Boring No.: P-1
Location: Howard County, Maryland — Job #: 06685A

SAMPLER — Datum: — Hammer Wt. 140 lbs. — Hole Diameter 6" — Foreman: L. Smith
Surf. Elev. 426.34 Ft. — Hammer Drop 30 in. — Rock Core Diameter: — Inspector:
Date Started 11/24/06 — Pipe Size 2 in. — Boring Method HSA — Date Completed 11/24/06

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve 10 30 50
426 / 0		Brown, moist, medium stiff to stiff, micaceous sandy silt, trace rock fragments (ML)	Topsoil-6"	12"		1-3-3	6	
423 / 3		Light brown to reddish brown, moist to damp, loose to medium dense, micaceous silty sand, trace rock fragments (SM)		10"		5-6-7	13	
420 / 6				13"		4-6-9	15	
417 / 9			Groundwater encountered @ 8.5' while drilling	10"		6-3-12	15	
414 / 12				10"		6-5-5	10	
411 / 14		Tan, damp, very soft to medium stiff, micaceous sandy silt (ML)		13"		1-3-3	6	
408 / 17				10"		1-1-2	3	
406 / 20				13"		1-3-3	6	
403 / 23								
400 / 26								
397 / 28								
394 / 31								
392 / 34								
389 / 37								
386 / 39								
383 / 42		Bottom of boring @ 25.0'						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

	AT COMPLETION	GROUND WATER	CAVE IN DEPTH
	7.5 ft.	7.5 ft.	9.5 ft.
	AFTER 24 HRS.	6.0 ft.	11.0 ft.
	AFTER ___ HRS.	ft.	ft.

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Maple Lawn - Wessel Property — Boring No.: P-2
Location: Howard County, Maryland — Job #: 06685A

SAMPLER — Datum: — Hammer Wt. 140 lbs. — Hole Diameter 6" — Foreman: L. Smith
Surf. Elev. 421.11 Ft. — Hammer Drop 30 in. — Rock Core Diameter: — Inspector:
Date Started 11/24/06 — Pipe Size 2 in. — Boring Method HSA — Date Completed 11/24/06

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve 10 30 50
421 / 0		Brown to reddish brown, moist to damp, medium stiff to stiff, micaceous sandy silt, trace to no roots (ML)	Topsoil-7"	6"		2-3-5	8	
418 / 3				10"		5-8-23	28	
415 / 6				10"		5-5-6	12	
412 / 9				10"		5-8-9	17	
409 / 12		Reddish brown, moist, loose to medium dense, micaceous silty sand to sandy silt (SM-ML)	Sample 4 contains trace rock fragments	13"		2-4-5	9	
406 / 14				15"		4-7-8	15	
404 / 17			Groundwater encountered @ 21.0' while drilling	12"		10-12-14	26	
401 / 20				11"		8-11-11	22	
398 / 23								
395 / 26								
393 / 28								
390 / 31								
387 / 34								
384 / 37								
382 / 39								
379 / 42		Bottom of boring @ 25.0'						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

	AT COMPLETION	GROUND WATER	CAVE IN DEPTH
	12.5 ft.	12.5 ft.	15.0 ft.
	AFTER 24 HRS.	6.5 ft.	12.0 ft.
	AFTER ___ HRS.	ft.	ft.

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Maple Lawn - Wessel Property — Boring No.: P-3
Location: Howard County, Maryland — Job #: 06685A

SAMPLER — Datum: — Hammer Wt. 140 lbs. — Hole Diameter 6" — Foreman: L. Smith
Surf. Elev. 420.19 Ft. — Hammer Drop 30 in. — Rock Core Diameter: — Inspector:
Date Started 11/24/06 — Pipe Size 2 in. — Boring Method HSA — Date Completed 11/24/06

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve 10 30 50
420 / 0		Brown, moist, soft, micaceous sandy silt, trace clay (ML)	Topsoil-7"	6"		1-1-3	4	
417 / 3		Tan, dry, loose, silty sand and gravel (GM-SM)		16"		3-5-7	12	
414 / 6		Reddish brown, moist, stiff, micaceous sandy silt (ML)		13"		10-11-16	27	
411 / 9		Brown, moist, medium dense, silty sand and gravel (GM - SM)		13"		3-5-6	11	
409 / 11		Brown to black, moist, loose to very dense, micaceous silty sand to sandy silt (SM-ML)		13"		4-4-6	10	
406 / 14				13"		7-11-17	28	
403 / 17			Groundwater encountered @ 20.0' while drilling	10"		5-4-18	22	
401 / 19				10"		25-39-39	78	
398 / 22								
395 / 25								
392 / 28								
390 / 30								
387 / 33								
384 / 36								
381 / 39								
379 / 41								
376 / 44		Bottom of boring @ 25.0'						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

	AT COMPLETION	GROUND WATER	CAVE IN DEPTH
	17.0 ft.	7.5 ft.	20.0 ft.
	AFTER 24 HRS.	7.5 ft.	15.0 ft.
	AFTER ___ HRS.	ft.	ft.

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Maple Lawn - Wessel Property — Boring No.: P-4
Location: Howard County, Maryland — Job #: 06685A

SAMPLER — Datum: — Hammer Wt. 140 lbs. — Hole Diameter 6" — Foreman: L. Smith
Surf. Elev. 402.25 Ft. — Hammer Drop 30 in. — Rock Core Diameter: — Inspector:
Date Started 12/07/06 — Pipe Size 2 in. — Boring Method HSA — Date Completed 12/07/06

Elevation/ Depth	SOIL SYMBOL/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve 10 30 50
399 / 0		Brown, moist, medium stiff, micaceous sandy silt, trace Organics (ML)	Topsoil-6"	3"		2-5-3	8	
396 / 3		Brown, moist, loose to dense, micaceous silty sand to sandy silt (SM-ML)	No groundwater encountered while drilling	12"		3-4-5	9	
393 / 6				14"		3-4-3	7	
390 / 9				12"		5-6-9	15	
387 / 12				12"		5-6-9	15	
384 / 14				12"		8-9-13	22	
382 / 17				14"		5-6-9	15	
379 / 20				10"		6-16-31	47	
376 / 23								
373 / 25								
371 / 28								
368 / 31								
365 / 34								
362 / 36								
359 / 39								
357 / 42		Bottom of boring @ 25.0'						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

	AT COMPLETION	GROUND WATER	CAVE IN DEPTH
	Dry ft.	14.0 ft.	14.0 ft.
	AFTER 24 HRS.	12.0 ft.	12.0 ft.
	AFTER ___ HRS.	ft.	ft.

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2/15/08

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Signature of Developer/Builder — Date 1-11-08

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Engineer's Signature — Date 1-11-08

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Natural Resources Conservation Service — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081BORINGS.dwg | DES. HC | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2008

STATE OF MARYLAND — CHARLES H. O'DONOVAN — No. 12975 — REGISTERED PROFESSIONAL ENGINEER

SOIL BORINGS (1 OF 2)

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
NOV., 2007	41-21&22 46-3	23 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Maple Lawn - Wessel Property — Boring No. P-5
Location: Howard County, Maryland — Job # 06685A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter 6" Foreman L. Smith
Surf. Elev. 396.40 Ft. Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 12/07/06 Pipe Size 2 in. Boring Method HSA Date Completed 12/07/06

Elevation/Depth	Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
0	I	Brown, moist, very soft, micaceous sandy silt, trace roots (ML)	Topsoil-6"; No groundwater encountered while drilling	6"		1-1-1	2
392	D			12"		1-1-2	3
	D	Tan, moist, medium dense to very dense, silty sand and gravel (GM-SM)		14"		3-27-26	53
7	D			14"		10-10-8	18
385	D	Light brown to gray, moist, medium dense to dense, micaceous silty sand to sandy silt (SM-ML)		14"		6-6-7	13
14	D			16"		15-19-24	43
378 / 21	D	Gray, moist, very dense, micaceous silty sand to sandy silt (SM-ML; Decomposed ROCK)		16"		19-28-36	64
371	D	Bottom of boring @ 25.3'		3"		51/4"	100+

SPT Blows/Foot Curve: 10 30 50

GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. 16.0 ft.; AFTER 24 HRS. Dry ft. 10.5 ft.; AFTER ___ HRS. ___ ft. ___ ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Maple Lawn - Wessel Property — Boring No. I-1
Location: Howard County, Maryland — Job # 06685A
Hammer Wt. 140 lbs. Hole Diameter 6" Foreman L. Smith
Surf. Elev. 431.51 Ft. Hammer Drop 30 in.
Date Started 11/26/06 Pipe Size 2 in. Boring Method HSA Date Completed 11/26/06

Elevation/Depth	Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
0	D	Brown, moist, loose to medium dense, silty sand, trace roots (SM)	Topsoil-10"	18"		1-2-3	5
	I			16"		3-3-5	8
427	D			12"		5-7-8	15
7	D		Groundwater encountered @ 8.0' while drilling	16"		3-4-5	9
420	D			12"		2-3-5	8
14	D	Brown, moist, loose, micaceous silty sand to sandy silt (SM-ML); Bottom of boring @ 15.0'		13"		3-5-5	10

AT COMPLETION 8.5 ft. / 11.0 ft.; AFTER 24 HRS. 5.5 ft. / 8.0 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE. SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST. BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING. STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

Project Name: Maple Lawn - Wessel Property — Boring No. I-2
Location: Howard County, Maryland — Job # 06685A
Hammer Wt. 140 lbs. Hole Diameter 6" Foreman L. Smith
Surf. Elev. 438.25 Ft. Hammer Drop 30 in.
Date Started 11/26/06 Pipe Size 2 in. Boring Method HSA Date Completed 11/26/06

Elevation/Depth	Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
0	D	Brown to reddish brown, moist, soft to medium stiff, micaceous sandy silt, trace roots (ML)	Topsoil-6"; No groundwater encountered while drilling	11"		1-1-3	4
434	D			18"		3-3-3	6
	D	Reddish brown, moist, loose to medium dense, micaceous silty sand to sandy silt (SM-ML)		13"		3-4-5	9
7	D			14"		4-5-5	10
427	D			15"		6-6-7	13
14	D	Bottom of boring @ 15.0'		13"		4-6-7	13

AT COMPLETION Dry ft. / 10.0 ft.; AFTER 24 HRS. Dry ft. / 10.0 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE. SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST. BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING. STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

Project Name: Maple Lawn - Wessel Property — Boring No. I-3
Location: Howard County, Maryland — Job # 06685A
Hammer Wt. 140 lbs. Hole Diameter 6" Foreman L. Smith
Surf. Elev. 433.38 Ft. Hammer Drop 30 in.
Date Started 11/26/06 Pipe Size 2 in. Boring Method HSA Date Completed 11/26/06

Elevation/Depth	Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
0	I	Brown to reddish brown, moist, soft to medium stiff, micaceous sandy silt, trace rock fragments (ML)	Topsoil-6"	12"		1-1-3	4
	D			16"		4-5-4	9
427	D	Brown, moist, medium dense, micaceous silty sand to sandy silt (SM-ML)		18"		5-6-8	14
7	D		Groundwater encountered @ 8.5' while drilling	13"		11-12-17	29
	D			15"		3-8-9	17
420 / 14	D	Bottom of boring @ 15.0'		16"		8-10-13	23

AT COMPLETION 9.0 ft. / 11.0 ft.; AFTER 24 HRS. 8.5 ft. / 10.0 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE. SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST. BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING. STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

Project Name: Maple Lawn - Wessel Property — Boring No. I-4
Location: Howard County, Maryland — Job # 06685A
Hammer Wt. 140 lbs. Hole Diameter 6" Foreman L. Smith
Surf. Elev. 428.14 Ft. Hammer Drop 30 in.
Date Started 11/26/06 Pipe Size 2 in. Boring Method HSA Date Completed 11/26/06

Elevation/Depth	Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
0 / 427	I	Brown, moist, medium stiff to stiff, micaceous sandy silt, trace roots (ML)	Topsoil-10"	11"		1-3-5	8
	I			14"		3-4-8	12
	D	Light brown, moist, loose, micaceous silty sand to sandy silt (SM-ML)		15"		5-4-4	8
7 / 420	D	Brown, damp, medium stiff to stiff, micaceous sandy silt (ML)	Groundwater encountered @ 8.5' while drilling	13"		4-5-5	10
	D			15"		4-5-4	9
14	D	Bottom of boring @ 15.0'		7"		6-7-9	16

AT COMPLETION 9.0 ft. / 9.5 ft.; AFTER 24 HRS. 8.0 ft. / 10.0 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE. SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST. BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING. STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

Project Name: Maple Lawn - Wessel Property — Boring No. I-5
Location: Howard County, Maryland — Job # 06685A
Hammer Wt. 140 lbs. Hole Diameter 6" Foreman L. Smith
Surf. Elev. 411.54 Ft. Hammer Drop 30 in.
Date Started 12/07/06 Pipe Size 2 in. Boring Method HSA Date Completed 12/07/06

Elevation/Depth	Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
0	I	Brown, moist, very soft to stiff, micaceous sandy silt (ML)	Topsoil-6"; No groundwater encountered while drilling	10"		1-1-2	3
	I			12"		4-4-5	9
406	D			14"		4-6-8	14
7	D	Brown, moist, medium dense, micaceous silty sand to sandy silt (SM-ML)		8"		6-9-12	21
	D			6"		5-8-12	20
399 / 14	D	Bottom of boring @ 15.0'		12"		8-11-13	24

AT COMPLETION Dry ft. / 7.5 ft.; AFTER 24 HRS. Dry ft. / 7.0 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE. SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST. BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING. STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

Project Name: Maple Lawn - Wessel Property — Boring No. I-6
Location: Howard County, Maryland — Job # 06685A
Hammer Wt. 140 lbs. Hole Diameter 6" Foreman L. Smith
Surf. Elev. 412.67 Ft. Hammer Drop 30 in.
Date Started 12/06/06 Pipe Size 2 in. Boring Method HSA Date Completed 12/06/06

Elevation/Depth	Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
0	D	Brown, moist, medium stiff to stiff, micaceous sandy silt, trace to no organics (ML)	Topsoil-7"; No groundwater encountered while drilling	1"		3-4-4	8
	D			6"		4-5-9	14
406 / 7	D	Brown, moist, loose to medium dense, micaceous silty sand to sandy silt, trace to no rock fragments (SM-ML)		6"		4-5-5	10
	D			6"		4-5-5	10
	D			6"		3-3-4	7
399 / 14	D	Bottom of boring @ 15.0'		8"		4-8-12	20

AT COMPLETION Dry ft. / 7.5 ft.; AFTER 24 HRS. Dry ft. / 7.5 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE. SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST. BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING. STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

Project Name: Maple Lawn - Wessel Property — Boring No. I-7
Location: Howard County, Maryland — Job # 06685A
Hammer Wt. 140 lbs. Hole Diameter 6" Foreman L. Smith
Surf. Elev. 419.00 Ft. Hammer Drop 30 in.
Date Started 12/06/06 Pipe Size 2 in. Boring Method HSA Date Completed 12/06/06

Elevation/Depth	Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
0	D	Light brown to brown, moist, loose to dense, micaceous silty sand to sandy silt (SM-ML)	Topsoil-6"; No groundwater encountered while drilling	12"		2-2-3	5
	D			12"		3-5-5	10
413	D			14"		3-4-5	9
7	D			10"		11-15-20	35
	D			14"		11-18-23	42
406 / 14	D	Bottom of boring @ 15.0'		10"		9-11-14	25

AT COMPLETION Dry ft. / 8.0 ft.; AFTER 24 HRS. Dry ft. / 7.5 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE. SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST. BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING. STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

Project Name: Maple Lawn - Wessel Property — Boring No. I-8
Location: Howard County, Maryland — Job # 06685A
Hammer Wt. 140 lbs. Hole Diameter 6" Foreman L. Smith
Surf. Elev. 425.22 Ft. Hammer Drop 30 in.
Date Started 12/05/06 Pipe Size 2 in. Boring Method HSA Date Completed 12/05/06

Elevation/Depth	Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
0	D	Brown, moist, medium stiff to stiff, micaceous sandy silt (ML)	Topsoil-7"; No groundwater encountered while drilling	2"		2-3-3	6
	I			5"		4-5-7	12
420	D	Brown, moist, very dense, silty sand and gravel (GM-SM)		14"		8-11-45	56
7	D	Brown, moist, medium dense to dense, micaceous silty sand to sandy silt (SM-ML)		14"		5-6-9	15
413	D			15"		8-13-20	33
14	D	Bottom of boring @ 15.0'		10"		5-7-8	15

AT COMPLETION Dry ft. / 6.5 ft.; AFTER 24 HRS. Dry ft. / 6.5 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE. SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST. BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING. STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

Project Name: Maple Lawn - Wessel Property — Boring No. I-9
Location: Howard County, Maryland — Job # 06685A
Hammer Wt. 140 lbs. Hole Diameter 6" Foreman L. Smith
Surf. Elev. 446.29 Ft. Hammer Drop 30 in.
Date Started 11/30/06 Pipe Size 2 in. Boring Method HSA Date Completed 11/30/06

Elevation/Depth	Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
0	I	Reddish brown to light brown, moist, soft to medium stiff, trace mica and clay (ML)	Topsoil-8"; No groundwater encountered while drilling	18"		1-2-3	5
	I			18"		2-3-5	8
441	I	Reddish brown, moist, stiff, micaceous sandy silt (ML)		18"		7-10-9	19
7	D	Brown, moist, medium dense to dense, silty sand and gravel (GM-SM)		12"		12-21-11	32
	D			9"		4-6-16	22
434 / 14	D	Brown, moist, stiff, micaceous sandy silt (ML)		18"		4-7-8	15
427 / 21	D	Brown, moist, dense, micaceous silty sand to sandy silt (SM-ML)		18"		10-19-20	39
	D	Bottom of boring @ 25.0'		18"		8-14-17	31

AT COMPLETION Dry ft. / 17.5 ft.; AFTER 24 HRS. Dry ft. / 17.0 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE. SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST. BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING. STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

Geotechnical Engineering Study
Maple Lawn Farms – Wessel Property

5.0 EVALUATIONS AND RECOMMENDATIONS

Our findings indicate that the site can be developed for the proposed structures utilizing conventional spread footing and ground-supported slab construction. Special consideration should be given to the proper monitoring of fill operations, footing excavations, and concrete placement in all structural areas.

The following recommendations have been developed on the basis of the previously described project characteristics and subsurface conditions. If there are any changes to the project characteristics or if different subsurface conditions are encountered during construction, HCEA should be consulted so that the recommendations of this report can be reviewed.

5.1 General Site Preparation

The initial step in the development of this site should be the controlled removal of topsoil/organic laden cultivated soils; man-made materials; frozen, wet, soft or loose soils; and any other deleterious materials. These operations should be performed in a manner consistent with good erosion and sediment control practices.

After the initial stripping process is completed, areas of the site to receive fill, or areas of the site at-grade where structures will be located, should be proofrolled. The proofrolling operations should be performed using a 20-ton, fully-loaded dump truck or another pneumatic-tire vehicle of similar size and weight. The purpose of the proofrolling will be to provide surficial densification and to locate any near-surface pockets of soft or loose soils requiring undercutting. A Geotechnical Engineer or experienced Soils Inspector should witness the proofrolling operations and should determine which areas need further undercutting and/or stabilization.

At the time of our subsurface exploration, relatively soft or loose soils were encountered within the top two feet at the boring locations. It should therefore be anticipated that even the surficial natural soils may need to be either reworked or removed and replaced in order to prepare the subgrade for the placement of additional structural fill materials.

In areas where auger refusal was encountered, it should be anticipated that more intensive excavation efforts may be required. In particular, areas of confined excavation (such as for utility lines) may require jackhammering or other rock excavation methods to establish invert elevations. Due to the variable nature of the residual materials encountered at the site, it should be anticipated that areas of very dense material may be encountered at other locations across the site.

5.2 Fill Selection, Placement and Compaction

All material to be used as fill or backfill should be inspected, tested and approved by the Geotechnical Engineer. In general, the on-site soils with a Unified Soil Classification of CL or better, which are free from organic and other deleterious components can be re-used as general site fill.

We must point out, however, that using the on-site soils or importing similar materials may present placement and compaction problems for the contractor if the moisture contents of the materials are not carefully controlled or if heavy concentrated wheel loads are applied to the surface of the soils. The fine-grained nature of many of the soils encountered on-site will make them sensitive to heavy dynamic loads and to increases in moisture content beyond their "optimum" value. Traffic from the various equipment may create pumping and a general deterioration of the soils. As a result, the backfill (or at-grade natural material) may have to be removed and properly re-compacted or replaced. It is our recommendation that the contractor be fully advised of these potential problems. Additionally, the contractor should not permit water to pond on the site. Exposed subgrades should be sloped and sealed at all times to facilitate rainfall runoff.

Moisture conditioning (that is, wetting or drying) of the soils should be anticipated to achieve proper compaction. Our experience has been that drying of the soils is required more often than wetting of the soils; therefore, a drier season of the year, such as late spring through early fall, would be the preferable part of the year for fill construction. In any case, the Contractor should be aware that drying of the soils may be required. The moisture contents of the soils should be controlled properly to avoid extensive construction delays. If imported fill material is required, those materials should have Unified Soil Classifications of SM or better.

All fill should be placed in relatively horizontal 8-inch (maximum) loose lifts and should be compacted to a minimum of 95 percent of the Modified Proctor (ASTM D-1557) maximum dry density. Fill materials in landscape and other non-structural areas should be compacted to at least 92 percent of the Modified Proctor maximum dry density if significant subsidence of the fill under its own weight is to be avoided. Field moisture contents should be maintained within 2 percentage points of the optimum moisture content in order to provide adequate compaction.

Structural fill should extend a minimum of 10 ft beyond building lines where floor slabs are to be constructed on the fill. Fill slopes no steeper than 2:1 (H:V), or flatter, should be used. A sufficient number of in-place density tests should be performed by an experienced Engineering Technician on a full-time basis to verify that the proper degree of compaction is being obtained.

Many of the building areas on site are only proposed locations. Topsoil which has been stripped during site preparation and other unsuitable soils which are not removed from the site, should not be buried on site except in clearly defined areas which are not planned for future development.

5.6 Groundwater and Drainage

As detailed in Section 4.5 of this report, it is anticipated that groundwater will not cause any major construction problems. Any water infiltration resulting from precipitation, surface run-off, or perched water should be able to be controlled by means of sump pits and pumps. If any conditions are encountered which cannot be handled in such a manner, this office should be consulted.

Adequate drainage should be provided at the site to minimize any increases in the moisture contents of the foundation soils. All pavement or parking areas should be sloped away from the structures to prevent the ponding of water. The site drainage should also be such that run-off onto adjacent properties is controlled properly.

5.8 Stormwater Management by Infiltration

We have evaluated the site subsurface conditions in the vicinities of the proposed stormwater management facilities (both recharge facilities and pond areas) in accordance with the State of Maryland's, "2000 Stormwater Design Manual", General Subsurface Exploration Guidelines. The following information is provided for planning stormwater management measures:

1. Location of seasonal high groundwater table.

Groundwater was monitored during the drilling and 24 hours after the completion of the borings. The following table summarizes the groundwater conditions at the time of our exploration:

Boring	Approximate Depth to Groundwater (ft) Enc.	Completion	24 hr
I-1	8.0	8.5	5.5
I-3	8.5	9.0	8.5
I-4	8.5	9.0	8.0
P-1	8.5	7.5	6.0
P-2	21.0	12.5	5.5
P-3	20.0	17.0	7.5
E-2	11.5	8.0	7.0
E-3	8.0	8.5	5.5

The groundwater levels indicated herein represent the groundwater conditions at the site at the time of our field exploration. A more accurate determination of the hydrostatic water table would require the installation of perforated pipes or piezometers, which could be monitored over an extended period of time. The actual level of the hydrostatic water table and the amount and level of perched water should be anticipated to fluctuate throughout the year depending on variations in precipitation, surface run-off, infiltration, site topography and drainage. HCEA cannot be responsible for changes in groundwater conditions at the site due to seasonal variations and changes caused by other factors such as grading operations at the site.

2. Infiltration Rates

In-situ infiltration tests were conducted in boreholes offset five feet from I-1 through I-9, P-2, and P-5. All tests were conducted at a depth of 5 ft below existing site grades except for I-9, which was conducted at 10 ft in depth. The water level drop in each pipe was measured each hour for four hours and the in-situ rate was calculated by taking the average of the four readings for each test.

Test Number	Average In-situ Infiltration Rate (in/hr)
I-1	0.56
I-2	0.31
I-3	0.13
I-4	0.38
I-5	2.06
I-6	3.88
I-7	3.88
I-8	0.06
I-9	0.00
P-2	0.31
P-5	0.06

3. Depth to Bedrock

Bedrock was not encountered within the depths explored in the SWM borings, however, very dense decomposed rock materials were encountered in borings P-3 and P-5 at depths of 23.5 ft and 20.0 ft respectively, below the existing site grades.

Based on the State of Maryland's, "2000 Stormwater Design Manual", a minimum field infiltration rate of 0.52 inches per hour is required for infiltration practices." Also, "... it is recommended that infiltration structures be located only in areas where the bottom of the structure will be 2 to 4 feet above the seasonally high groundwater table and/or bedrock". Lastly, "the use of SWM infiltration systems on fill material is not recommended..."

Based on the results of our subsurface exploration, the above-outlined criteria, and our experience with infiltration facilities in the project vicinity, infiltration methods of stormwater management are not recommended for use at either of the two SWM ponds or at the locations of I-1 through I-4 and I-8 and I-9.

Infiltration may be feasible at the locations of I-5, I-6, and I-7. The actual ability to infiltrate will depend on the facility bottom elevation. The cut sheets provided at the time of the boring stakeout indicate that these three SWM locations will require fill to establish the final site grades. In order for infiltration to be feasible, the bottom of the structures would have to be located below the proposed fill materials and founded in natural soils similar to those tested.

Representative samples of some of the surficial soils encountered within the pond area borings as well as areas of planned cut were analyzed in our laboratory for potential use as core trench material in the SWM ponds. The results of the laboratory testing are as follows:

Boring	Sample Depth (ft)	USCS	Liquid Limit	Plasticity Index	Natural Moisture Content
P-1	2.5 – 4.0	ML	41	14	20.7
P-3	0.0 – 1.5	ML	43	16	25.7
P-5	2.5 – 4.0	ML	41	13	35.1
G-22	2.5 – 4.0	CL	45	19	24.6
G-26	0.0 – 1.5	CL	35	14	18.2

It is HCEA's opinion, that in addition to the CL materials similar to those tested above, ML materials similar to those tested (with a PI>10) will also be suitable for use in the SWM pond core trenches where required. It should be noted however that these more fine-grained materials, where encountered, were typically limited to the upper 2± ft to 5± ft of the boreholes and may be limited in quantity. Additional test pits can be performed at the start of construction of help further identify potential borrow sources.

6.0 RECOMMENDED ADDITIONAL SERVICES

Additional soil and foundation engineering, testing, and consulting services recommended for this project are summarized below:

Fill Placement and Compaction: A Geotechnical Engineer or experienced Soils Inspector should witness any required filling operations and should take sufficient in-place density tests to verify that the specified degree of fill compaction is achieved. He should observe and approve borrow materials used and should determine if their existing moisture contents are suitable. The Soils Inspector should also be onsite during all cement augmentation procedures in the pavement areas.

Foundation Excavation Inspection: A Geotechnical Engineer or experienced Soils Inspector should inspect the foundation excavations. He should verify that the design bearing pressure is available and that no loose pockets exist beneath the bearing surfaces of the excavations. Based on the inspection, the Inspector would either approve the bearing surface or recommend that loose or soft soils or highly plastic soils be undercut to expose satisfactory bearing materials.

Additional Geotechnical Studies: When the footprints of the Commercial Buildings onsite are finalized, a geotechnical study including additional test borings should be performed to determine the soil conditions at the location of those specific structures, based upon the actual structural loading conditions and building elevations.

~~These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.~~

~~Howard Soil Conservation District~~ Date

~~These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.~~

~~Natural Resources Conservation Service~~ Date

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Engineer's Signature — Date 1-11-08

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Signature of Developer/Builder — Date 1-11-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2/15/08

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081BORINGS.dwg | DES. HC | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2008

SOIL BORINGS (2 OF 2)

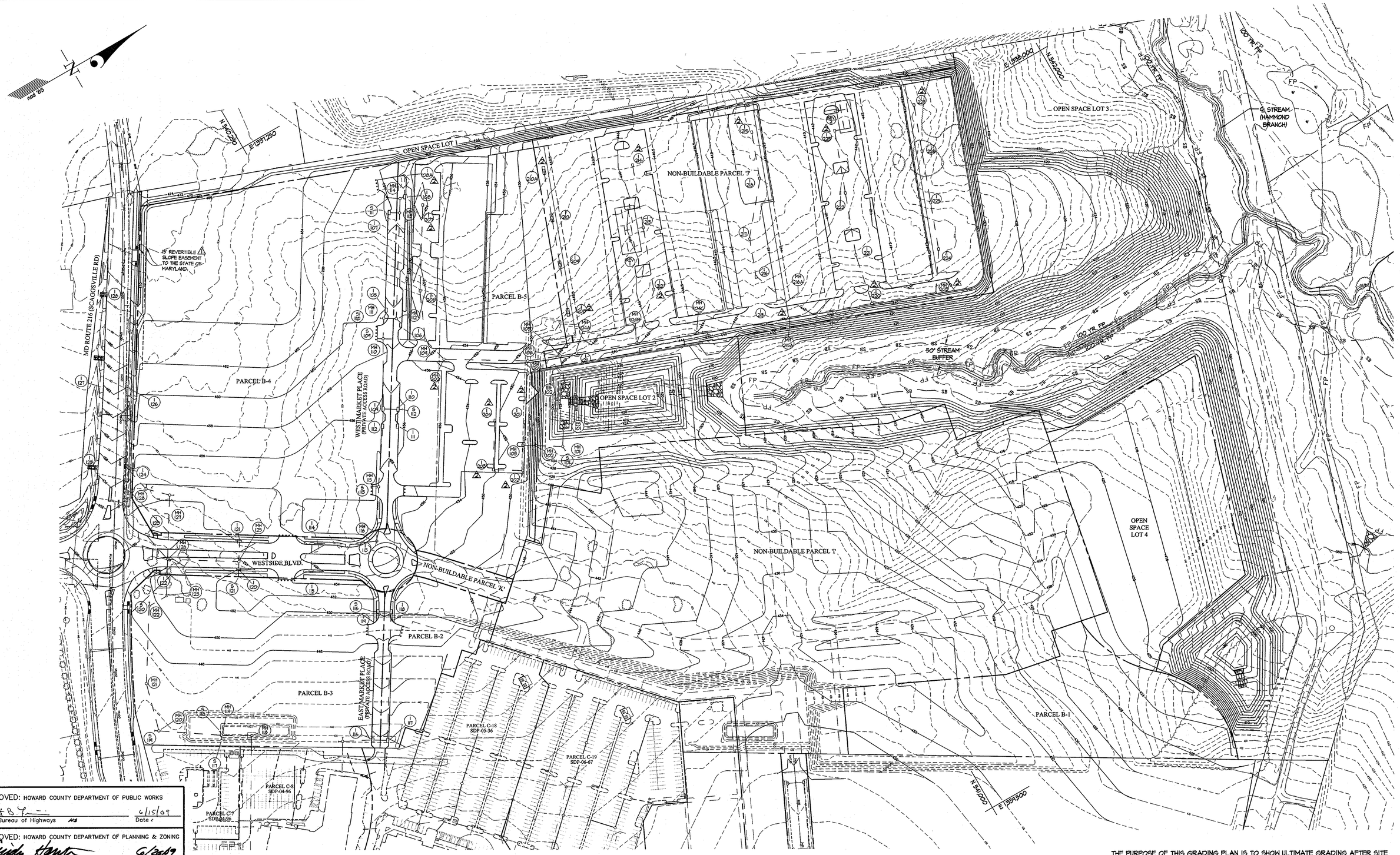
(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)
MAPLE LAWN FARMS
WESTSIDE DISTRICT - AREA 1
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP – GRID	SHEET
NOV., 2007	41–21&22 46–3	24 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 4/15/09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 6/29/09

Chief, Development Engineering Division — Date 6.19.09

THE PURPOSE OF THIS GRADING PLAN IS TO SHOW ULTIMATE GRADING AFTER SITE STABILIZATION AND REMOVAL OF SEDIMENT CONTROL DEVICES. ALL OTHER INFORMATION HAS BEEN INTENTIONALLY OMITTED FOR CLARITY. FOR STORM DRAIN INFORMATION, SEE F-08-54.

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

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DATE	REVISION	BY	APP'R.
06/03/09	⚠ CONTOURS, CURB, & SD REVISED IN PARCELS 'B-5' & 'J' (REPLACEMENT SHEET)	dds	
07/01/08	⚠ REV. PURPOSE NOTE; ADDED SLOPE EASEMENT		

PREPARED FOR:
G&R / WESSEL LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 28, 2010

Revised **OVERALL FINAL GRADING PLAN**

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

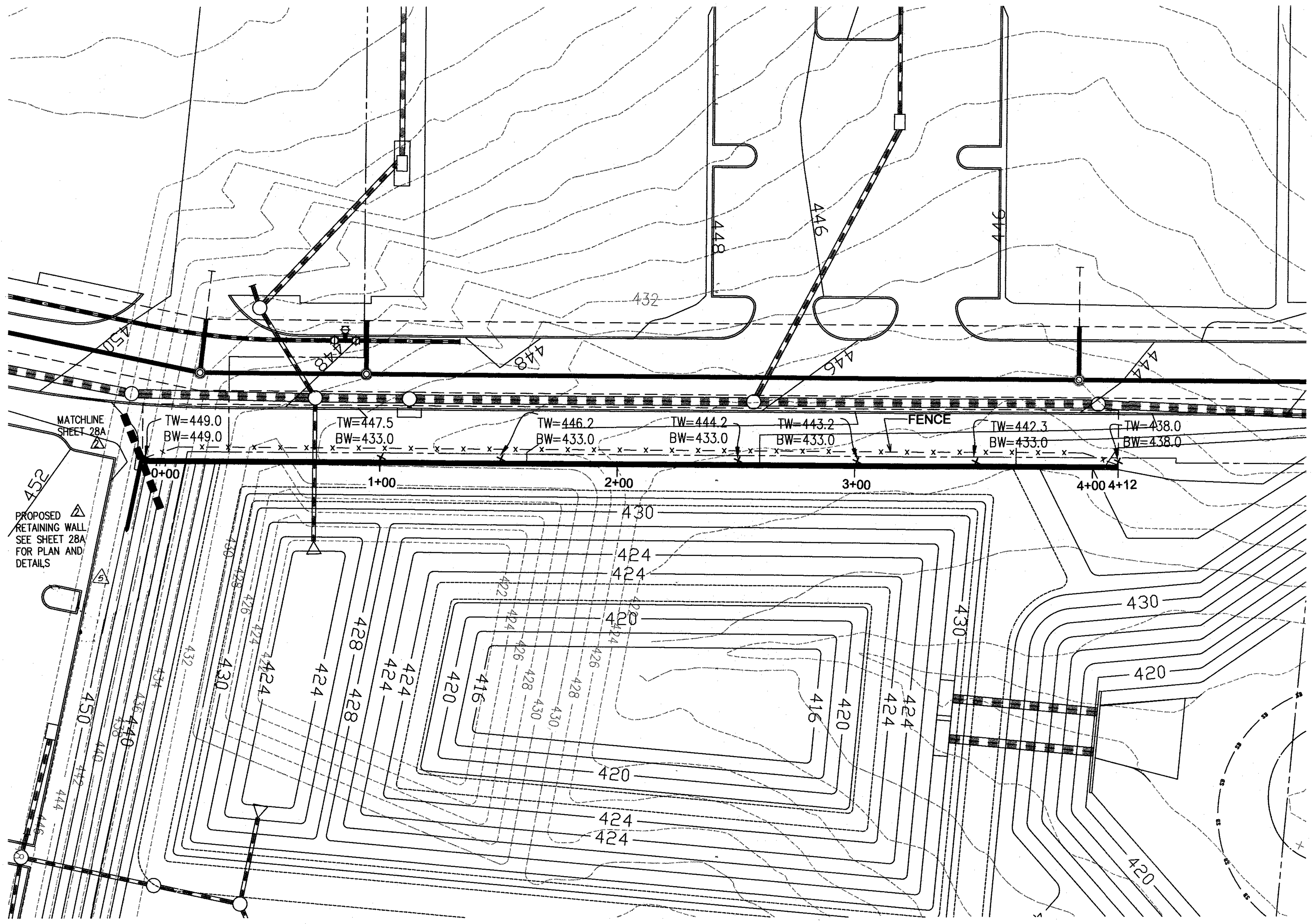
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	MXD-3	06081
DATE	TAX MAP – GRID	SHEET
JUNE, 2009	41-21&22 46-3	25 OF 32

F-08-55

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54



WALL LOCATION PLAN

1" = 30'

SPECIFICATIONS

MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

1.01 Description

A. Work shall consist of furnishing and construction of a Modular Retaining Wall System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans. Work includes preparing foundation soil, furnishing and

B. installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings. Work includes furnishing and installing geogrid soil

C. reinforcement of the type, size, location, and lengths designated on the construction drawings.

1.02 Delivery, Storage and Handling

A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.

B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2: PRODUCTS

2.01 Modular Concrete Retaining Wall Units

A. Modular concrete units shall conform to the following architectural requirements:
face color - concrete gray - standard manufacturers' color may be specified by the Owner.
face finish - sculptured rock face in angular tri-planer configuration. Other face finishes will not be allowed without written approval of Owner.
bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.

B. Modular concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.

C. Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:
compressive strength = 3000 psi minimum;
absorption = 8 % maximum (6% in northern states) for standard weight aggregates;
dimensional tolerances = ± 1/8" from nominal unit dimensions not including rough split face, ±1/16" unit height - top and bottom planes;
unit size - 8" (H) x 18" (W) x 12" (D) minimum;
unit weight - 75 lbs/unit minimum for standard weight aggregates;
inter-unit shear strength - 1000 plf minimum at 2 psi normal pressure;
geogrid/unit peak connection strength - 1000 plf minimum at 2 psi normal force.

D. Modular concrete units shall conform to the following constructability requirements: (If applicable)
vertical setback = 1/8"± per course (near vertical) or 1"+ per course per the design;
alignment and grid positioning mechanism - fiberglass pins, two per unit minimum;
maximum horizontal gap between erected units shall be - 1/2 inch.

2.02 Shear Connectors (If applicable)

A. Shear connectors shall be 1/2 inch diameter thermoset isopthalic polyester resin-protruded fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units. Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to + 100 degrees F.

B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

2.03 Base Leveling Pad Material

A. Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.

2.04 Unit Drainage Fill

A. Unit drainage fill shall consist of #57crushed stone

2.05 Reinforced Backfill

A. Reinforced backfill shall type SM, be free of debris and meet the following gradation tested in accordance with ASTM D-422 and meet other properties shown on the plan:

Sieve Size	Percent Passing
2 inch	100-75
3/4 inch	100-75
No. 40	0-60
No. 200	0-45

Plasticity Index (PI) <10 and Liquid Limit <40 per ASTM D-4318.

B. Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.

2.06 Geogrid Soil Reinforcement

A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn.

2.07 Drainage Pipe

A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.

PART 3 EXECUTION

3.01 Excavation

A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.

3.02 Base Leveling Pad

A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6" in front and behind the modular wall unit.

B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

3.03 Modular Unit Installation

A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.

B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.

C. Install shear/connecting devices per manufacturer's recommendations.

D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.

E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.

3.04 Structural Geogrid Installation

A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.

B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.

C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.

D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.

3.05 Reinforced Backfill Placement

A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.

B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.

C. Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 3% to - 3% of optimum.

D. Only lightweight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete unit.

E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.

F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.

G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3.06 Cap Installation

A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.

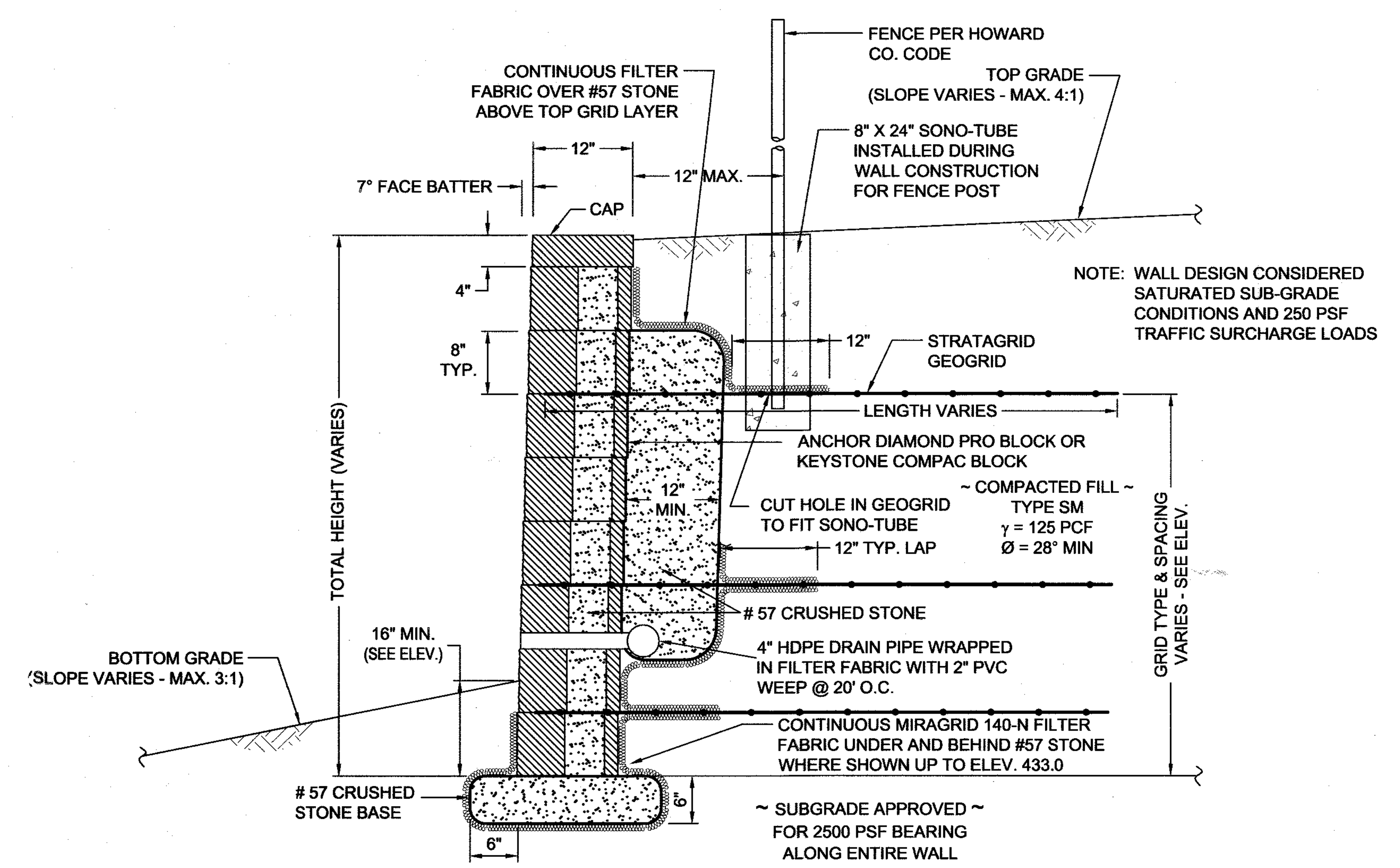
3.07 Field Quality Control

A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.

B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.

NOTES:

1. No trees shall be planted within 10 feet of the top of the retaining wall.
2. Retaining walls shall only be constructed under the observation of a registered professional engineer and a (NICET, WACEL, or equiv.) certified soils technician.
3. One soil boring shall be required every one hundred feet along the entire length of the wall. Copies of all boring reports shall be provided to the Howard County Inspector Prior to the start of construction.
4. The required bearing pressure beneath the wall system shall be verified in the field by a certified soils technician. Testing documentation must be provided to the Howard County Inspector prior to start of construction. The required bearing test shall be the Dynamic Cone Penetrometer test ASTM STP-399.
5. The suitability of fill material shall be confirmed by the on-site soils technician. Each 8" lift must be compacted to a minimum 95% standard proctor density and the testing report shall be made available to the Howard County Inspector upon completion of construction.
6. Walls shall not be constructed on uncertified fill materials.
7. Walls shall not be constructed within a Howard Co. right-of-way or easement.



TYPICAL WALL SECTION

NTS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 6/15/09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 6/30/09

Chief, Development Engineering Division — Date 6.19.9

HILLIS-CARNES ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A, Annapolis Junction, Maryland
(410) 880-4788 Fax: (410) 880-4098

DES. ITV | DRN. ITV | CHK. RWS

DATE	REVISION	BY	APP'R.
08/01/10	3 REMOVE PROPOSED RETAINING WALL	HKJ	
6/11/09	2 STORMDRAIN REVISED IN PARCELS 'B-5' & 'J'. MATCHLINE ADDED (REPLACEMENT SHEET)		
07/01/08	1 REV. TO SHOW STORM DRAIN AS PROPOSED PER F-08-54		

PREPARED FOR:
G&R / WESSEL LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 14434, EXPIRATION DATE: 05/13/11

Revised

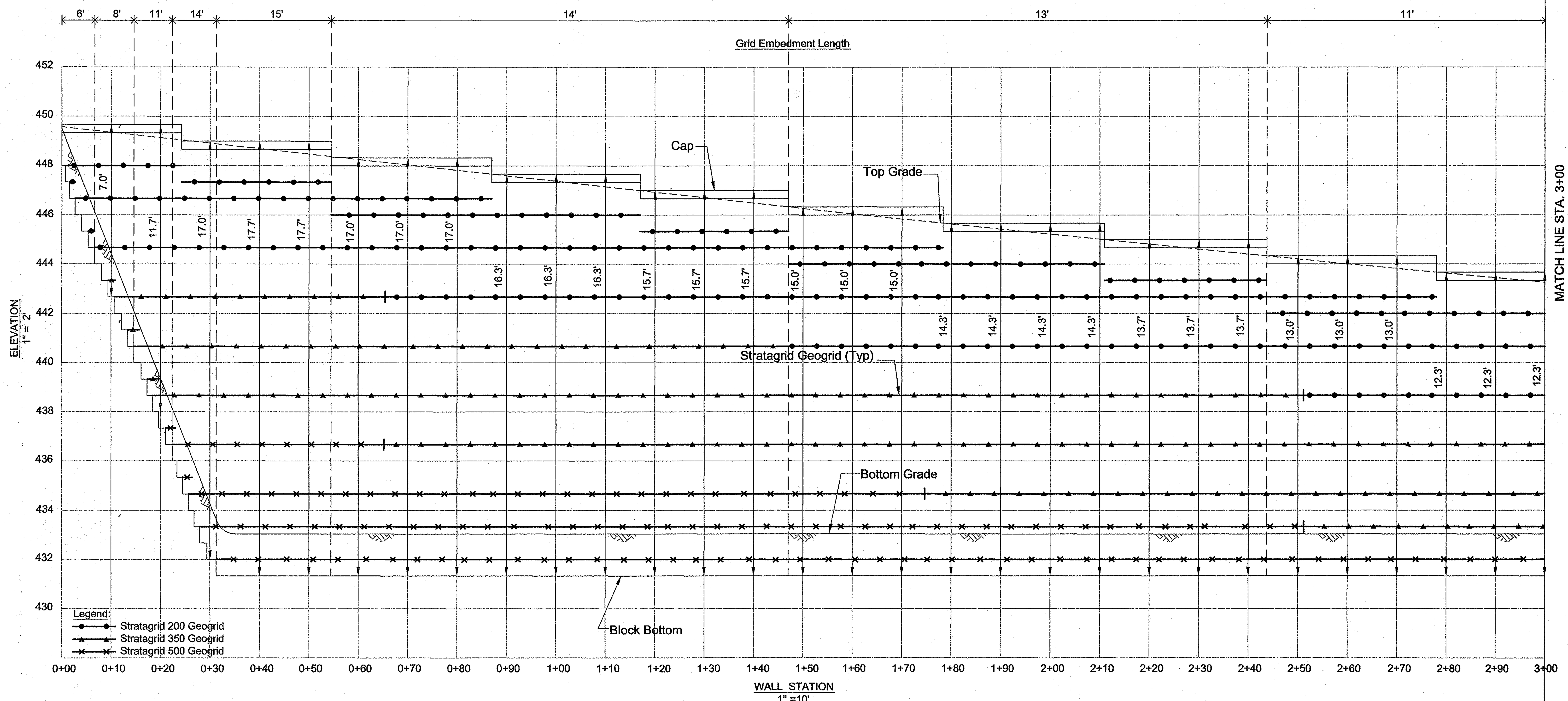
WALL LOCATION PLAN AND CONSTRUCTION DETAILS

MAPLE LAWN FARMS
WESTSIDE DISTRICT - AREA 1
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4
AND NON-BUILDABLE PARCELS 'I' AND 'J'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	HCEA PROJECT NO.
AS SHOWN	MXD-3	04164-B
DATE	**TAX MAP - GRID**	**SHEET**
JUNE, 2009	41-21&22 46-3	26 OF 32

F08-55



WALL ELEVATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 2-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 2/15/08

Chief, Development Engineering Division — Date 2/15/08

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, Maryland
(410) 880-4788 Fax: (410) 880-4098

DES. ITV | DRN. ITV | CHK. RWS

WS DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 14808
EXPIRATION DATE: 3/27/2008

WALL ELEVATION

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

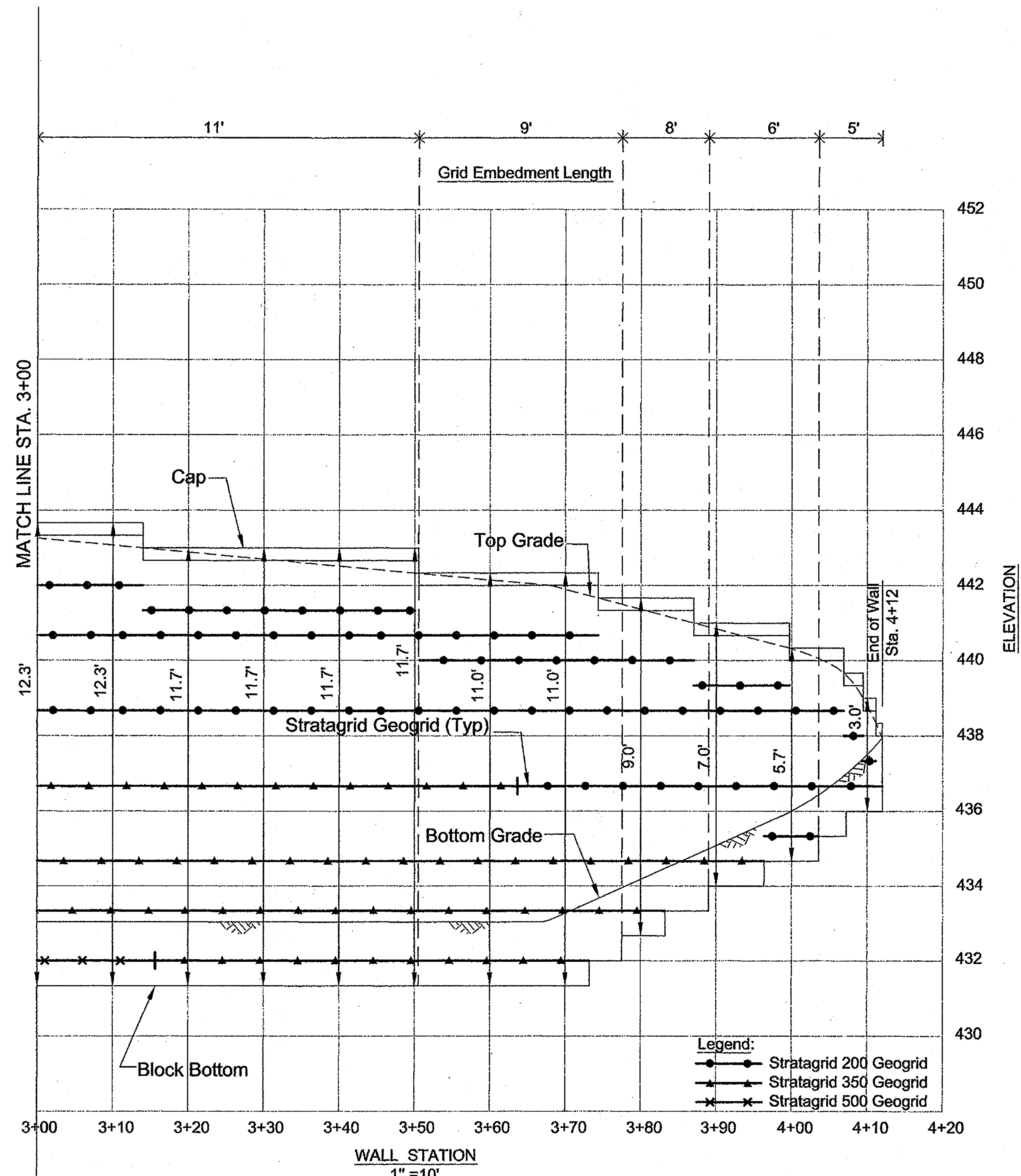
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	HCEA PROJECT NO.
AS SHOWN	MXD-3	04164-B
DATE	TAX MAP - GRID	SHEET
JAN., 2008	41-21&22 46-3	27 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55



WALL ELEVATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — 2-1-08 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — 2/15/08 Date

Chief, Development Engineering Division — 2/15/08 Date

HILLIS-CARNES ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A, Annapolis Junction, Maryland
(410) 880-4788 Fax: (410) 880-4098

DES. ITV | DRN. ITV | CHK. RWS

WS DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R/Wessel LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

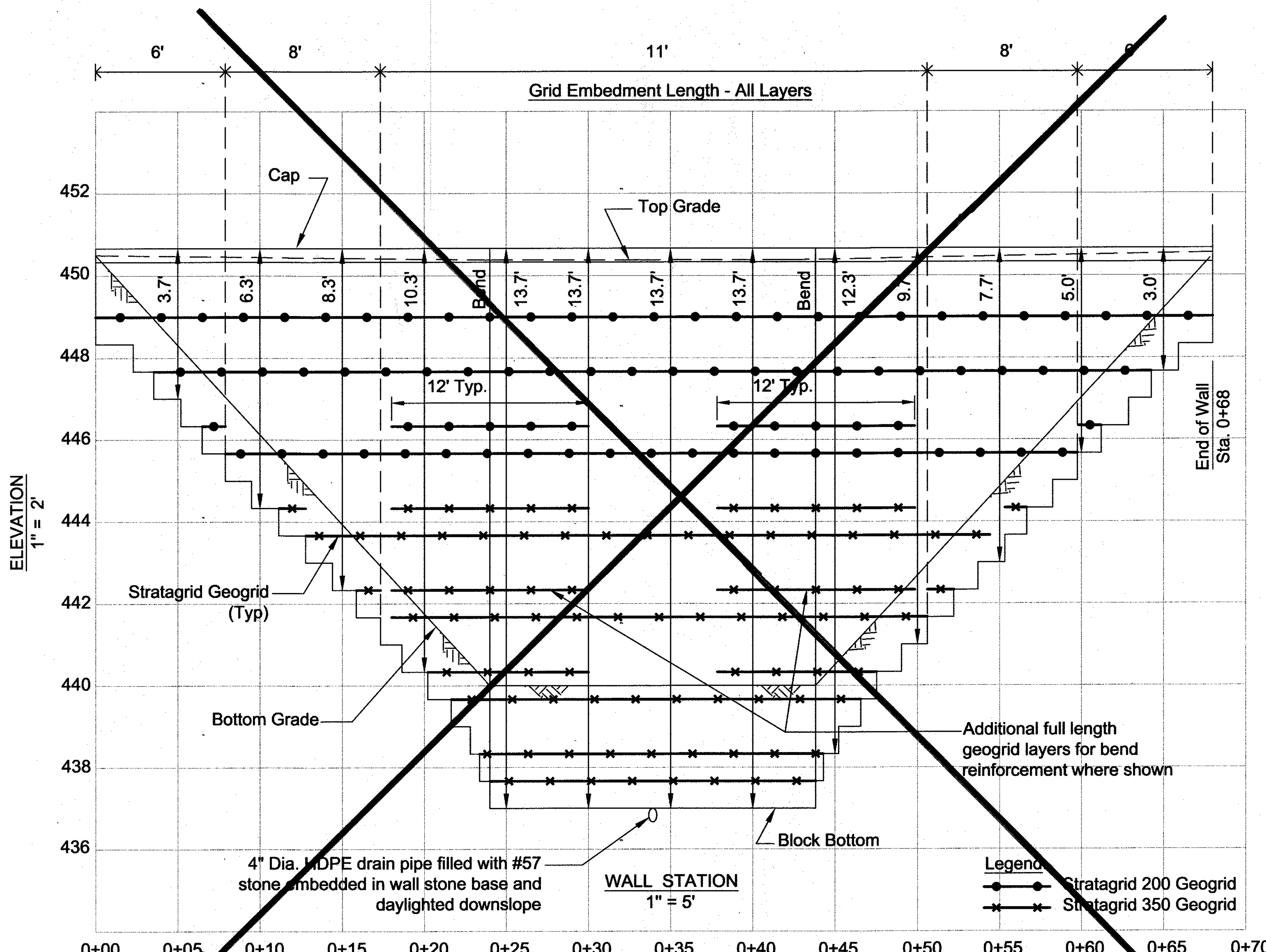
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 19808
EXPIRATION DATE: 2/27/2008

WALL ELEVATION
(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)
MAPLE LAWN FARMS
WESTSIDE DISTRICT - AREA 1
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

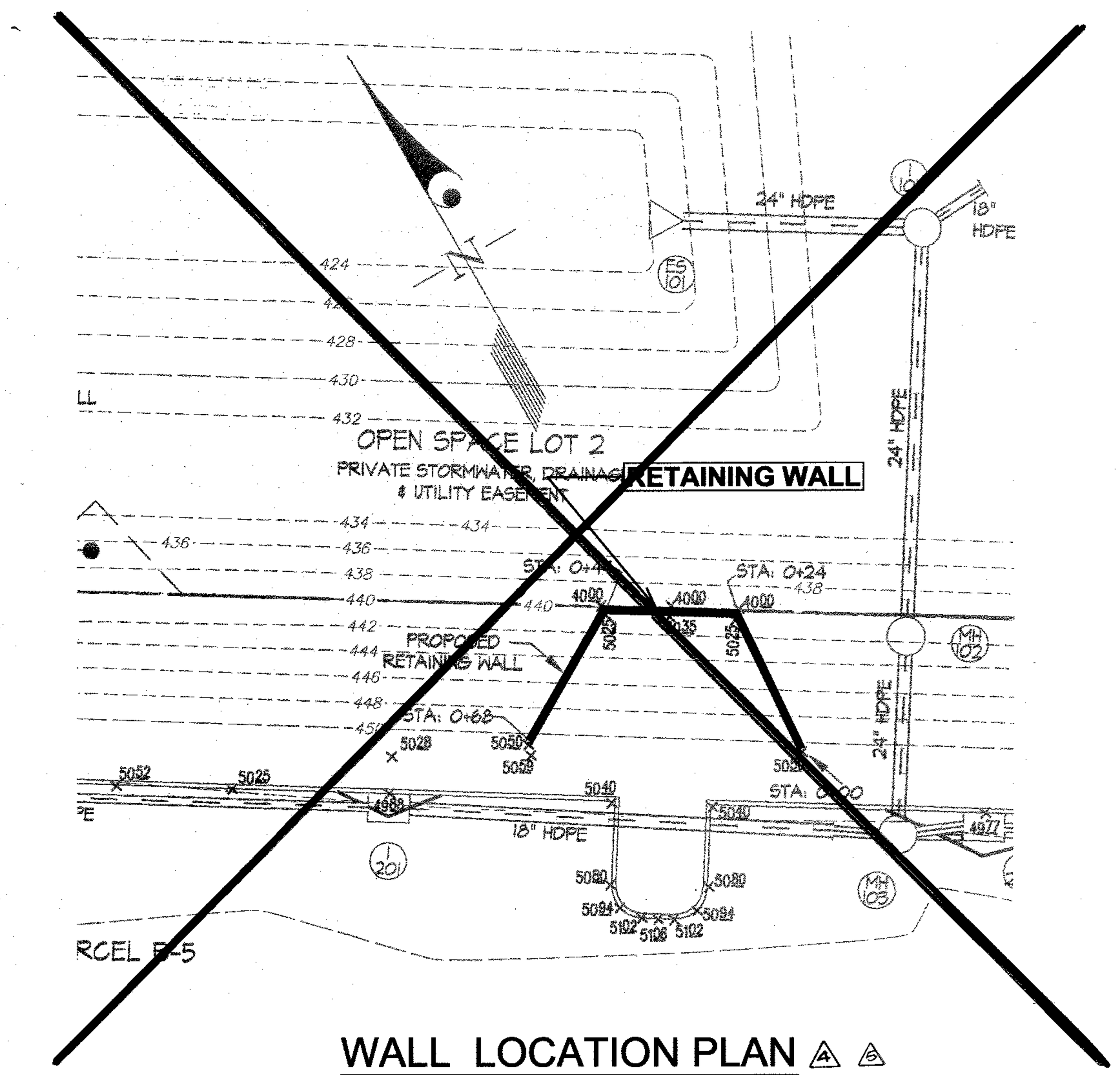
SCALE	ZONING	HCEA PROJECT NO.
AS SHOWN	MXD-3	04164-B
DATE	TAX MAP - GRID	SHEET
JAN., 2008	41-21&22 46-3	28 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55



WALL ELEVATION



WALL LOCATION PLAN

1" = 20'

Note:
For typical wall section and specifications see sheet 26

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — 1-12-10 — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — 1/15/10 — Date

Chief, Development Engineering Division — 1/15/10 — Date

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A — Annapolis Junction, Maryland
(410) 880-4788 — Fax: (410) 880-4098

DES. RWS | DRN. AM | CHK. RWS

DATE	REVISION	BY	APP'R.
08-01-16	3 REMOVE PROPOSED RETAINING WALL	HKJ	
11-02-09	2 Wall Location, Elevation and Profile Revised		
WS	u.n.on Wall cht. Added 1		

PREPARED FOR:
MAPLE LAWN FARMS, LLC.
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 14434, EXPIRATION DATE: 05/13/11

STATE OF MARYLAND — RICHARD W. STUS — No. 14434 — PROFESSIONAL ENGINEER

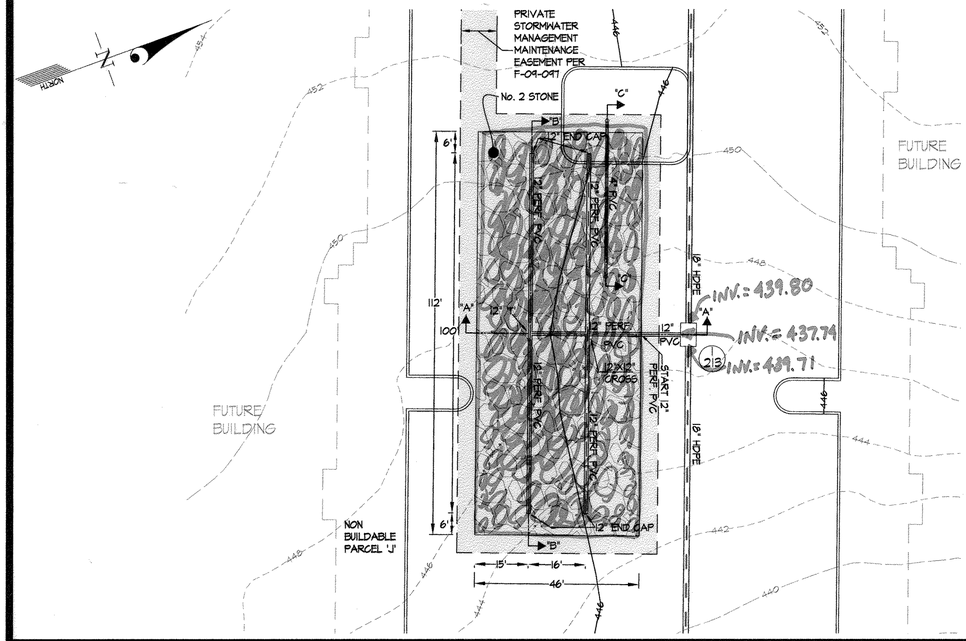
Revised WALL LOCATION PLAN AND ELEVATION

MAPLE LAWN FARMS
WESTSIDE DISTRICT – AREA 1
PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4
AND NON-BUILDABLE PARCELS 'I', 'J' AND 'K'

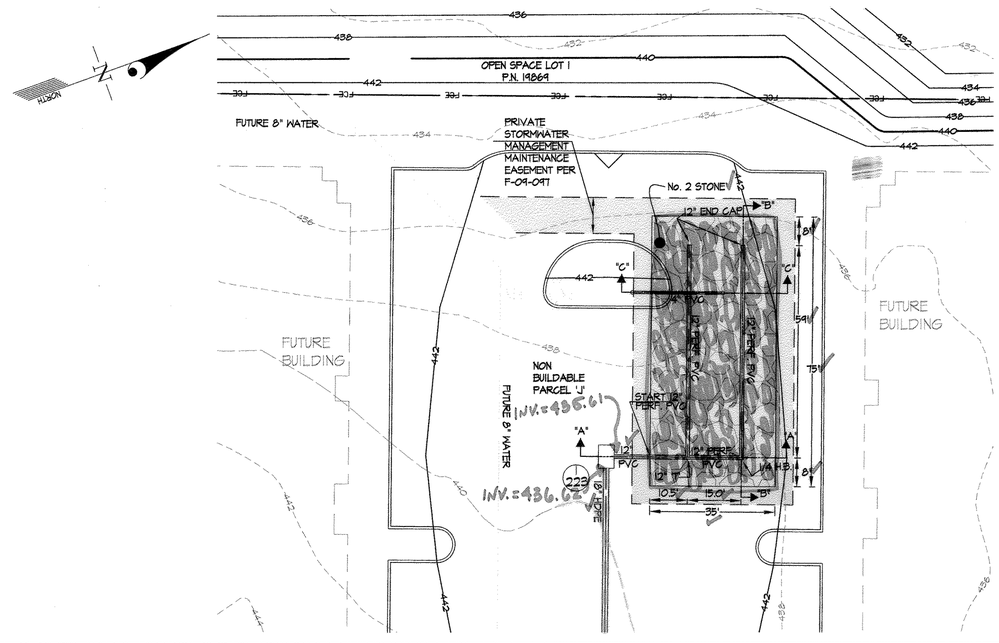
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	HCEA PROJECT NO.
AS SHOWN	MXD-3	09148-A
DATE	TAX MAP – GRID	SHEET
December, 2009	41-21&22 46-3	2 29 OF 32

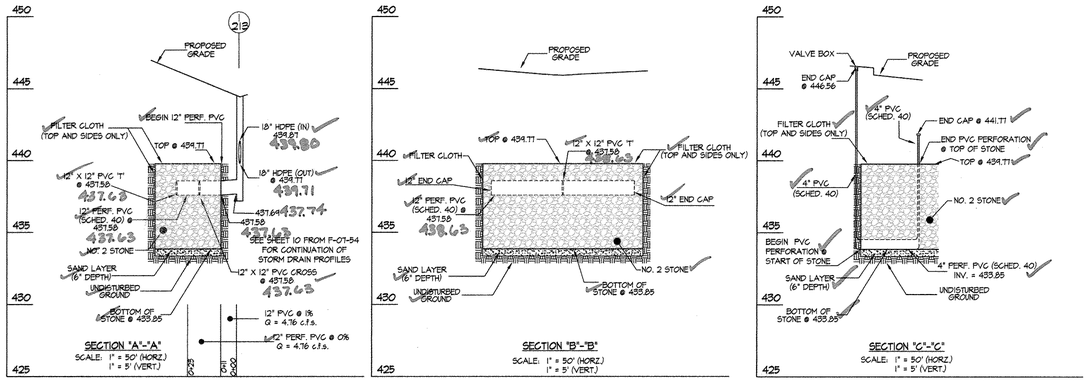
F08-055



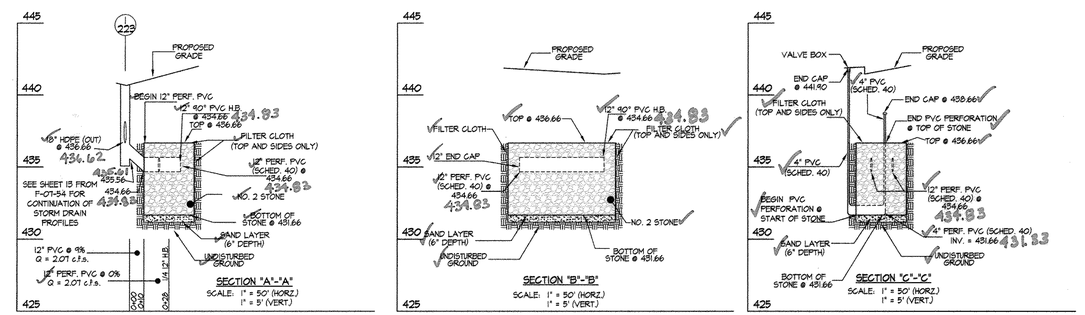
RECHARGE FACILITY 1 ENLARGEMENT SCALE: 1" = 20'



RECHARGE FACILITY 2 ENLARGEMENT SCALE: 1" = 20'



RECHARGE FACILITY 1 CROSS SECTIONS



RECHARGE FACILITY 2 CROSS SECTIONS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 6/15/09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 6/25/09

Chief, Development Engineering Division — Date 5.19.9

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DRAWINGS 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. 12975, EXPIRATION DATE: MAY 26, 2014

12/9/13
DATE

CARL K. GUTSCHICK
P.E. MARYLAND REG. NO. 12975

ASBUILTS

PIPE SCHEDULE

SIZE & TYPE	QUANTITY (LF)	REMARKS
4" PVC	33	SCH. 40
4" PERF. PVC	69	SCH. 40
12" PVC	21	SCH. 40
12" PERF. PVC	315	SCH. 40

*ALL PIPES TO BE PRIVATE.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER INFILTRATION TRENCHES

1. THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT.
2. WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS SHALL BE RECORDED OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
3. A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
4. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN THE 72 HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
5. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
6. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081REV2208.dwg | DES. dds | DRN. dds | CHK.

DATE	REVISION	BY	APP'R.
06/03/09	RECHARGE FACILITIES DETAIL SHEET ADDED ⚠	dds	

PREPARED FOR:
G&R / WESSEL LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: May 26, 2010

RECARGE FACILITY DETAILS

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP - GRID	SHEET
JUNE, 2009	41-21&22 46-3	⚠ 10 OF 22

ASBUILTS

F-08-55

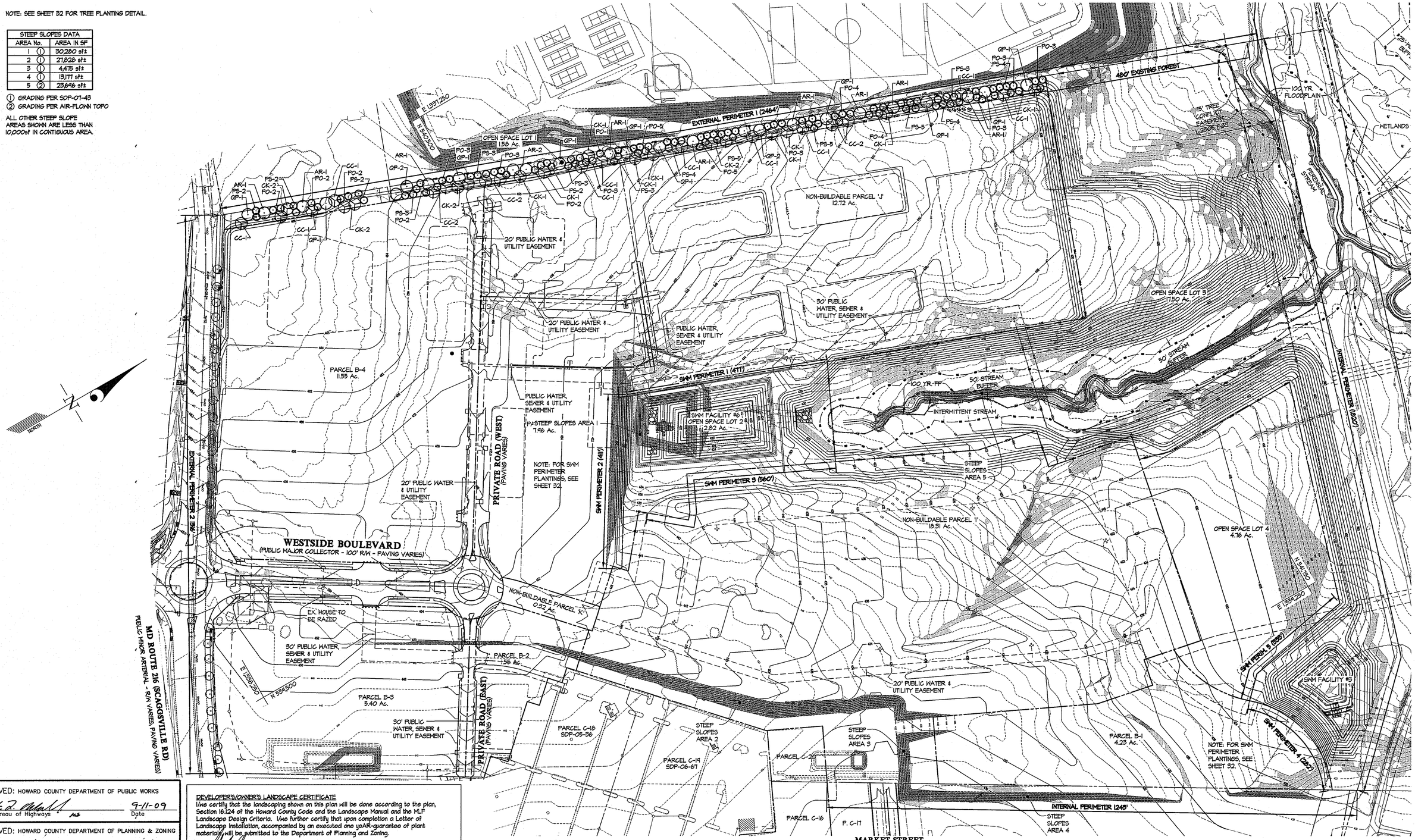
THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

NOTE: SEE SHEET 32 FOR TREE PLANTING DETAIL.

STEEP SLOPES DATA		
AREA No.		AREA IN SF
1	①	30,280 sf±
2	①	27,828 sf±
3	①	4,475 sf±
4	①	13,171 sf±
5	②	23,646 sf±

① GRADING PER SDP-07-43
② GRADING PER AIR-FLOWN TOPO

ALL OTHER STEEP SLOPE AREAS SHOWN ARE LESS THAN 10,000sf IN CONTIGUOUS AREA.



THIS PLAN IS FOR LANDSCAPING INFORMATION ONLY.
SEE SHEET 9 OF F-08-54 FOR STORM DRAIN SIZE, TYPE AND LENGTH.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 9-11-09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 9/21/09

Chief, Development Engineering Division — Date 9/21/09

DEVELOPER'S/OWNER'S LANDSCAPE CERTIFICATE

I/we certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Landscape Manual and the MLF Landscape Design Criteria. I/we further certify that upon completion a Letter of Landscape Installation, accompanied by an executed one yeAR-guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Developer's/Owner's Name — 9-04-09

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081LS31-32.dwg | DES. AWL | DRN. TWL | CHK. MBT

DATE	REVISION	BY	APP'R.
9-17-9	Rev.3 New Sheet, Add perimeter landscaping.		

PREPARED FOR:
G&R / WESSEL LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2010

STATE OF MARYLAND — MARK B. TROUTMAN — REG. NO. 12975 — PROFESSIONAL ENGINEER — 9-3-09

FINAL LANDSCAPING PLAN

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	MXD-3	06081
DATE	TAX MAP – GRID	SHEET
JUNE, 2009	41-21&22 46-3	31 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55

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STORMWATER MANAGEMENT AREA LANDSCAPING – SCHEDULE D

PERIMETER	PROPOSED LAND USE	TYPE OF BUFFER	ADJACENT LAND USE	LINEAR-FEET OF PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR-FEET) DESCRIBE BELOW IF NEEDED.	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR-FEET) DESCRIBE BELOW IF NEEDED.	NUMBER OF PLANTS REQUIRED		NUMBER OF PLANTS PROVIDED		HOW REQUIRED BUFFER IS BEING PROVIDED
							SHADE TREES	EVERGREEN TREES	SHADE TREES	EVERGREEN TREES	
SWM-1	SWM	'B' BUFFER *	COMMERCIAL	471 L.F.	NO	YES - 471' (SWM RETAINING WALL)	0	0	----	----	------
SWM-2	SWM	'B' BUFFER *	COMMERCIAL	411 L.F.	NO	NO	8	10	8	14	SEE PLAN (THIS SHEET)
SWM-3	SWM	'C' BUFFER *	RESIDENTIAL (FUTURE)	560 L.F.	NO	NO	14	28	14	28	SEE PLAN (THIS SHEET)
SWM-4	SWM	'B' BUFFER *	COMMERCIAL	282 L.F.	NO	NO	6	7	6	7	SEE PLAN (THIS SHEET)
SWM-5	SWM	'C' BUFFER *	OPEN SPACE (RESIDENTIAL)	333 L.F.	NO	NO	8	17	8	17	SEE PLAN (THIS SHEET)
						TOTAL NUMBER OF TREES	36	62	36	66	

* FOLLOWS COMPREHENSIVE SKETCH PLAN GUIDELINE REQUIREMENTS

NOTES

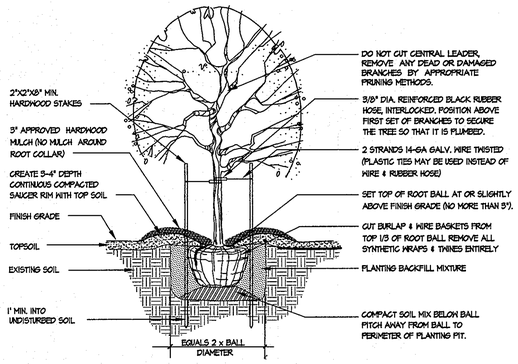
1. INTERNAL PLANTING AND PARKING LOT LANDSCAPING WILL BE PROVIDED WITH THE SITE DEVELOPMENT PLANS.
2. THE BUFFERS SHOWN FOR SCHEDULE 'D' ARE IN ACCORDANCE WITH THE LANDSCAPING MANUAL ACCORDING TO THE COMPREHENSIVE SKETCH PLAN CRITERIA, THE FOLLOWING ARE THE MINIMUM PLANTING TO BE PROVIDED ALONG BUFFER TYPE 'B'.
   SHADE TREE: 1:50 LINEAR-FEET OF MEASURED PERIMETER EDGE, AND
   EVERGREEN TREE: 1:40 LINEAR-FEET OF MEASURED PERIMETER EDGE.

   BUFFER STORMWATER MANAGEMENT FROM A ROADWAY OR PERIMETER RESIDENTIAL PROPERTIES:
   SHADE TREE: 1:40 LINEAR-FEET OF MEASURED PERIMETER EDGE, AND
   EVERGREEN TREE: 1:20 LINEAR-FEET OF MEASURED PERIMETER EDGE.

Projected Bond Requirement - Surety for Schedule D:

Schedule 'D' Number of required Shade Trees for bonding:	36 x $300 =	$ 10,800.00
Schedule 'D' Number of required Evergreen Trees for bonding:	62 x $150 =	$ 9,300.00
TOTAL:		$ 20,100.00

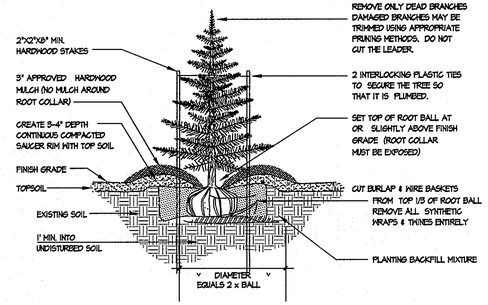
COMMENTS:



NOTE: TREE STAKES AND GUY WIRES TO BE REMOVED 1 YEAR AFTER PLANTING.

DECIDUOUS TREE PLANTING DETAIL

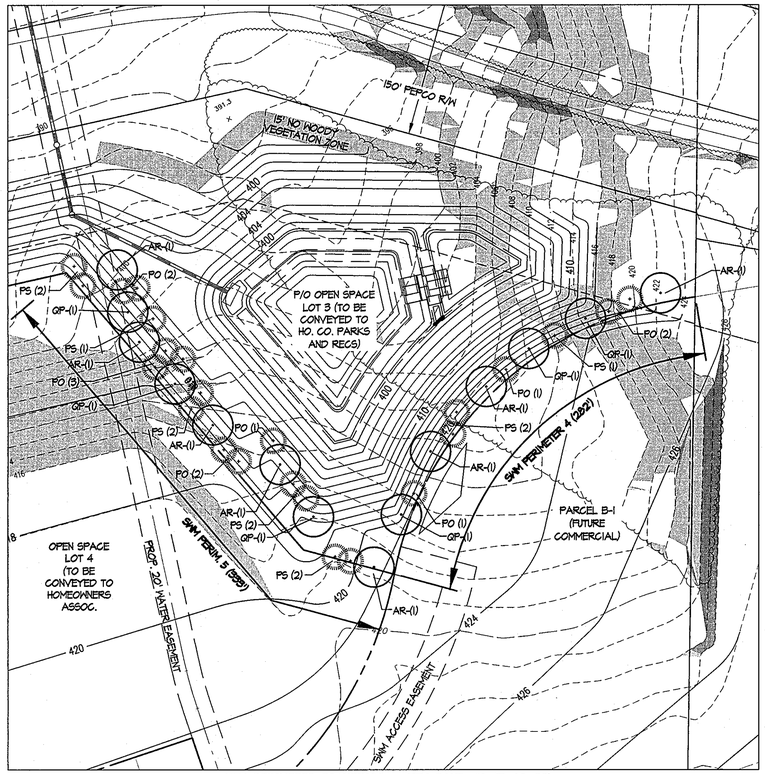
FOR PLANTING MATERIAL UP TO 3 1/2" CALIPER NTS



NOTE: TREE STAKES AND GUY WIRES TO BE REMOVED 1 YEAR AFTER PLANTING.

EVERGREEN TREE PLANTING DETAIL

NTS

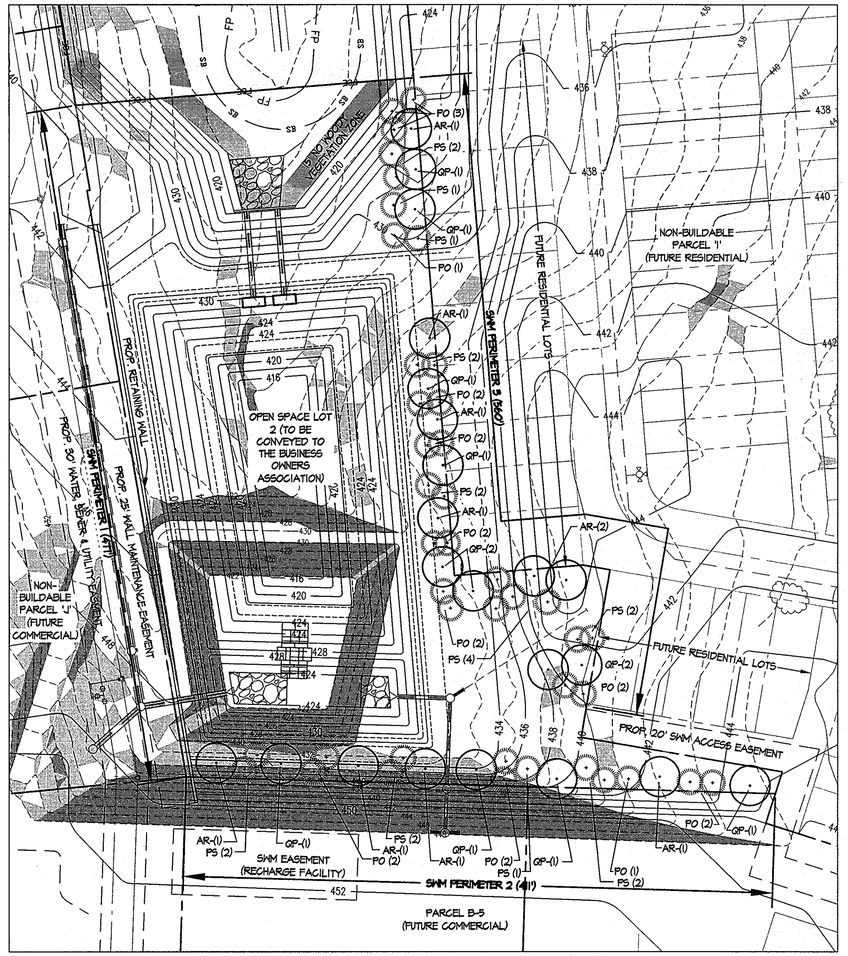


SWM PERIMETER PLANTINGS – SWM POND #3 (F-08-55)

SCALE: 1"=50'

PLANT LIST (SWM POND #3 FROM F-08-55)

SYMBOL	QTY.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	ROOT	COMMENTS
SHADE TREES					
AR	8	Acer rubrum 'Autumn Flame' Autumn Flame Maple	2 1/2-3" Cal.	B&B	
QP	6	Quercus palustris Pin Oak	2 1/2-3" Cal.	B&B	
EVERGREEN TREES					
PS	12	Pinus strobus White Pine	6'-8' Ht.	B&B	
PO	12	Picea omorika Serbian Spruce	6'-8' Ht.	B&B	



SWM PERIMETER PLANTINGS – SWM POND #6 (SEE F-08-55)

SCALE: 1"=50'

PLANT LIST (SWM POND #6 FROM F-08-55)

SYMBOL	QTY.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	ROOT	COMMENTS
SHADE TREES					
AR	10	Acer rubrum 'Autumn Flame' Autumn Flame Maple	2 1/2-3" Cal.	B&B	
QP	12	Quercus palustris Pin Oak	2 1/2-3" Cal.	B&B	
EVERGREEN TREES					
PS	21	Pinus strobus White Pine	6'-8' Ht.	B&B	
PO	21	Picea omorika Serbian Spruce	6'-8' Ht.	B&B	

NOTES

1. At the time of plant installation, all shrubs and trees listed and approved on the Landscape Plan, shall comply with the proper height requirement in accordance with the Howard County Landscape Manual and the MLF Landscape Design Criteria. In addition, no substitutions or reallocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from the approved Landscape Plan may result in the denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to the applicable plans.
2. The owner, tenants and/or their agents shall be responsible for maintenance of the required landscaping including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.
3. This plan has been prepared in accordance with Section 16.124 of the Howard County Code, the Landscape Manual, and the MLF Landscape Design Criteria with 61 shade trees, 33 ornamentals, and 162 evergreen trees required. A landscape surety in the amount of $47,550.00 will be posted to DPW with the Developer's Agreement.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 9-11-09

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 9/21/09

Chief, Development Engineering Division — Date 9/21/09

DEVELOPER'S/OWNER'S LANDSCAPE CERTIFICATE

I/we certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Landscape Manual and the MLF Landscape Design Criteria. I/we further certify that upon completion a Letter of Landscape Installation, accompanied by an executed one yeAR-guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Developer's/Owner's Name — 9-04-09

This Plan is For Landscaping Purposes See Sheet 1 of F-08-54 for storm drain size, type & Length.

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
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L:\CADD\DRAWINGS\03067\06081\FINALS (SWM-SC)\06081LS31-32.dwg | DES. AWL | DRN. TWL | CHK. MBT

DATE	REVISION	BY	APP'R.
9-17-9	Rev. 3 New Sheet. Add perimeter landscaping.		

PREPARED FOR:
G&R / WESSEL LLC
SUITE 300 WOODHOLME CENTER
1829 REISTERSTOWN RD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 28, 2010

STATE OF MARYLAND — MARK B. WARFIELD — 9-3-09

FINAL LANDSCAPING NOTES

(STORMWATER MANAGEMENT AND SEDIMENT CONTROL ONLY)

MAPLE LAWN FARMS

WESTSIDE DISTRICT - AREA 1

PARCELS B-1 THROUGH B-5, OPEN SPACE LOTS 1 THROUGH 4 AND NON-BUILDABLE PARCELS 'I', 'J', AND 'K'

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	06081
DATE	TAX MAP – GRID	SHEET
JUNE, 2009	41-21&22 46-3	32 OF 32

THIS SET TO BE APPROVED IN CONJUNCTION WITH F-08-54

F-08-55

1/9/2008 8:23:26 AM EST