CONSTRUCTION PLAN
MAPLE LAWN FARMS
Hillside District - Area 1
Lots 1 through 59, Open Space Lot 60, Common Open Space Lots 61 & 62, and Non-Buildable Parcels 'F' & 'G'

GENERAL NOTES:

1. Zoning: Site is being developed under MXD-3 regulations, per ZB995M, Approved on 2/8/01. Underlying Zoning is RR-DEO.
2. The previous Department of Planning and Zoning file numbers: S 01-17, ZB-995M, PB-353, WP-01-111, F-04-92, WP-03-120 and WP-03-02, F-08-177.
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.
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 August 20, 2001.
7. All roads in this development are public. All areas indicated as alley will be private.
8. Site Analysis

Gross Site Area:	501.9 Acres ±
Total Area of Phase 4a:	17.2 Acres ±
Area of Open Space:	6.7 Acres ±
Area of 100 Year Floodplain in Phase 4a:	3.0 Acres ±
Area of Roadway (Public):	5.1 Acres±
Area of Roadway (Private):	0.5 Acres±
Area of Lots:	3.4 Acres±
Area of Non-Buildable Lots:	1.5 Acres±

9. Open Space Requirements:
   Minimum Open Space Requirement for Project is 35%.
   Total Open Space Required: 6.01 Acres ± (35%)
   Total Open Space Provided: 6.70 Acres ± (39.0%)
   Recreational Open Space Required: 0.67 Acres (10%)
   Recreational Open Space Provided: 0.28 Acres (4.2%)
   (See Chart-this sheet)
   The excess open space area may be used to fulfill the minimum open space requirement for future phases.
10. Soils data was taken from the Soil Survey of Howard County, Maryland issued July 1968.
11. Topography indicated was taken from aerial topography prepared during March 1997 by 3DI. In areas within the limit of submission where no grading is being proposed, contours shown are grades established under F 03-90.
12. Boundary information shown is based upon a field survey prepared by Gutschick, Little, and Weber, P.A. on or about June, 2001.
13. Wetland delineation by Exploration Research, Inc. approved by the Corps of of Engineers JD 63787-3 on 5/14/98. Notice of intent to issue a permit is covered by MDE Tracking #01-NT-0344/200165421.
14. The 100-year flood plain limits were determined by the floodplain study prepared by Gutschick, Little and Weber, P.A. as part of P 04-01.
15. Horizontal and vertical datum is based on Howard County Station 41E.
16. Existing utilities were taken from available Howard County records.
17. Public water and sewer to be utilized:
    Existing Water Contract Number: 24-4105-D
    Existing Sewer Contract Number: 24-4105-D
18. Traffic Study was prepared and submitted as part of S 01-17, which was signed by the Planning Board on August 8, 2001.
19. Sediment and erosion control measures will be included with Final Plans and Site Development Plans. No sediment control devices will encroach beyond the L.O.D. shown.
20. Parking requirements will be determined and provided at the Site Development Plan stages.
21. Street trees will be provided per the Comprehensive Sketch Plan criteria at the Final Plan stage.
22. All buffering and other landscaping requirements/features will be shown at the Site Development Plan stage and/or final plan stage and will be provided in accordance with the Comprehensive Sketch Plan criteria.
23. 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.
24. ~~Stormwater management, for both quality and quantity for the development proposed by these plans will be satisfied by the facility as shown on this Final Plan. The pond will be publicly owned and maintained.~~
    24. Stormwater management, both quality and quantity, for this development will be satisfied by the facility shown on these plans. The pond will be publicly owned and jointly maintained by the County and H.O.A. (see sheet 14)
25. As a consequence of the Sketch Plan approval prior to November 15, 2001, this project is grandfathered to the Fourth Edition of the Subdivision and Land Development Regulations.
26. 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. This and other Preliminary Subdivision Plans submitted for this project shall not be approved by DPZ until funding test evaluation restrictions enunciated by the Zoning Board on page 22-23 of its decision on the PDP are met consistent with the requirements of Section 127.E.4.c.2 of the Zoning Regulations.
27. 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.
28. Open space lots may contain active recreational facilities as allowed by the approved Comprehensive Development Criteria.
29. Phasing for this project is in accordance with the Decision and Order for Zoning Board Case No. ZB-995M and the Decision and Order for PB Case No. 353 (Comprehensive Sketch Plan, S-01-17).
30. Development for this phase will be done in accordance with the Comprehensive Development Criteria approved with S-01-17 and PB-353.
31. The transportation and transit design will be implemented as outlined in the Petitioner's Exhibit 55 as submitted as part of ZB 995M. Location and number of bus stops within the limits of this Phase will be determined at Final Plan Stage. Any shelters will be provided at Site Development Plan Stage for the development adjacent to that structure so that architectural and hardscape features can be coordinated.
32. A Noise Study was prepared by Wildman & Associates for S 01-17, which was signed by the Planning Board on August 8, 2001.
33. The limits of this submission does not include the moderate income housing units. They will be part of the additional unit allocation on Parcel A-1 which are also part of Phase 4.
34. For soil types, descriptions and limitations, see S 01-17.
35. The minimum building setback restrictions from property lines and the public road right-of-way lines for all SFA residential lots will be in accordance with the Comprehensive Development criteria approved per S-01-17 and PB-353
36. The Maple Lawn Boulevard road crossing through the environmentally sensitive areas and buffers was determined to be necessary for reasonable development of the property in accordance with Section 16.116(c) of the Subdivision and Land Development Regulations during review and approval of S-01-17.
38. All sign post used for traffic control signs installed in the County Right-of-Way shall be mounted on a 2" galvanized steel, perforated, square tube post (14 gauge) inserted into a 2-1/2" galvanized steel, perforated, square tube sleeve (12 gauge) -3' long. A galvanized steel pole cap shall be mounted on top of each post.
39. All proposed Bus Stops shall be privately owned 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-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-03-120

On July 29, 2003, WP-03-120 was granted for the following:

- Installation of a temporary stream crossing for the purpose of earth moving operations (waiver from Section 16.115(c)(2) and Section 16.116(a)(1) and (2)).

SUMMARY OF MINIMUM SETBACKS FOR RESIDENTIAL LAND USE AREAS PER APPROVED PDP AND CSP DEVELOPMENT CRITERIA

The following minimum structure setbacks shall apply for structures from the project boundary:

- 50-foot minimum open space buffer adjacent to existing residential communities.
- 100-foot minimum setback for residential units from Johns Hopkins Road.
- 50-foot minimum setback for commercial buildings from Johns Hopkins Road and a 20-foot minimum setback for parking from Johns Hopkins Road.

STRUCTURE SETBACKS

The minimum required setbacks for SINGLE FAMILY DETACHED structures shall be as follows:

Lot Type	Minimum Front Setback	Minimum Side Setback	Minimum Rear Setback	
			To Principal Structure	To Rear Garage (Attached or Detached) or to Accessory Structure
Cottage	10'	4' except for garage which may be 0'	20'	3'
Manor	12'	6' except for garage which may be 0'	20'	3'
Villa	12'	6' except for garage which may be 0'	20'	3'
Estate	20'	20' except for garage which may be 10'	20'	20'

- A zero lot line dwelling unit may be located on any property line which is not a street right-of-way provided that (1) no part of the dwelling shall encroach onto the adjoining lot: (2) an access easement for the purpose of maintenance to the side of the structure shall be included in the deed where appropriate. Spacing between dwelling units shall be a minimum of 8'. Garages however, may adjoin along the property line, provided they comply with all building and fire code regulations.
- Open decks must be a minimum of 10' from rear property line, and are subject to side yard setbacks.
- Facing accessory structures and detached garages (across an alley/lane R.O.W.) shall be 30' apart.
- Structures may be located anywhere within such setback areas in accordance with a site development plan approved by Howard County Planning Board.

EXCEPTIONS TO FRONT SETBACK REQUIREMENTS:

Except for the following, section 128.A.1 applies:

- Porches may encroach into the front yard to within 2' from the property line or right-of-way for cottages, manors, villas; to within 12' for estates. Porches may encroach into the side yard of corner lots to within 2' from right-of-way for cottages, manors, and villas, to within 12' for estates. Where a side yard abuts an open space or passage, porches may encroach to within 1' from side property line for cottages, manors, and villas; to within 12' for estates.
- Stoops and steps may encroach into the front and side yards to within 1' from the front property line.
- Garden walls, fences, piers, gates and similar ornaments may be built in the front and side yards not closer than 1' from the front property line; not greater than 48" in height along the front property line and not greater than 72" along the side and rear property lines.

ACCESS

- Permanent access to lots may be provided by means of alleys, using perpetual reciprocal easements.

BUILDING HEIGHT

- Maximum building height on all lots shall be 38' to the midpoint of the roof height measured from the highest adjoining ground elevation adjacent to the building, except as otherwise approved on a site development plan by the Howard County Planning Board.

COVERAGE

- Lot coverage for estate lots shall not exceed 50 percent, including principal and accessory structures but not including sidewalks, paved parking areas, driveways, porches, stoops, steps, decks, patios, in-ground pools, landscaping and similar structures.

PARKING

- No less than two parking spaces shall be provided for each single family detached dwelling unit. Such spaces may consist of garage, driveway and/or similar off-street parking spaces. Visitor parking and overflow parking may be accommodated as on-street parking within the public right-of-way.

STRUCTURE SETBACKS

The minimum required setbacks for OTHER RESIDENTIAL structures shall be as follows:

Lot Type	Minimum Front Setback	Minimum Side Setback	Minimum Rear Setback		
			To Principal Structure	To Rear Garage (Attached or Detached) or to Accessory Structure	Minimum Front, Side and Rear Setback from Maple Lawn Blvd.
Single-Family Attached	0'	0'	20'	3'	20'
Live-Work	0'	0'	20'	3'	20'
Semi-detached	10'	4' except for garage which may be 0'	20'	3'	20'
Two-Family	10'	4' except for garage which may be 0'	20'	3'	20'
Apartment	10'	10' except for garage which may be 0'	20'	3'	20'

- Open decks must be a minimum of 10' from rear property line, and are subject to side yard setbacks.
- Facing accessory structures and detached garages (across an alley/lane R.O.W.) shall be 30' apart.
- Between apartment buildings, the minimum setback distances shall be 30' front to front, 50' back to back, 50' front to back and 15' for all other conditions. Between single-family attached buildings, the minimum setback distances shall be 30' front to front, 50' back to back, 50' back to front and 10' for all other conditions.
- Structures may be located anywhere within such setback areas in accordance with a site development plan approved by Howard County Planning Board.

EXCEPTIONS TO FRONT SETBACK REQUIREMENTS:

Except for the following, section 128.A.1 applies:

- Porches may encroach into the front yard to within 2' from the property line or right-of-way for all other residential lot types.
- Stoops and steps may encroach into the front and side yards to within 1' from the front property line for all other residential types.
- Garden walls, fences, piers, gates and similar ornaments may be built in the front and side yards not closer than 1' from the front property line; not greater than 48" in height along the front property line and not greater than 72" along the side and rear property lines.

ACCESS

- Permanent access to lots may be provided by means of alleys, using perpetual reciprocal easements.

BUILDING HEIGHT

- Maximum building height in the other residential land use areas shall be 50' for attached, semi-detached, or two-family dwelling units, and 60' for live-work units and apartments. In each case the building height is measured from the midpoint of the roof height to the highest adjoining ground elevation adjacent to the building, except as otherwise approved on a site development plan by the Howard County Planning Board.

COVERAGE

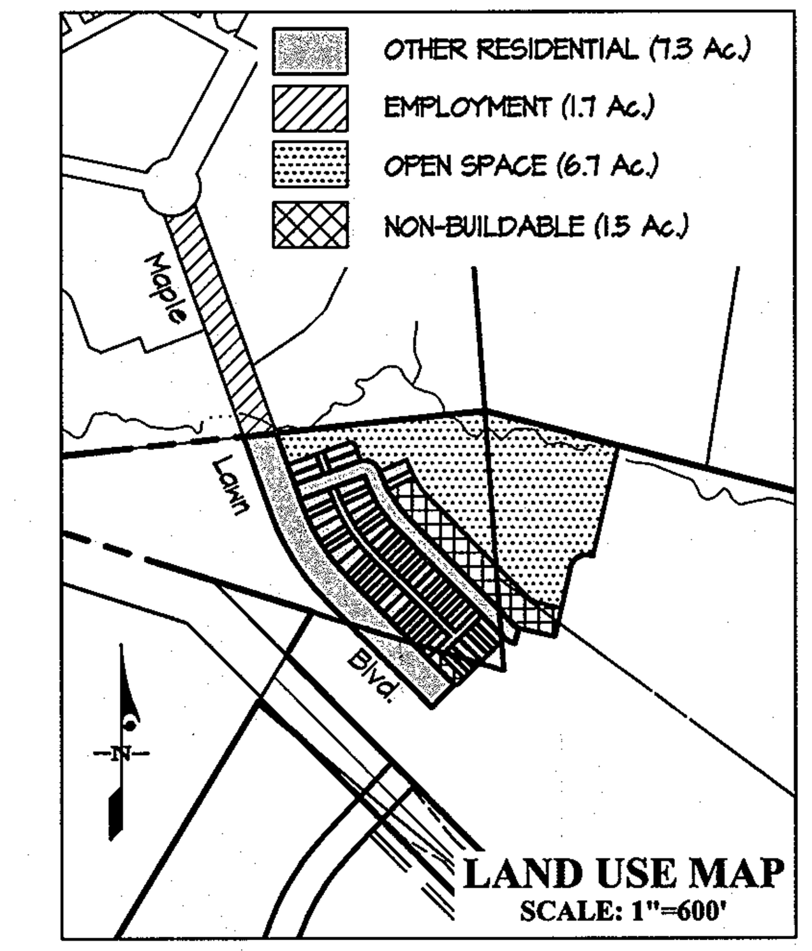
- No coverage requirements are imposed in other residential land use areas.

PARKING

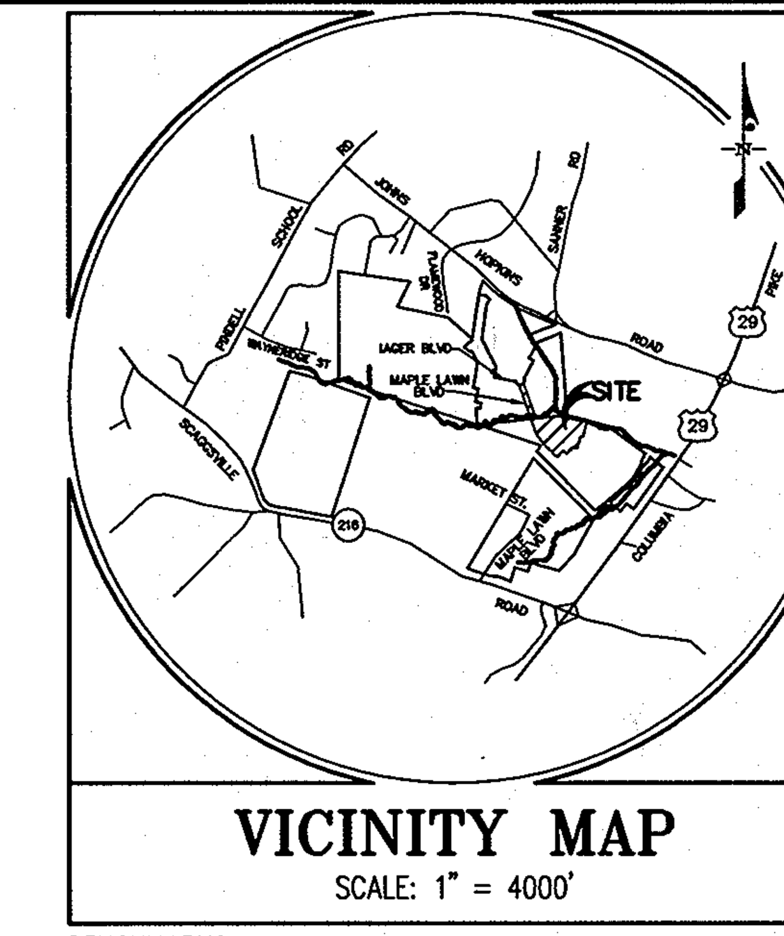
- No less than two parking spaces shall be provided for each single family attached, live-work, semi-detached , and two-family dwelling unit. No less than one and one-half parking spaces shall be provided for each apartment unit. Such spaces may consist of garage, driveway and/or similar off-street parking areas. Such parking shall be provided in proximity to such dwelling unit and may be included as part of a common parking area provided for residents, tenants, and guests. Principal structures shall be no closer than 15' to the curb of such parking areas. Visitor parking and overflow parking may be accommodated as on street and parallel parking within the public right-of-way.
- Such parking areas may be parallel spaces located on paved areas in and/or adjacent to publicly maintained roadways, adjacent to public or private service drives or oriented diagonally or at right angles to such roadways or service drives.

HOUSING FOR ELDERLY AND/OR HANDICAPPED PERSONS

- In the event a facility qualifies under federal, state or county programs intended to promote housing for the elderly or handicapped, the parking requirements may be modified to provide for four parking spaces for every ten dwelling units participating in such program. In the event the units are withdrawn from such a housing program, the owner of the facility shall immediately notify the Department of Planning and Zoning and shall construct, prior to further occupancy of the withdrawn units, such additional parking spaces as are necessary to provide one and one-half parking spaces for each dwelling unit withdrawn.

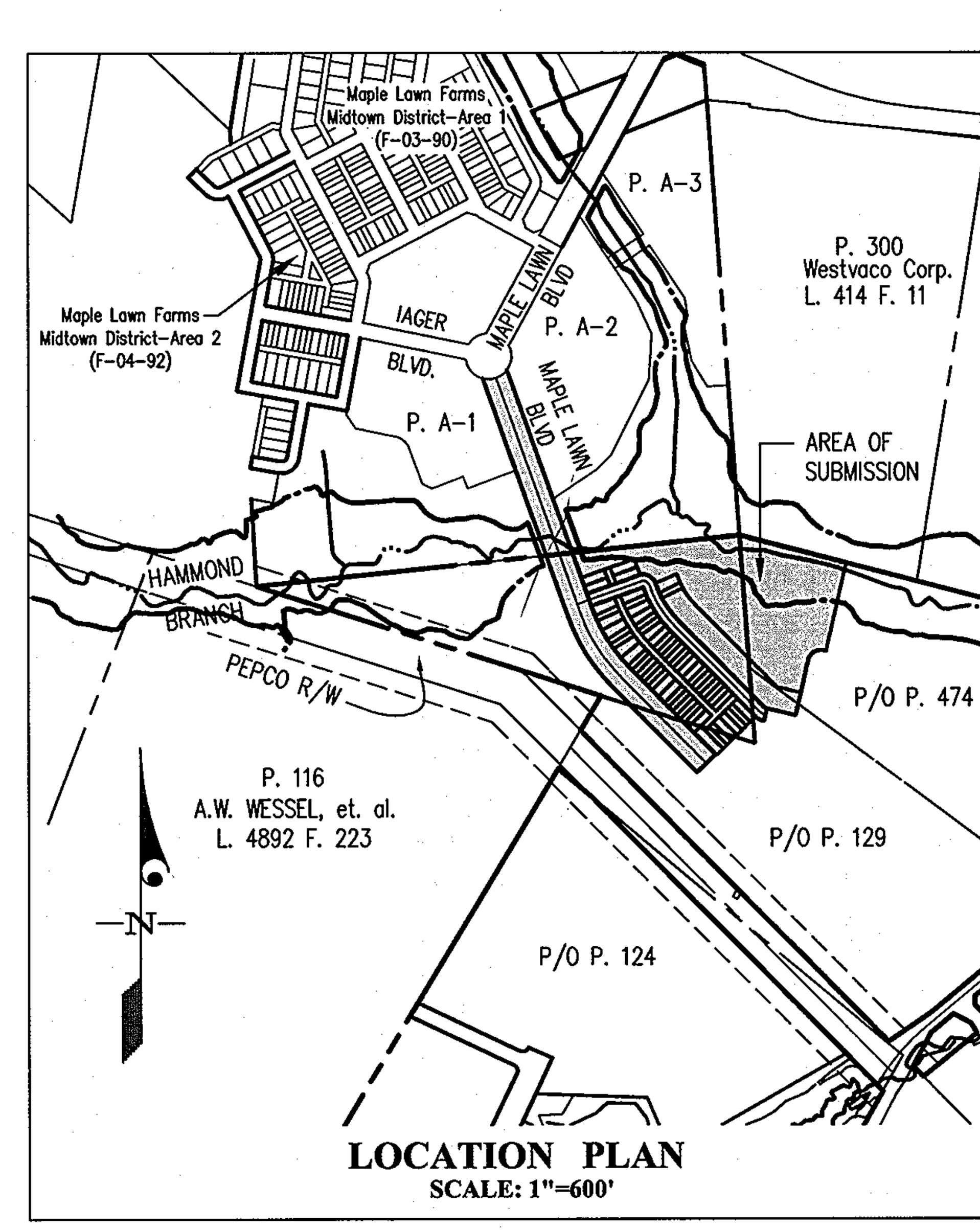


LAND USE MAP
SCALE: 1"=600'



VICINITY MAP
SCALE: 1" = 4000'

BENCHMARKS
41E ELEV. = 407.05
STANDARD DISC ON CONCRETE MONUMENT



LOCATION PLAN
SCALE: 1"=600'

SHEET INDEX

OVERALL TRACKING CHART

PHASE NO.	FILE REF. NO.	GROSS ACREAGE	NON-BUILDABLE SF	NON-BUILDABLE OR	NON-BUILDABLE EMP	NON-BUILDABLE OS	NON-BUILDABLE %	S.F.D. AC. (%)	O.R. AC. (%)	EMP. AC. (%)	O.S. AC. (%)	PUB. RD. SF	PUB. RD. OR	PUB. RD. EMP	PRIV. RD. ACREAGE	SFD UNITS	O.R. UNITS (APT./S.F.A.)	S.F.D. DENSIITY	O.R. DENSITY	EMP. BLDG. AREA	EMP. F.A.R.
1	F-03-07	51.98	0.00	0.00	0.00	0.00	(0.0)	------	------	30.83 (59.3)	21.15 (40.7)	0.00	0.00	4.38	------	------	------	------	------	------	------
2	F-03-90	37.43	0.52	0.43	0.24	0.00	(3.2)	10.84 (29.0)	8.09 (21.6)	1.56 (4.2)	15.75 (42.1)	3.72	3.74	1.56	1.68	55	65	5.1/AC.	8.0/AC.	------	------
3	F-04-92	58.80	-0.52	-0.43	2.71	0.00	(3.0)	7.11 (12.1)	12.28 (20.9)	14.80 (25.2)	22.85 (38.9)	2.52	0.46	0.00	1.00	41	79	5.8/AC.	6.4/AC.	------	------
4a	F-05-81/F-05-82	15.47	0.00	1.48	-1.69	0.00	-(1.4)	0.00 (0.0)	7.29 (47.1)	1.69 (10.9)	6.70 (43.3)	0.00	3.40	1.69	0.46	------	59	------	8.0/AC.	------	------
4b	F-05-139	0.00	0.00	0.00	-1.26	0.00	(0.00)	0.00 (0.0)	0.00 (0.0)	1.26 (---)	0.00 (0.0)	0.00	0.00	1.26	------	------	------	------	------	------	------
4c	F-05-112 & F-05-113	3.00	0.00	0.00	0.00	0.00	(0.0)	0.00 (0.0)	0.00 (0.0)	3.00 (100.0)	0.00 (0.0)	0.00	0.00	3.00	------	------	------	------	------	------	------
TOTALS		166.68	1.48				(0.9)	17.95 (10.8)	27.66 (16.6)	53.14 (31.9)	66.45 (39.9)	25.73			3.14	96	203	5.3/AC.	7.3/AC.	0.00	0.00

OVERALL DENISTY TABULATION	PROPOSED	ALLOWED
OVERALL S.F.D/GROSS ACRE	5.3 UNITS/AC.	2.8 UNITS/AC.
OVERALL O.R./GROSS ACRE	7.3 UNITS/AC.	14.0 UNITS/AC.
OVERALL EMPLOYMENT F.A.R		0.35
OVERALL S.F.D/O.R. DENSITY	1.8 UNITS/AC.	2.2 UNITS/AC.

LAND USE ACREAGES*	PROPOSED	ALLOWED
SINGLE FAMILY DETACHED (S.F.D.)	17.95	198.3
OTHER RESIDENTIAL (O.R.)	29.14	53.0
EMPLOYMENT	53.14	77.1
OPEN SPACE	66.45	179.5
TOTALS	166.68	507.9

MAX. RES. UNITS ALLOWED	S-01-17
SINGLE FAMILY DETACHED	485 (43.5%)
APARTMENTS (O.R.)	236 (21.1%)
SINGLE FAMILY ATTACHED	395 (35.4%)
TOTAL	1116

*LAND ACREAGES INCLUDE NON-BUILDABLE AREAS

NON-BUILDABLE TRACKING CHART

PARCEL	TOTAL NON-BUILDABLE PARCEL AREA	FILE UNDER WHICH PARCEL WAS CREATED	FILE UNDER WHICH PARCEL WAS CONVERTED	AREA CONVERTED	CONVERTED TO:	AREA REMAINING
A	0.52	F-03-90	F-04-92	0.52	O.R. LOTS	---
B	0.43	F-03-90	F-04-92	0.43	S.F.D. LOTS	---
C	0.24	F-03-90	SP-05-03	0.24	R/W (EMP.)	---
D	1.02	F-04-92	SP-05-03	1.02	R/W (EMP.)	---
E	1.69	F-04-92	F-05-81	1.69	R/W (EMP.)	---
F	1.38	F-05-81	---	0	---	1.38
G	0.10	F-05-81	---	0	---	0.10
TOTAL	5.38					1.48

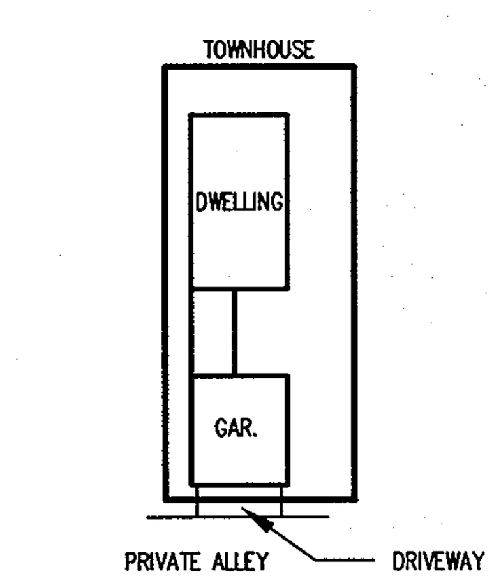
OVERALL OPEN SPACE TRACKING CHART

PHASE NO.	FILE REF. NO.	GROSS ACREAGE	O.S. AC. (%)	ACTIVE O.S. AC. (%) *
1	F-03-07	51.98	21.15 (40.7)	———
2	F-03-90	37.43	15.75 (42.1)	5.55 (35.2) *
3	F-04-92	58.80	22.85 (38.9)	———
4a	F-05-81 / 82	15.47	6.70 (43.3)	0.29 (4.3) *
4b	F-05-139	0.00	0.00 (0.0)	———
4c	F-05-112/113	3.00	0.00 (0.0)	———
TOTAL		166.68	66.45 (39.9)	5.84 (8.8) *

* The percent of active open space is based upon the total open space provided.

LEGEND

- 400 — EX. CONTOUR
- PROP. CONTOUR
- EXISTING TREELINE
- SB — STREAM BUFFER
- WB — WETLAND BUFFER
- MH 20 — STRUCTURE NUMBER
- CENTERLINE CURVE
- PROPERTY CORNER
- 15" HDPE — PROP. STORM DRAIN
- PROP. BARRICADE
- 100 YEAR FLOODPLAIN
- LIMIT OF WETLAND
- WETLAND AREA
- CENTERLINE OF STREAM
- BOTTOM OF STREAM
- ACCESS POINTS
- PROPOSED 6' PATHWAY
- FOREST CONSERVATION EASEMENT



TYPICAL FOOTPRINTS
NO SCALE

LOT INFORMATION

Lot Type	Lots	Minimum Lot Size	Min. Lot Width at Front BRL
Townhouse	1-59	———	———

THE LIMITS OF THIS FINAL PLAN COVERS PART OF THE DEVELOPMENT PROPOSED BY S-01-17 AS ANNUAL PHASE 4 (ALLOCATION YEAR 2007).

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 7/5/05
Chief, Development Engineering Division MK — Date 7/14/05

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.
11/9/2010	Revise sheet index, sheet numbers and contact information.	DEV	
6-6-08	Rev. ohh. No. in General Notes, & sht. index to reflect sht. moved to F-08-177	WJ	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett
410-484-8400

COVER SHEET
MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
APR., 2005	41-22	1 OF 17

F-05-81

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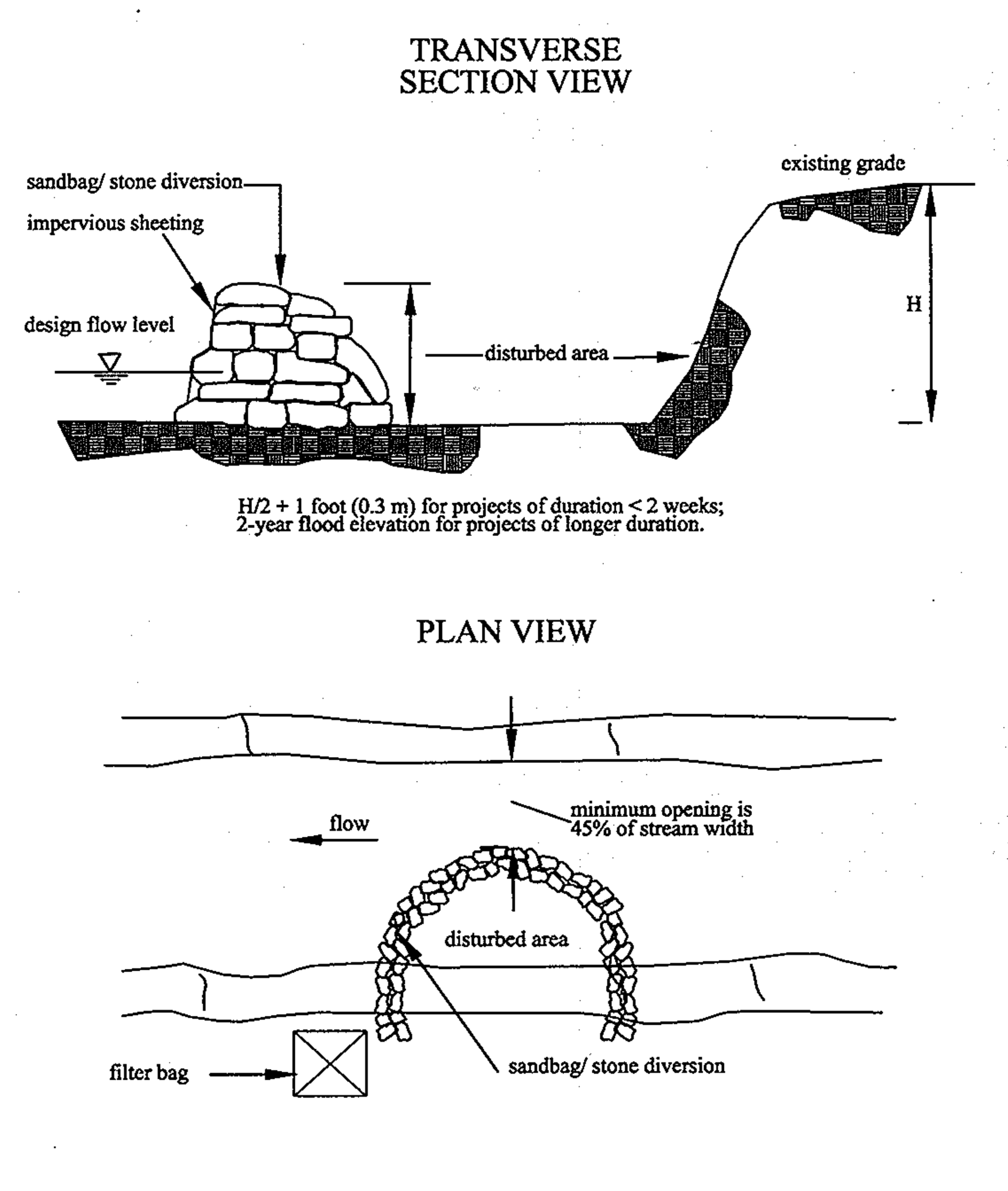
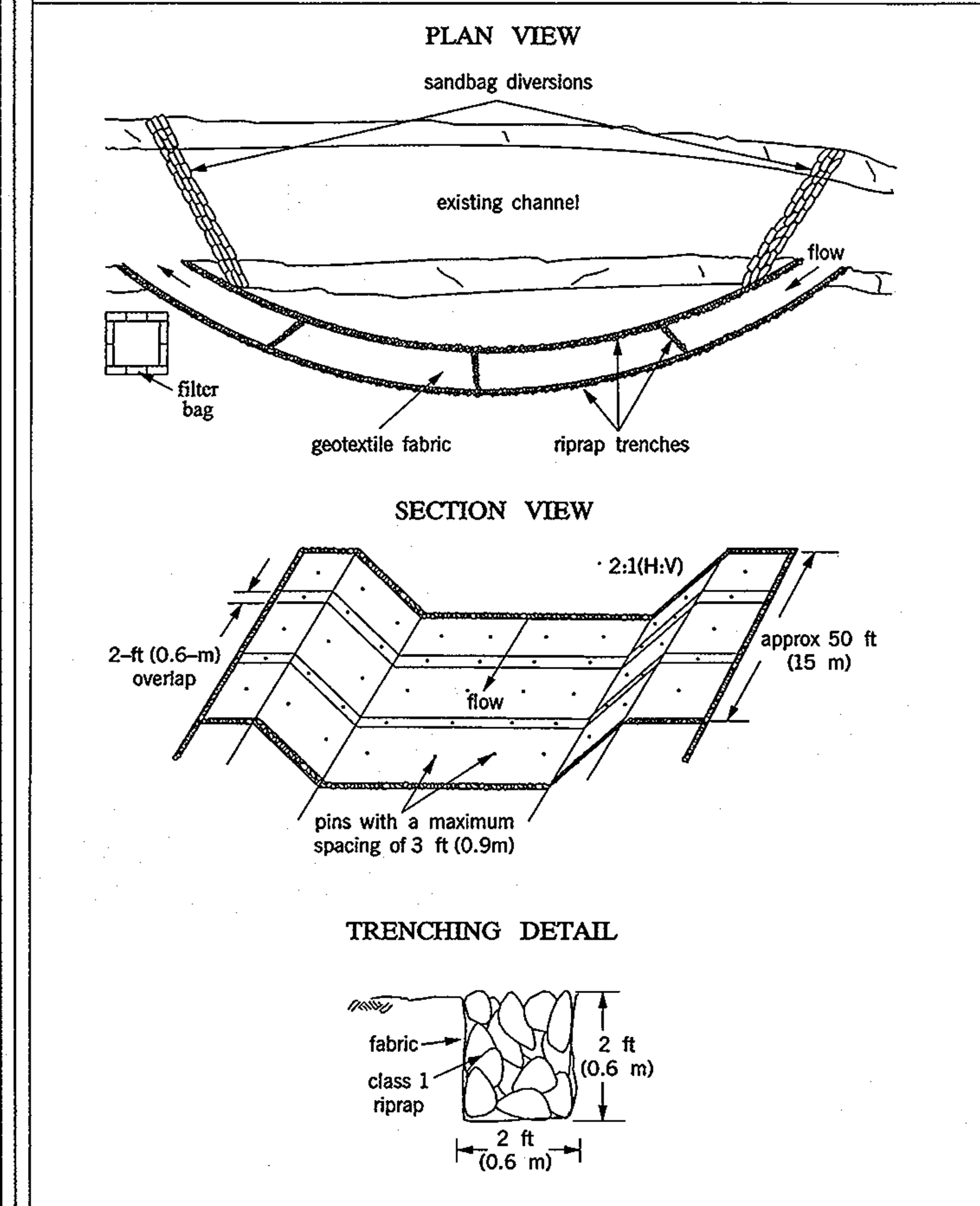
Maryland's Guidelines To Waterway Construction
DETAIL 1.5: SANDBAG / STONE DIVERSION



TEMPORARY INSTREAM CONSTRUCTION MEASURES	REVISED NOVEMBER 2000 PAGE 1.5-3	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

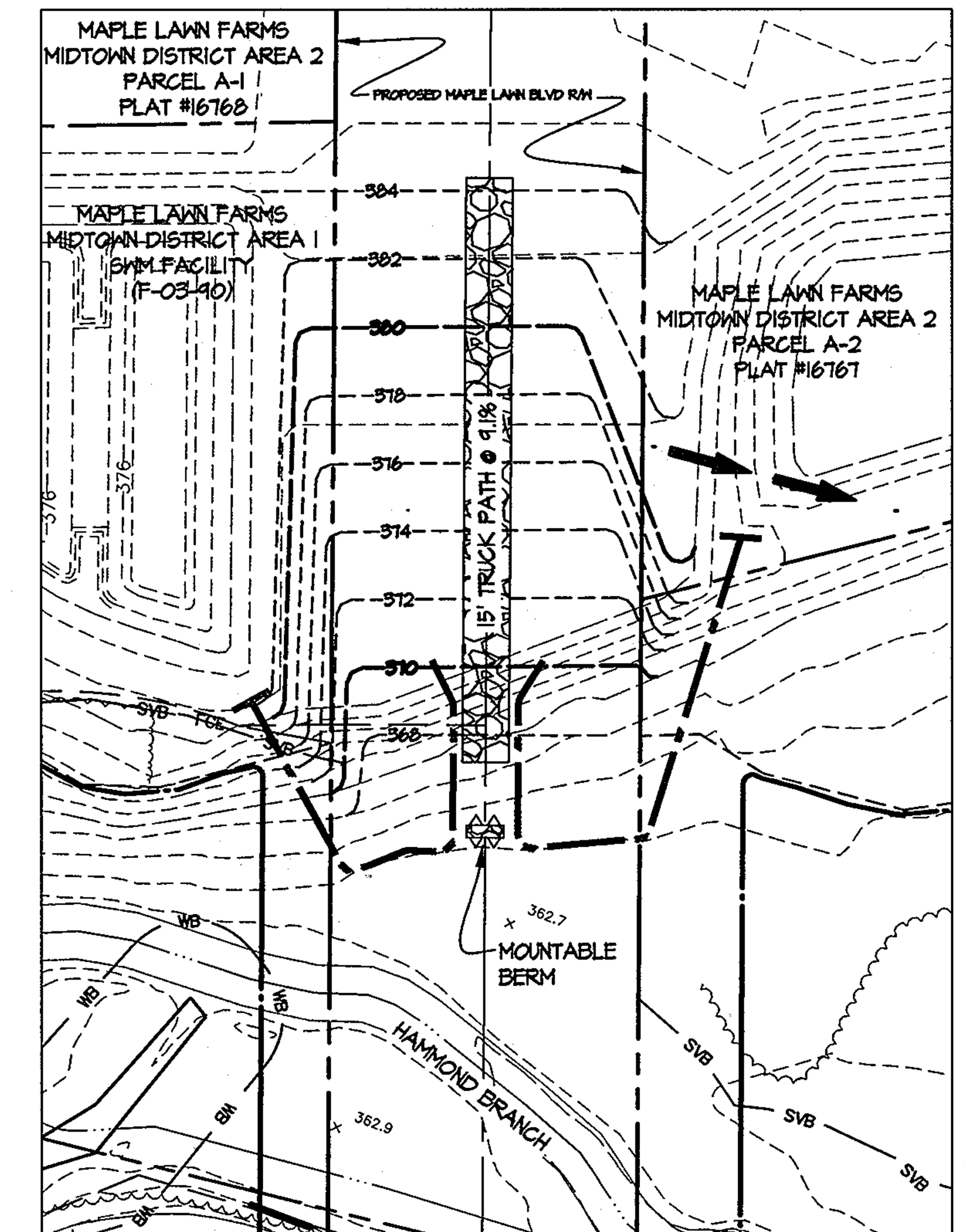
Maryland's Guidelines To Waterway Construction
DETAIL 1.6: FABRIC–BASED DIVERSION



TEMPORARY INSTREAM CONSTRUCTION MEASURES	PAGE 1.6 - 3	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

CONTRACTOR NOTES:

1. FOR STORM DRAIN SIZES, F-08-177.
2. WHERE THE L.O.D. 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. WORK IN THE STREAM IS PROHIBITED FROM MARCH 1 TO JUNE 15.
5. DISTURBED AREAS WITHIN THE 100 YEAR FLOODPLAIN MUST BE STABILIZED ACCORDING TO THE RIPARIAN PLANTING NOTES ON SHEET 13
6. SEE F-08-177 FOR RIP RAP INFORMATION AT THE HAMMOND BRANCH CROSSING.
7. THE CONTRACTOR MAY NOT CROSS THE STREAM AT ANY TIME DURING THE CONSTRUCTION OF THE TRIPLE CULVERTS.



ACCESS GRADING
(PER STREAM CROSSING S.O.C. - PHASE I - ITEM II)
SCALE: 1"=30'

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT AND ARRANGE FOR AN ON-SITE PRE-CONSTRUCTION MEETING. (1 DAY)
   NOTE: WORK IN THE STREAM IS PROHIBITED FROM MARCH 1 TO JUNE 15.
   MDE PERMIT NUMBER FOR THE PROJECT IS 01-NT-0344/200165421
2. INSTALL A STABILIZED CONSTRUCTION ENTRANCE AT THE END OF MAPLE LAWN BOULEVARD NEAR MARKET STREET. IF THE CONSTRUCTION ENTRANCE AT THAT LOCATION (CONSTRUCTED UNDER SDP 03-96) IS STILL IN PLACE, MAKE THE NECESSARY REPAIRS TO CONTINUE ITS USE. (1 DAY)
3. INSTALL A STABILIZED CONSTRUCTION ENTRANCE AT THE INTERSECTION OF MAPLE LAWN AND IAGER BOULEVARDS. THIS INSTALLATION WILL REQUIRE THE REMOVAL OF THE EXISTING BARRICADE IN THE AREA. DUE TO TRAFFIC THRU EXISTING RESIDENTIAL AREAS, THIS ENTRANCE SHOULD BE USED ONLY DURING THE INITIAL CONSTRUCTION OF THE HAMMOND BRANCH CROSSING AND DISCONTINUED WHEN ACCESS TO THE TRIPLE CULVERT AREA IS AVAILABLE FROM THE SOUTH. (1 DAY)

NOTE:
CONSTRUCTION OF THE TRIPLE CULVERTS CAN BEGIN AT THIS TIME AND RUN CONCURRENT TO ITEMS 4 THRU 10. SEE "STREAM CROSSING CONSTRUCTION SEQUENCE" BELOW.

4. INSTALL SUPER SILT FENCE ALONG THE TOE OF THE PROPOSED STORMWATER MANAGEMENT FACILITY AND EXTEND THE SUPER SILT FENCE ALONG THE 360 CONTOUR JUST TO THE EAST OF THE FACILITY. WHEN THE LIMIT OF DISTURBANCE IS ADJACENT TO A TREE SAVE AREA, AND SUPER SILT FENCE / SILT FENCE IS NOT REQUIRED, INSTALL TREE PROTECTION FENCE. (3 DAYS)
5. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, BEGIN CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITY. THE FACILITY WILL BE USED AS A SEDIMENT BASIN DURING THE CONSTRUCTION OF THE IMPROVEMENTS SHOWN ⚠ ON THESE PLANS and those shown on F-05-112. (2 months)
6. ONCE THE FILL FOR THE POND REACHES THE TOP OF DAM ELEVATION (365.36) INSTALL THE EARTH DIKE SHOWN IN ORDER TO PROVIDE POSITIVE DRAINAGE TO THE POND. CONTRACTOR MUST CONTINUE TO PROVIDE POSITIVE DRAINAGE ALONG THIS DIKE AS THE FILL IN THE TRIPLE CULVERT AREA CONTINUES AND THE EARTH DIKE IS RELOCATED. (1 WEEK)
7. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, BEGIN ROUGH GRADING. WHERE FILLS AND CUTS EXCEED 15 FEET IN HEIGHT, TECHNIQUES OF INCREMENTAL STABILIZATION SHALL BE USED (SEE DETAILS G-20-6 AND G-20-7 ON SHEET 11). PROVIDE DUST CONTROL MEASURES AS NECESSARY IN ACCORDANCE WITH THE DUST CONTROL SPECIFICATIONS SHOWN ON SHEET 13. (2 MONTHS)
8. INSTALL STORM DRAINS, INCLUDING THOSE IN THE ALLEYS PER AND THE WATER AND SEWER PER CONT. # 24-4238-D. UTILITIES FROM CENTERLINE STATION 20+00 TO 24+00 OF MAPLE LAWN BOULEVARD CANNOT BE CONSTRUCTED AT THIS TIME. (1 MONTH)
9. ONCE THE STORM DRAIN RUNS S-411 THRU ES-410 HAVE BEEN CONSTRUCTED, THE PORTION OF THE EARTH DIKE IN THE CULVERT FILL AREA NEAR CENTERLINE STATION 24+00 CAN BE CONVERTED TO A MOUNTABLE BERM. (2 DAYS)
10. CONTINUE FILL OPERATIONS IN THE CULVERT AREA AND INSTALL THE REMAINING UTILITIES FROM CENTERLINE STATION 20+00 TO 24+00 OF MAPLE LAWN BOULEVARD. (2 WEEKS)
11. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, AND THE REMAINING UTILITIES FROM CENTERLINE STATION 20+00 TO 24+00 HAVE BEEN INSTALLED, THE MOUNTABLE BERM CAN BE REMOVED. (1 DAY)
12. INSTALL CURB AND GUTTER, SIDEWALKS, AND BASE PAVING IN ROADS AND ALLEYS. (1 MONTH)
13. FINE GRADE SITE AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE TOPSOIL AND PERMANENT SEEDING NOTES. DISTURBED AREAS WITHIN THE 100 YEAR FLOODPLAIN MUST BE STABILIZED USING THE RIPARIAN PLANTING SPECIFICATIONS DESCRIBED IN THE SEEDING NOTES ON SHEET 13 UNDER THE BEST MANAGEMENT PRACTICES.(2 WEEKS)
14. INSTALL SURFACE COURSE PAVING. (2 WEEKS)
15. BEGIN FOREST CONSERVATION PROGRAM SEQUENCE (SEE SHEET 29).
16. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT AND EROSION CONTROL DEVICES AND STABILIZE ANY DISTURBED AREAS AS NEEDED. AGAIN, AREAS WITHIN THE FLOODPLAIN REQUIRE SPECIAL STABILIZATION PROCEDURES.(2 WEEKS)
17. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, CONVERT THE STORMWATER MANAGEMENT FACILITY TO THE FINAL GRADES AND RISER CONFIGURATION (REMOVAL OF DRAW DOWN DEVICE). STABILIZE ANY DISTURBED AREAS AS ⚠ NEEDED. Contributing areas under F-05-112 must be stabilized in order to make conversion.

STREAM CROSSING CONSTRUCTION SEQUENCE

ACCESS GRADING

I. UPON COMPLETION OF ITEM 3 ABOVE, CONSTRUCT SUPER SILT FENCE ON THE NORTH SIDE OF THE WORK AREA ALONG THE 364 CONTOUR. (1 DAY)

II. GRADE ACCESS TO TRIPLE CULVERT WORK AREA. (2 DAYS)

PHASE IA CONSTRUCTION

III. INSTALL SANDBAGS AT LOCATION SHOWN AS "INITIAL" AND CONSTRUCT INITIAL CHANNEL DIVERSION. (1 WEEK)

IV. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, DIRECT STREAM FLOW INTO INITIAL CHANNEL DIVERSION. (1 DAY)

PHASE IB CONSTRUCTION

V. INSTALL SANDBAGS AT LOCATION SHOWN AS "INTERIM" AND CONSTRUCT "FINAL" CHANNEL DIVERSION. (2 WEEKS)

VI. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, DIVERT THE STREAM FLOW INTO THE CHANNEL DIVERSION WITH THE CONSTRUCTION OF THE SANDBAGS IN THE LOCATION SHOWN AS "FINAL". (1 DAY)

PHASE 2 CONSTRUCTION

VII. BEGIN EXCAVATION AND CONSTRUCTION OF THE HEADWALLS, TRIPLE CULVERTS, AND INSTALLATION OF THE RIP RAP. (1 MONTH)

PHASE 3 CONSTRUCTION

VIII. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SANDBAGS SHOWN AS "FINAL" UNDER PHASE 2 AND DIVERT STREAM FLOW INTO THE TRIPLE CULVERTS. THE CHANNEL DIVERSION CAN BE BACKFILLED TO AN ELEVATION OF 364.

IX. PLACE SANDBAGS IN LOCATION SHOWN AS "INTERIM" AND GRADE TRANSITION FROM THE RIP RAP APRON TO THE EXISTING STREAM. (2 DAYS)

X. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, REMOVE THE SANDBAGS SHOWN AS "INTERIM". (1 DAY)

XI. GRADE OVER PIPE TO PROVIDE THREE FEET OF COVER. (1 WEEK)

XII. REMOVE SUPER SILT FENCE AND EARTH DIKES FROM THEIR INITIAL LOCATION AND RELOCATE. SUPER SILT FENCE WILL BE PLACED ALONG THE TOP OF THE HEADWALL AND TOE OF SLOPE WHICH HAS BEEN PLACED UP TO THIS POINT. THE EARTH DIKES WILL BE RELOCATED TO DIRECT RUNOFF TO THE SEDIMENT BASIN. (1 WEEK)

XIII. CONTINUE WITH ITEM NUMBER II ABOVE.

CONTRACTOR NOTES:

1. CONTRACTOR MUST KEEP SUPER SILT FENCE BETWEEN WORK AREAS AND THE EXISTING STREAM THROUGH EACH PHASE OF THE TRIPLE CULVERT CONSTRUCTION.
2. DISTURBED AREAS WITHIN THE 100 YEAR FLOODPLAIN MUST BE STABILIZED USING THE RIPARIAN PLANTING SPECIFICATIONS IN THE SEEDING NOTES ON SHEET 13 UNDER THE BEST MANAGEMENT PRACTICES. (2 WEEKS)
3. ANY AREAS WHERE WORK HAS BEEN COMPLETED AND THE AREA WILL NOT BE DISTURBED AGAIN, MUST BE STABILIZED BY THE END OF THAT DAY.
4. SEDIMENT CONTROL DEVICES MUST BE CHECKED ON A REGULAR BASIS AND ESPECIALLY AFTER RAIN EVENTS. ANY NECESSARY REPAIRS MUST BE MADE THE SAME DAY.

Maryland's Guidelines To Waterway Construction
DETAIL 1.5: SANDBAG/STONE CHANNEL DIVERSION

MATERIAL SPECIFICATIONS

Materials for sandbag and stone stream diversions should meet the following requirements:

** Riprap: Riprap should be washed and have a minimum diameter of 6 inches (0.15 meters).*
** Sandbags: Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of the fill material (i.e./ sand, fine gravel, etc.).*
** Sheeting: Sheeting should consist of polyethylene or other materials which are impervious and resistant to puncture and tearing.*

INSTALLATION GUIDELINES

All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Installations should proceed from upstream to downstream during periods of low flow. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

Sandbag/stone diversions can be used independently or as components of other stream diversion techniques. Installation of this measure should proceed as follows (refer to Detail 1.5):

1. The diversion structure should be installed from upstream to downstream.

2. The height of the sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with a duration less than 2 weeks,. The height of the diversion should be one half the streambank height, measured from the channel bed, plus 1 foot (0.3 meters) or bank full height, whichever is greater. For projects of longer duration, the top of the sandbag or stone diversion should correspond to bankfull height. For diversion structures utilizing sandbags, the stream bed should be hand prepared prior to placement of the base layer of sandbags in order to ensure a water tight fit. Additionally, it may be necessary to prepare the bank in a similar fashion.

3. All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.

4. Sediment-laden water from the construction area should be pumped to a dewatering basin.

5. Sheeting on the diversion should be positioned such that the upstream portion covers the downstream portion with at least a 18-inch (0.45 meters) overlap.

6. Sandbag or stone diversions should not obstruct more than 45% of the stream width. Additionally, bank stabilization measures should be placed in the constricted section of accelerated erosion and bank scour are observed during the construction time or if project time is expected to last more than 2 weeks.

7. Prior to removal of these temporary structures, any accumulated sediment should be removed, deposited and stabilized in an approved area outside the 100-year floodplain unless authorized by the WMA.

8. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

TEMPORARY INSTREAM CONSTRUCTION MEASURES	REVISED NOVEMBER 2000 PAGE 1.4-1	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MGWC 1.6: FABRIC-BASED CHANNEL DIVERSION

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing fabric-based diversion channels for the purpose of erosion control when construction activities occur within the stream channel.

EFFECTIVE USES & LIMITATIONS

Diversions are used to divert flow during construction of in-stream projects. Diversions which have an insufficient flow capacity can fail and severely erode the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low rainfall.

MATERIAL SPECIFICATIONS

Materials for fabric-based channel diversions should meet the following requirements:

- *Riprap*: Class I riprap should be used with fabric-based channel diversions.
- *Filter Cloth*: Filter cloth should be a woven or non-woven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric should be inert to commonly encountered chemicals, hydro-carbons, and mildew and should be rot resistant.
- *Anchor Pins*: Hold down pins should have a minimum length of 18 inches (0.45 meters), and accompanying washers should have a minimum diameter of 1 inch (2.5 centimeters).
- *Sandbags*: Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).
- *Sheeting*: Sheeting should consist of polyethylene or other material which is impervious and resistant to puncture and tearing.

INSTALLATION GUIDELINES

All erosion and sediment control devices, including mandatory dewatering basins, should be installed as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during periods of low flow.

Construction of fabric-based channel diversions involves channel excavation, placement of geotextile fabric, and installation of flow diverters for both the main channel and all tributaries contributing flow to the work area (refer to Detail 1.6).

Channel Excavation

1. All disturbances resulting from construction of the channel should be contained by appropriate sediment control measures.
2. Excavation of the channel should begin at the downstream end and proceed upstream. The channel should have a minimum capacity sufficient to convey the stream's base flow for projects with duration of 2 weeks or less. For projects of longer duration, channels should have a capacity sufficient to convey bankfull flow. All excavated materials should be stockpiled outside of the 100 year flood plain and temporarily stabilized to

TEMPORARY INSTREAM CONSTRUCTION MEASURES — *MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000*

PAGE 1.6 - 1

MGWC 1.6: FABRIC-BASED CHANNEL DIVERSION

prevent re-entry into the stream channel.

3. The process of excavation and stabilization with fabric should be a continuous and uninterrupted operation. All materials should be on-site prior to channel construction.
4. The downstream and upstream connection to the natural channel should be constructed under dry conditions. The stream should be contained by sandbags along the opposing bank during the process of cutting the diversion channel into the natural stream channel. Excavation and stabilization should be a continuous and uninterrupted operation.
5. All debris such as rocks, sticks, etc. should be removed and the channel surfaces made smooth so that the fabric will rest flush with the channel at all sides and bottom.

Stabilization with Geotextile Fabric

1. The fabric should have a minimum width such that it is keyed in and anchored at the top of stream bank.
2. Fabric should be placed so that it rests flush with the channel at all points of contact.
3. Fabric should be placed such that one piece will line the entire channel. If this is not possible, fabric should be placed so that transverse overlapping occurs in accordance with the detail. Longitudinal overlaps should not be allowed. Upstream sections should overlap downstream sections. Overlap width should equal 2 feet (0.6 meters) minimum.
4. The fabric should be keyed into 2 by 2-foot (0.6 by 0.6-meter) trenches located at the upstream edge and at 50-foot (15.25-meter) intervals with the overlap placed nearest to each 50 feet increment. The key-in should be from top of channel to top of channel. Class I riprap should be carefully placed into the trench with zero drop height.
5. The fabric sections should be secured with hold down pins and washers. Overlaps should be pinned along transverse and longitudinal axes with spacing equal to 3 feet (0.9 meters) maximum.
6. Sediment from surrounding areas of disturbance should not be allowed to enter the diversion channel.

Alternate Methods of Placing the Fabric

1. The above design may be modified to allow sewing of the geotextile fabric. Sewing of the geotextile fabric, rather than overlapping, should eliminate the requirement for transverse placement of the fabric. Either transverse or longitudinal placement should work equally well.
2. The spacing of the pins could be either larger or smaller depending on the anticipated velocities and thickness and type of geotextile fabric.
3. The entire bottom of the channel could be riprapped if high velocities are anticipated. When the area is riprapped, it is not required that the geotextile fabric underneath the riprap be pinned.

Removal of Diversion

1. Water should not be allowed through the natural stream until all construction is completed.
2. After redirecting the flow through the natural channel, all fabric should be removed from the temporary diversion. The diversion should then be backfilled and stabilized. Points of tie-in to the natural channel should be protected with riprap according to the riprap guidelines.

TEMPORARY INSTREAM CONSTRUCTION MEASURES — *MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000*

PAGE 1.6 - 2

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/15/05

Chief, Development Engineering Division MK — Date 7/14/05

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* 6/22/05

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* 6-22-05

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* 6/28/05

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* 6/28/05

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.
11/9/2010	Revise contact information	DEV.	
6.5.08	Rev. Plans For creation of F-08-177 This set For SWM & Sed. Con. See F-08-177 For S.D. & Rd. Info.	WGJ	
2.17.06	⚠ rev. sediment control notes	K.L.P.	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett ⚠
410-484-8400

HAMMOND BRANCH CROSSING - SEDIMENT CONTROL DETAILS AND NOTES

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	2 OF 17

F-05-81

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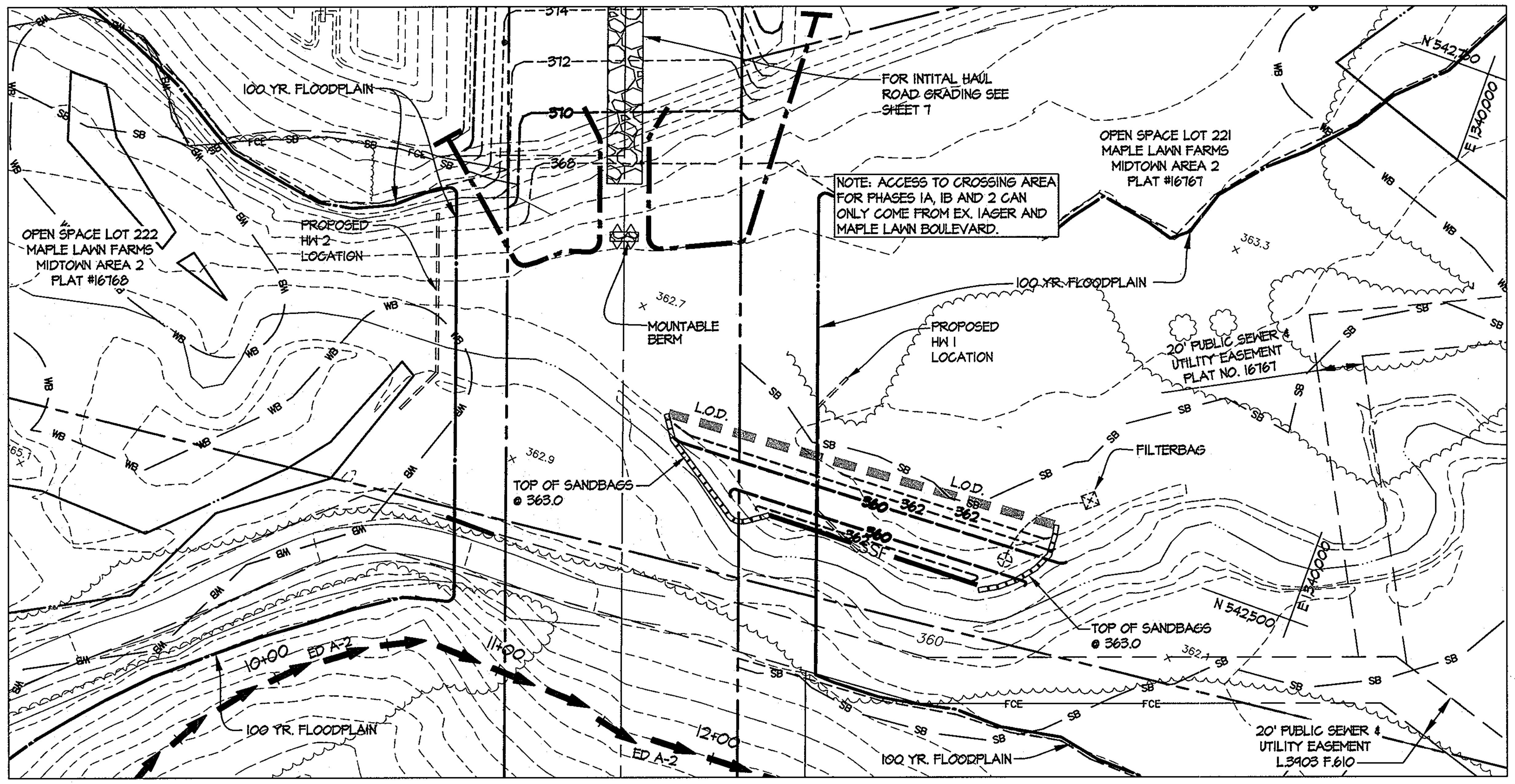
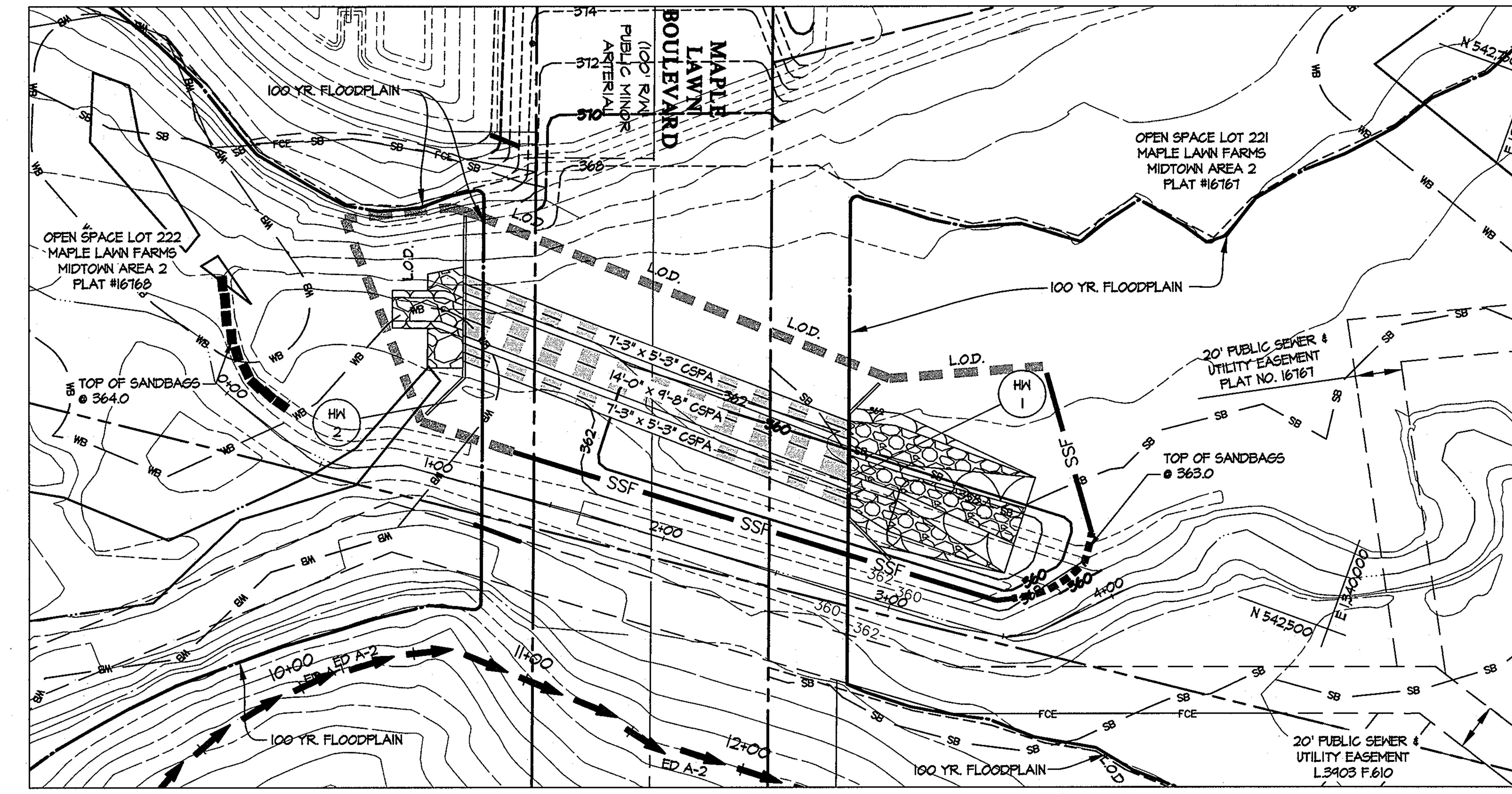
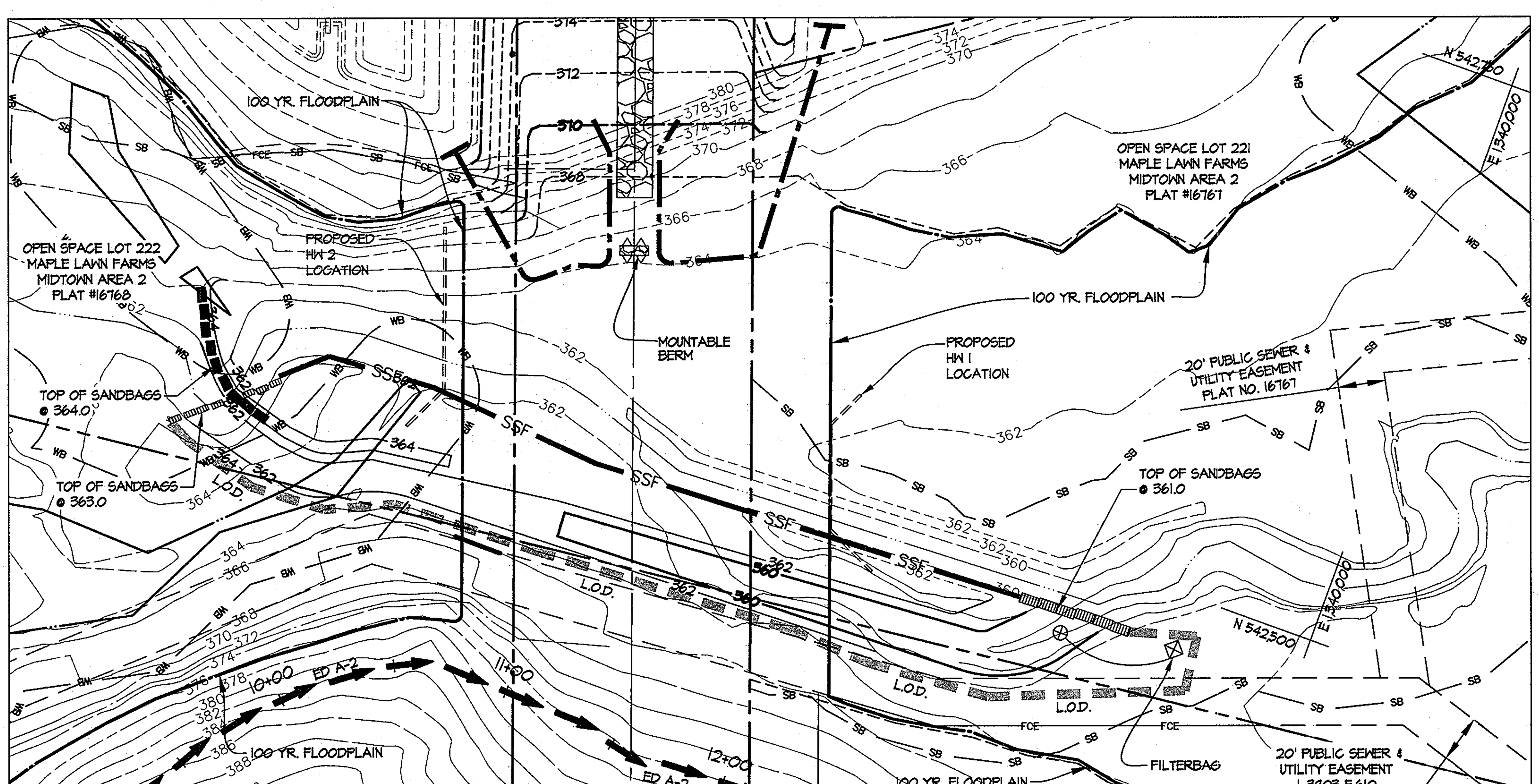


SEDIMENT CONTROL - PHASE 1A (INITIAL CHANNEL DIVERSION)
SCALE: 1"=40'



SEDIMENT CONTROL - PHASE 2
SCALE: 1"=40'



SEDIMENT CONTROL - PHASE 1B (FINAL CHANNEL DIVERSION)
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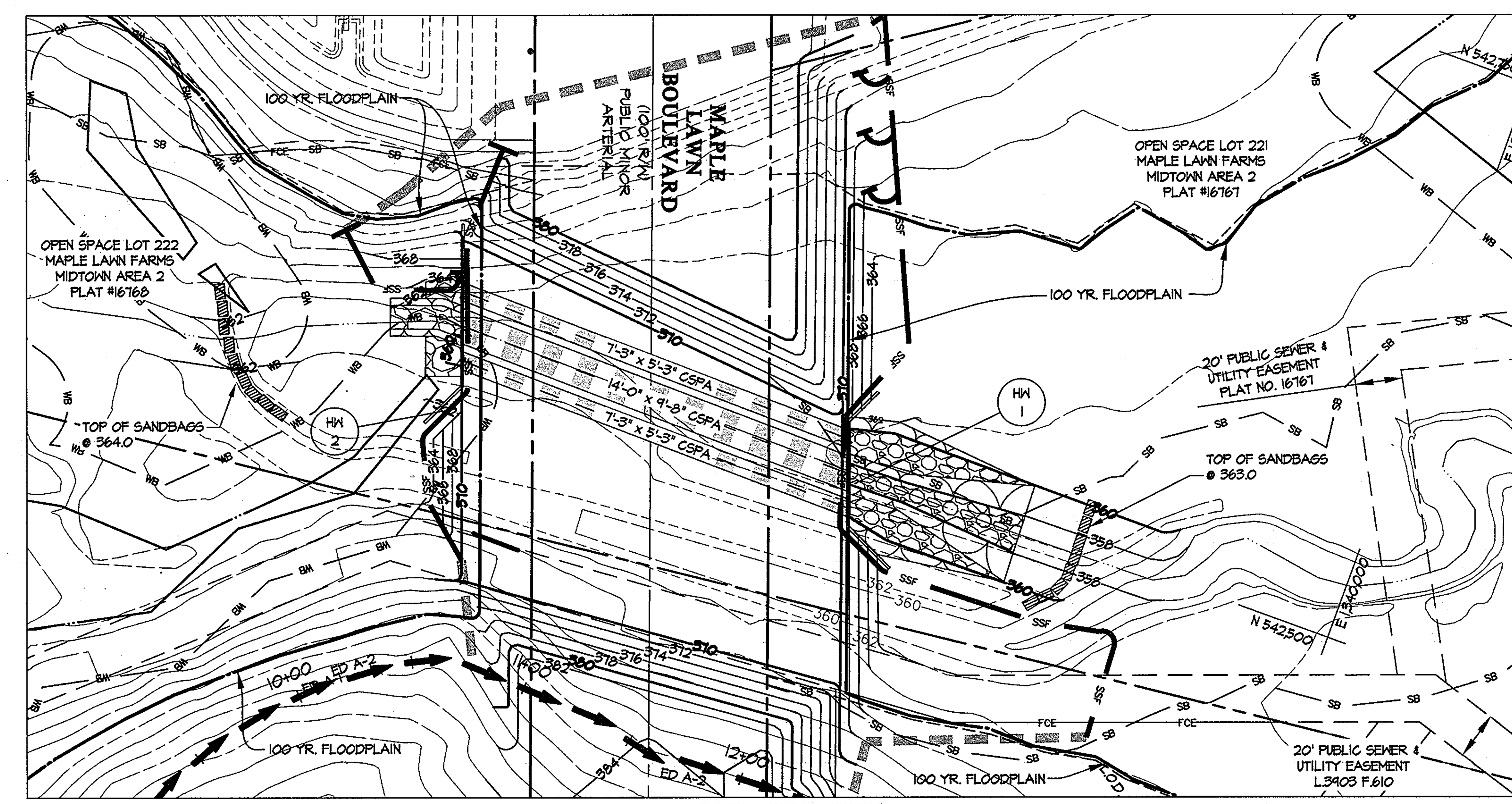

SEDIMENT CONTROL - PHASE 3
SCALE: 1"=40'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature] 7-6-05
Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

[signature] 7/15/05
Chief, Division of Land Development — Date

[signature] 7/14/05
Chief, Development Engineering Division MK — 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] 6-22-05
Signature of Developer/Builder — *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."

[signature] 6/27/05
Engineer's Signature — *Date*

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

[signature] 6/28/05
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.

[signature] 6/28/05
Natural Resources Conservation Service — *Date*

LEGEND
- EXISTING CONTOUR
- INITIAL GRADING/DIVERSION
- FINAL DIVERSION GRADING
- INITIAL SANDBAG LOCATION
- INTERIM SANDBAG LOCATION
- FINAL SANDBAG LOCATION

NOTE: FOR DIVERSION CHANNEL TYPICAL SECTION, SEE SHEET 12

[signature] 6/27/05

CONTRACTOR NOTES:
1. FOR STORM DRAIN SIZES, F-08-177.
2. WHERE THE L.O.D. 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. WORK IN THE STREAM IS PROHIBITED FROM MARCH 1 TO JUNE 15.
5. DISTURBED AREAS WITHIN THE 100 YEAR FLOODPLAIN MUST BE STABILIZED ACCORDING TO THE RIPARIAN PLANTING NOTES ON SHEET 13
6. SEE PLAN F-08-177 FOR RIP RAP INFORMATION AT THE HAMMOND BRANCH CROSSING.
7. THE CONTRACTOR MAY NOT CROSS THE STREAM AT ANY TIME DURING THE CONSTRUCTION OF THE TRIPLE CULVERTS.

GLW GUTSCHICK LITTLE & WEBER, P.A.
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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.
11/9/2010	⚠3 Revise contact information.	DEV	
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HAMMOND BRANCH CROSSING PLAN

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
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ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

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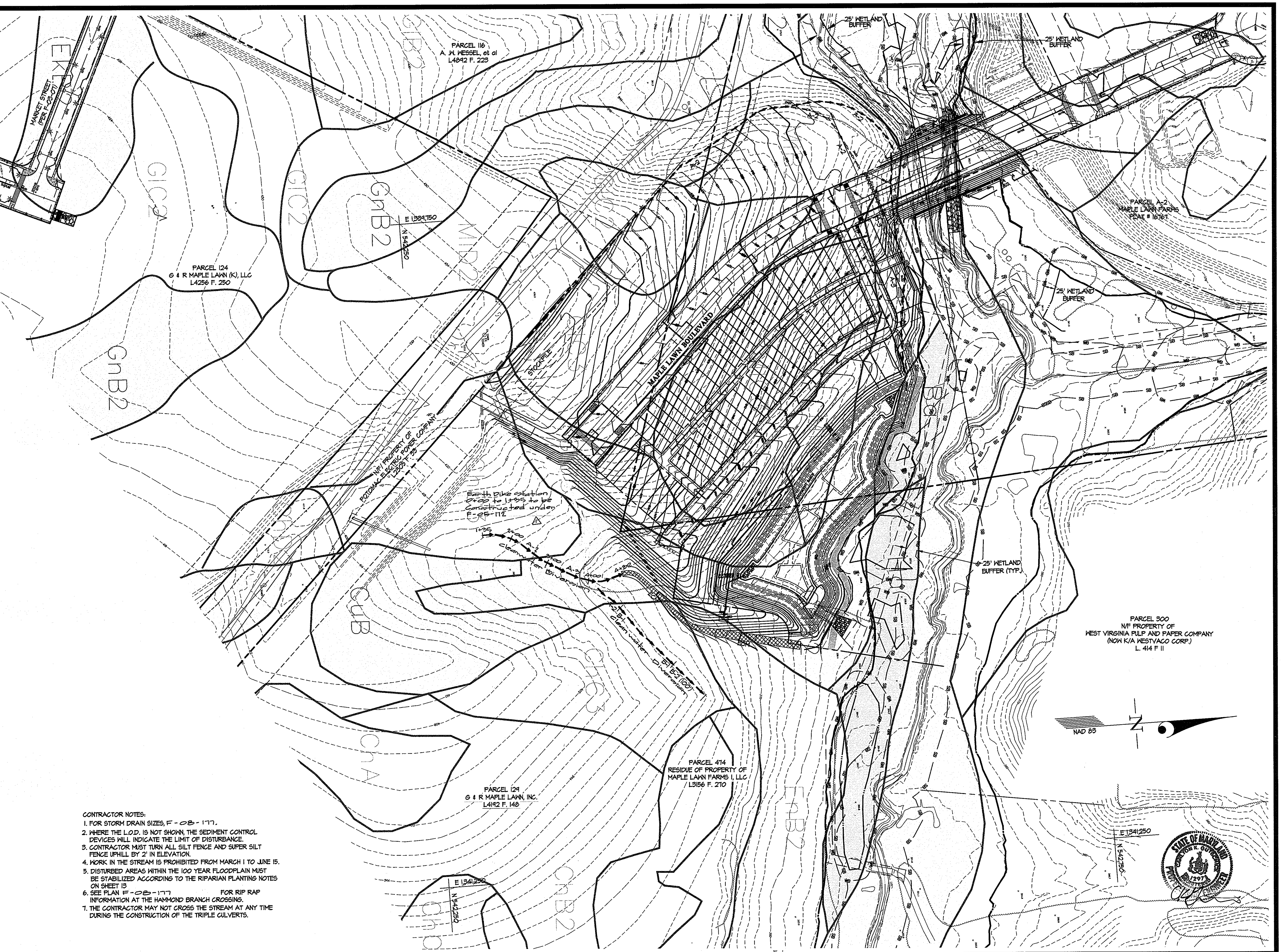

LEGEND

Symbol	Description
	STONE CONSTRUCTION ENTRANCE
— SF —	SILT FENCE
— SSF —	SUPER SILT FENCE
	EARTH DIKE (INITIAL CONDITION)
	EARTH DIKE (ULTIMATE CONDITION)
L.O.D.	LIMIT OF DISTURBANCE
RPS	REMOVABLE PUMPIMG STATION
ECM	EROSION CONTROL MATTING
	100 YR. FLOODPLAIN
-410-	EXISTING CONTOUR
—410—	PROPOSED CONTOUR
GM	GABION MATTRESS
RRP	RIP RAP INFLOW
	15' (MIN.) NO-WOODY ZONE
	PUBLIC & PRIVATE EASEMENTS (SEE SHEET 8 FOR EASEMENT TYPES)
	'C' TYPE SOIL
	'D' TYPE SOIL

NOTE: ALL OTHER SOILS SHOWN ARE 'B' TYPE

Temporary Stormwater Management Drainage Information for Sediment Basin
Drainage Area= 19.8 Acres or 0.0309 Sq. Miles
PRE-DEVELOMENT
Curve Number= 60 Time of Concentration= 0.17 Hours
POST-DEVELOMENT
Curve Number= 92 Time of Concentration= 0.07 Hours

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: 6/22/05

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: 6/28/05

DEVELOPER'S/BUILDER'S CERTIFICATE

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Signature of Developer/Builder — Date: 6-22-05

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Howard Soil Conservation District — Date: 6/28/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date: 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date: 7/18/05
Chief, Development Engineering Division MK — Date: 7/14/05

CONTRACTOR NOTES:
1. FOR STORM DRAIN SIZES, F-08-177.
2. WHERE THE L.O.D. 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. WORK IN THE STREAM IS PROHIBITED FROM MARCH 1 TO JUNE 15.
5. DISTURBED AREAS WITHIN THE 100 YEAR FLOODPLAIN MUST BE STABILIZED ACCORDING TO THE RIPARIAN PLANTING NOTES ON SHEET 13
6. SEE PLAN F-08-177 FOR RIP RAP INFORMATION AT THE HAMMOND BRANCH CROSSING.
7. THE CONTRACTOR MAY NOT CROSS THE STREAM AT ANY TIME DURING THE CONSTRUCTION OF THE TRIPLE CULVERTS.

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

\DRAWINGS\04001\04001A\Finals\04001aSC09.dwg	DES. DEV	DRN. AWL	CHK. DEV

DATE	REVISION	BY	APP'R.
11/9/2010	3 Revise contact information.		
6.5.08	Rev. Plans For Creation of F-08-177 This Set For SWM & Sed. Con. See F-08-177 For S.D. & Rd. Info.	WDJ	
2.17.06	rev. earth dike and clean water diversion	K.L.P.	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett 3
410-484-8400

SEDIMENT CONTROL PLAN
MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	MXD-3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41-22	4 OF 17

F-05-81

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.

6-22-05

Signature of Developer/Builder — *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."

6/22/05

Engineer's Signature — *Date*

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

6/28/05

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.

6/28/05

Natural Resources Conservation Service — *Date*

SEDIMENT BASIN INFORMATION ⚠

PRE-DEVELOPEMENT DRAINAGE AREA	21.6 ACRES
POST-DEVELOPMENT DRAINAGE AREA	21.6 ACRES
TOTAL STORAGE REQUIRED (WET VOLUME & 1 YR. TSWM)	144,793 C.F.
TOTAL STORAGE PROVIDED	175,014 C.F.
RISER DIMENSIONS	15' X 6'
BARREL SIZE	42" RCCP
RISER CREST ELEVATION	362.35
OUTLET ELEVATION (LIMIT OF WET VOLUME)	360.00
CLEANOUT ELEVATION	358.50
BOTTOM ELEVATION	357.00
BOTTOM DIMENSIONS	VARIES
PRE-DEVELOPMENT 1 YEAR DISCHARGE	2.57 CFS
POST-DEVELOPMENT 1 YEAR DISCHARGE (UNMANAGED)	56.40 CFS
POST-DEVELOPMENT 1 YEAR DISCHARGE (MANAGED)	1.06 CFS @ 362.19
WET VOLUME REQUIRED	38,880 CF
WET VOLUME PROVIDED	69101 CF @ 360.00
DRY VOLUME REQUIRED	105,913 CF
DRY VOLUME PROVIDED	105,913 CF @ 362.19

CONTRACTOR NOTES:

1. FOR STORM DRAIN SIZES, F-08-177.
2. WHERE THE L.O.D. 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.
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5. DISTURBED AREAS WITHIN THE 100 YEAR FLOODPLAIN MUST BE STABILIZED ACCORDING TO THE RIPARIAN PLANTING NOTES ON SHEET 13
6. SEE PLAN F-08-177. FOR RIP RAP INFORMATION AT THE HAMMOND BRANCH CROSSING.
7. THE CONTRACTOR MAY NOT CROSS THE STREAM AT ANY TIME DURING THE CONSTRUCTION OF THE TRIPLE CULVERTS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

7-6-05

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

7/15/05

Chief, Division of Land Development — Date

7/14/05

Chief, Development Engineering Division MK — 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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\DRAWINGS\04001\04001A\Finals\04001aSC10.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
11/9/2010	⚠3 Revise contact information.	DEV	
6-5-08	Rev. Plans For Creation of F-08-177 This set For SWM & Sed. Con. See F-08-177 For S.D. & Rd. Info.	WSJ	
7-7-06	⚠1 rev. earth dike location and sediment/basin information		

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett ⚠3
410-484-8400

SEDIMENT CONTROL PLAN

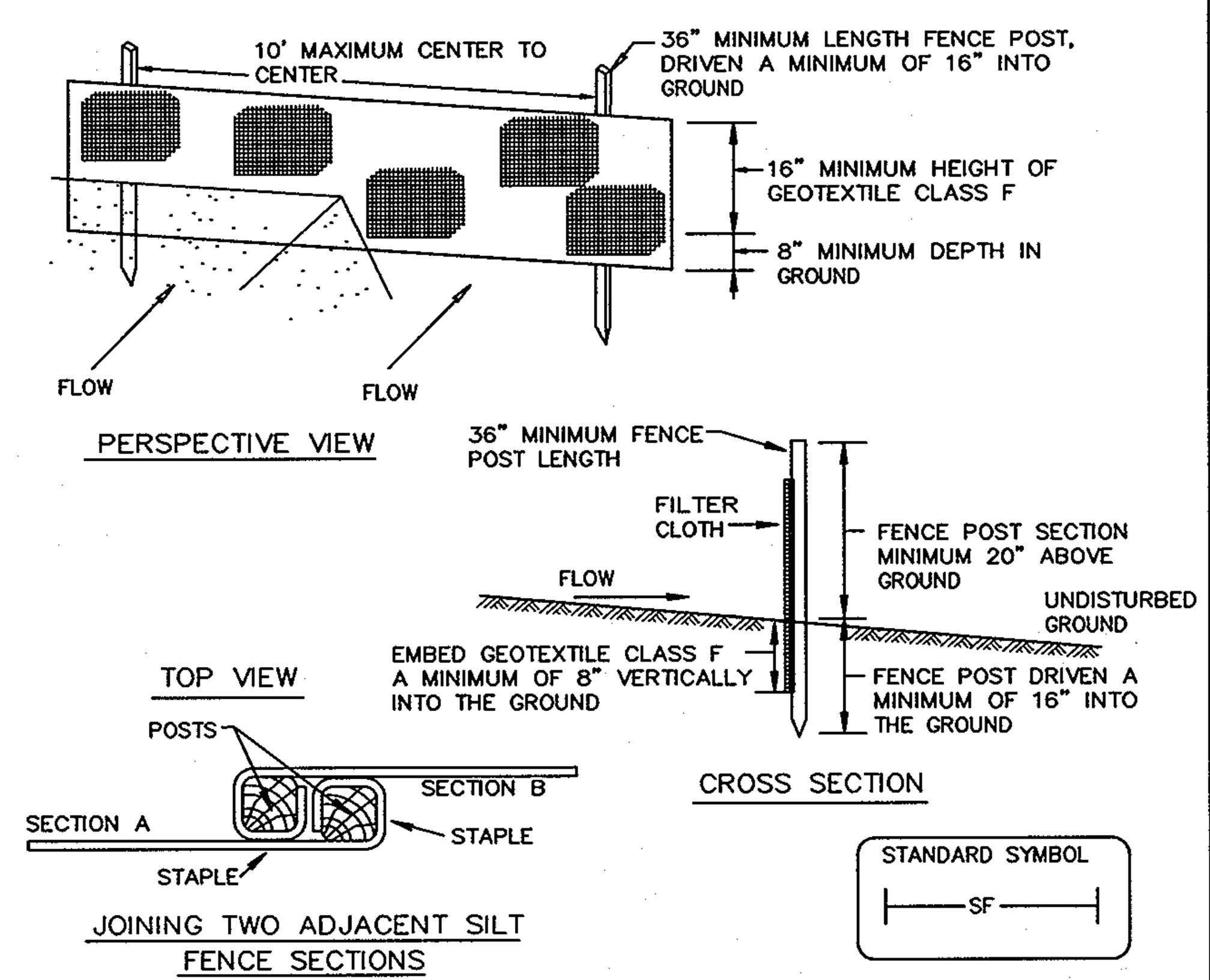
MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	5 OF 17

F-05-81

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:

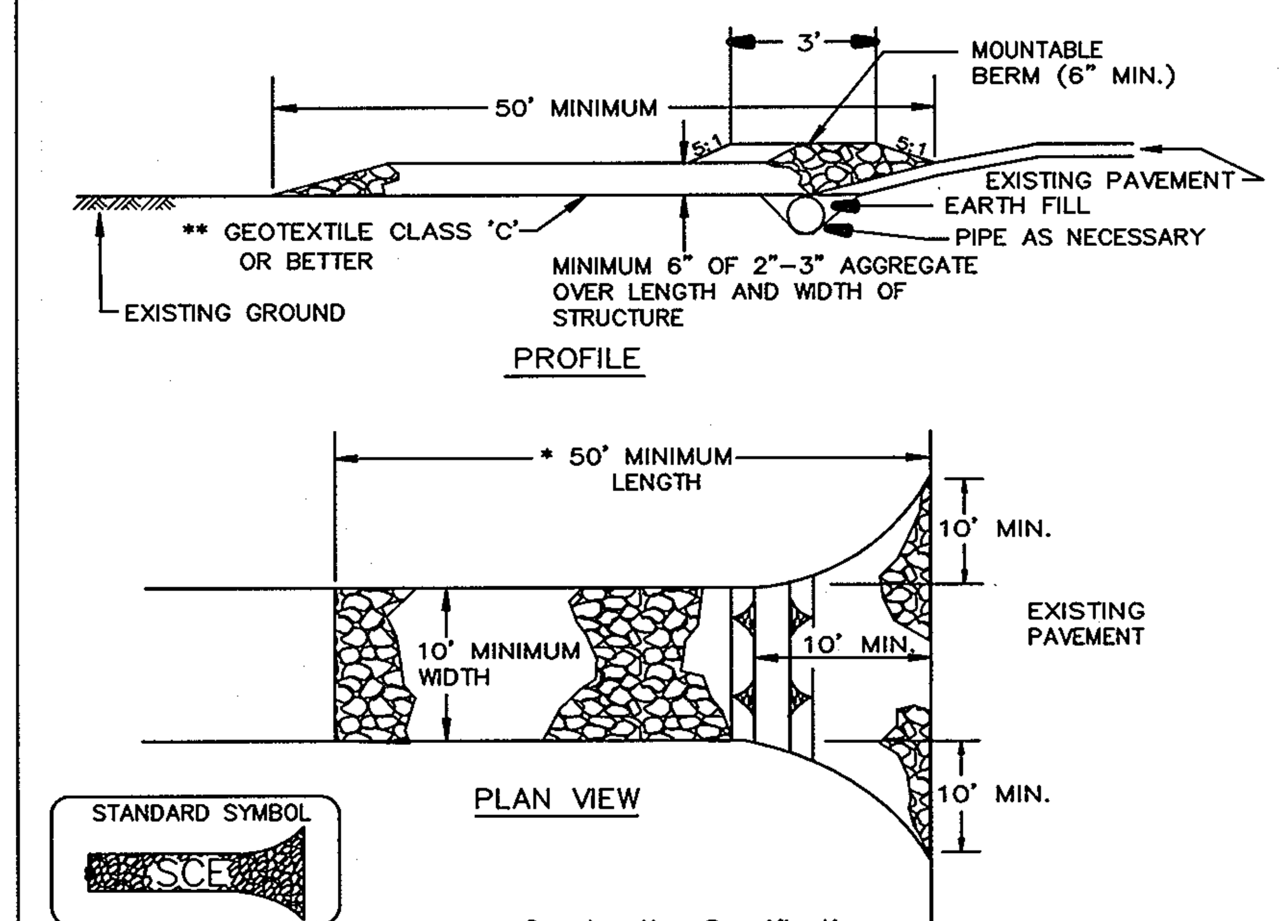
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft ^{2}/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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.

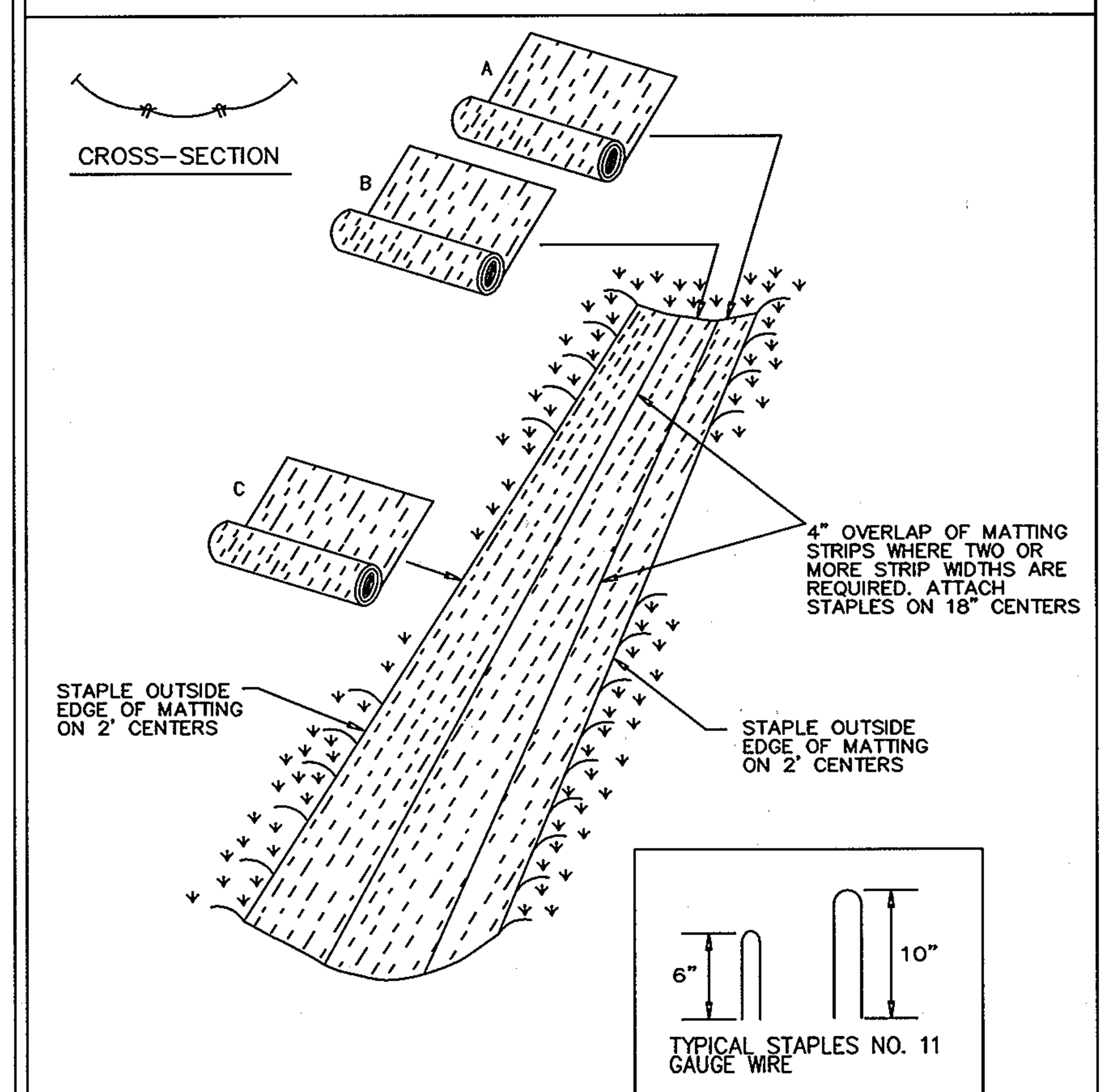
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

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.

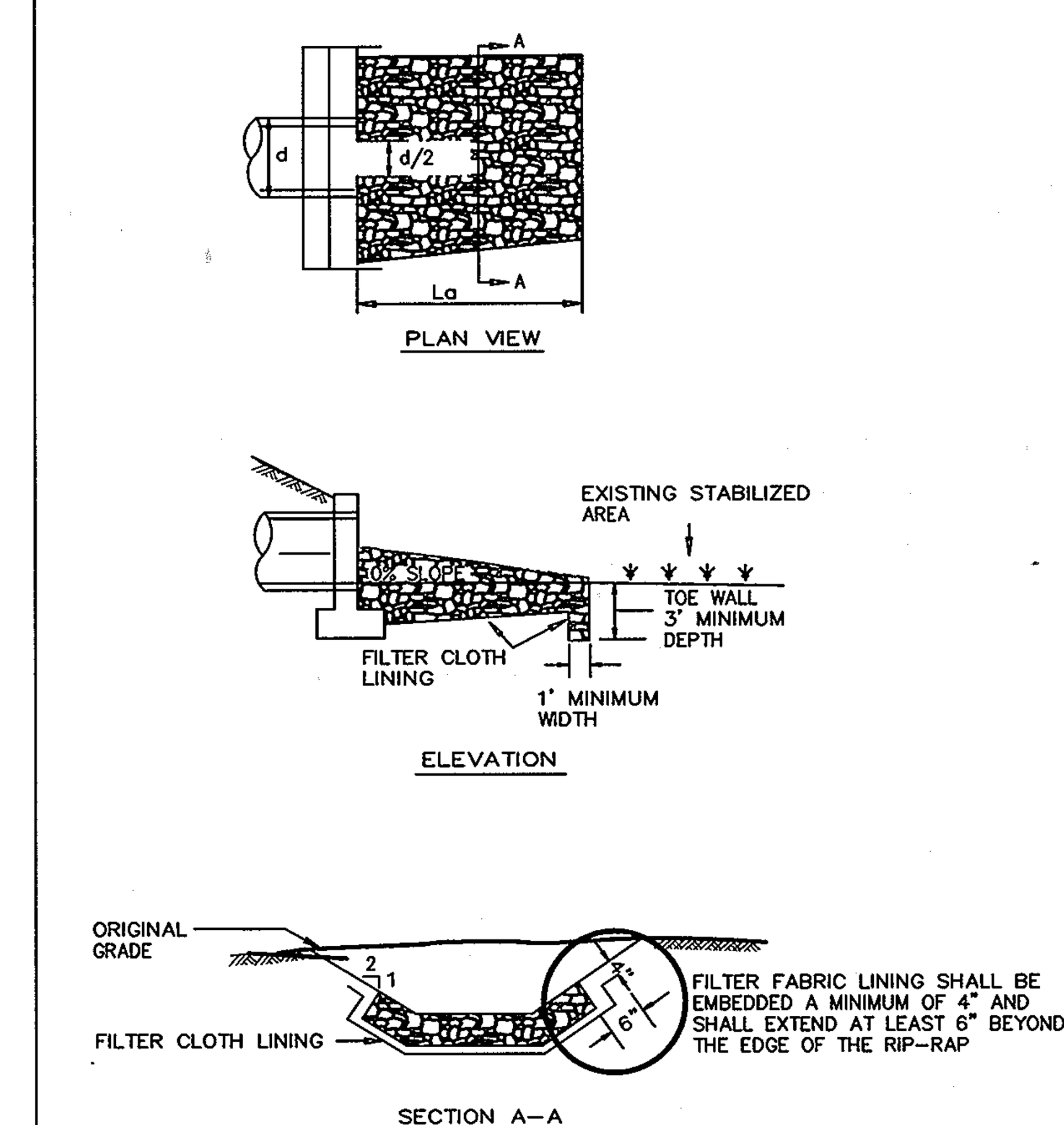
5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.

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.

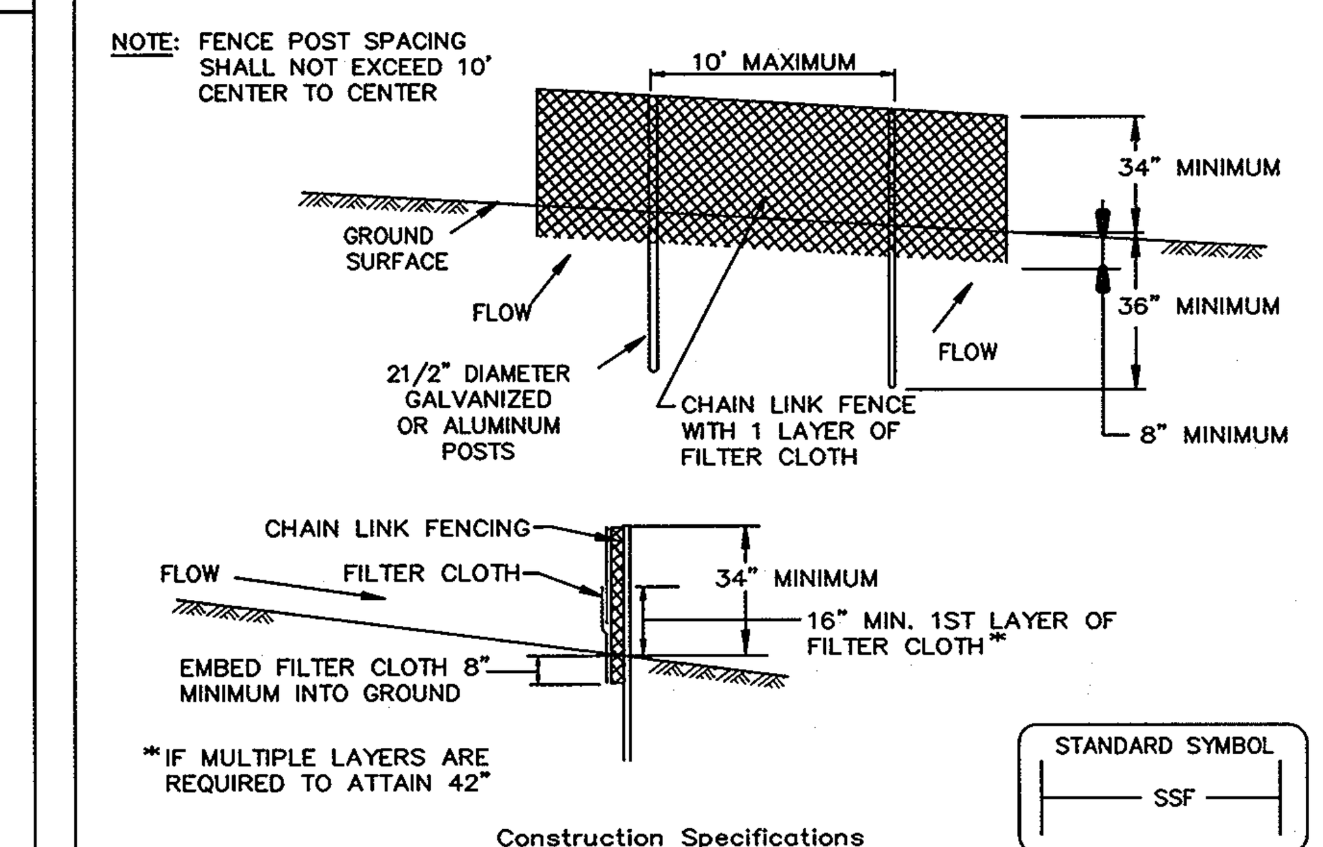
4. Stone for the rip–rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will 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

NOTE: FENCE POST SPACING SHALL NOT EXCEED 10' CENTER TO CENTER



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.

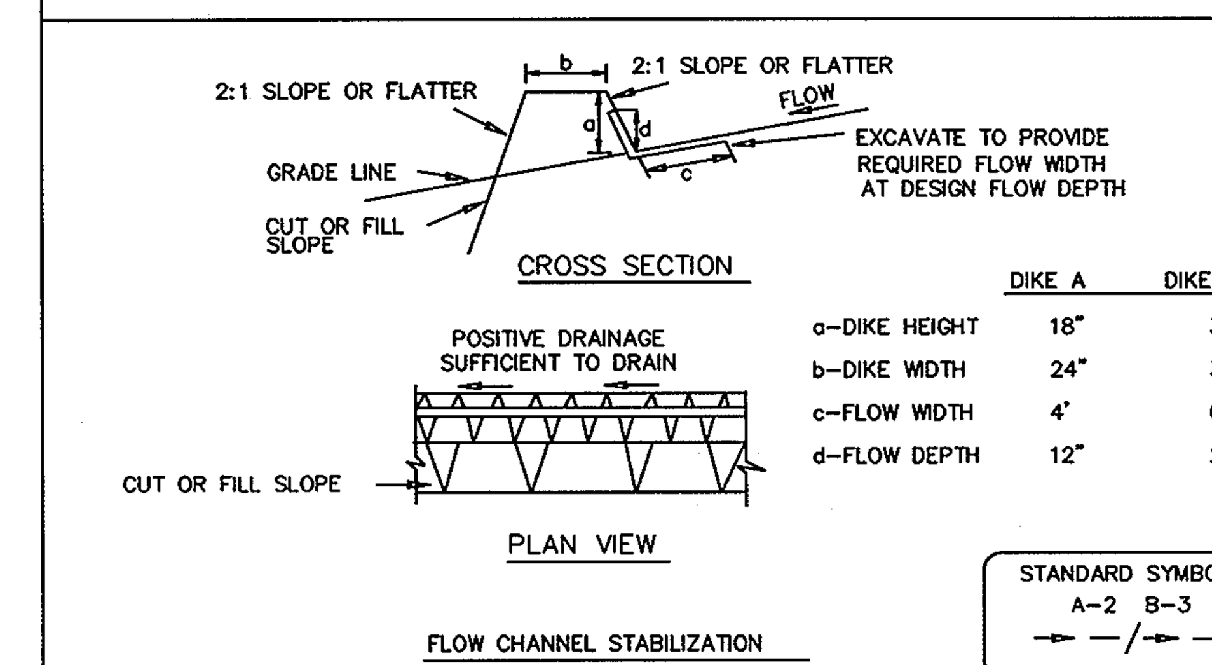
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

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"

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

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 6/28/05

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 6/28/05

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 6/22/05

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 6-22-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/15/05

Chief, Development Engineering Division MK — Date 7/14/05

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.

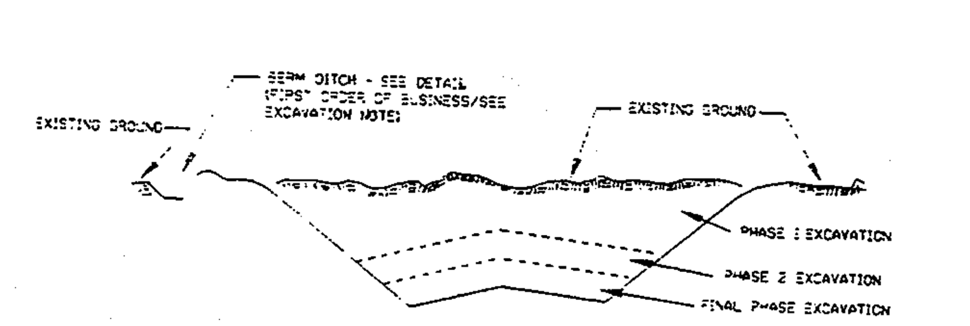


Figure 4 Incremental Stabilization - Cut

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.

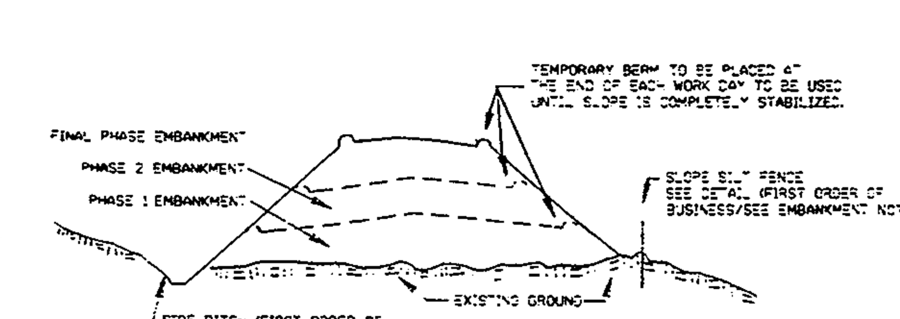


Figure 5 Incremental Stabilization - Fill

G-20-7

1994

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.
11/9/2010	2 Revised contact information	DEV	
4-9-08	Rev. Plans for creation of F-08-171 This sheet for wind-sed. Con. see F08-171 for add'l. Info.	WDJ	

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PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett 2
410-484-8400

SEDIMENT CONTROL DETAILS

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD–3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41–22	6 OF 17

F-05-81

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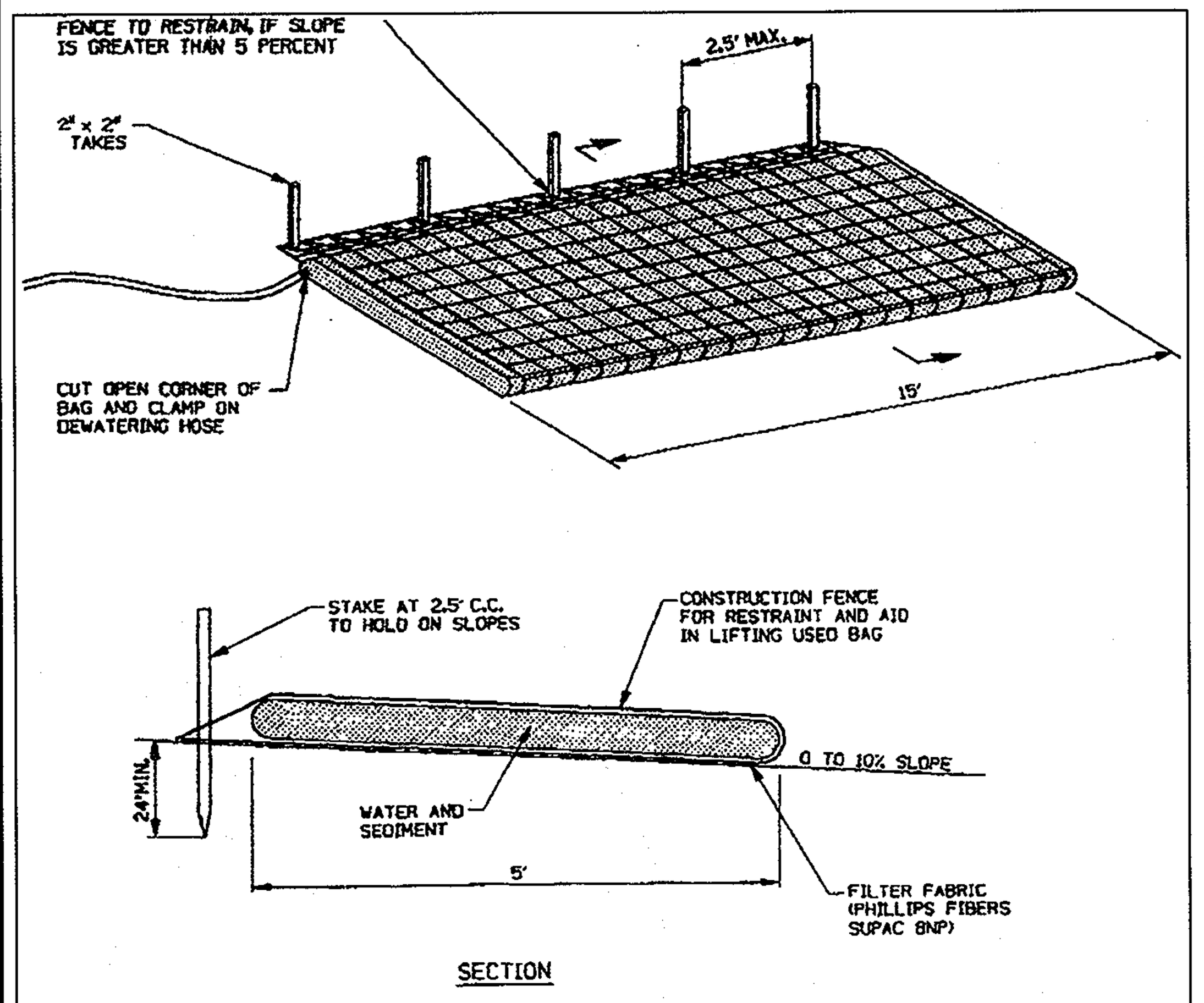
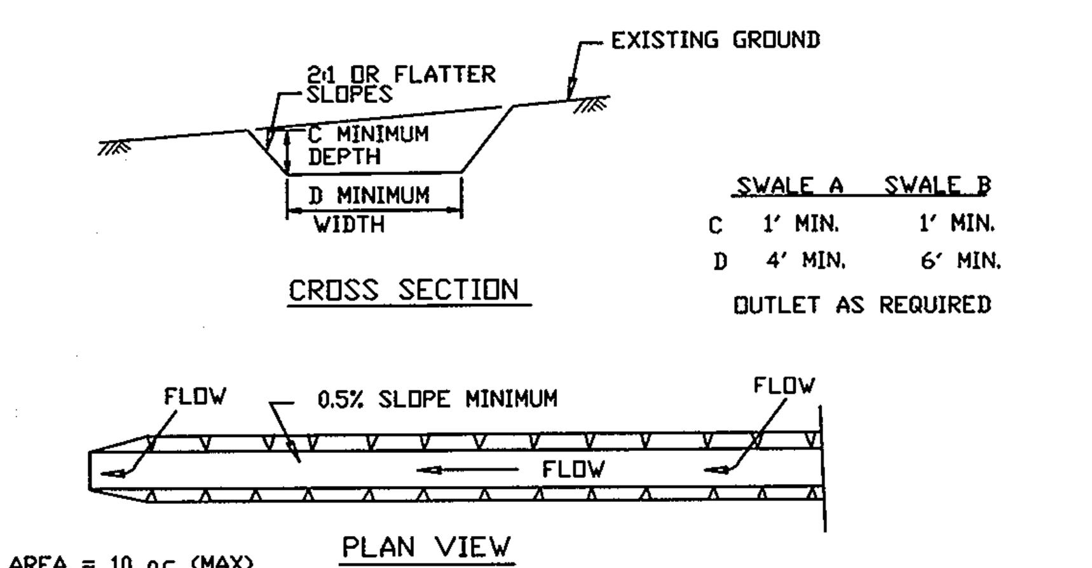


NOTES:
1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. WIDTH AND LENGTH SHALL BE AS SHOWN IN THE TABLE.
3. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
4. FILTER BAG SHALL NOT 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 (FB)

DETAIL 2 - TEMPORARY SWALE



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

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 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.

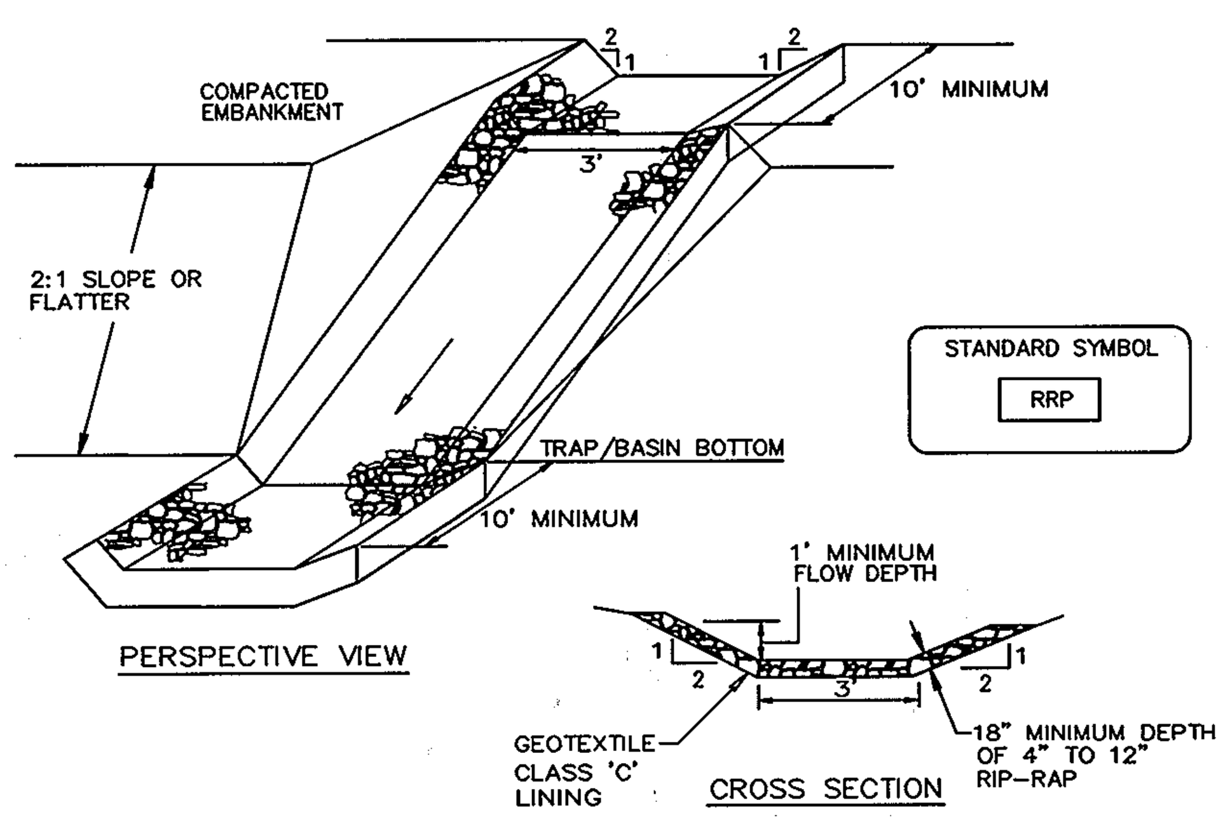
6. Fill, if necessary, shall be compacted by earth moving equipment.

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 A - 2 - 4	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 5 - RIP-RAP INFLOW PROTECTION



STANDARD SYMBOL
RRP

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.

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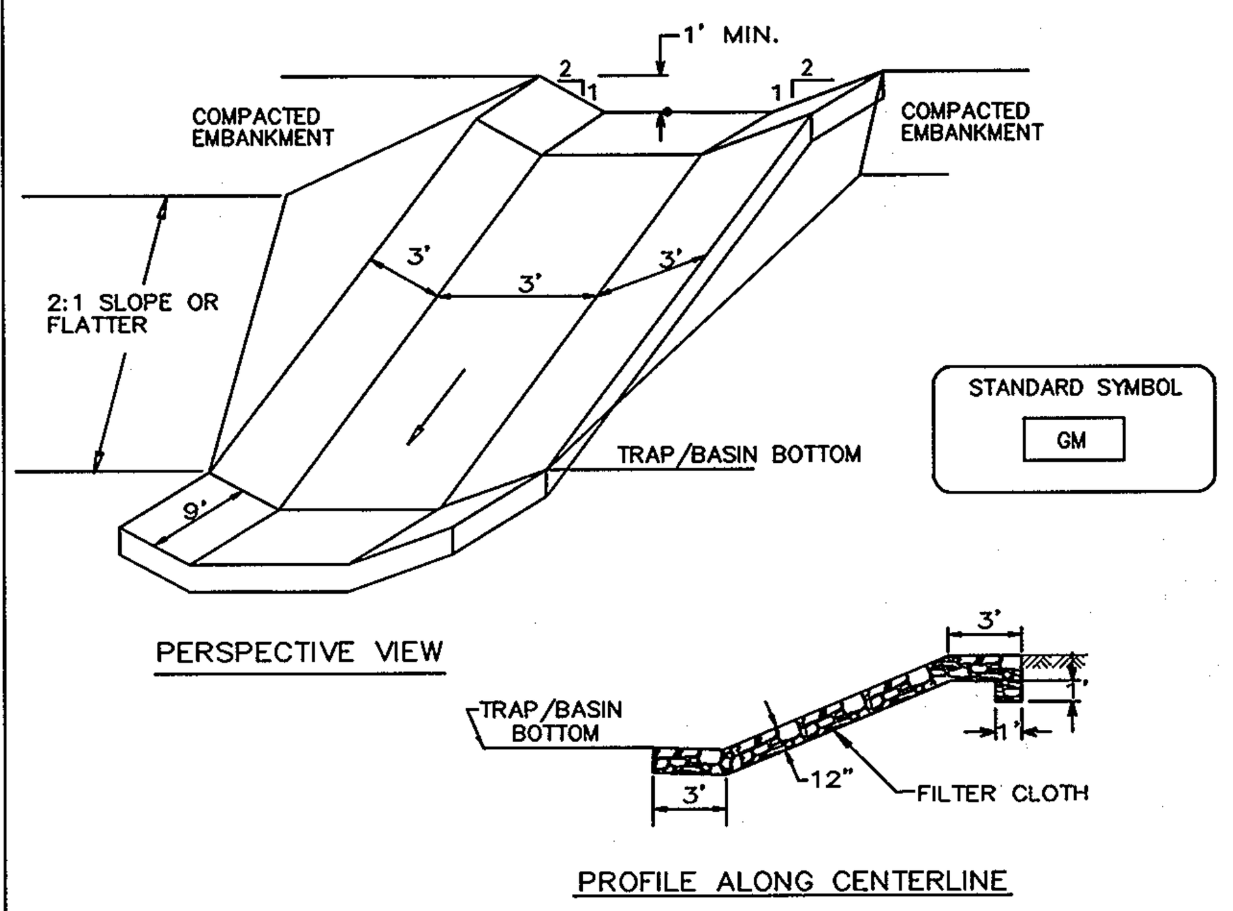
DETAIL 6 - GABION INFLOW PROTECTION



STANDARD SYMBOL
GM

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.

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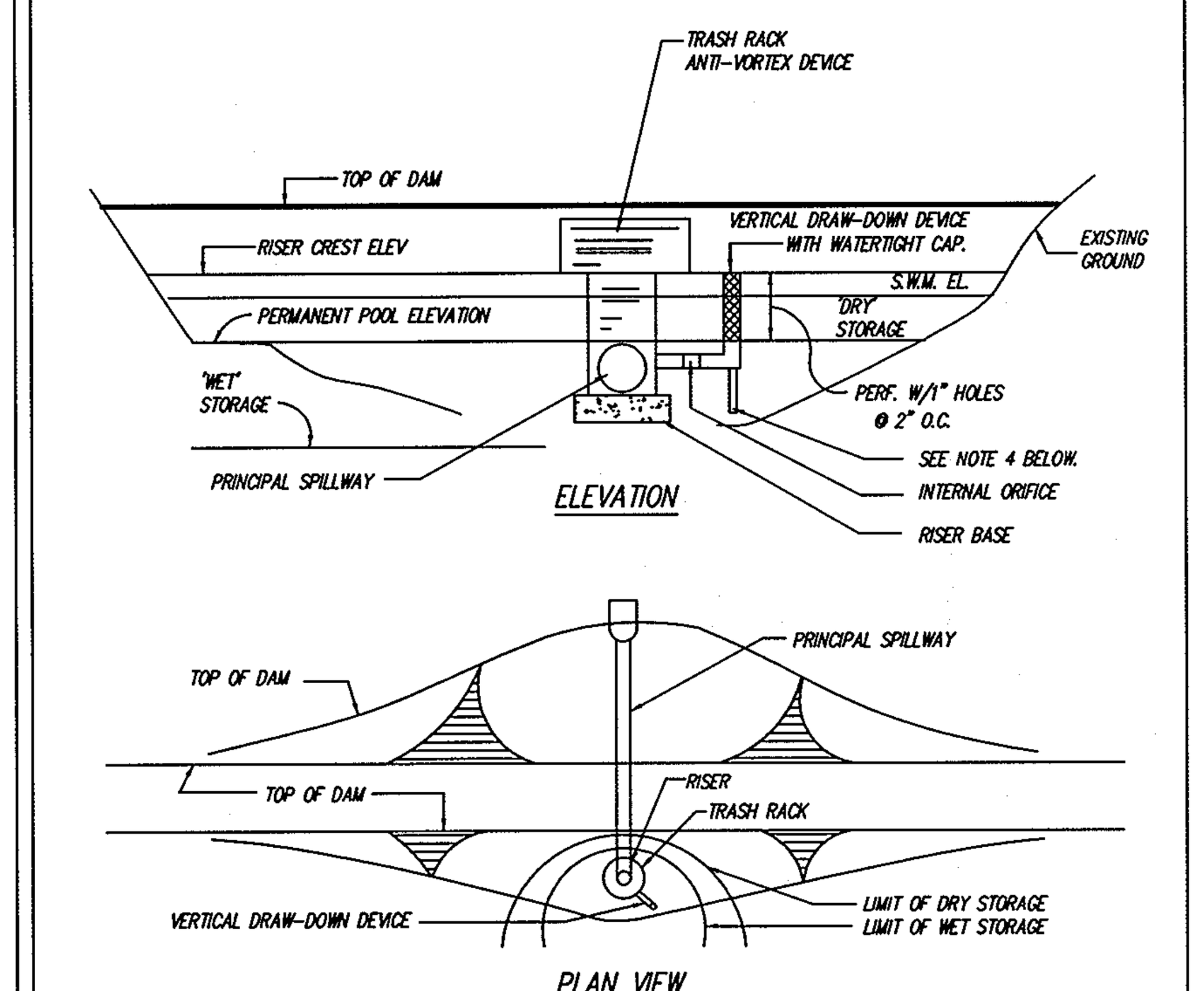
BASIN DRAWDOWN SCHEMATIC
VERTICAL DRAWDOWN DEVICE



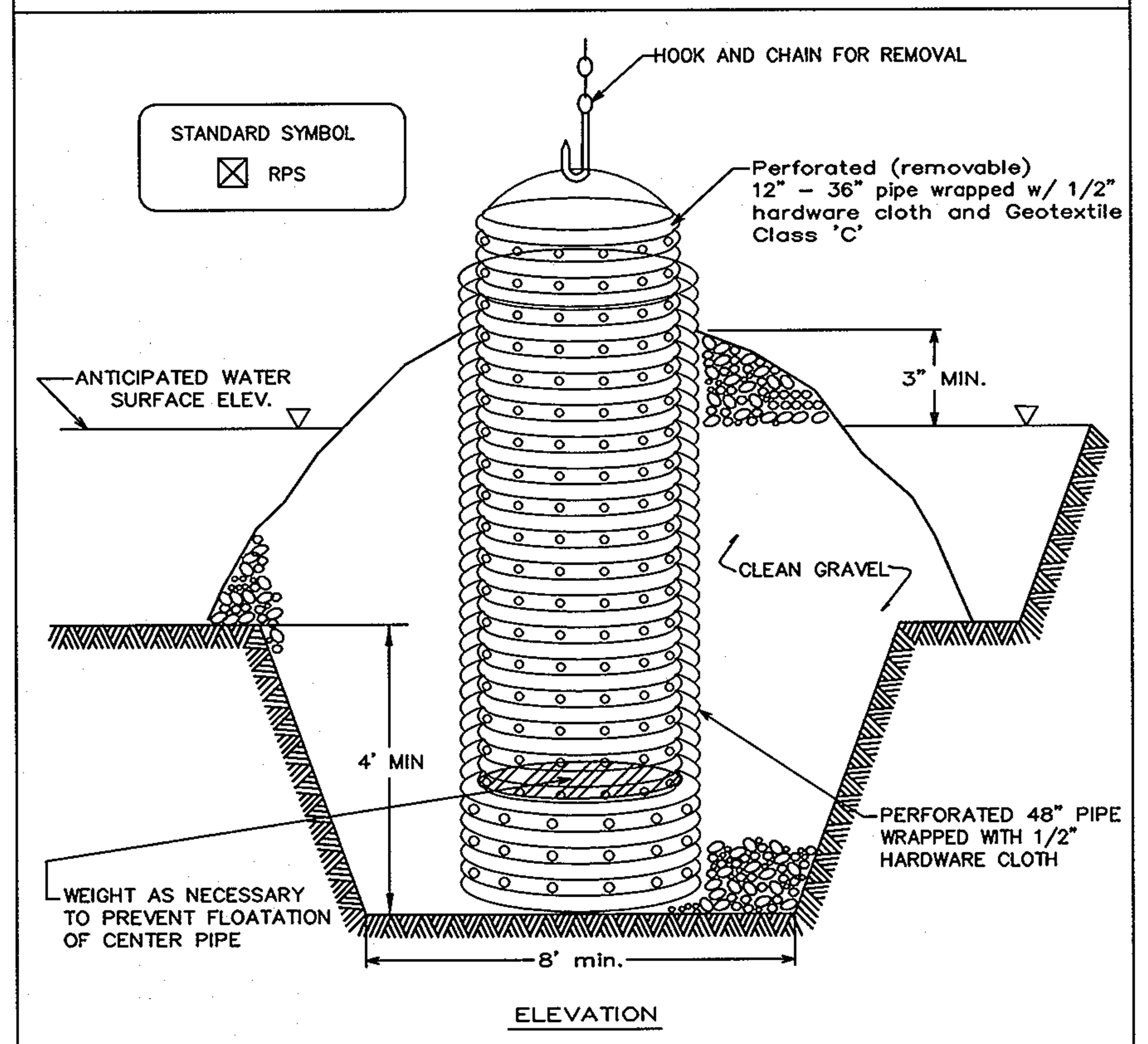
CONSTRUCTION SPECIFICATIONS

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 internel 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 flootation. An acceptable preventative measure is to stake both sides of draw-down device with 1" steel angle, or 1" by 4" square or 2" round wodden posts set 3' minimum into the ground then joining them to the device by wrapping with 12 guage minimum wire.*

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE [illegible]	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 20A - REMOVABLE PUMPING STATION

STANDARD SYMBOL
RPS



Construction Specifications

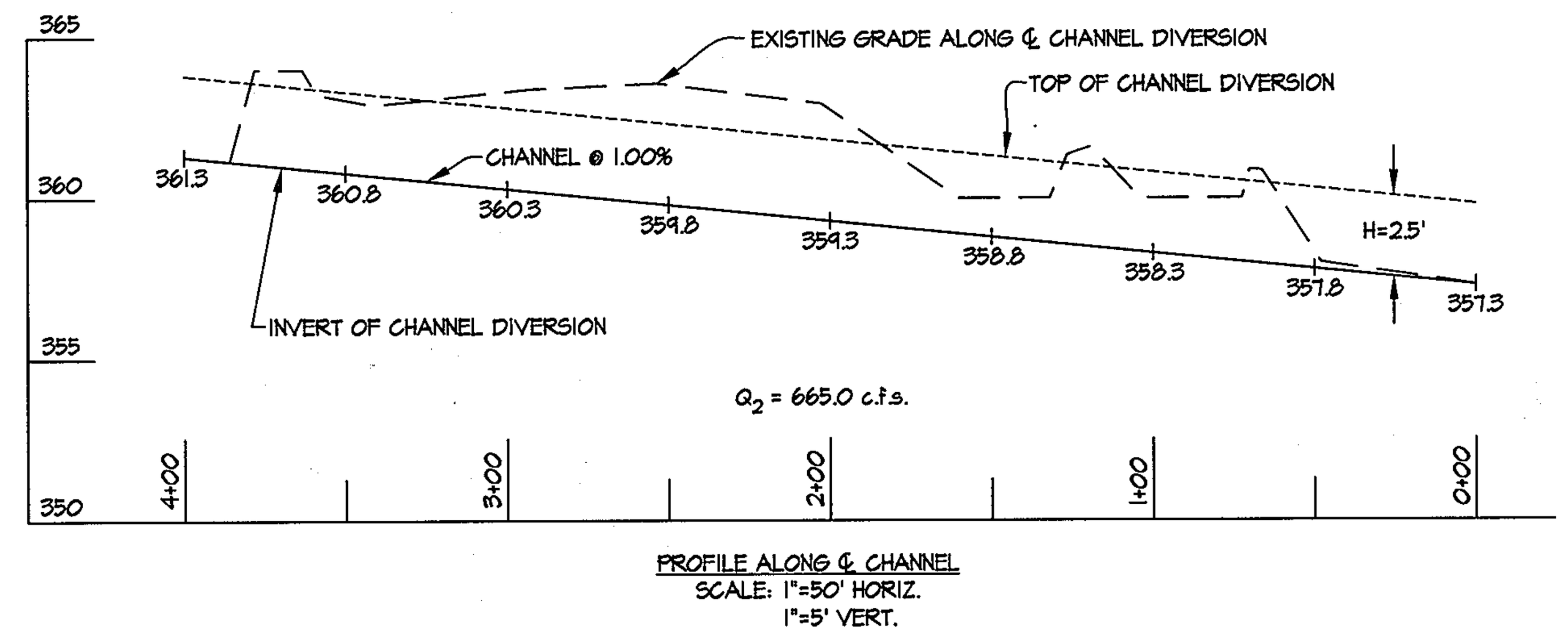
1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.

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

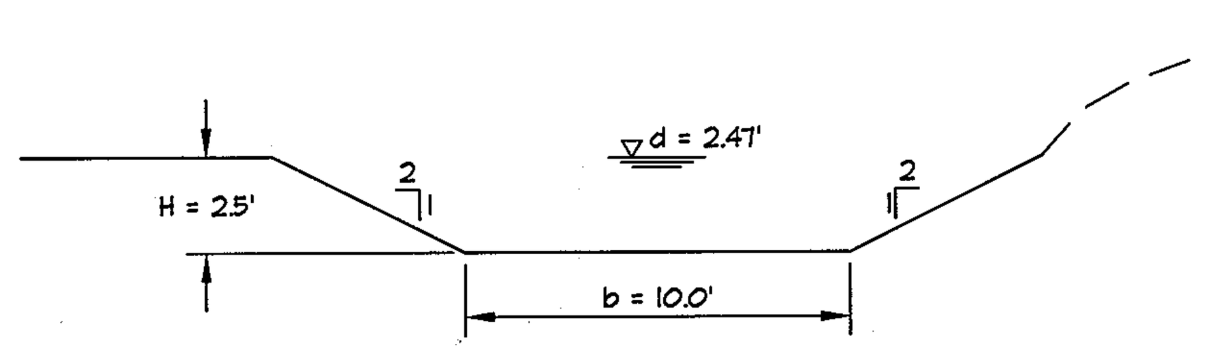
3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile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

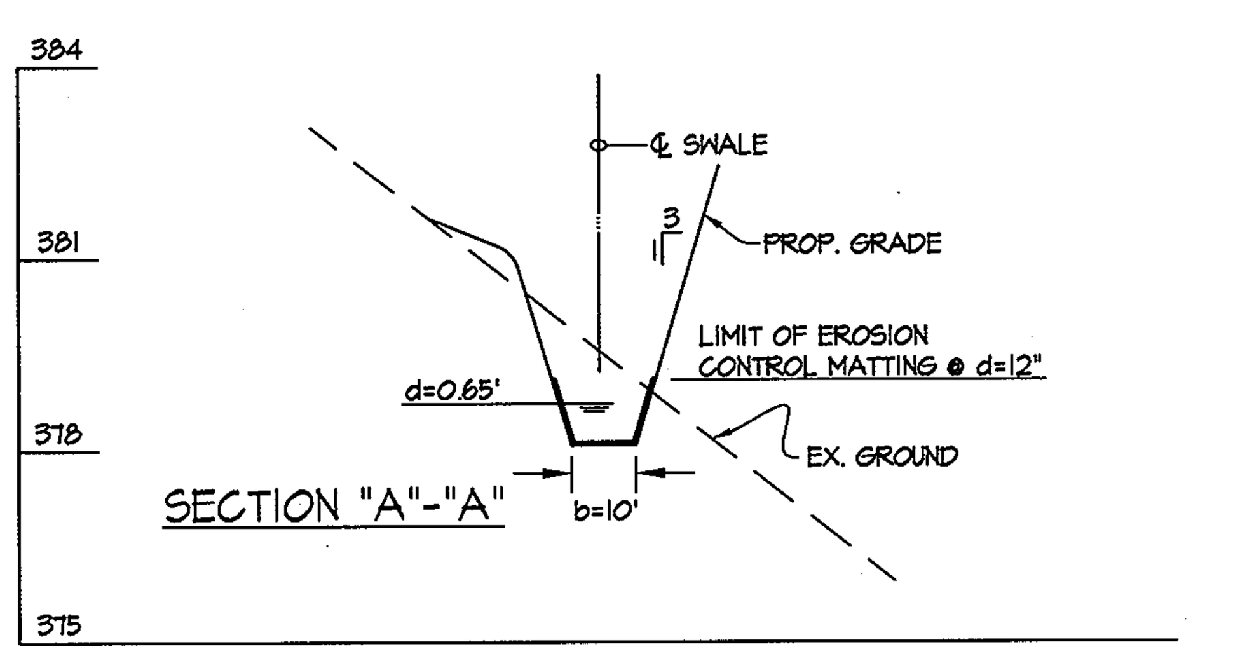
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE D - 12 - 5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



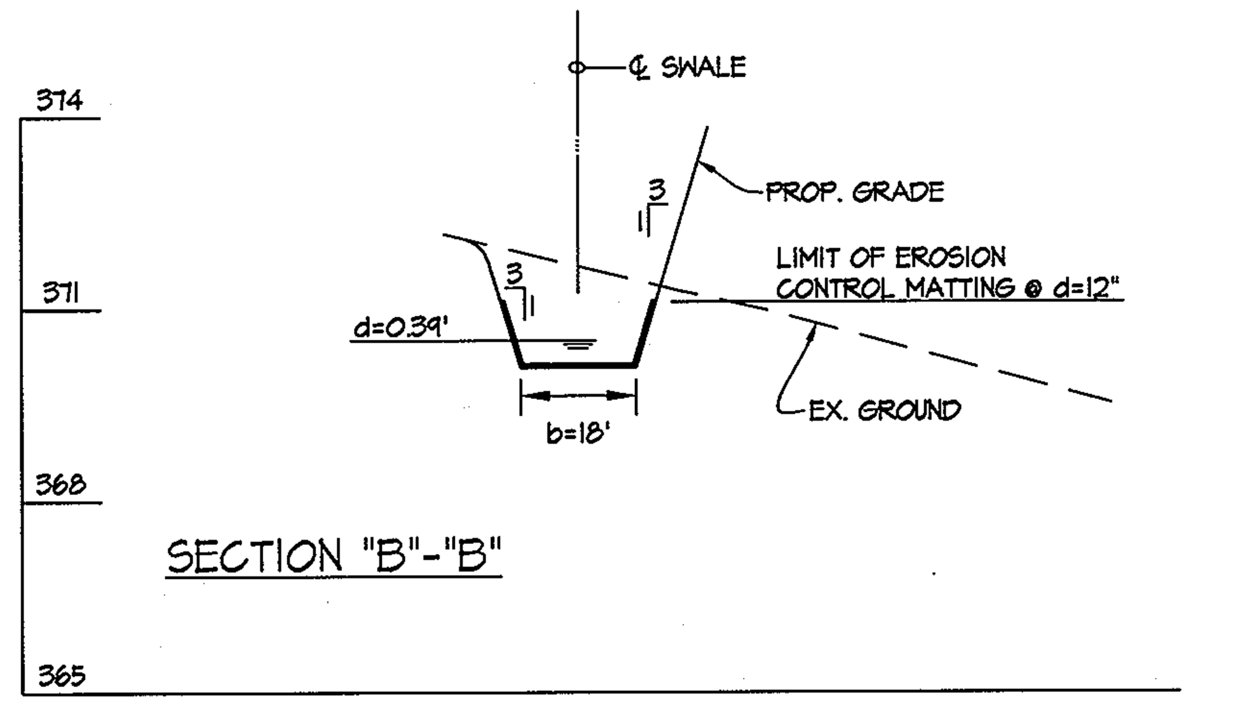
PROFILE ALONG ℄ CHANNEL
SCALE: 1"=50' HORIZ.
1"=5' VERT.



SECTION THROUGH DIVERSION CHANNEL
SCALE: 1"=5'



SECTION "A"-"A"



SECTION "B"-"B"

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] 6-22-05
Signature of Developer/Builder — *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."

[signature] 6/22/05
Engineer's Signature — *Date*

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[signature] 7-6-05
Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[signature] 7/15/05
Chief, Division of Land Development — Date
[signature] 7/14/05
Chief, Development Engineering Division MK — 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.

[signature] 6/28/05
Natural Resources Conservation Service — *Date*

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

[signature] 6/28/05
Howard Soil Conservation District — *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

\DRAWINGS\04001\04001A\Finals\04001aSC12.dwg	DES. DEV	DRN. AWL	CHK. DEV

DATE	REVISION	BY	APP'R.
11/9/2010	3 Revised contact information.	DEV.	
6.5.08	Rev. Plans For Creation of F-08-11 This set For SWM & Sed. Con. See F-08-111 For S.D. & Rd. Info.	WSJ	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett 3
410-484-8400

SEDIMENT CONTROL DETAILS
MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	7 OF 17

F-05-81

L:\CADD\DRAWINGS\04001\04001A\Finals\04001aSC12.dwg 6/22/2005 11:16:03 AM 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	:	17.2 Acres
Area Disturbed	:	21.5 Acres
Area to be roofed or paved	:	3.1 Acres
Area to be vegetatively stabilized	:	18.4 Acres
Total Cut	:	76,500 Cu. Yds.
Total Fill	:	84,000 Cu. Yds.
Borrow area location:		7,500 Cu. Yds. stockpiled where shown on sheet 10

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.

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 topsoiling, 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.

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.

BEST MANAGEMENT PRACTICES

FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE 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 1777, 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.

STATE OF MARYLAND — CARLTON K. GUTSCHICK — 12973 — PROFESSIONAL ENGINEER

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] — Signature of Developer/Builder — 6-22-05 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."

[signature] — Engineer's Signature — 6/22/05 Date

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

[signature] — Howard Soil Conservation District — 6/28/05 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.

[signature] — Natural Resources Conservation Service — 6/28/05 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature] — Chief, Bureau of Highways — 7-6-05 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

[signature] — Chief, Division of Land Development — 7/15/05 Date

[signature] — Chief, Development Engineering Division MK — 7/14/05 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

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DATE	REVISION	BY	APP'R.
11/9/2010	3 Revised contact information.	DEV.	
6.9.08	Rev. Plans For Creation of F-08-177 This Sheet For SWM & Sed. Con. See F-08-177 For S.D. & Rd. Info.	WOJ	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett 3
410-484-8400

SEDIMENT CONTROL DETAILS

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHWON	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	8 OF 17

F-05-81

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APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/15/05

Chief, Development Engineering Division MK — Date 7/14/05

GLW GUTSCHICK LITTLE & WEBER, P.A.

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

\DRAWINGS\04001\04001A\Finals\04001aLU19.dwg	DES. DEV	DRN. AWL	CHK. DEV

DATE	REVISION	BY	APP'R.
11/9/2010	③ Revised contact information.	DEV.	
6-8-08	Rev. Plans For Creation of F-08-177 This not For SWM & sed. Con. See F-08-177 For S.D. & Rd. Info.	WAJ	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett ③
410-484-8400

LAND USE PLAN

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	MXD-3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41–22	9 OF 17

F-05-81

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Stormwater Management Summary for Facility Along the Hammond Branch
Drainage Area=28.0 Acres or 0.0438 Sq. Miles

PRE-DEVELOMENT
Curve Number=59 Time of Concentration=0.24 Hours

POST-DEVELOMENT
Curve Number=89 Time of Concentration=0.23 Hours

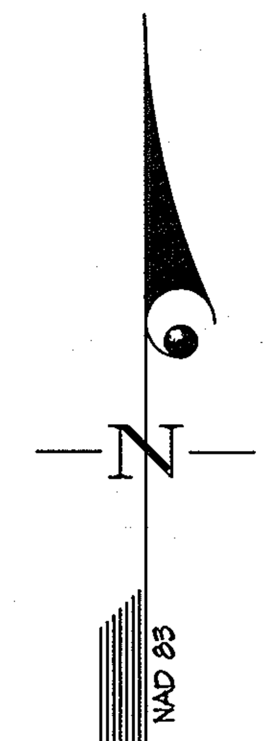
Water Quality Volume Required:	51,371 c.f.	Provided:	51,372 c.f.
Recharge Volume Required:	8,636 c.f.	Provided:	See note 4 below
Channel Protection Volume Required:	102,368 c.f.	Provided:	111,514 c.f.

1 Year Discharge = 1.40 c.f.s.
100 Year Discharge = 164.48 c.f.s.

1. The facility will be publicly owned and maintained. An open space lot will be conveyed to the County.
2. The facility will be a P-2 wet pond with extended detention.
3. The facilty has an 'A' classification.
4. The storage will be provided in an infiltration trench type facility on an open space lot during the design and construction of the Hillside District - Area 2.

POND SUMMARY

	Before	Unmanaged	Managed
FINAL SWM @ POND			
1 YR	2.25 c.f.s.	49.58 c.f.s.	1.40 c.f.s. @ 362.35
2 YR	7.51 c.f.s.	66.55 c.f.s.	9.01 c.f.s. @ 362.49
10 YR	36.53 c.f.s.	120.85 c.f.s.	92.22 c.f.s. @ 363.02
100 YR	---------	201.36 c.f.s.	164.48 c.f.s. @ 363.35
TEMPORARY SWM @ POND			
1 YR	1.90 c.f.s.	51.56 c.f.s.	1.02 c.f.s. @ 362.03
2 YR	6.80 c.f.s.	66.61 c.f.s.	3.27 c.f.s. @ 362.39
10 YR	32.45 c.f.s.	113.85 c.f.s.	61.46c.f.s. @ 362.86



LEGEND

HYDROLOGIC SOIL GROUP

'C' SOIL 'D' SOIL

NOTE: REMAINDER OF DRAINAGE AREA TO POND IS 'B' SOIL.

Time of Concentration Path (Pre-Development)

Time of Concentration Path (Post Development)

Limit of Drainage to SWM Pond (Pre & Post Development)

Ⓐ Before Development Tc Segment

Ⓐ After Development Tc Segment

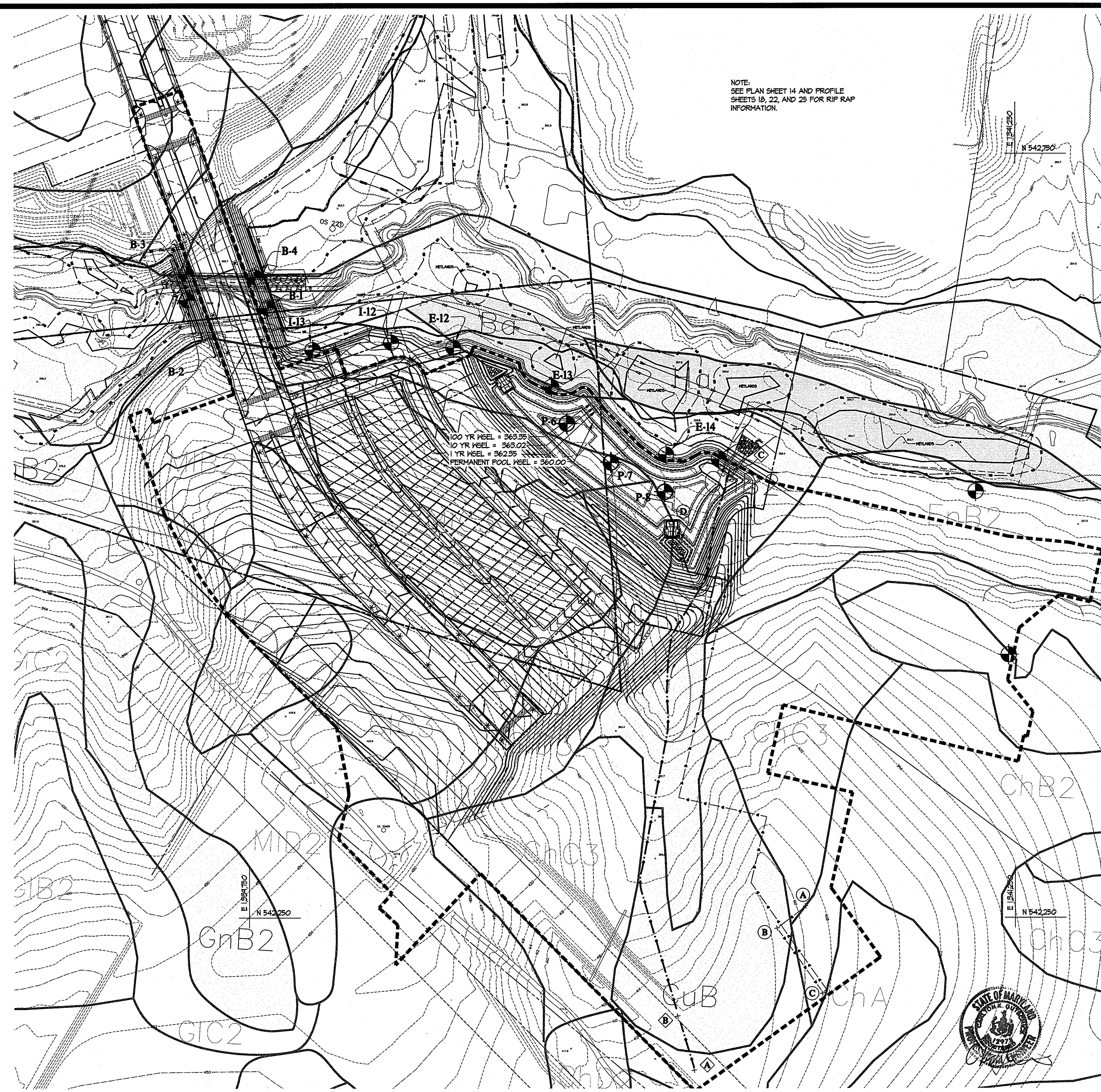
Soil Boring Location

Pre-Development

SEGMENT	DESCRIPTION	TIME
A - B	100' OVERLAND FLOW @ 5.0% (grass, n=24)	0.16 hr.
B - C	1070' SHALLOW CONC. FLOW (unpaved) @ 5% (v = 3.6'/sec)	0.08 hr.

Post Development

SEGMENT	DESCRIPTION	TIME
A - B	60' OVERLAND FLOW @ 2.0% (n=24)	0.18 hr.
B - C	100' SHALLOW CONC. FLOW @ 2.5% (v = 3.2'/sec)	0.01 hr.
C - D	1000' PIPE FLOW @ 6.0'/SEC.	0.05 hr.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/15/05

Chief, Development Engineering Division MK — Date 7/14/05

GLW GUTSCHICK LITTLE & WEBER, P.A.
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DATE	REVISION	BY	APP'R.
11/9/2010	3 Revised contact information.		
6.5.08	Rev. Plans For Creation of F-08-177 This set For SWM & Sed. Con. See F-08-177 For P.D. & Rd. Info.	WSJ	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett 3
410-484-8400

STORM WATER MANAGEMENT DRAINAGE MAP

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	10 OF 17

F-05-81

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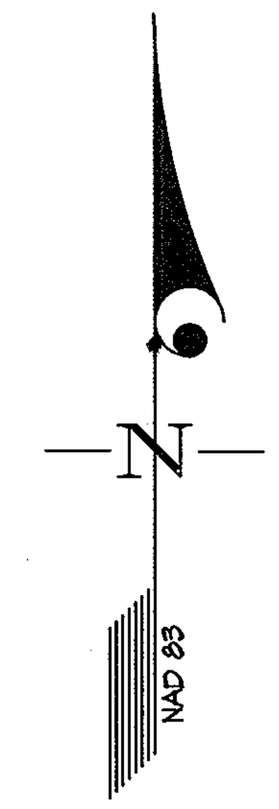
LEGEND

- Earth Dike
- Time of Concentration Path (Before Development)
- Time of Concentration Path (After Development)
- (A) Before Development Tc Segment
- A After Development Tc Segment
- Limit of Drainage to Sediment Basin



TEMPORARY STORMWATER MANAGEMENT DRAINAGE INFORMATION FOR SEDIMENT BASIN

Drainage Area= 21.6 Acres or 0.0338 Sq. Miles △1

PRE-DEVELOMENT

Curve Number= 61 Time of Concentration= 0.17 Hours

PRE-DEVELOMENT TIME OF CONCENTRATION

SEGMENT	DESCRIPTION	TIME
◇A - ◇B	100' OVERLAND FLOW @ 8.0% (grass, n=24)	0.14 hr.
◇B - ◇C	510' SHALLOW CONC. FLOW (unpaved) @ 9.8% (v = 5.1'/sec)	0.03 hr.

Total = 0.17 hr.

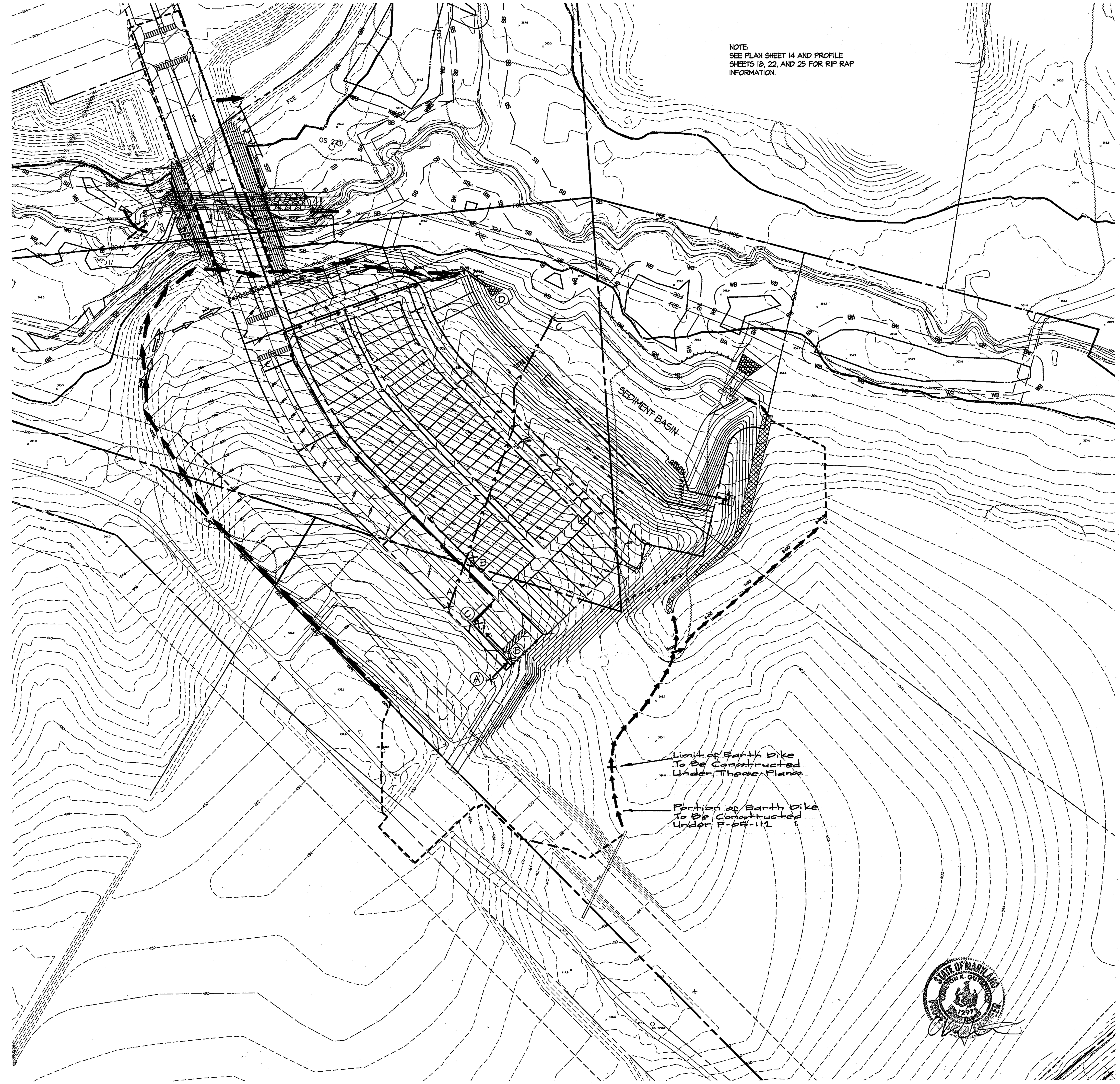
POST-DEVELOMENT △1

Curve Number= 93 Time of Concentration= 0.07 Hours

POST-DEVELOMENT TIME OF CONCENTRATION

SEGMENT	DESCRIPTION	TIME
(A) - (B)	50' OVERLAND FLOW @ 12.0% (n=24)	0.01 hr.
(B) - (C)	110' SHALLOW CONC. FLOW @ 3.6% (v = 3.9'/sec)	0.01 hr.
(C) - (D)	1175' PIPE FLOW @ 7.0'/SEC.	0.05 hr.

Total = 0.07 hr.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature] 7-6-05
Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

[signature] 7/15/05
Chief, Division of Land Development — Date

[signature] 7/14/05
Chief, Development Engineering Division MK — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
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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.
11/9/2010	△3 Revised contact information.	DEV.	
6.5.08	Rev. Plans For Creation of F-08-177 This set For SWM & Sed. Con. See F-08-177 For S.D. & Rd. Info.	WOJ	
2-22-06	△1 rev. earth dike location per F-05-112 plans & rev. drainage area info. to basin	K.L.F.	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett △3
410-484-8400

TEMPORARY STORMWATER MANAGEMENT DRAINAGE MAP

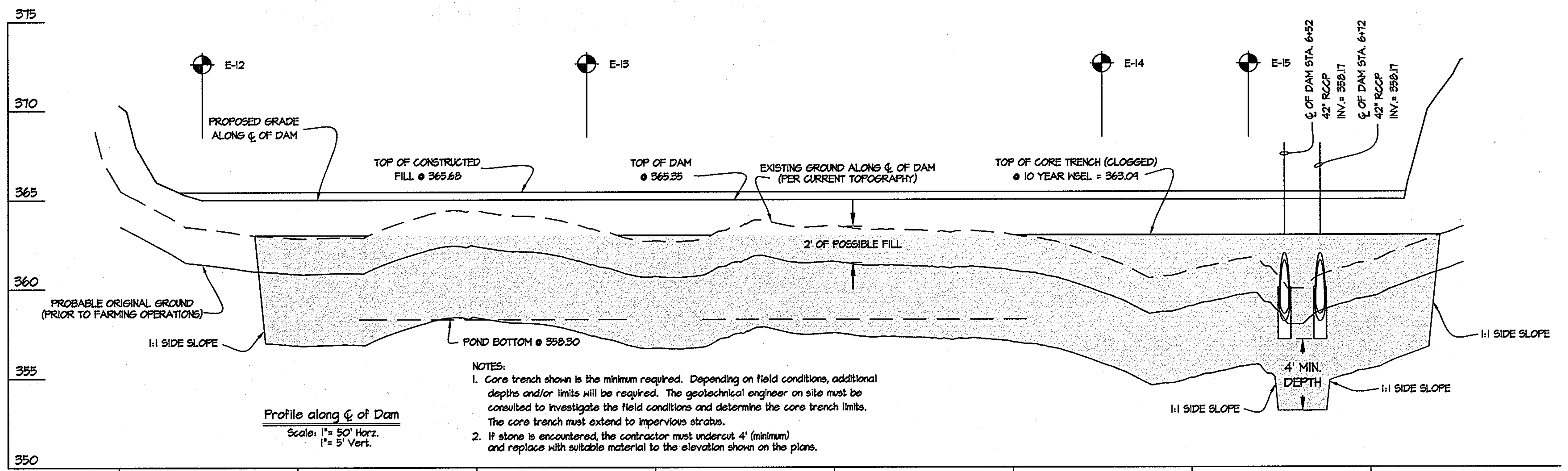
MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

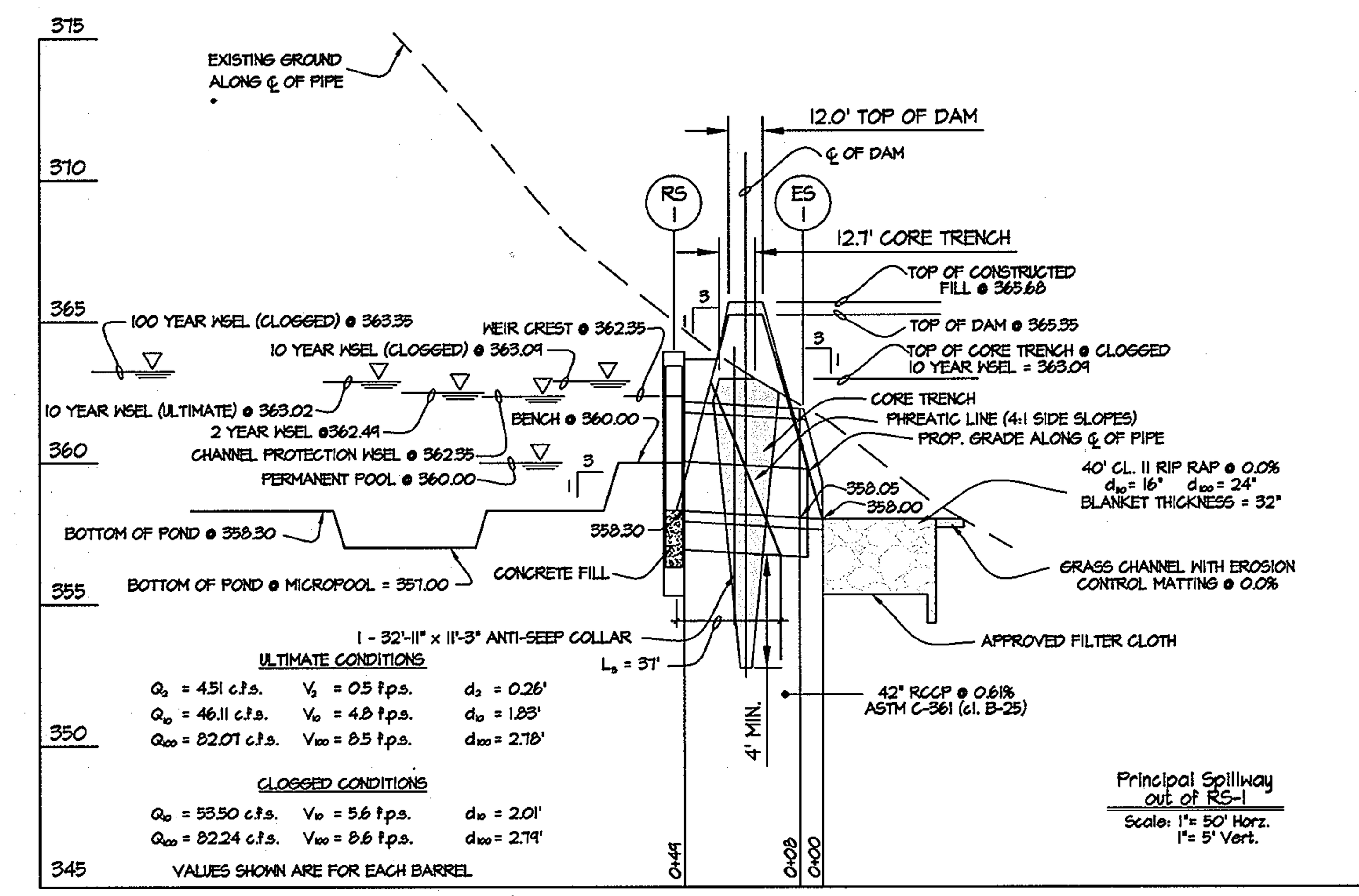
SCALE	ZONING	G. L. W. FILE No.
1"=100'	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	11 OF 17

F-05-81

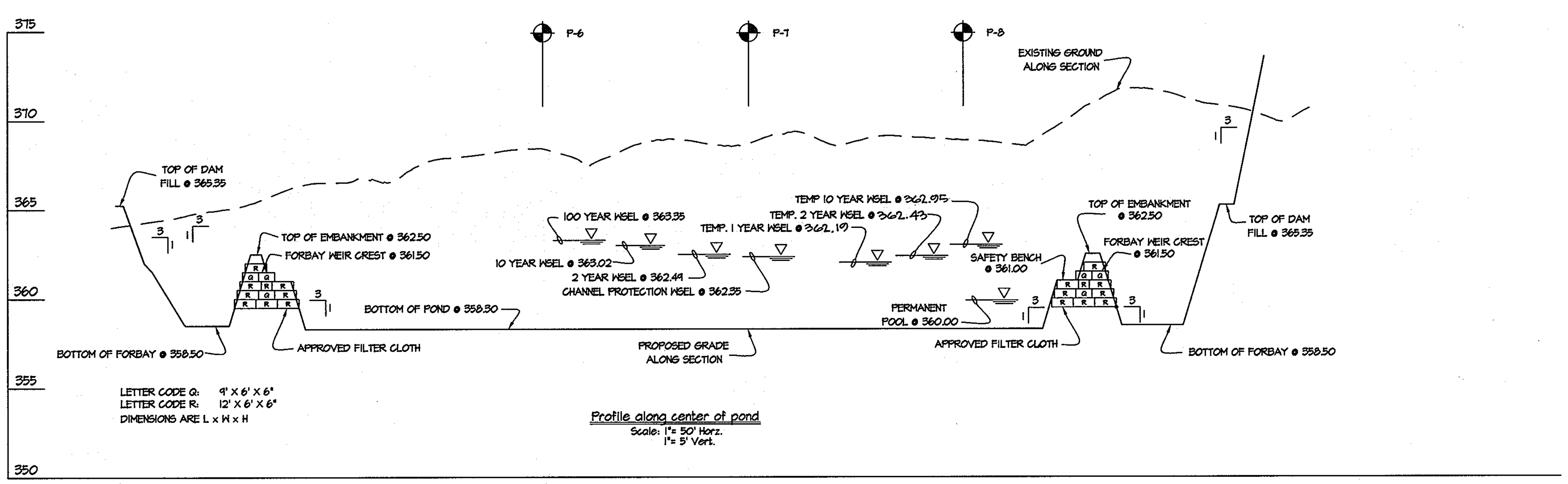


Profile along ℄ of Dam
Scale: 1"= 50' Horz. 1"= 5' Vert.

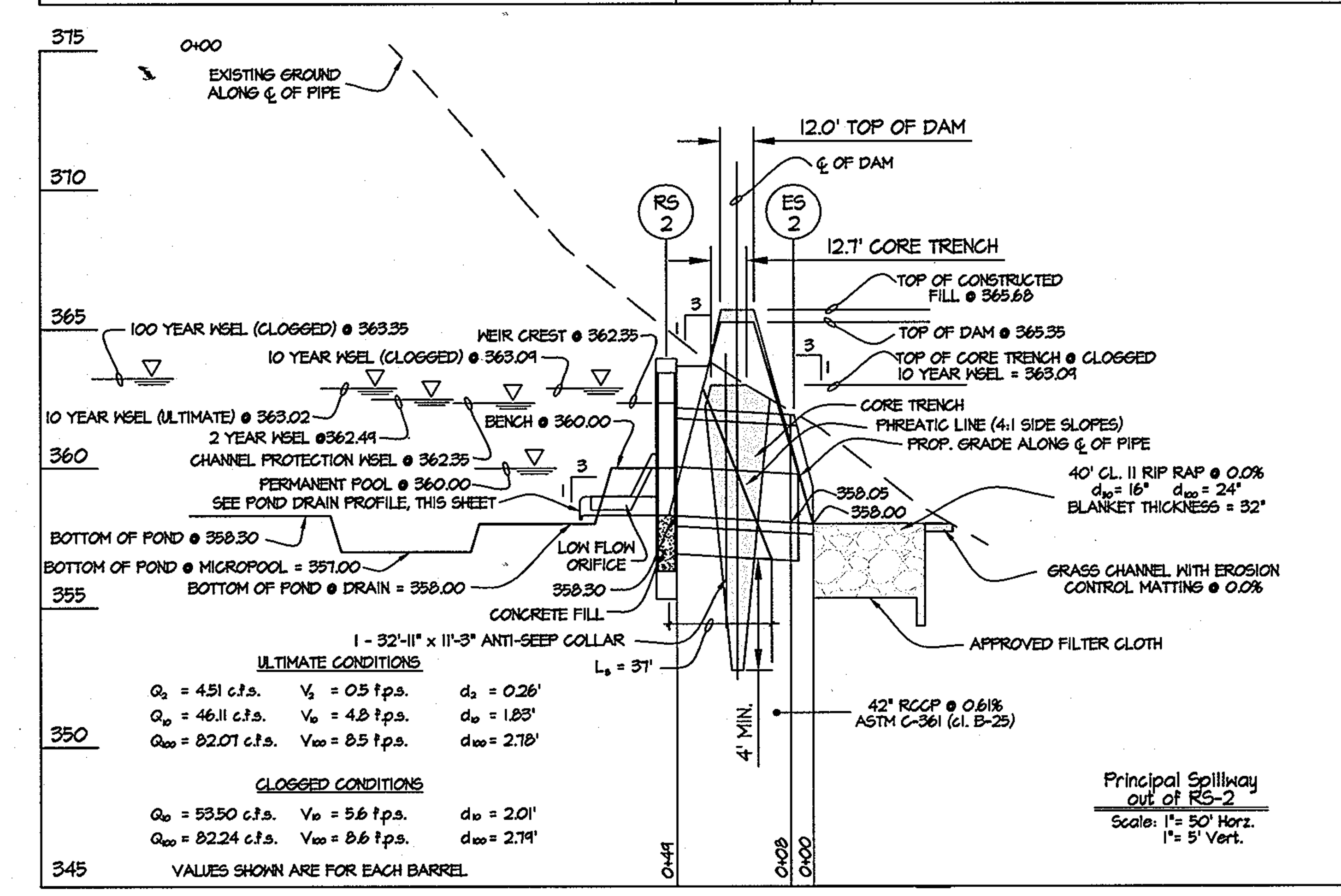
NOTES:
1. Core trench shown is the minimum required. Depending on field conditions, additional depths and/or limits will be required. The geotechnical engineer on site must be consulted to investigate the field conditions and determine the core trench limits. The core trench must extend to impervious stratus.
2. If stone is encountered, the contractor must undercut 4' (minimum) and replace with suitable material to the elevation shown on the plans.



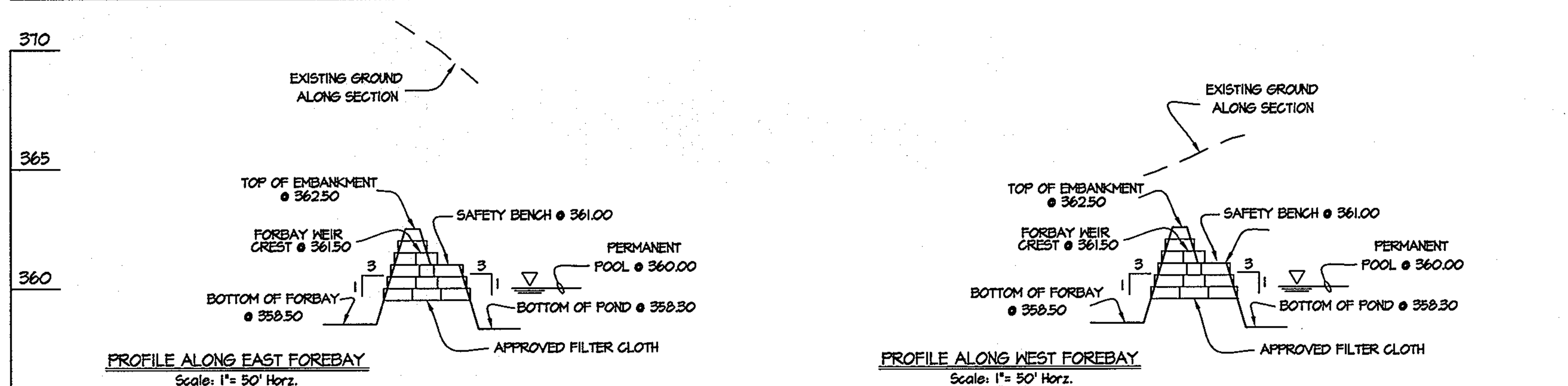
Principal Spillway out of RS-1
Scale: 1"= 50' Horz. 1"= 5' Vert.



Profile along center of pond
Scale: 1"= 50' Horz. 1"= 5' Vert.

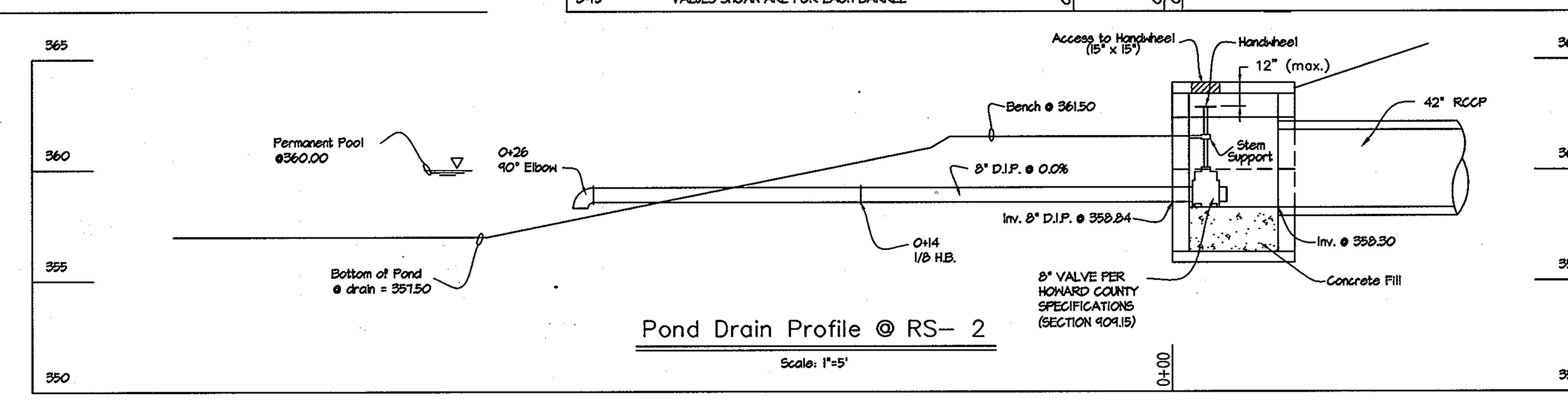


Principal Spillway out of RS-2
Scale: 1"= 50' Horz. 1"= 5' Vert.

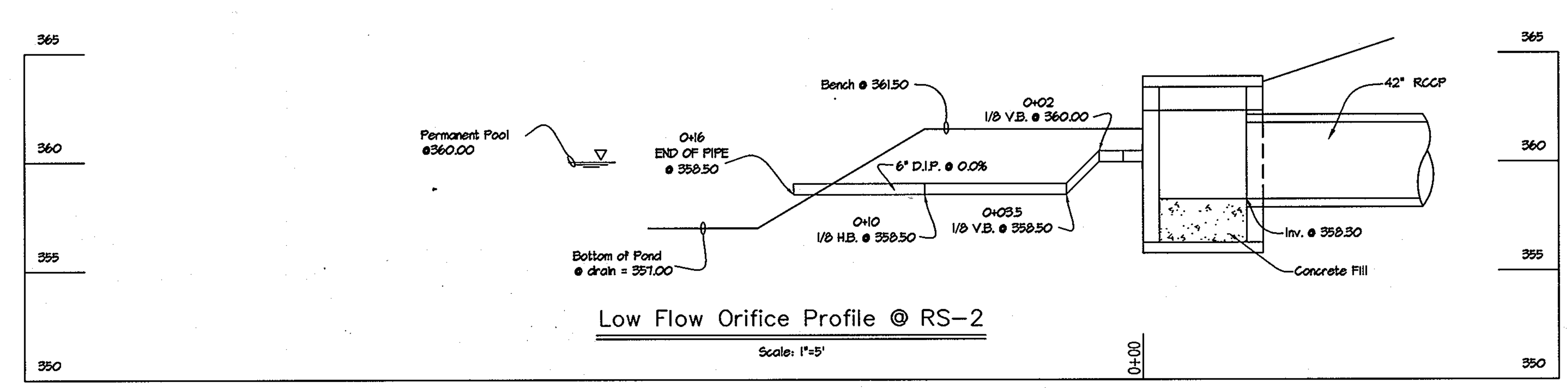


PROFILE ALONG EAST FOREBAY
Scale: 1"= 50' Horz. 1"= 5' Vert.

PROFILE ALONG WEST FOREBAY
Scale: 1"= 50' Horz. 1"= 5' Vert.



Pond Drain Profile @ RS- 2
Scale: 1"=5'



Low Flow Orifice Profile @ RS-2
Scale: 1"=5'

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 6/28/05

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 6/28/05

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 6/22/05

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 6-22-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/15/05

Chief, Development Engineering Division MK — Date 7/14/05

GLW GUTSCHICK LITTLE & WEBER, P.A.
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\DRAWINGS\04001\04001A\Finals\04001aSWM22.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
11/9/2010	③ Revised contact information.	DEV.	
6.5.08	Rev. Plans for Creation of F-08-117 This set For SWM & Sed. Con. See F-08-117 For S.D. & Rd. Info	WJ	
2-22-06	△ rev. temporary stormwater management elevations	K.L.F.	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett ③
410-484-8400

STORMWATER MANAGEMENT PROFILES, NOTES, AND DETAILS

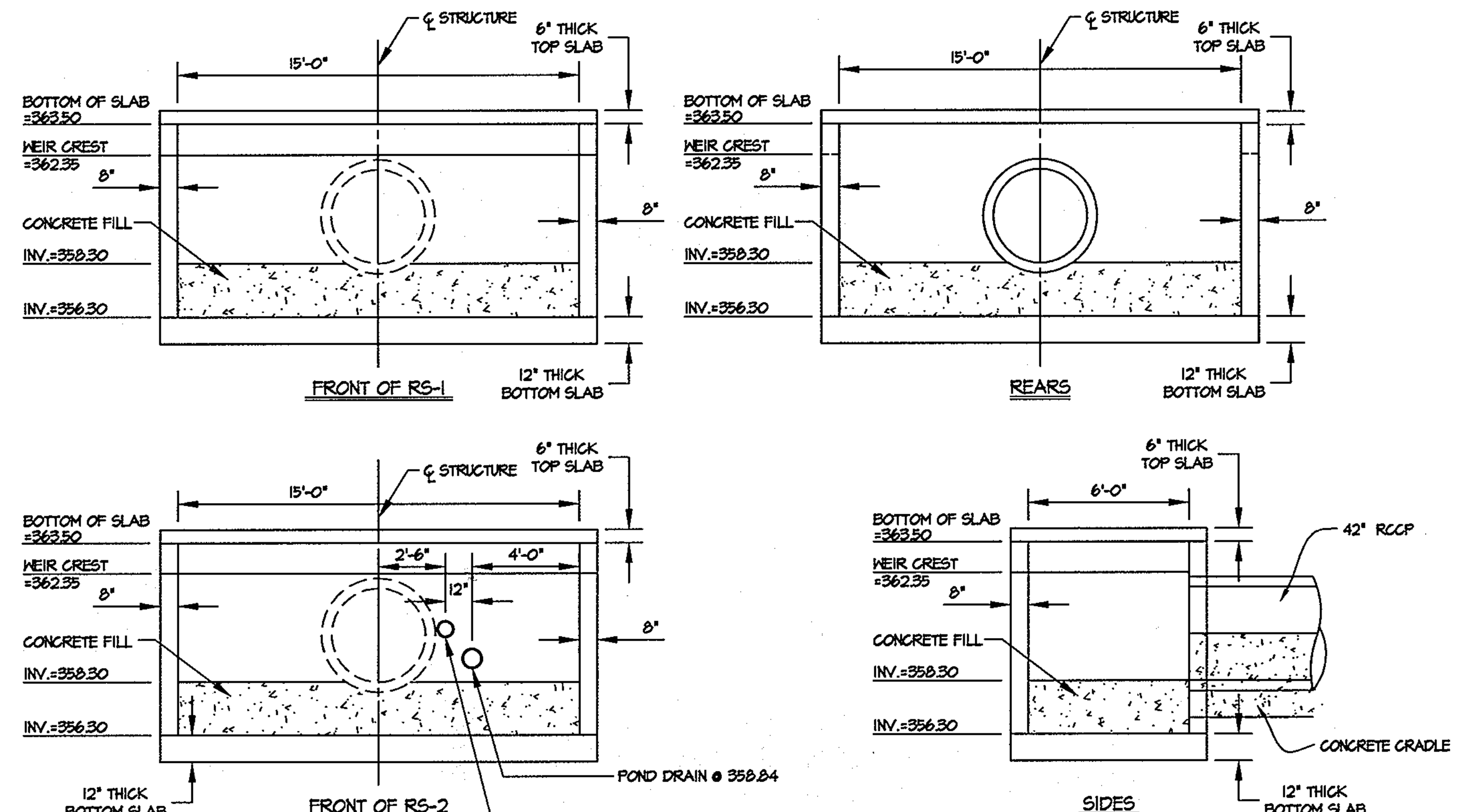
MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND
A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

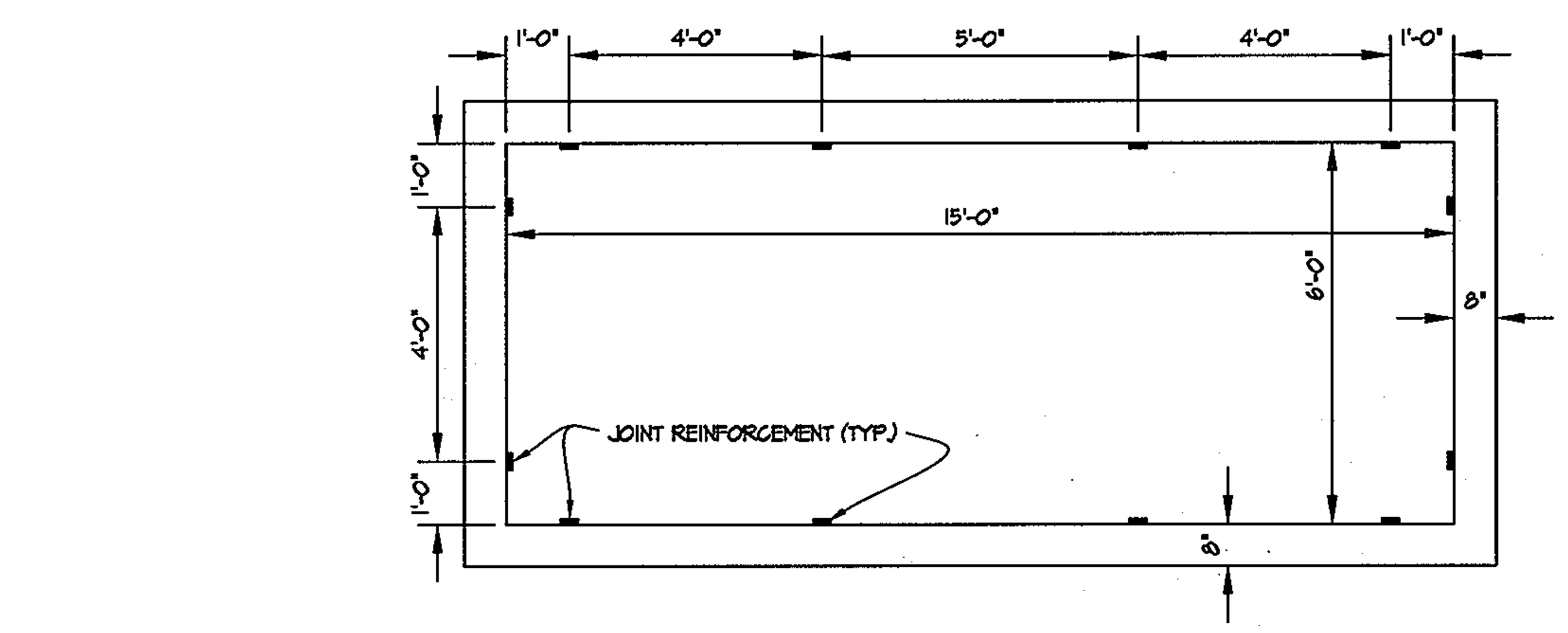
SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41-22	12 OF 17

F-05-81

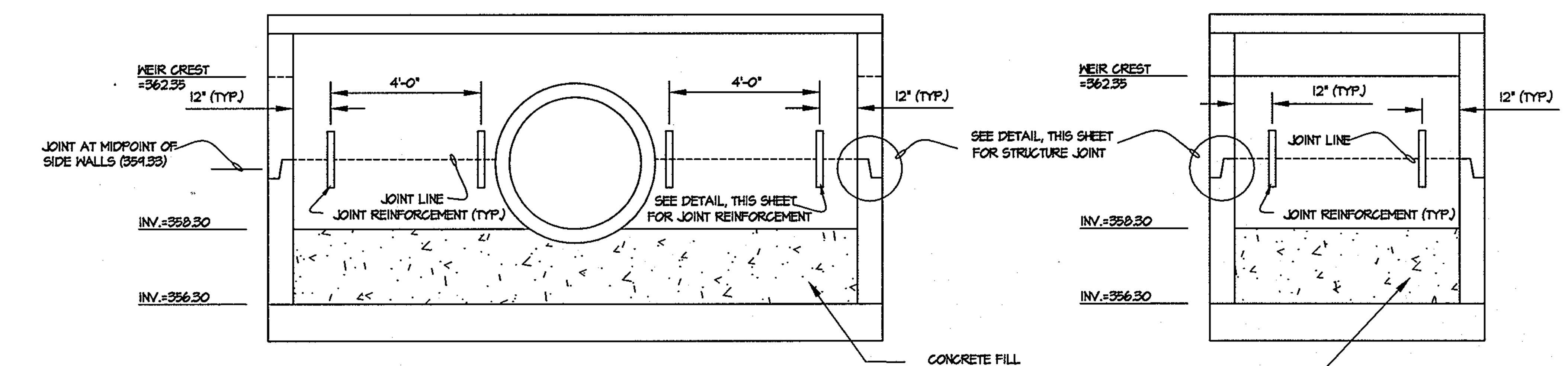


RISER DETAILS
Scale: 1"= 5'

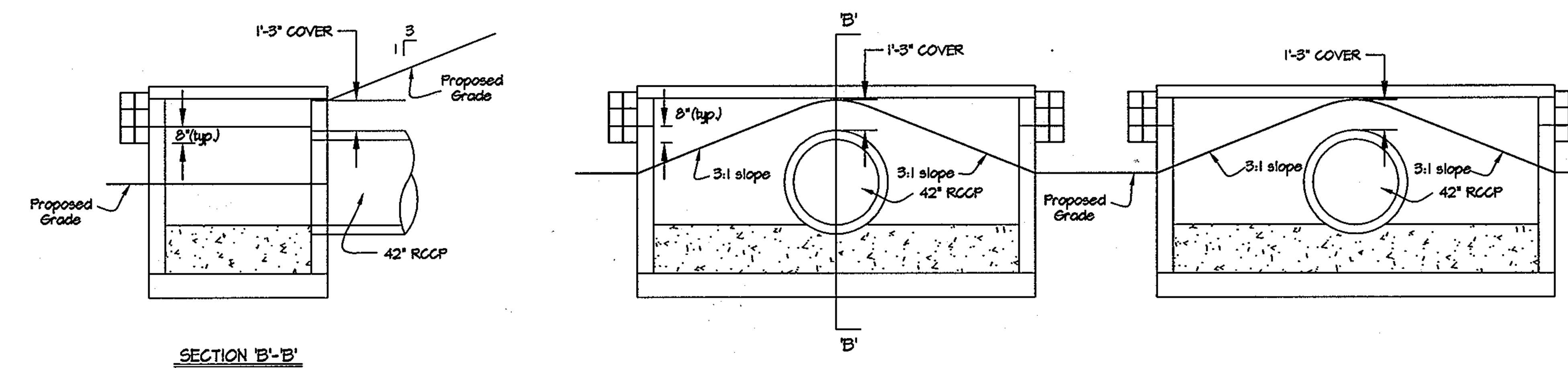
NOTES:
1. WEIR OPENINGS WILL BE PROVIDED ON THE FRONT AND SIDES OF BOTH RS-1 AND RS-2
2. CONTACTOR MUST PROVIDE RUBBER GASKETS AT THE PIPE JOINTS ALONG BOTH 42" RCCP
3. THE FIRST PIPE JOINT MUST BE WITHIN 4 FEET OF THE RISER STRUCTURE
4. CONTRACTOR MUST USE A MASTIC GROUT WHERE THE 42" RCCP CONNECTS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



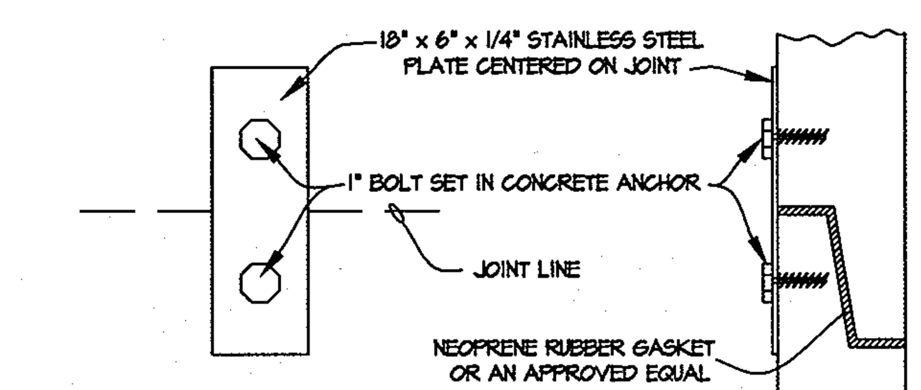
NOTES:
1. CONTRACTOR TO WRAP RISER STRUCTURES WITH FILTER CLOTH TO ELEVATION 360.00
2. JOINT REINFORCEMENT (STRAPPING) SHALL BE LOCATED ON THE INSIDE OF THE STRUCTURES.



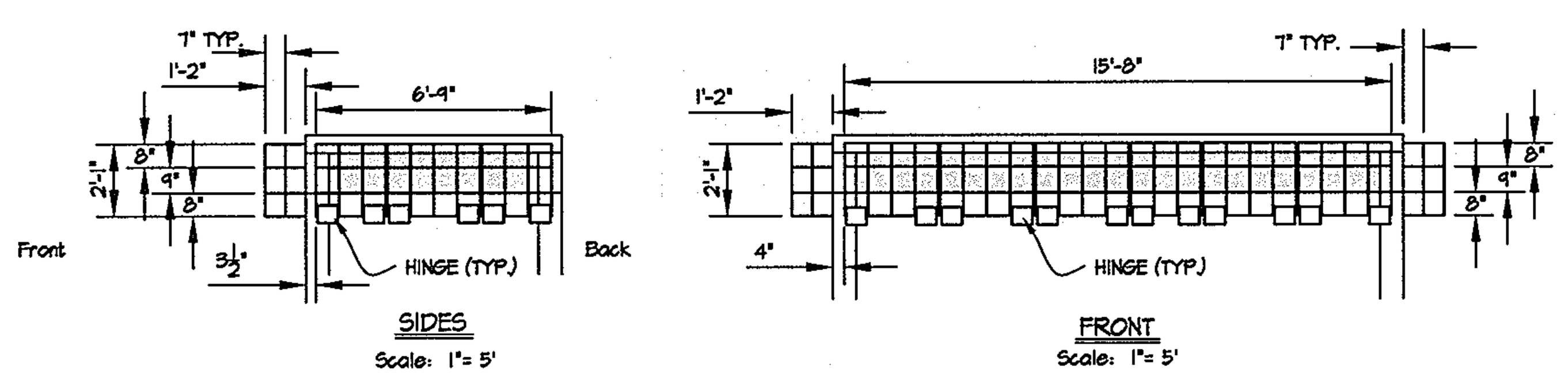
JOINT REINFORCEMENT (STRAPPING) DETAIL
Scale: 1"= 3'



FILL ALONG REAR OF RISERS
Scale: 1"= 5'

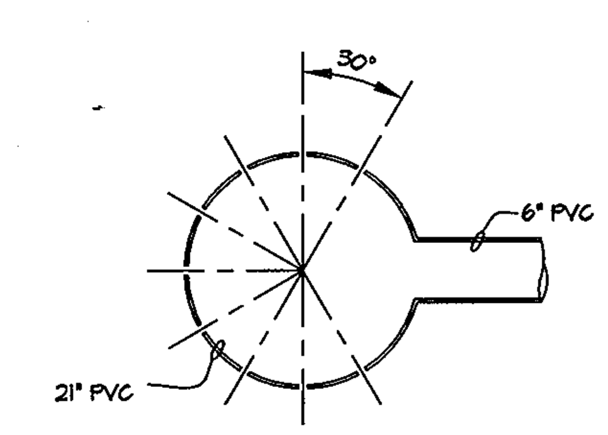


JOINT REINFORCEMENT DETAIL
SCALE: 1"=1'

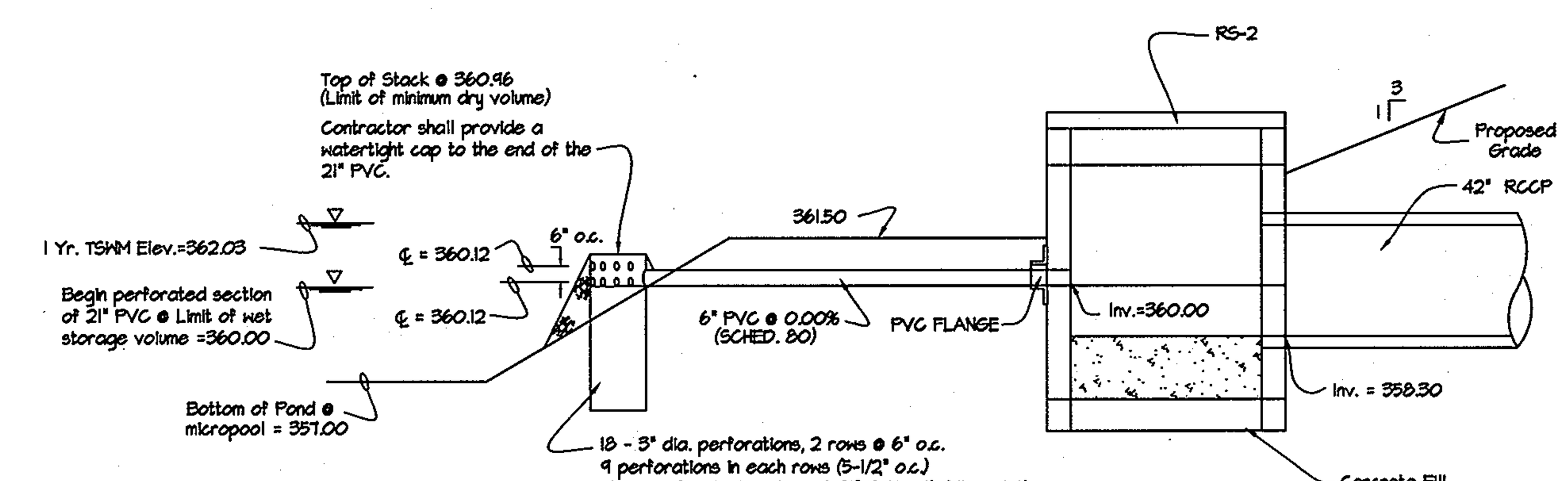


NOTES:
1. TRASH RACK MOUNTINGS TO BE GALVANIZED AFTER FABRICATION
2. REBAR MUST BE GALVANIZED AND PAINTED BATTLESHIP GRAY.
3. THERE IS NO WEIR OPENING ON THE BACK SIDE OF EITHER RS-1 OR RS-2.

TRASH RACK DETAILS
Scale: 1"= 5'

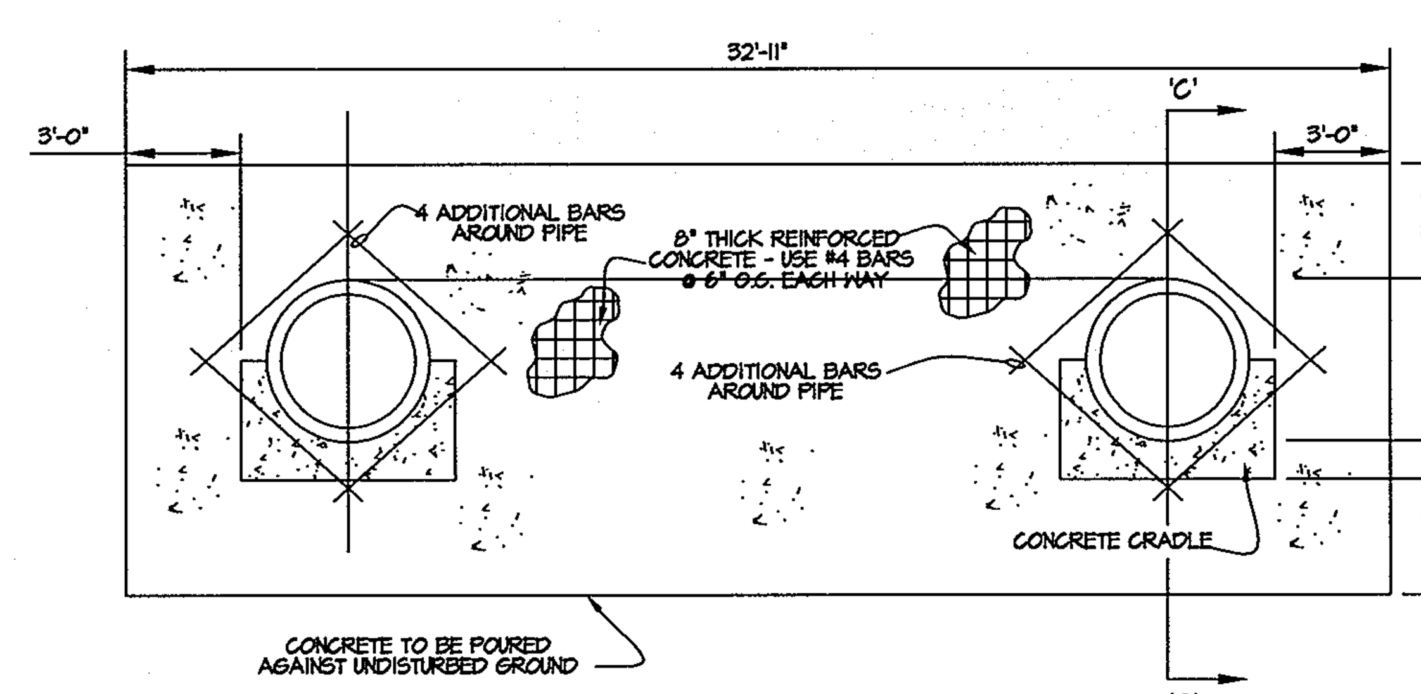


PERFORATION PATTERN
Not to Scale

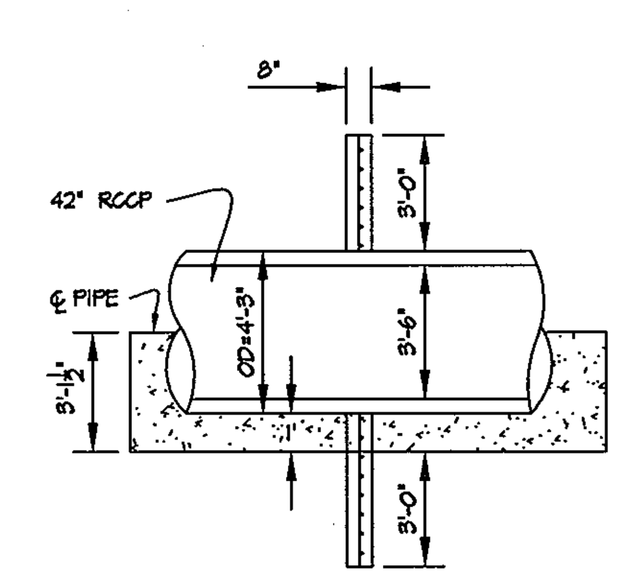


Note: The dewatering device is to be used during construction only. Once all disturbed areas have been stabilized, and the basin is converted to a pond, the dewatering device is to be removed.

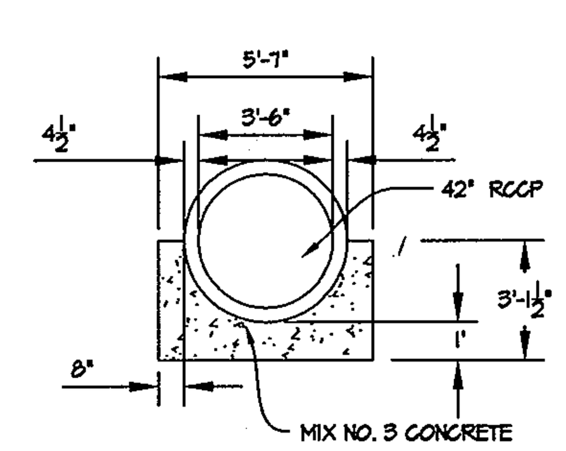
DEWATERING DEVICE DETAIL
Scale: 1" = 5'



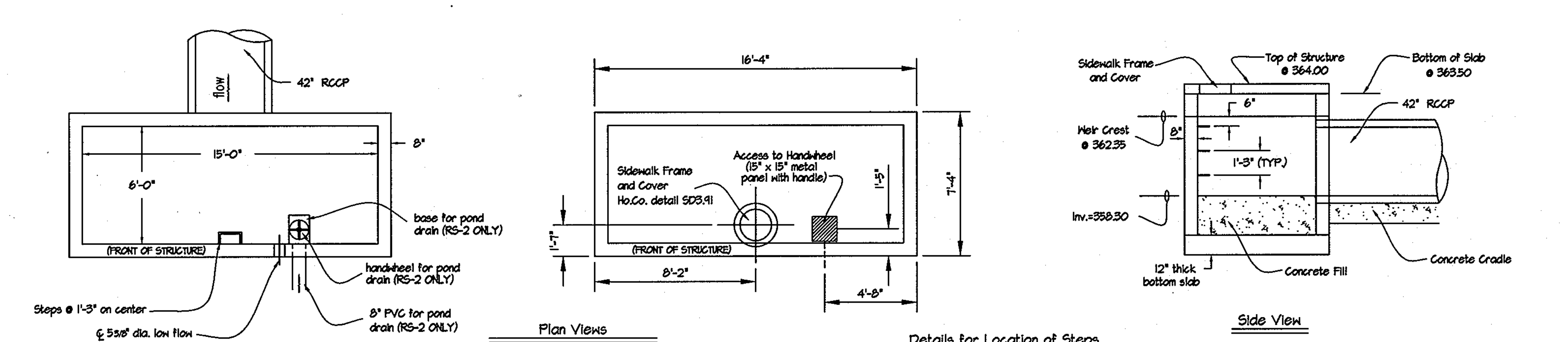
ANTI-SEEP COLLAR DETAILS
Not to Scale



SECTION 'C'-'C'



CONCRETE CRADLE DETAIL
Not to Scale



Details for Location of Steps and Manhole Frame and Cover
Scale: 1"=5'

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 — 6-22-05 *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 — 6/22/05 *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 — 6/28/05 *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 — 6/28/05 *Date*

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 7/15/05
Chief, Development Engineering Division MK — Date 7/14/05

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

\DRAWINGS\04001\04001A\Finals\04001aSWM23.dwg	DES. DEV	DRN. AWL	CHK. DEV

DATE	REVISION	BY	APP'R.
11-9-2010	⚠3 Revised contact information.		
6-5-08	Rev. Plans For Creation of F-08-117 This sheet For SWM & Sed. Con. See F-08-117 For S.P. & Rd. Info.	WAJ	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett ⚠3
410-484-8400

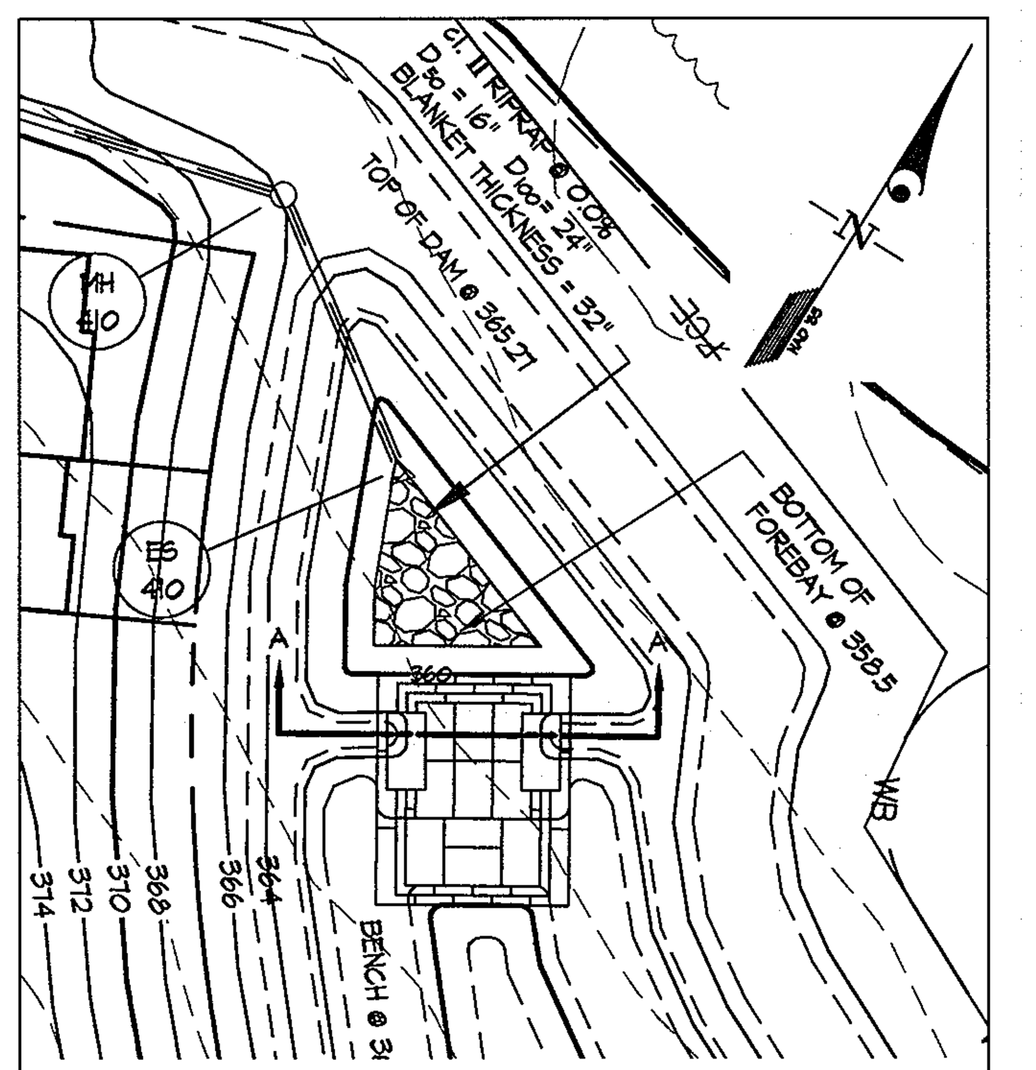
STORMWATER MANAGEMENT PROFILES, NOTES, AND DETAILS

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

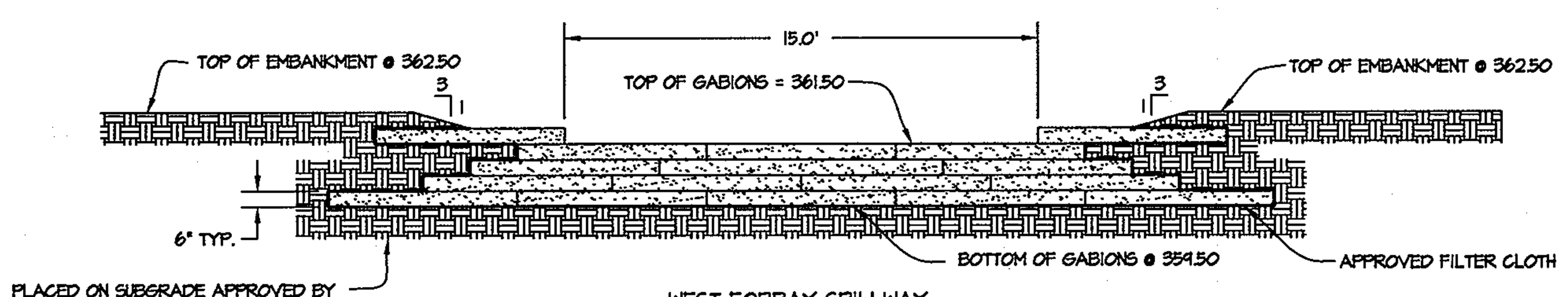
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41-22	13 OF 17

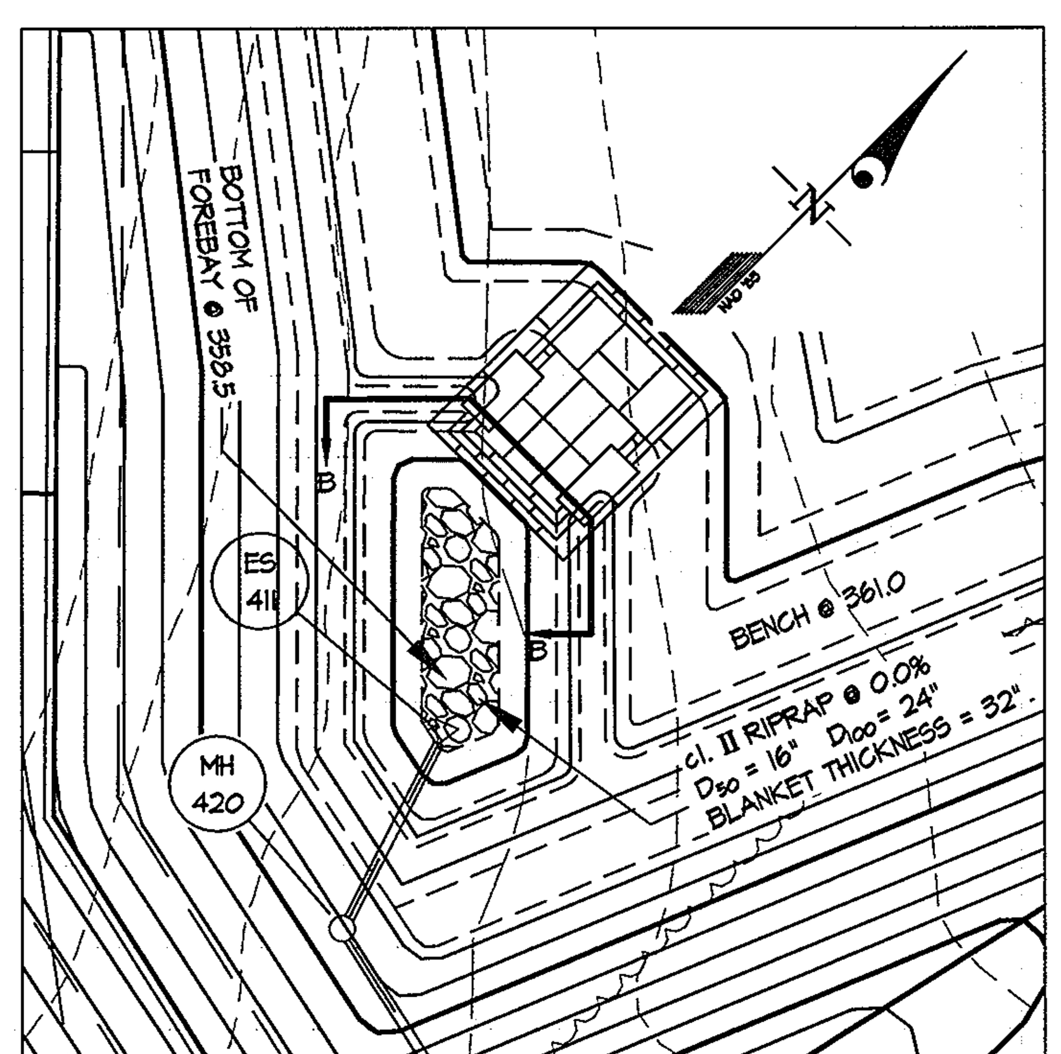
F-05-81



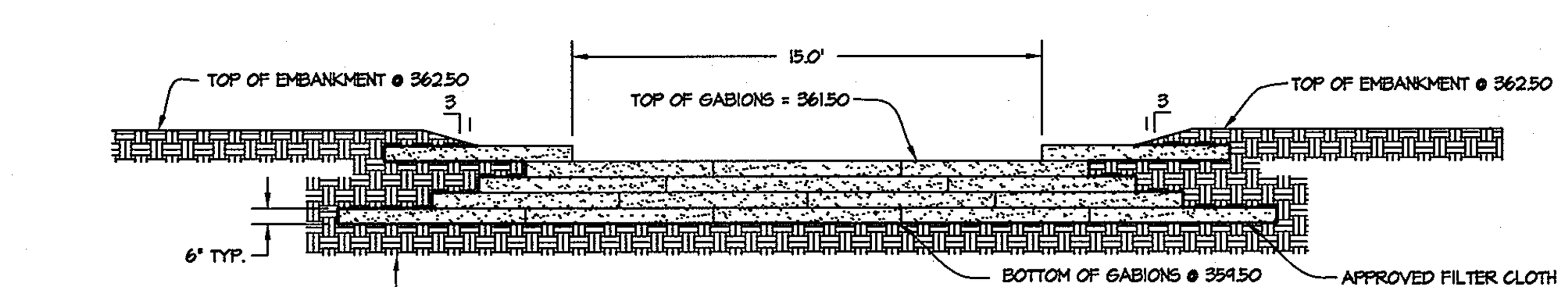
WEST FOREBAY PLAN
Scale: 1"= 30'



WEST FORBAY SPILLWAY
SECTION 'A'-'A'
Scale: 1"= 5'



EAST FOREBAY PLAN
Scale: 1"= 30'



EAST FORBAY SPILLWAY
SECTION 'B'-'B'
Scale: 1"= 5'

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.

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.

[signature] 6/28/05
Natural Resources Conservation Service — *Date*

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

[signature] 6/28/05
Howard Soil Conservation District — *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."

[signature] 6/22/05
Engineer's Signature — *Date*

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[signature] 6-22-05
Signature of Developer/Builder — *Date*

STATE OF MARYLAND CARLTON K. GUTSCHICK 12971 PROFESSIONAL ENGINEER

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
[signature] 7-6-05
Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[signature] 7/15/05
Chief, Division of Land Development — Date
[signature] 7/14/05
Chief, Development Engineering Division MK — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
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\DRAWINGS\04001\04001A\Finals\04001aSWM24.dwg	DES. DEV	DRN. AWL	CHK. DEV

DATE	REVISION	BY	APP'R.
11/9/2010	(3) Revised contact information	DEV.	
6-5-08	Rev. plans for creation of F08-177. This plan set for SWM & Sed. Cont. See F08-177 for Rd & S.D. info.	WCJ	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett (3)
410-484-8400

STORMWATER MANAGEMENT PROFILES, NOTES, AND DETAILS

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41-22	14 OF 17

F-05-81

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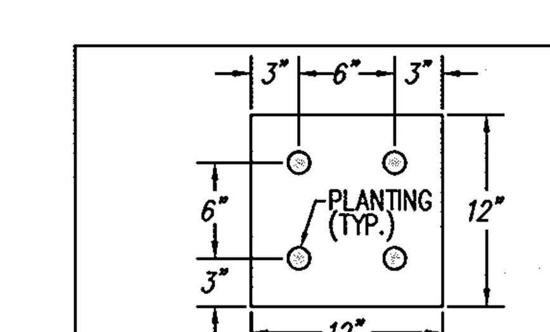
DETAIL TO CONVERT STORMWATER MANAGEMENT FACILITY
SCALE: 1"=40'



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.

DEVELOPER'S/BUILDER'S CERTIFICATE

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Signature of Developer/Builder — Date: 6-22-05

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Engineer's Signature — Date: 6/22/05

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: 6/28/05

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: 6/28/05

STATE OF MARYLAND — CARLTON K. GUTSCHICK — 12973 — REGISTERED PROFESSIONAL ENGINEER

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date: 7-6-05

HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Date: 7/15/05

Chief, Development Engineering Division MK — Date: 7/14/05

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DATE	REVISION	BY	APP'R.
11/9/2010	(3) Revised contact information.	DEV.	
6-5-08	Rev. Plans for creation of F-08-111. This set for own med. Con. See F-08-111 for G.P. & Rd. Info.	WAJ	

.\DRAWINGS\04001\04001A\Finals\04001aSWM27.dwg | DES. DEV | DRN. AWL | CHK. DEV

PREPARED FOR:
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SUITE 410 WOODHOLME CENTER
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BALTIMORE, MD 21208
ATTN: Mark Bennett (3)
410-484-8400

STORMWATER MANAGEMENT POND CONVERSION PLAN

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	15 OF 17

F-05-81

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HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Location: Howard County, Maryland | Boring Number: E-12 | Job #: 01065I

Datum: | Surf. Elev.: 363.6 | Date Started: 05-27-04 | SAMPLER: Hammer Wt. 140 Lbs. | Hammer Drop 30 Inches | Pipe Size 2.0 Inches OD | Hole Diameter: | Rock Core Dia.: | Boring Method: HSA | Foreman: Ola Aranmolate | Inspector: | Completed: 05-27-04

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					0" Topsoil
	Brown, moist, soft, sandy silt, trace mica and root matter (ML) Possible Fill	2.5		I	1-2-2	1	14"	Groundwater encountered at 8.0' while drilling
	Orange/gray, moist to very moist, clayey silt, trace fine sand and mica (ML-CL)			I	1-1-1	2	18"	
		8.0	5.0	I	1-3-3	3	13"	
	Dark brown, very moist to wet, medium dense micaceous silty sand with rock fragments	13.0		D	4-7-11	4	18"	Caved in at 8.4' at Completion. Caved in at 7.5' after 24 hours
	Auger Refusal at 13.0' Bottom of Test Hole at 13.0'		15.0 / 20.0					

GROUND WATER DEPTH: AT COMPLETION 8.2 FT. AFTER 24 hrs 7.0 FT. AFTER ___ FT.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. 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-CONT. FLIGHT AUGERS. DC-DRIVING CASING. MD-MUD DRILLING

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

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Location: Howard County, Maryland | Boring Number: E-13 | Job #: 01065I

Datum: | Surf. Elev.: 362.5 | Date Started: 05-27-04 | SAMPLER: Hammer Wt. 140 Lbs. | Hammer Drop 30 Inches | Pipe Size 2.0 Inches OD | Boring Method: HSA | Foreman: Ola Aranmolate | Completed: 05-27-04

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					0" Topsoil
	Brown, moist, soft, sandy silt trace mica and rootmatter (ML) Possible Fill	2.5		D	1-2-2	1	14"	
	Orange/tan/gray, moist medium stiff clayey silt, trace mica and fine sand (ML-CL)			D	2-2-5	2	18"	Groundwater encountered at 8.0' while drilling. Caved in at 3.6' at Completion
		8.0	5.0	D	3-3-5	3	14"	Caved in at 3.8' after 24 hours
	Orange brown to gray brown, wet, loose to medium dense, micaceous silty sand with weathered rock (SM)			D	5-3-4	4	6"	
		15.0		D	4-10-15	5	12"	
	Botom of Test Hole at 15.0'		20.0					

GROUND WATER DEPTH: AT COMPLETION 3.6 FT. AFTER 24 hrs 3.6 FT. AFTER ___ FT.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Location: Howard County, Maryland | Boring Number: E-14 | Job #: 01065I

Datum: | Surf. Elev.: 361.2 | Date Started: 06-02-04 | SAMPLER: Hammer Wt. 140 Lbs. | Hammer Drop 30 Inches | Pipe Size 2.0 Inches OD | Boring Method: HSA | Foreman: Ola Aranmolate | Completed: 06-02-04

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Brown, moist, medium stiff to stiff micaceous sandy silt trace clay and quartz rock fragments (ML)			I	2-3-6	1	12"	Groundwater encountered at 13.5' while drilling
		5.5		I	5-6-8	2	14"	
	Brown/tan, moist to very moist, dense to loose fine to coarse silty sand with quartz rock fragments and mica (SM)			I	18-17-21	3	14"	
				I	4-4-5	4	N/A	Caved in at 9.0' at Completion. Caved in at 7.0' after 24 hours
		15.0		I	4-6-7	5	12"	
	Bottom of Test Hole at 15.0'		20.0					

GROUND WATER DEPTH: AT COMPLETION 8.0 FT. AFTER 24 hrs 3.5 FT. AFTER ___ FT.

361.7
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Location: Howard County, Maryland | Boring Number: E-15 | Job #: 01065I

Datum: | Surf. Elev.: | Date Started: 05-28-04 | SAMPLER: Hammer Wt. 140 Lbs. | Hammer Drop 30 Inches | Pipe Size 2.0 Inches OD | Boring Method: HSA | Foreman: Ola Aranmolate | Completed: 05-28-04

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Brown, very moist to wet, medium stiff to very soft, fine sandy silt, little clay, trace mica (ML)			I	2-3-3	1	14"	Groundwater encountered at 6.0' while drilling
				D	1-1-1	2	16"	
		8.0		D	1-2-3	3	6"	
	Gray, wet, medium stiff silty clay, trace fine sand and mica (CL) Alluvial			D	2-3-5	4	16"	Caved in at 9.0' at Completion. Caved in at 6.0' after 24 hours
		15.0		D	3-3-4	5	2"	
	Bottom of Test Hole at 15.0'		20.0					

GROUND WATER DEPTH: AT COMPLETION 4.5 FT. AFTER 24 hrs 3.5 FT. AFTER ___ FT.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Location: Howard County, Maryland | Boring Number: I-12 | Job #: 01065I

Datum: | Surf. Elev.: 365.0 | Date Started: 06-02-04 | SAMPLER: Hammer Wt. 140 Lbs. | Hammer Drop 30 Inches | Pipe Size 2.0 Inches OD | Boring Method: HSA | Foreman: Ola Aranmolate | Completed: 06-02-04

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Brown, moist, medium stiff sandy silt trace rootmatter (ML) Possible Fill	2.5		I	3-3-4	1	13"	
	Orange brown, moist, medium stiff, clayey silt, trace mica and fine sand (ML-CL)	6.0		I	3-4-7	2	16"	Groundwater encountered at 10.0' while drilling
	Brown, moist to wet, loose to very dense, micaceous silty sand with weathered rock (SM)			D	10-17-22	3	14"	
				D	7-3-4	4	14"	Caved in at 10.0' at Completion. Set Insitu pipe at 10.0
		15.0		D	7-17-34	5	14"	Caved in at 8.5' after 24 hours
	Bottom of Test Hole at 15.0'		20.0					

GROUND WATER DEPTH: AT COMPLETION 10.5 FT. AFTER 24 hrs 6.0 FT. AFTER ___ FT.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Location: Howard County, Maryland | Boring Number: I-13 | Job #: 01065I

Datum: | Surf. Elev.: 370.7 | Date Started: 06-02-04 | SAMPLER: Hammer Wt. 140 Lbs. | Hammer Drop 30 Inches | Pipe Size 2.0 Inches OD | Boring Method: HSA | Foreman: Ola Aranmolate | Completed: 06-02-04

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Red brown, moist, medium stiff sandy silt trace clay mica and rock fragments (ML)	3.0		I	3-4-4	1	14"	No groundwater encountered while drilling
	Brown/gray, moist medium dense to very dense micaceous silty sand with rock fragments (SM)			D	15-38-17	2	15"	
				D	6-6-7	3	3"	Caved in at 7.0' at Completion
		13.0		D	4-4-7	4	14"	Set Insitu pipe at 10.0. Caved in at 7.0' after 24 hours
	Auger Refusal at 13.0' Bottom of Test Hole at 13.0'		15.0		51/0"	5	N/A	

GROUND WATER DEPTH: AT COMPLETION Dry FT. AFTER 24 hrs Dry FT. AFTER ___ FT.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Location: Howard County, Maryland | Boring Number: P-6 | Job #: 01065I

Datum: | Surf. Elev.: 366.2 | Date Started: 05-27-04 | SAMPLER: Hammer Wt. 140 Lbs. | Hammer Drop 30 Inches | Pipe Size 2.0 Inches OD | Boring Method: HSA | Foreman: Brian Ewing | Completed: 05-27-04

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					Boring offset 5' NW and refused at 4.5'
	Red/brown, moist, soft to hard micaceous sandy silt with quartz rock fragments (ML)			D	1-1-2	1	12"	0" Topsoil
		4.0		D	4-6-33	2	18"	No groundwater encountered while drilling
	Auger Refusal at 4.0' Bottom of Test Hole at 4.0'		5.0					Caved in at 2'10" at Completion

GROUND WATER DEPTH: AT COMPLETION Dry FT. AFTER 24 hrs Dry FT. AFTER ___ FT.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Page 1 of 2

Project Name: Maple Lawn - Hillside SWM | Location: Howard County, Maryland | Boring Number: P-7 | Job #: 01065I

Datum: | Surf. Elev.: 367.5 | Date Started: 05-28-04 | SAMPLER: Hammer Wt. 140 Lbs. | Hammer Drop 30 Inches | Pipe Size 2.0 Inches OD | Boring Method: HSA | Foreman: Ola Aranmolate | Completed: 05-28-04

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Brown to red/brown, moist soft to very stiff sandy silt trace clay, mica and quartz rock fragments (ML)			I	2-2-2	1	13"	
		5.5		I	8-10-10	2	14"	Groundwater encountered at 10.0' while drilling
	Brown, very moist to wet, loose to medium dense, micaceous silty sand (SM)			I	3-3-4	3	8"	
	USDA: Loamy Sand		10.0	D	1-3-4	4	16"	Caved in at 10.0' at Completion. Caved in at 8.3' after 24 hours
		18.0	15.0	D	2-8-16	5	12"	
	Dark brown, very moist, very dense, micaceous silty sand with weathered rock (SM) Decomposed Rock		20.0	D	17-33-43	6	14"	

GROUND WATER DEPTH: AT COMPLETION 10.0 FT. AFTER 24 hrs 8.0 FT. AFTER ___ FT.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Page 2 of 2

Project Name: Maple Lawn - Hillside SWM | Location: Howard County, Maryland | Boring Number: P-7 | Job #: 01065I

Datum: | Surf. Elev.: | Date Started: 05-28-04 | SAMPLER: Hammer Wt. 140 Lbs. | Hammer Drop 30 Inches | Pipe Size 2.0 Inches OD | Boring Method: HSA | Foreman: Ola Aranmolate | Completed: 05-28-04

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
			20.0					
	Dark brown, very moist, very dense, micaceous silty sand with weathered rock (SM) Decomposed Rock	24.0		D	51/6"	7	6"	
	Bottom of Test Hole at 24.0'		25.0 / 30.0 / 35.0 / 40.0					

GROUND WATER DEPTH: AT COMPLETION 10.0 FT. AFTER 24 hrs 8.0 FT. AFTER ___ FT.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Page 1 of 2

Project Name: Maple Lawn - Hillside SWM | Location: Howard County, Maryland | Boring Number: P-8 | Job #: 01065I

Datum: | Surf. Elev.: 365.3 | Date Started: 06-02-04 | SAMPLER: Hammer Wt. 140 Lbs. | Hammer Drop 30 Inches | Pipe Size 2.0 Inches OD | Boring Method: HSA | Foreman: Ola Aranmolate | Completed: 06-02-04

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Red/brown, moist, stiff to very stiff clayey silt little fine sand and mica trace quartz rock fragments (ML-CL)			I	2-2-10	1	12"	Groundwater encountered at 20.0' while drilling
	USDA - Sandy Clay Loam	5.5		I	10-11-11	2	14"	Caved in at 19.0' at Completion
	Orange brown to brown, moist to wet loose to medium dense micaceous silty sand with weathered rock (SM)			I	6-4-6	3	16"	Caved in at 16.0' after 24 hours
				D	4-6-8	4	14"	
				D	6-6-7	5	14"	
				D	5-8-10	6	16"	

GROUND WATER DEPTH: AT COMPLETION 10.0 FT. AFTER 24 hrs 7.0 FT. AFTER ___ FT.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Page 2 of 2

Project Name: Maple Lawn - Hillside SWM | Location: Howard County, Maryland | Boring Number: P-8 | Job #: 01065I

Datum: | Surf. Elev.: | Date Started: 06-02-04 | SAMPLER: Hammer Wt. 140 Lbs. | Hammer Drop 30 Inches | Pipe Size 2.0 Inches OD | Boring Method: HSA | Foreman: Ola Aranmolate | Completed: 06-02-04

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
			20.0					
	Orange brown to brown, moist to wet loose to medium dense micaceous silty sand with weathered rock (SM)	25.0		D	12-17-18	7	8"	
	Bottom of Test Hole at 25.0'		30.0 / 35.0 / 40.0					

GROUND WATER DEPTH: AT COMPLETION 10.0 FT. AFTER 24 hrs 7.0 FT. AFTER ___ FT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/13/05

Chief, Development Engineering Division MK — Date 7/14/05

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 6-22-05

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 6/22/05

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 6/28/05

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 6/28/05

STATE OF MARYLAND — CARLTON K. GUTSCHICK — 12975 — PROFESSIONAL ENGINEER

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.
11/9/2010	3 Revised contact information.	DEV.	
6-5-08	Rev. Plans for creation of F-08-117 This set for swm & sed. con. see F-08-117 for S.D. & Rd. info.	WOJ	

\DRAWINGS\04001\04001A\Finals\04001aSWM28.dwg | DES. | DRN. AWL | CHK. DEV

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: Mark Bennett 3
410-484-8400

SOIL BORING DETAILS

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41-22	16 OF 17

F-05-81

STORMWATER MANAGEMENT AREA LANDSCAPING – SCHEDULE D

PERIMETER	PROPOSED LAND USE	ADJACENT LAND USE	TYPE OF BUFFER	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 (F-03-90)	ROADWAY	'C' Buffer*	190 L.F.	NO	NO	5	10	5	10	PROVIDED UNDER THIS FINAL PLAN
SWM-2	SWM	ROADWAY	'C'Buffer *	217 L.F.	NO	NO	6	11	7	11	PROVIDED UNDER THIS FINAL PLAN
SWM-3	SWM	RESIDENTIAL	'B'Buffer *	687 L.F.	NO	NO	14	17	16	26	PROVIDED UNDER THIS FINAL PLAN

* FOLLOWS COMPREHENSIVE SKETCH PLAN GUIDELINE REQUIREMENTS

NOTES

1. 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.
2. AFFORESTATION PLANTING SIZE SHALL BE LARGE ENOUGH TO MEET THE LANDSCAPE BUFFERING REQUIREMENT ALONG EXTERNAL PERIMETERS WHERE APPLICABLE.

Schedule 'D' Number of required Shade Trees for bonding: 25 x $300 = $ 7,500.00
Schedule 'D' Number of required Evergreen Trees for bonding: 38 x $150 = $ 5,700.00
$ 13,200.00

COMMENTS:

K/A WESTVACO CORP.
L.414 F. 11
ZONED: PEC

PROP. TREELINE TO REMAIN

PROP. 6' PATH

RIP RAP APRON

RIP RAP APRON

TILGHMAN ST.
(PUBLIC ACCESS STREET - 50' R/W)

MAPLE LAWN BLVD.
(PUBLIC MINOR ARTERIAL - 100' R/W)

N 542500 E 1340500

N 543000 E 1339750

E 1339600 N 542250

PLANT LIST						
SYMBOL	QTY.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	ROOT	COMMENTS
SHADE TREES					
AR	14	Acer rubrum 'Autumn Flame' Autumn Flame Maple	2 1/2-3" Cal.	B&B	
QP	14	Quercus palustris Pin Oak	2 1/2-3" Cal.	B&B	
EVERGREEN TREES					
PS	23	Pinus strobus White Pine	6'-8' Ht.	B&B	
PO	24	Picea omorika Serbian Spruce	6'-8' Ht.	B&B	

STATE OF MARYLAND
Michael B. Tran
REGISTERED LANDSCAPE ARCHITECT
933
11/16/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 12-1-10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 12/09/10
Chief, Development Engineering Division — Date 12/8/10

DEVELOPERS' 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. I/We further certify that upon completion of the landscape installation, a letter of notice, accompanied with an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Mark D. Burtt V. Pres — 11/11/10
Name — Date

NOTE:
SEE PLAN SHEET 14 AND PROFILE SHEETS 19, 22, AND 25 FOR RIP RAP INFORMATION.

The purpose of this plan is to remove the information pertaining to the stormwater management planting from F-08-177 and include it with this plan set.

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

\DRAWINGS\04001\04001A\Finals\04001aLS31.dwg | DES. TWL | DRN. AWL | CHK. KAF

DATE	REVISION	BY	APP'R.
11/09/2010	(6) REPLACEMENT SHEET. REMOVED REFERENCES TO RESIDENTIAL LANDSCAPE PERIMETERS, REVISED SHEET NUMBER AND CONTACT INFORMATION.	DEV	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: MARK BENNETT (6)
410-484-8400

Revised FINAL LANDSCAPE PLAN AND SCHEDULES

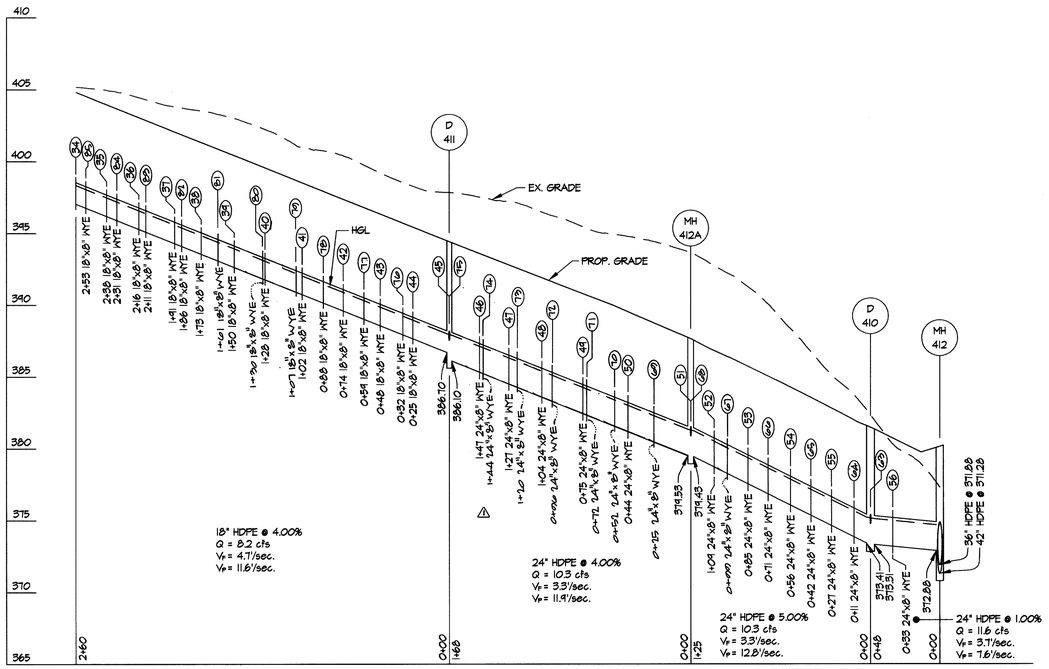
MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

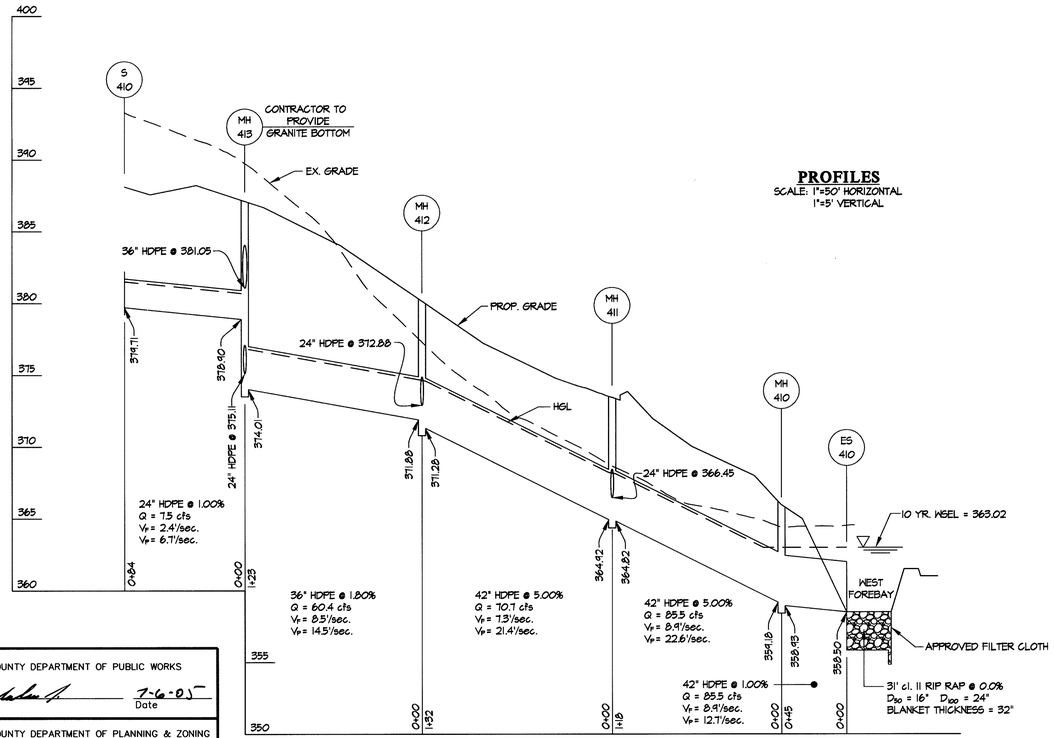
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL 'E', PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

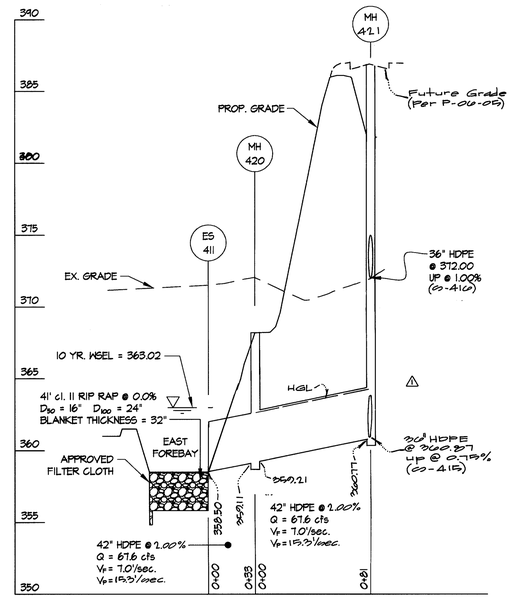
SCALE	ZONING	G. L. W. FILE No.
1"=50'	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
NOV., 2010	41-22	17 OF 17

F-05-81





PROFILES
SCALE: 1"=50' HORIZONTAL
1"=5' VERTICAL



STRUCTURE SCHEDULE									
NO	TYPE	WIDTH (INSIDE)	TOP ELEVATION UPPER	TOP ELEVATION LOWER	INVERT ELEVATION UPPER	INVERT ELEVATION LOWER	STD. DETAIL	LOCATIONS ◊	REMARKS
MH-410	STANDARD MANHOLE	5'-0"	---	365.96	359.18	359.40	HO. CO. G 5.13	N 542,362 E 1,340,176	
MH-411	STANDARD MANHOLE	5'-0"	---	373.44	366.45	364.82	HO. CO. G 5.13	N 542,332 E 1,340,062	
MH-412	STANDARD MANHOLE	5'-0"	---	380.15	372.88	371.28	HO. CO. G 5.13	N 542,288 E 1,339,938	
MH-412A	STANDARD MANHOLE	4'-0"	---	387.62	380.87	379.43	HO. CO. G 5.12	N 542,151 E 1,340,012	
MH-413	STANDARD MANHOLE	5'-0"	---	387.01	381.05	374.01	HO. CO. G 5.13	N 542,246 E 1,339,821	
MH-420	STANDARD MANHOLE	6'-0"	---	368.21	359.21	359.11	MD-384.05	N 541,929 E 1,340,610	
MH-421	STANDARD MANHOLE	6'-0"	---	367.00	361.00	360.77	MD-384.05	N 541,912 E 1,340,688	
D-410	DOUBLE 'S' INLET	---	381.58	381.54	374.75	373.31	HO. CO. SD 4.22	N 542,242 E 1,339,954	
D-411	DOUBLE 'S' INLET	---	384.49	384.35	387.55	386.10	HO. CO. SD 4.22	N 542,006 E 1,340,125	

◊ COORDINATE POINT GIVEN IS TO THE CENTERLINE OF STRUCTURE AT THE FACE OF CURB FOR INLETS AND TO THE CENTERLINE OF STRUCTURE FOR MANHOLES AND END SECTIONS.

NOTE: ALL WATER AND SEWER CROSSINGS SHOWN ARE PER CONTRACT: 24-4238 D

PIPE SCHEDULE			
SIZE	TYPE	QUANTITY (l.f.)	REMARKS
8"	HDPE	500	
18"	HDPE	260	
24"	HDPE	410	
36"	HDPE	120	
42"	HDPE	340	

HDPE indicates High Density Polyethylene pipe, such as N-12 by ADS, or Hi-Q by Hancor or an approved equal.

Trench bedding to be provided per Howard County Detail G 2.01, "Trench for P.V.C. pipe and H.D.P.E."

YARD DRAIN SCHEDULE			
LOT No.	INV. OF MAIN LINE	INV. 8" HDPE @ MAIN	INV. 8" HDPE @ PROP. LINE
(60)	----	374.75	374.85
(59)	373.85	374.52	374.66
(58)	375.36	376.03	376.18
(57)	376.84	377.51	377.67
(61)	378.25	378.92	379.07
(60)	----	380.87	380.96
(47)	380.44	381.11	381.20
(7)	381.52	382.19	382.34
(1)	382.31	382.98	383.13
(2)	383.28	383.95	384.10
(3)	384.25	384.92	385.07
(4)	385.21	385.88	386.03
(5)	----	387.55	387.00
(6)	387.93	388.35	388.48
(7)	389.02	389.44	389.57
(8)	390.15	390.57	390.70
(9)	390.91	391.33	391.48
(82)	391.82	392.24	392.39
(81)	392.80	393.48	393.63
(31)	344.09	344.51	344.64
(32)	345.09	345.51	345.64
(33)	345.40	346.32	346.45
(34)	346.76	347.18	347.31
34	347.04	347.46	347.60
35	346.18	346.60	346.73
36	345.29	345.71	345.84
37	344.29	344.71	344.84
38	343.55	343.97	344.10
39	342.63	343.05	343.18
40	341.77	342.19	342.32
41	340.74	341.16	341.29
42	339.59	340.01	340.14
43	338.56	338.98	339.11
44	337.66	338.08	338.21
45	----	337.55	337.00
46	335.34	336.01	336.13
47	334.52	335.19	335.30
48	333.60	334.27	334.37
49	332.46	333.13	333.22
50	331.20	331.87	331.97
51	----	330.87	331.75
52	318.72	319.39	319.52
53	317.54	318.21	318.32
54	316.06	316.73	316.83
55	314.64	315.31	315.42
56	313.19	313.86	313.99

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 7/15/05
Chief, Development Engineering Division MK — Date 7/14/05

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

\DRAWINGS\04001\04001A\Finals\04001aSD18.dwg | DES. TWL | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
6-22-06	⚠ rev. yard drain connections and MH-421 & MH-420 inverts	K.L.F.	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

STORM DRAIN PROFILES

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	18 OF 32

F-05-81

LEGEND

LAND USAGE

- OPEN SPACE
- SINGLE FAMILY DETACHED
- SINGLE FAMILY ATTACHED
- APARTMENTS
- ROAD R/W
- DRAINAGE DIVIDE
- SWM POND

N

NAD 1983

N 542500 E 1340000

HAMMOND BRANCH

SWM POND

HAMMOND BRANCH

TILGHMAN STREET

MAPLE LAWN BOULEVARD

OLD COLUMBIA ROAD

HAMMOND BRANCH

N 542500 E 1339500

N 540500 E 1341000

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/5/05

Chief, Development Engineering Division MK — Date 7/14/05

STATE OF MARYLAND — JOSEPH K. GUTSCHICK — No. 19073 — REGISTERED PROFESSIONAL ENGINEER

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS

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\DRAWINGS\04001\04001A\Finals\04001aLU19.dwg	DES. DEV	DRN. AWL	CHK. DEV

DATE	REVISION	BY	APP'R.

PREPARED FOR:

G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

LAND USE PLAN

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'

A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	MXD-3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41–22	19 OF 32

F-05-81

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Stormwater Management Summary for Facility Along the Hammond Branch
Drainage Area=28.0 Acres or 0.0438 Sq. Miles
PRE-DEVELOMENT
Curve Number=54 Time of Concentration=0.24 Hours
POST-DEVELOMENT
Curve Number=89 Time of Concentration=0.23 Hours

Water Quality Volume Required:	51,371 c.f.	Provided:	51,372 c.f.
Recharge Volume Required:	8,636 c.f.	Provided:	See note 4 below
Channel Protection Volume Required:	102,368 c.f.	Provided:	111,514 c.f.

1 Year Discharge = 1.40 c.f.s.
100 Year Discharge = 164.48 c.f.s.

1. The facility will be publicly owned and maintained. An open space lot will be conveyed to the County.
2. The facility will be a P-2 wet pond with extended detention.
3. The facility has an 'A' classification.
4. The storage will be provided in an infiltration trench type facility on an open space lot during the design and construction of the Hillside District - Area 2.

POND SUMMARY

	Before	Unmanaged	Managed
		FINAL SWM @ POND	
1 YR	2.25 c.f.s.	49.58 c.f.s.	1.40 c.f.s. @ 362.35
2 YR	7.51 c.f.s.	66.55 c.f.s.	9.01 c.f.s. @ 362.49
10 YR	36.55 c.f.s.	120.85 c.f.s.	92.22 c.f.s. @ 363.02
100 YR	----------	201.36 c.f.s.	164.48 c.f.s. @ 363.35
		TEMPORARY SWM @ POND	
1 YR	1.90 c.f.s.	51.56 c.f.s.	1.02 c.f.s. @ 362.03
2 YR	6.80 c.f.s.	66.61 c.f.s.	3.21 c.f.s. @ 362.39
10 YR	32.45 c.f.s.	113.85 c.f.s.	61.46c.f.s. @ 362.86

LEGEND

HYDROLOGIC SOIL GROUP

'C' SOIL 'D' SOIL

NOTE: REMAINDER OF DRAINAGE AREA TO POND IS 'B' SOIL.

Time of Concentration Path (Pre-Development)

Time of Concentration Path (Post Development)

Limit of Drainage to SWM Pond (Pre & Post Development)

(A) Before Development Tc Segment

(A) After Development Tc Segment

Soil Boring Location

Pre-Development

SEGMENT	DESCRIPTION	TIME
(A) - (B)	100' OVERLAND FLOW @ 5.0% (grass, n=24)	0.16 hr.
(B) - (C)	1070' SHALLOW CONC. FLOW (unpaved) @ 5% (v = 3.6'/sec)	0.08 hr.

Post Development

SEGMENT	DESCRIPTION	TIME
(A) - (B)	60' OVERLAND FLOW @ 2.0% (n=24)	0.18 hr.
(B) - (C)	100' SHALLOW CONC. FLOW @ 2.5% (v = 3.2'/sec)	0.01 hr.
(C) - (D)	1000' PIPE FLOW @ 6.0'/SEC.	0.05 hr.

NOTE:
SEE PLAN SHEET 14 AND PROFILE SHEETS 18, 22, AND 25 FOR RIP RAP INFORMATION.

100 YR WSEL = 363.35
10 YR WSEL = 363.02
1 YR WSEL = 362.35
PERMANENT POOL WSEL = 360.00

E 1,341,250 N 542,750

E 1,334,750 N 542,250

E 1,341,250 N 542,250

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/15/05

Chief, Development Engineering Division MK — Date 7/14/05

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\DRAWINGS\04001\04001A\Finals\04001aSWMDA20.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

STORM WATER MANAGEMENT DRAINAGE MAP

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	20 OF 32

F-05-81

\CADD\DRAWINGS\04001\04001A\Finals\04001aSWMDA20.dwg 6/22/2005 1:05:25 PM EST

LEGEND

- Earth Dike
- Time of Concentration Path (Before Development)
- Time of Concentration Path (After Development)
- (A) Before Development Tc Segment
- A After Development Tc Segment
- Limit of Drainage to Sediment Basin

NAD 83

TEMPORARY STORMWATER MANAGEMENT DRAINAGE INFORMATION FOR SEDIMENT BASIN

Drainage Area= 2.1.6 Acres or 0.0338 Sq. Miles ⚠

PRE-DEVELOMENT

Curve Number= 61 Time of Concentration= 0.17 Hours

PRE-DEVELOMENT TIME OF CONCENTRATION

SEGMENT	DESCRIPTION	TIME
(A) - (B)	100' OVERLAND FLOW @ 8.0% (grass, n=24)	0.14 hr.
(B) - (C)	510' SHALLOW CONC. FLOW (unpaved) @ 9.8% (v = 5.1'/sec)	0.03 hr.

Total = 0.17 hr.

POST-DEVELOMENT ⚠

Curve Number= 93 Time of Concentration= 0.07 Hours

POST-DEVELOMENT TIME OF CONCENTRATION

SEGMENT	DESCRIPTION	TIME
(A) - (B)	50' OVERLAND FLOW @ 12.0% (n=24)	0.01 hr.
(B) - (C)	110' SHALLOW CONC. FLOW @ 3.6% (v = 3.9'/sec)	0.01 hr.
(C) - (D)	1175' PIPE FLOW @ 7.0'/SEC.	0.05 hr.

Total = 0.07 hr.

NOTE:
SEE PLAN SHEET 14 AND PROFILE SHEETS 18, 22, AND 25 FOR RIP RAP INFORMATION.

SEDIMENT BASIN

Limit of Earth Dike To Be Constructed Under These Plans

Portion of Earth Dike To Be Constructed Under F-05-112

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/15/05

Chief, Development Engineering Division MK — Date 7/14/05

GLW GUTSCHICK LITTLE & WEBER, P.A.
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\DRAWINGS\04001\04001A\Finals\04001aSWMDA21.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
9-22-06	⚠ rev. earth dike location per F-05-112 plans & rev. drainage areas in & to basin	K.L.P.	

PREPARED FOR:
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TEMPORARY STORMWATER MANAGEMENT DRAINAGE MAP

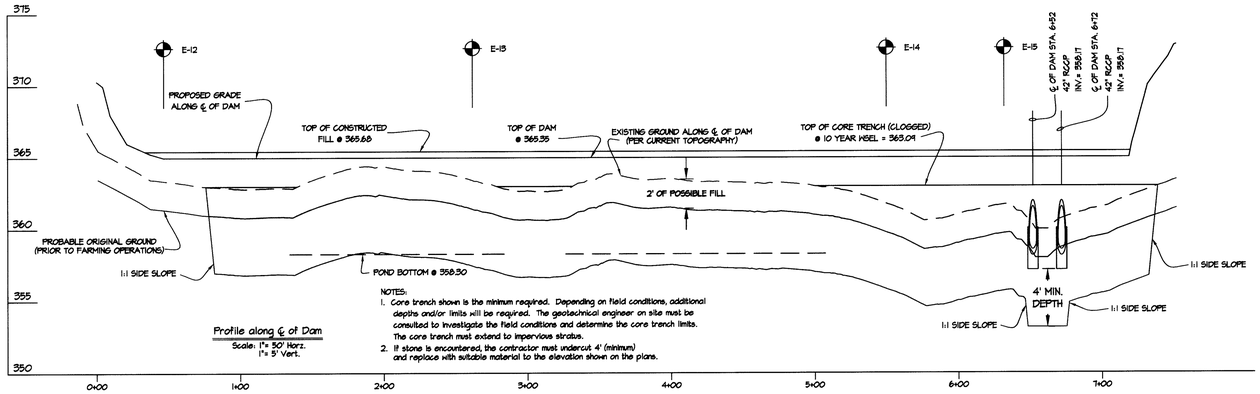
MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 674 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

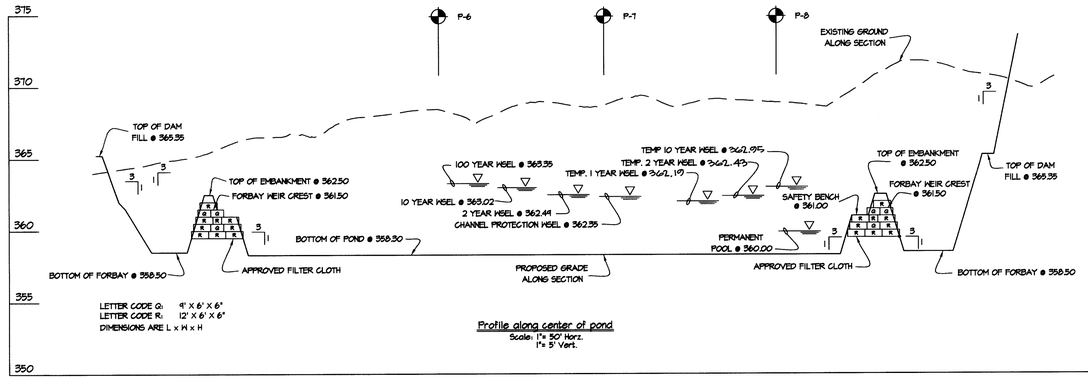
SCALE	ZONING	G. L. W. FILE No.
1"=100'	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	21 OF 32

F-05-81



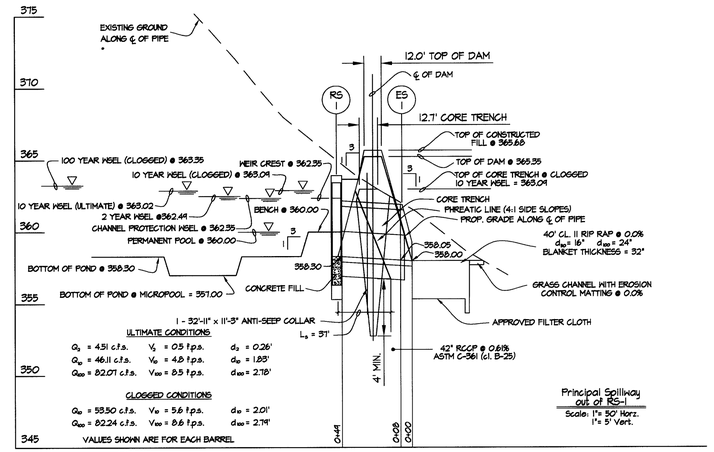
Profile along ℄ of Dam
Scale: 1"= 50' Horz.
1"= 5' Vert.

NOTES:
1. Core trench shown is the minimum required. Depending on 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. The core trench must extend to impervious stratus.
2. If stone is encountered, the contractor must undercut 4' (minimum) and replace with suitable material to the elevation shown on the plans.



LETTER CODE Q: 4' X 6' X 6'
LETTER CODE R: 12' X 6' X 6"
DIMENSIONS ARE L x W x H

Profile along center of pond
Scale: 1"= 50' Horz.
1"= 5' Vert.

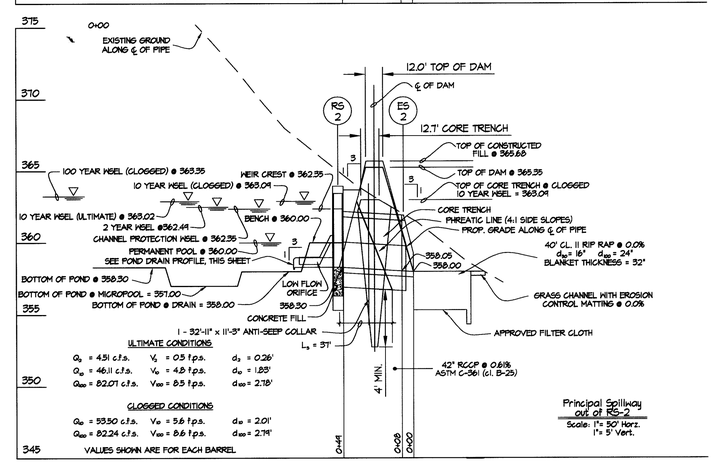


ULTIMATE CONDITIONS
Q_o = 4.51 c.f.s. V_o = 0.5 f.p.s. d_o = 0.26'
Q_c = 46.11 c.f.s. V_c = 4.2 f.p.s. d_c = 1.83'
Q_{100} = 82.07 c.f.s. V_{100} = 8.5 f.p.s. d_{100} = 2.78'

CLOGGED CONDITIONS
Q_o = 53.50 c.f.s. V_o = 5.6 f.p.s. d_o = 2.01'
Q_{100} = 82.24 c.f.s. V_{100} = 8.6 f.p.s. d_{100} = 2.79'

VALUES SHOWN ARE FOR EACH BARREL

Principal Spillway out of RS-1
Scale: 1"= 50' Horz.
1"= 5' Vert.

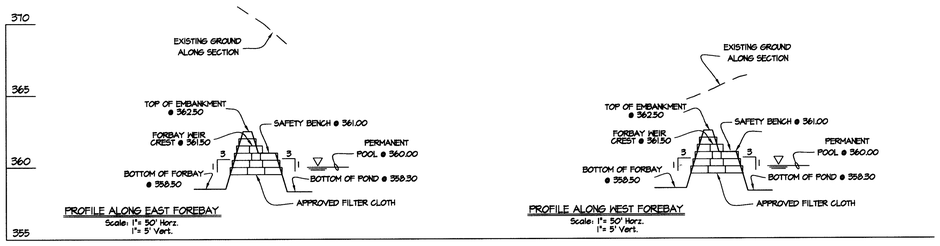


ULTIMATE CONDITIONS
Q_o = 4.51 c.f.s. V_o = 0.5 f.p.s. d_o = 0.26'
Q_c = 46.11 c.f.s. V_c = 4.2 f.p.s. d_c = 1.83'
Q_{100} = 82.07 c.f.s. V_{100} = 8.5 f.p.s. d_{100} = 2.78'

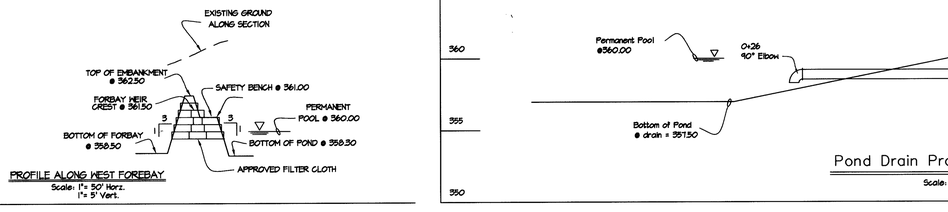
CLOGGED CONDITIONS
Q_o = 53.50 c.f.s. V_o = 5.6 f.p.s. d_o = 2.01'
Q_{100} = 82.24 c.f.s. V_{100} = 8.6 f.p.s. d_{100} = 2.79'

VALUES SHOWN ARE FOR EACH BARREL

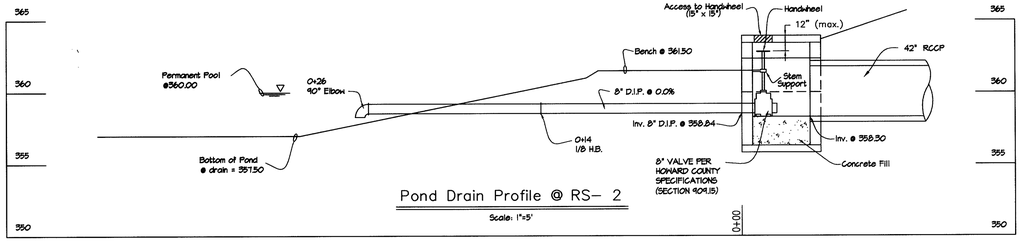
Principal Spillway out of RS-2
Scale: 1"= 50' Horz.
1"= 5' Vert.



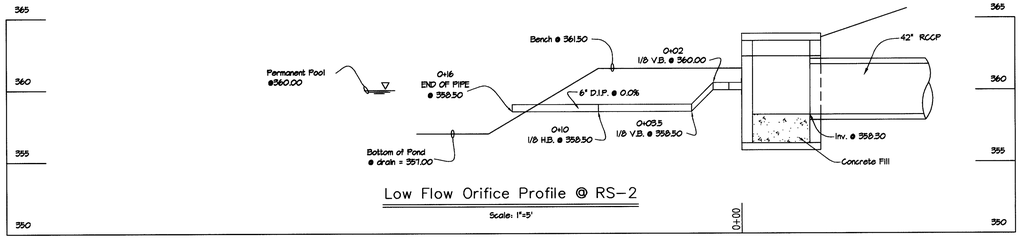
PROFILE ALONG EAST FOREBAY
Scale: 1"= 50' Horz.
1"= 5' Vert.



PROFILE ALONG WEST FOREBAY
Scale: 1"= 50' Horz.
1"= 5' Vert.



Pond Drain Profile @ RS- 2
Scale: 1"=5'



Low Flow Orifice Profile @ RS-2
Scale: 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/5/05

Chief, Development Engineering Division MK — Date 7/14/05

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 6/28/05

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 6/28/05

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 6/22/05

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 6-22-05

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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\DRAWINGS\04001\04001A\Finals\04001aSWM22.dwg | DES. DEV | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.
7-22-05	⚠ rev. temporary stormwater management elevations	K.L.F.	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
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410-484-8400

STORMWATER MANAGEMENT PROFILES, NOTES, AND DETAILS

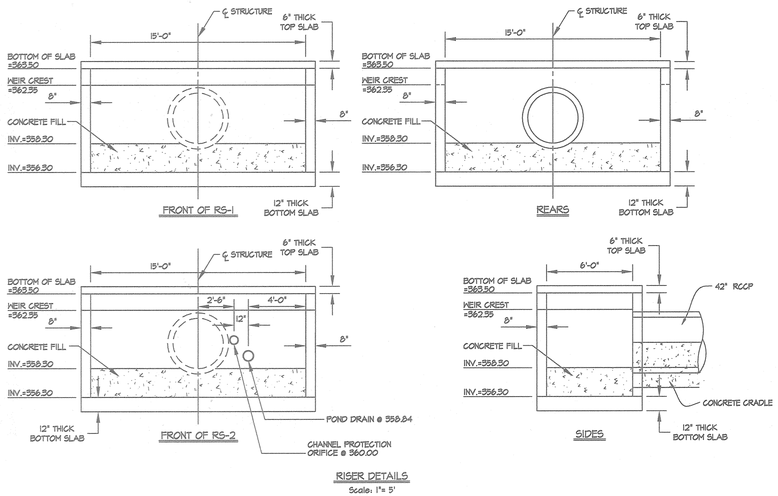
MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL 'E', PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41-22	22 OF 32

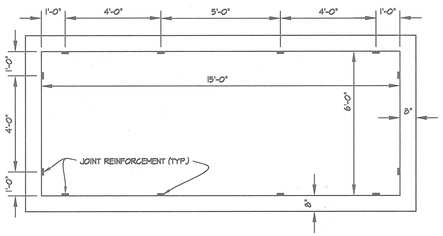
F-05-81



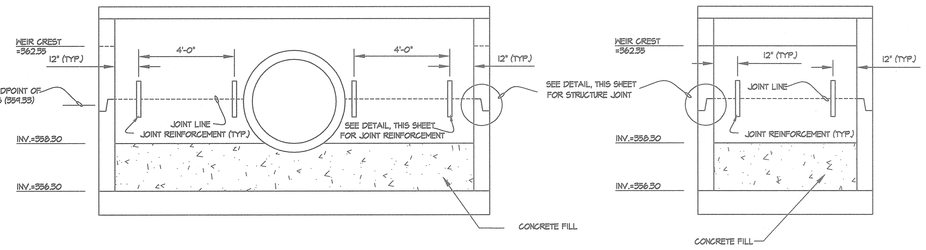
RISER DETAILS

Scale: 1"= 5'

NOTES:
1. WEIR OPENINGS WILL BE PROVIDED ON THE FRONT AND SIDES OF BOTH RS-1 AND RS-2
2. CONTRACTOR MUST PROVIDE RUBBER GASKETS AT THE PIPE JOINTS ALONG BOTH 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

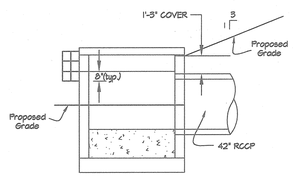


NOTES:
1. CONTRACTOR TO WRAP RISER STRUCTURES WITH FILTER CLOTH TO ELEVATION 360.00
2. JOINT REINFORCEMENT (STRAPPING) SHALL BE LOCATED ON THE INSIDE OF THE STRUCTURES.

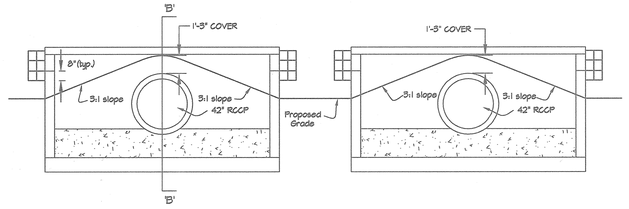


JOINT REINFORCEMENT (STRAPPING) DETAIL

Scale: 1"= 5'

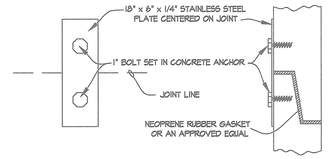


SECTION 'B'-'B'



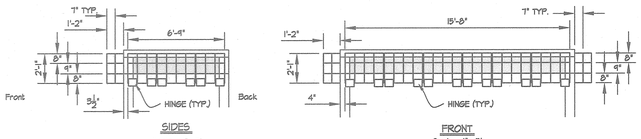
FILL ALONG REAR OF RISERS

Scale: 1"= 5'



JOINT REINFORCEMENT DETAIL

SCALE: 1"=1'



SIDES

Scale: 1"= 5'

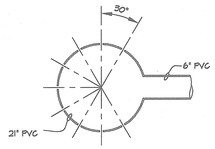
FRONT

Scale: 1"= 5'

NOTES:
1. TRASH RACK MOUNTINGS TO BE GALVANIZED AFTER FABRICATION
2. REBAR MUST BE GALVANIZED AND PAINTED BATTLESHIP GRAY.
3. THERE IS NO WEIR OPENING ON THE BACK SIDE OF EITHER RS-1 OR RS-2.

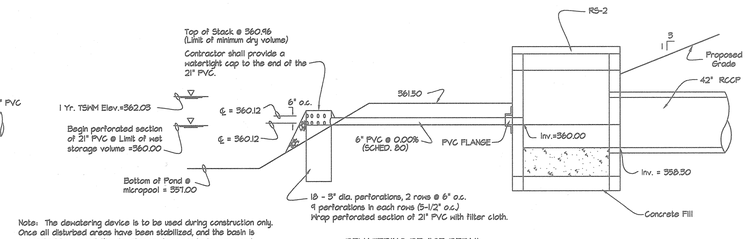
TRASH RACK DETAILS

Scale: 1"= 5'



PERFORATION PATTERN

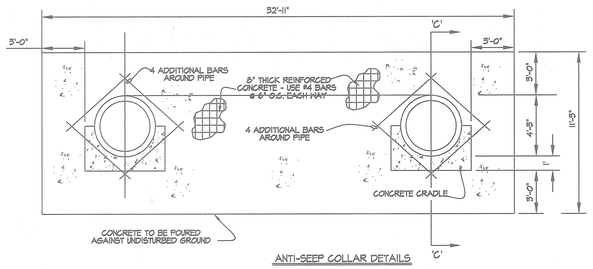
Not to Scale



Note: The dewatering device is to be used during construction only. Once all disturbed areas have been stabilized, and the basin is converted to a pond, the dewatering device is to be removed.

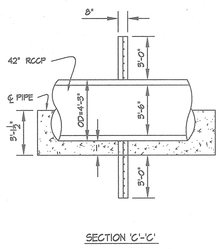
DEWATERING DEVICE DETAIL

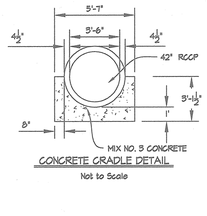
Scale: 1" = 5'



ANTI-SEEP COLLAR DETAILS

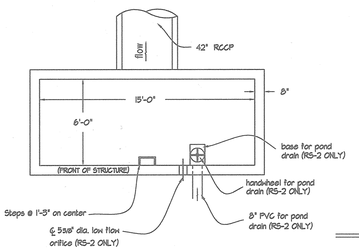
Not to Scale



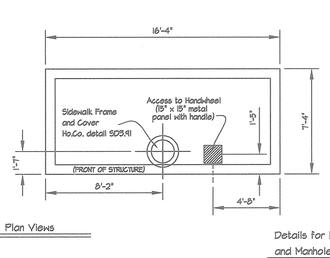


CONCRETE CRADLE DETAIL

Not to Scale

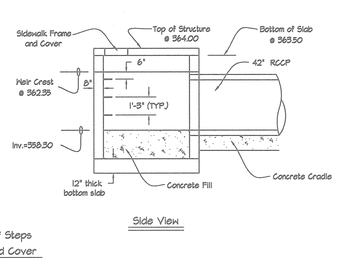


Plan Views



Details for Location of Steps and Manhole Frame and Cover

Scale: 1"=5'



Side View

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: 6-22-05

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: 6/22/05

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: 6/28/05

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: 6/28/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date: 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date: 7/5/05

Chief, Development Engineering Division MK — Date: 7/14/05

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.

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

STORMWATER MANAGEMENT PROFILES, NOTES, AND DETAILS

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	23 OF 32

F-05-81

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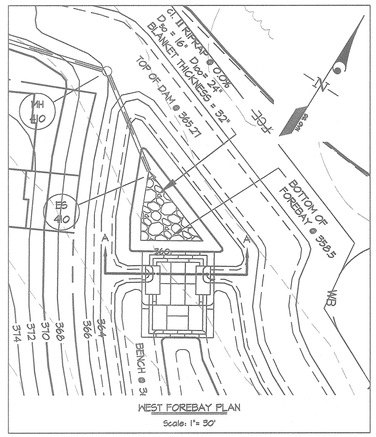
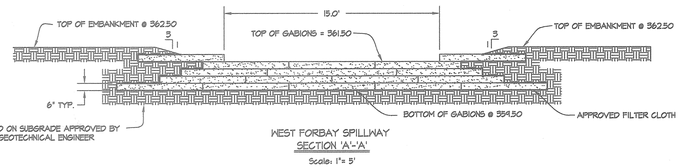
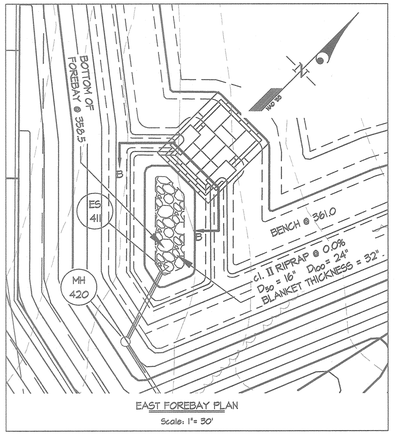


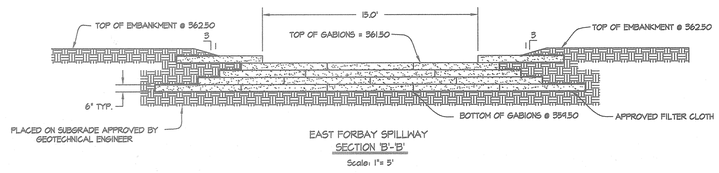
WEST FOREBAY PLAN
Scale: 1"= 30'



WEST FORBAY SPILLWAY
SECTION 'A'-'A'
Scale: 1"= 5'



EAST FOREBAY PLAN
Scale: 1"= 30'



EAST FORBAY SPILLWAY
SECTION 'B'-'B'
Scale: 1"= 5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/15/05

Chief, Development Engineering Division MK — Date 7/14/05

GLW GUTSCHICK LITTLE & WEBER, P.A.
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\DRAWINGS\04001\04001A\Finals\04001aSWM24.dwg	DES. DEV	DRN. AWL	CHK. DEV

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ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41-22	24 OF 32

F-05-81

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 shall 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 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 foreboy, 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.

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

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

Howard Soil Conservation District — 6/22/05 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 — 6/22/05 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 — 6-22-05 Date

STATE OF MARYLAND — ERIK K. GUTSCHICK — No. 21071 — REGISTERED PROFESSIONAL ENGINEER

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

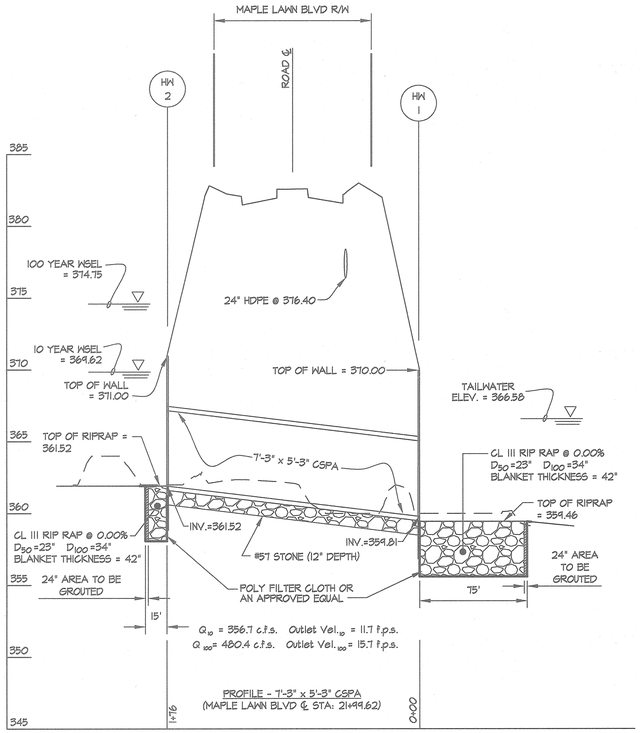
All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching.

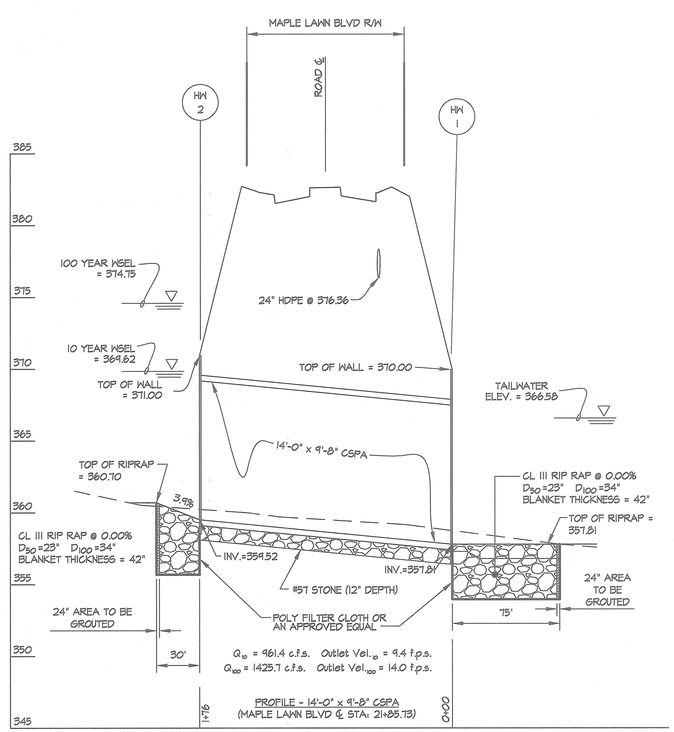
Erosion and Sediment Control

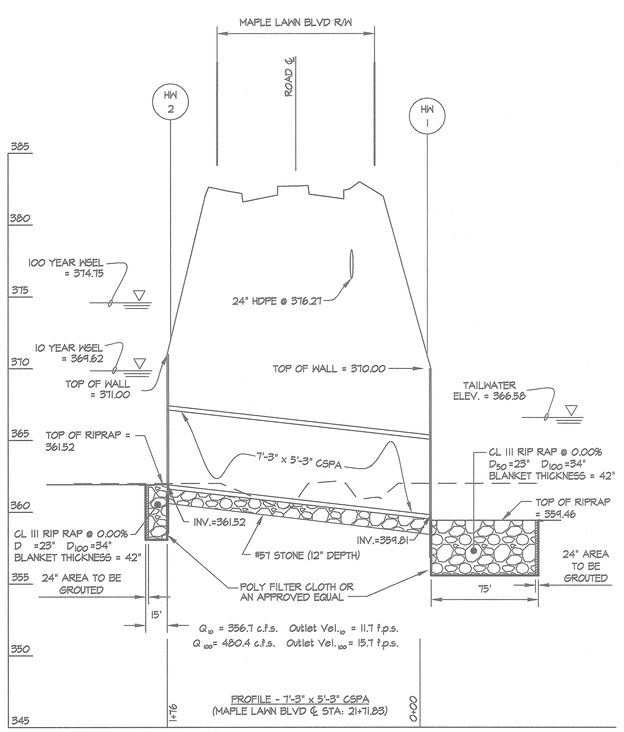
Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

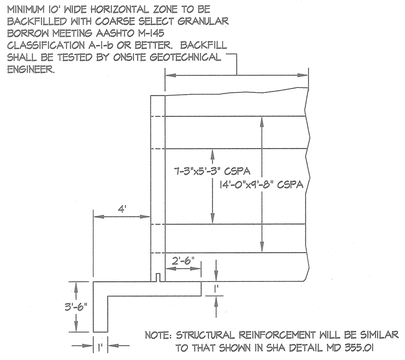
OPERATION AND MAINTENANCE

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.

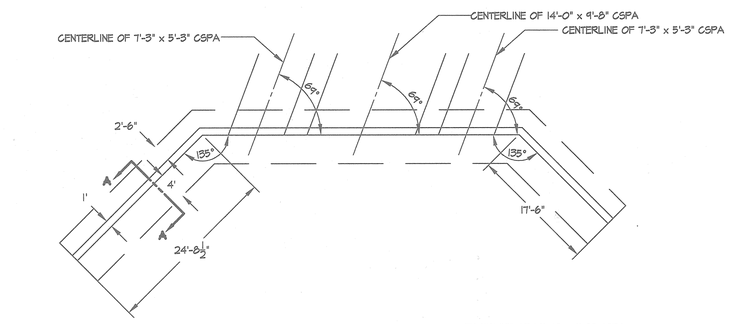


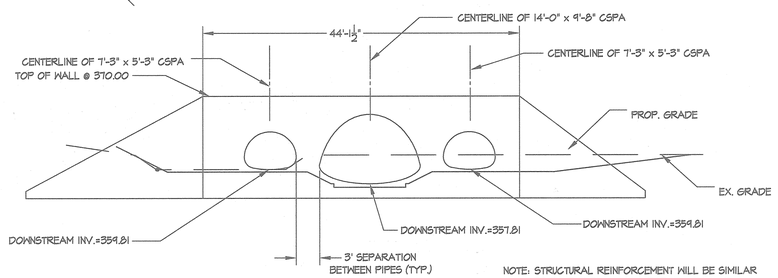






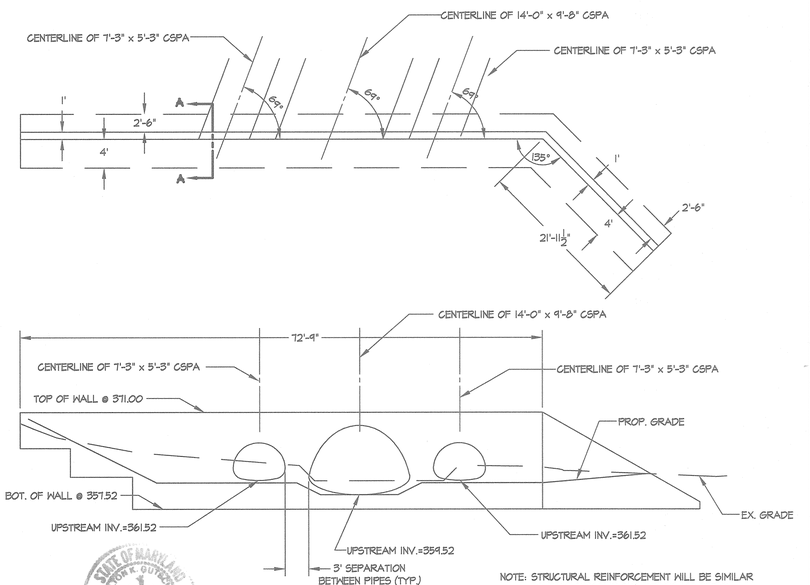
UPSECTION 'A-A'
SCALE: 1"=5'





NOTE: STRUCTURAL REINFORCEMENT WILL BE SIMILAR TO THAT SHOWN IN SHA DETAIL MD 355.01

DOWNSTREAM HEADWALL (HW-1)
SCALE: 1"=10'



NOTE: STRUCTURAL REINFORCEMENT WILL BE SIMILAR TO THAT SHOWN IN SHA DETAIL MD 355.01

UPSTREAM HEADWALL (HW-2)
SCALE: 1"=10'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/05/05

Chief, Development Engineering Division MK — Date 7/14/05

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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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.

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

HAMMOND BRANCH CROSSING DETAILS

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL B, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	25 OF 32

F-05-81

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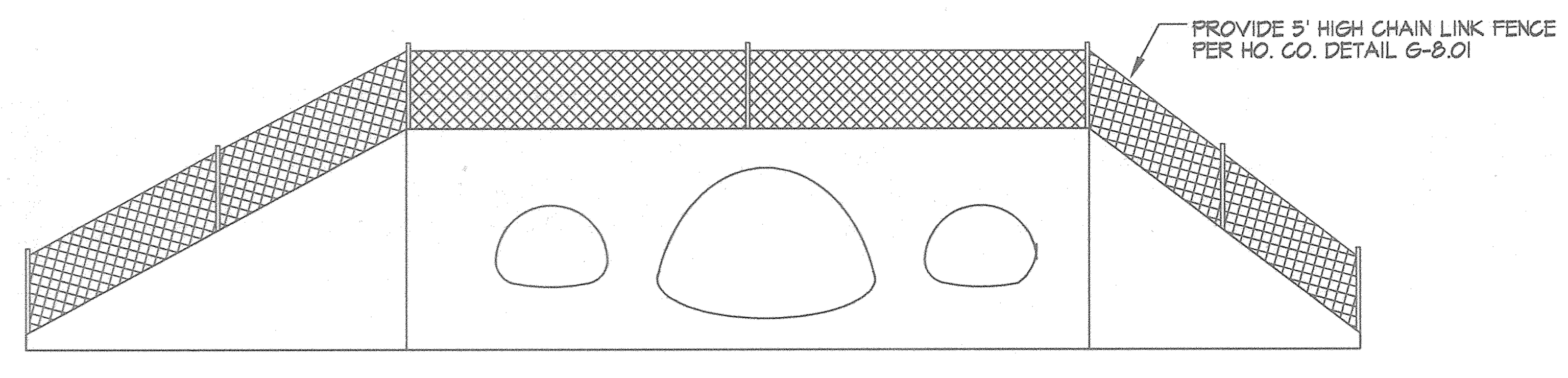
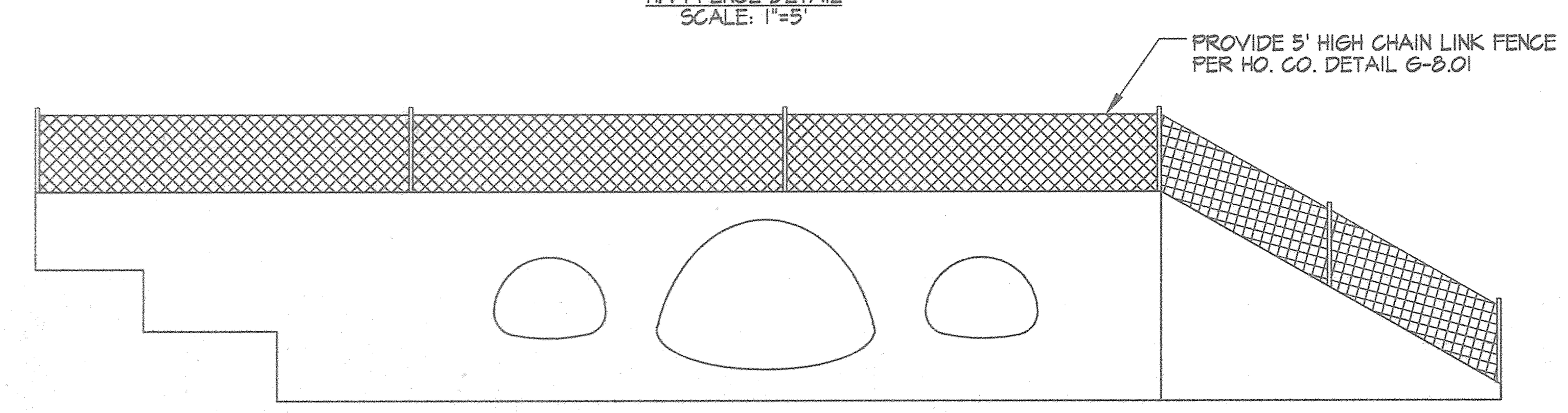
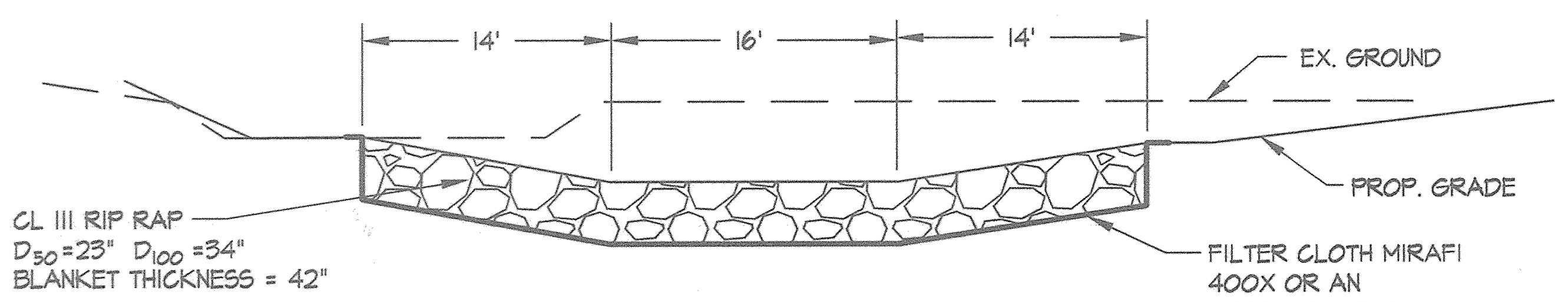


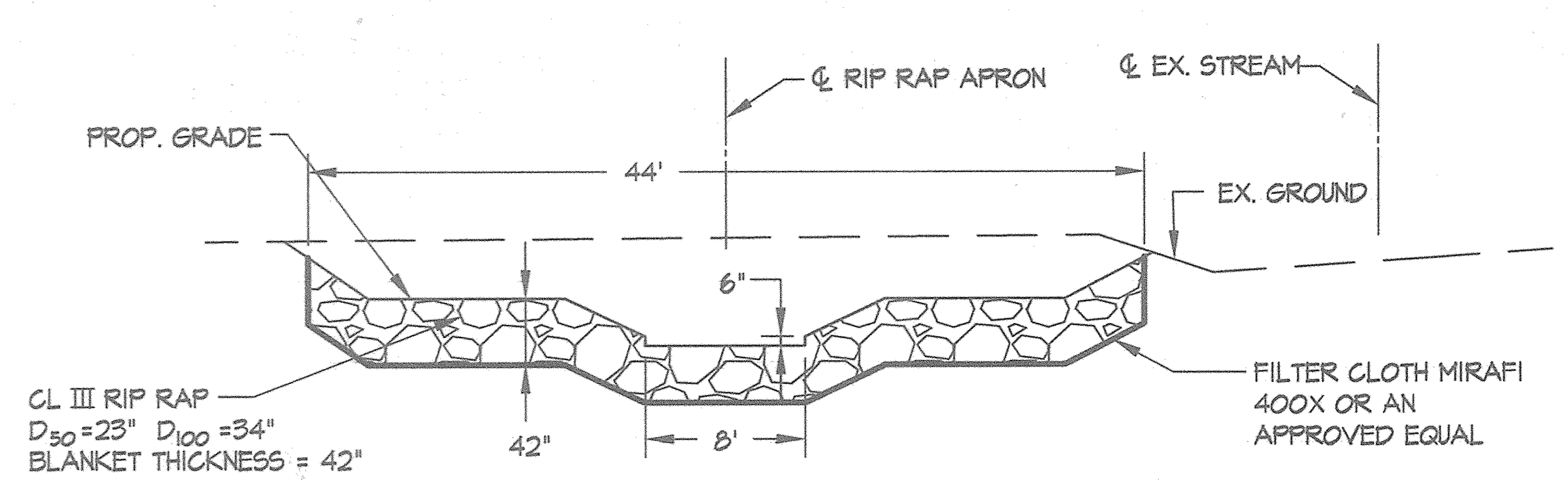
HW-1 FENCE DETAIL
SCALE: 1"=5'



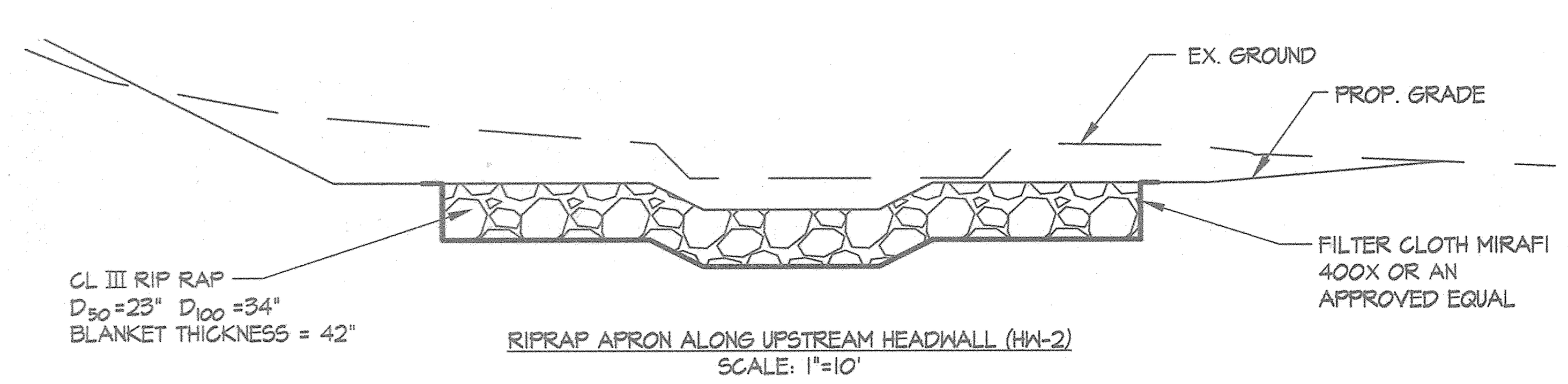
HW-2 FENCE DETAIL
SCALE: 1"=5'



RIPRAP APRON 75' DOWNSTREAM OF HEADWALL (HW-1)
SCALE: 1"=10'

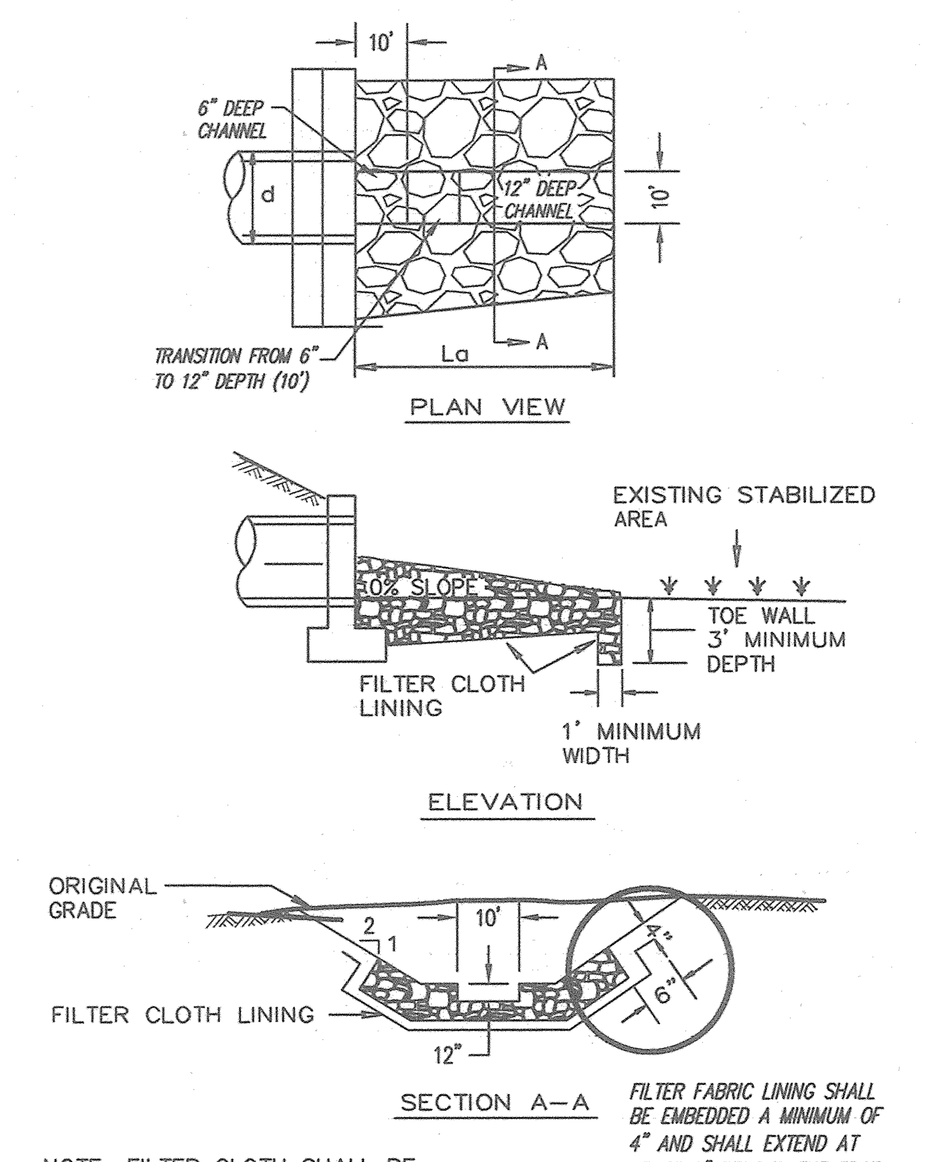


RIPRAP APRON ALONG DOWNSTREAM HEADWALL (HW-1)
SCALE: 1"=10'



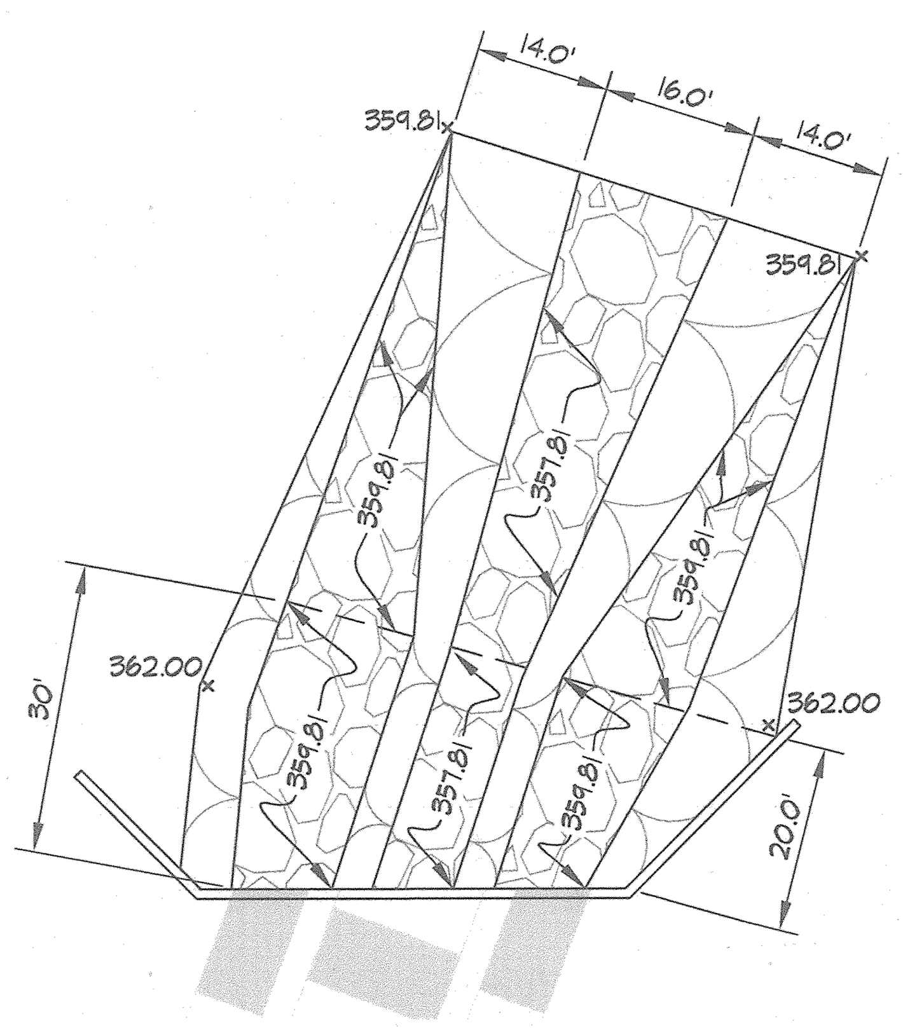
RIPRAP APRON ALONG UPSTREAM HEADWALL (HW-2)
SCALE: 1"=10'

HAMMOND BRANCH DOWNSTREAM ROCK OUTLET PROTECTION DETAIL

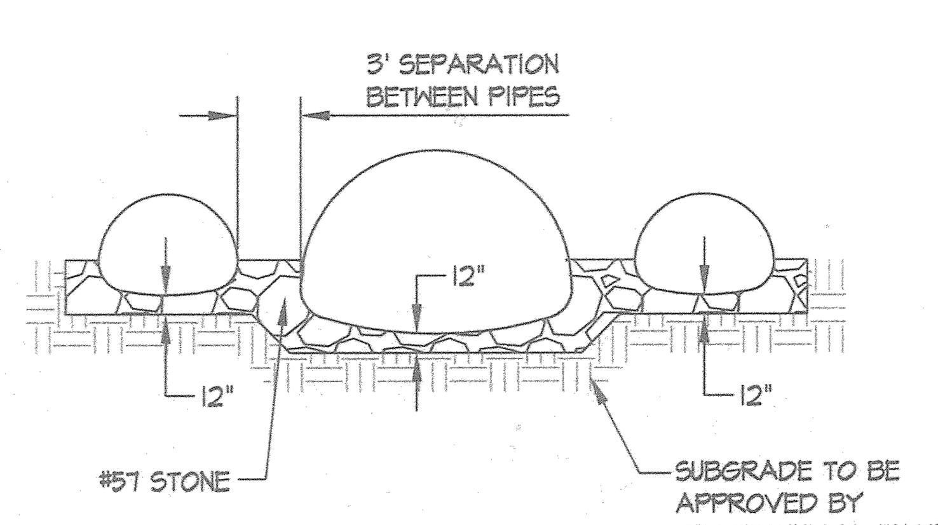


NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

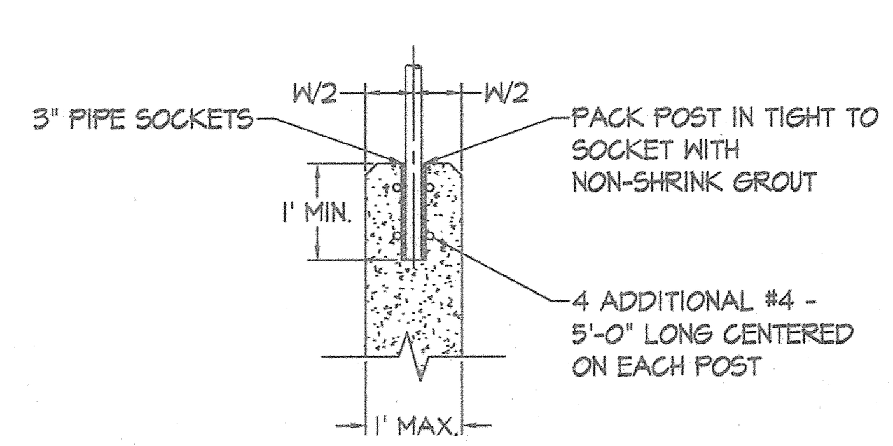
For Construction Specifications, see MDE F-18-10 (see sheet 11)



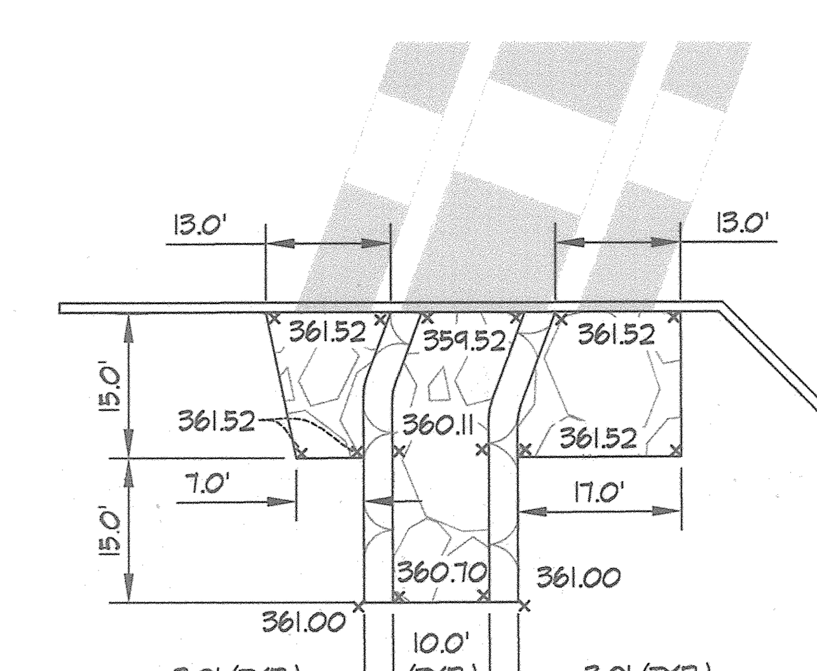
HW-1 (DOWNSTREAM) RIPRAP DETAIL
SCALE: 1"=20'



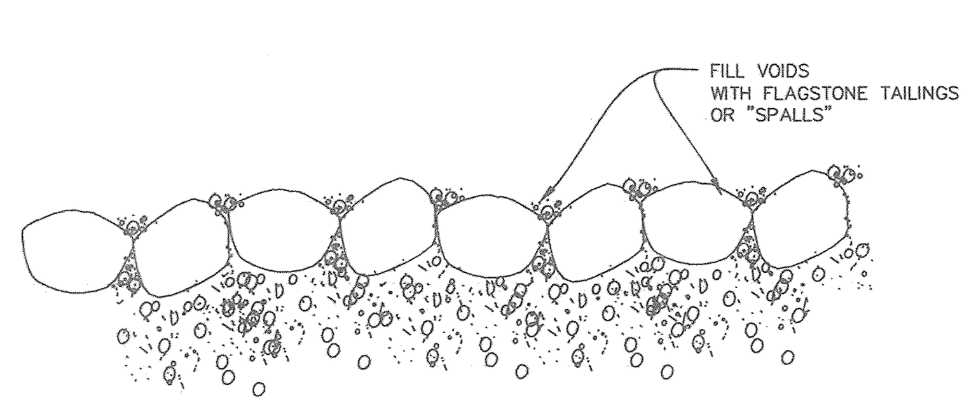
PIPE BEDDING DETAIL
SCALE: 1"=10'



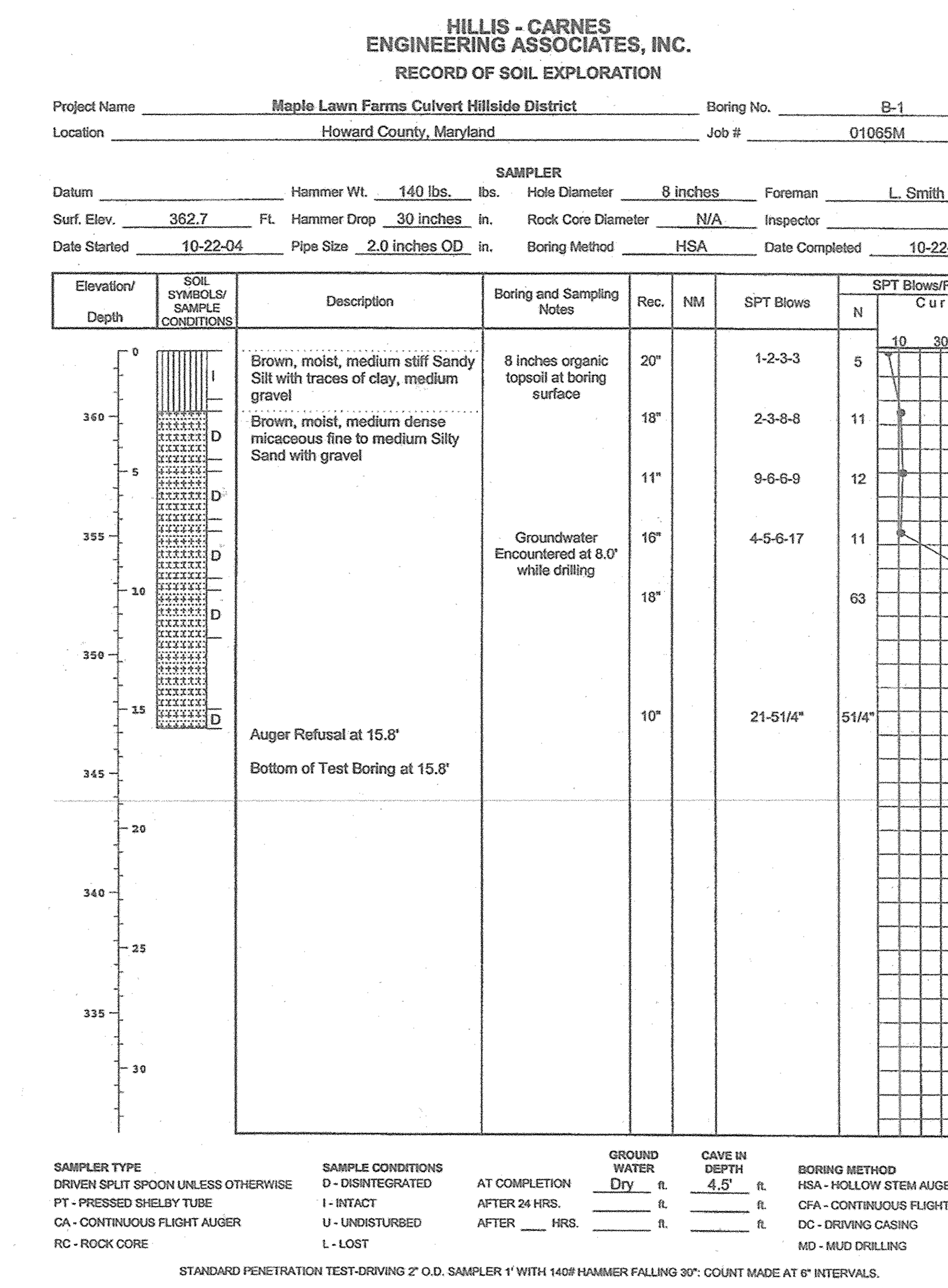
POST INSTALLATION (ON WALL)
SCALE: 1"=2'

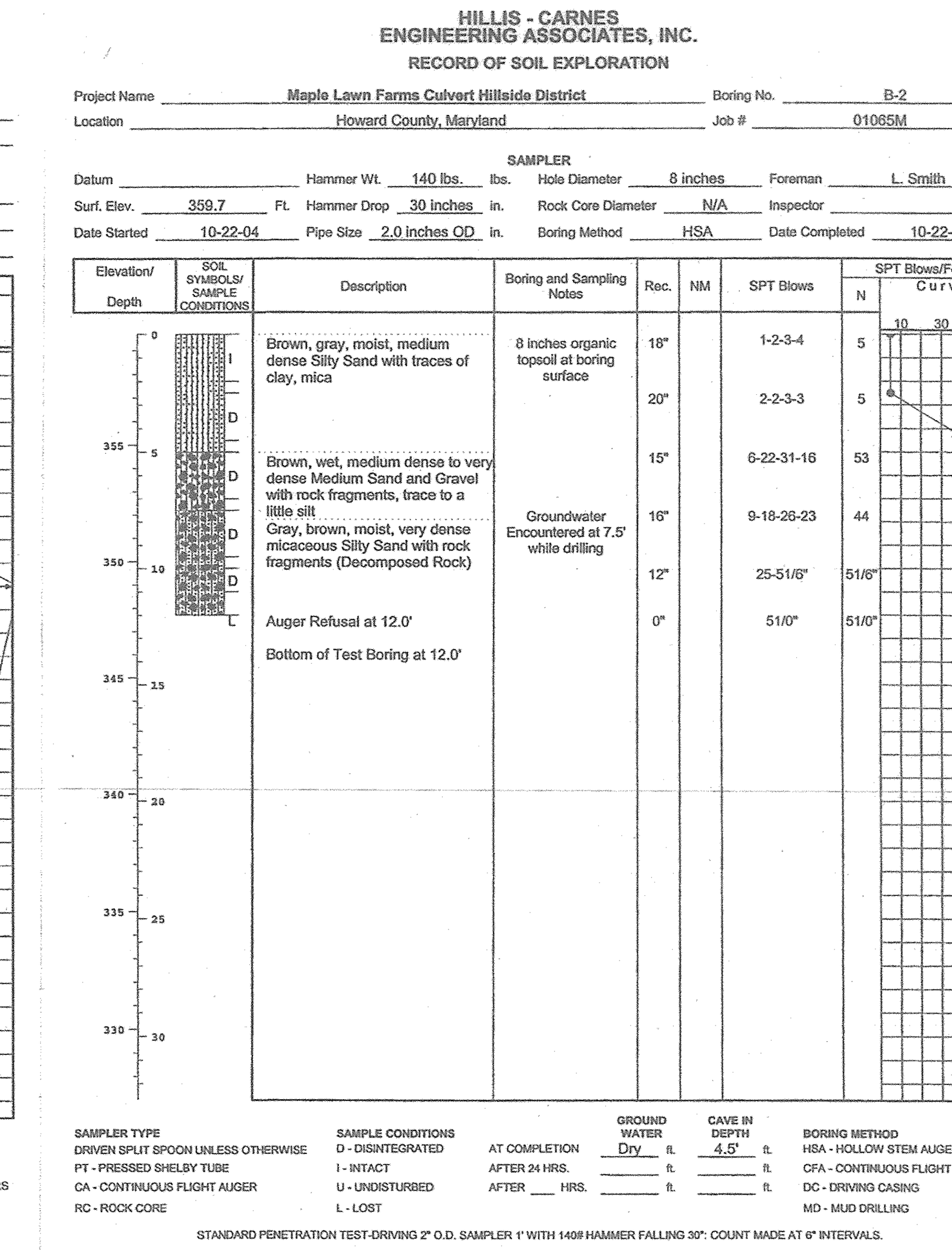


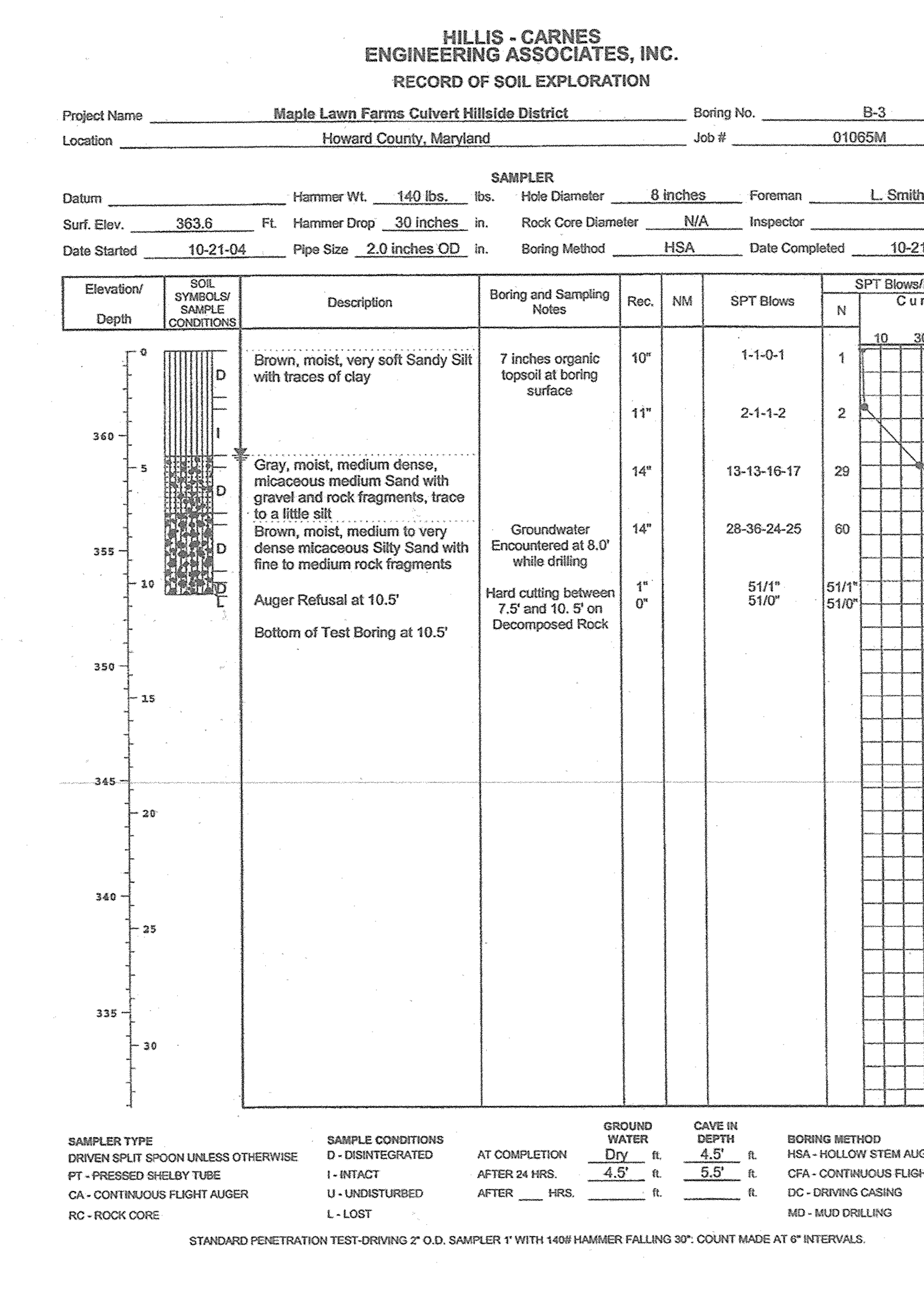
HW-2 (UPSTREAM) RIPRAP DETAIL
SCALE: 1"=20'

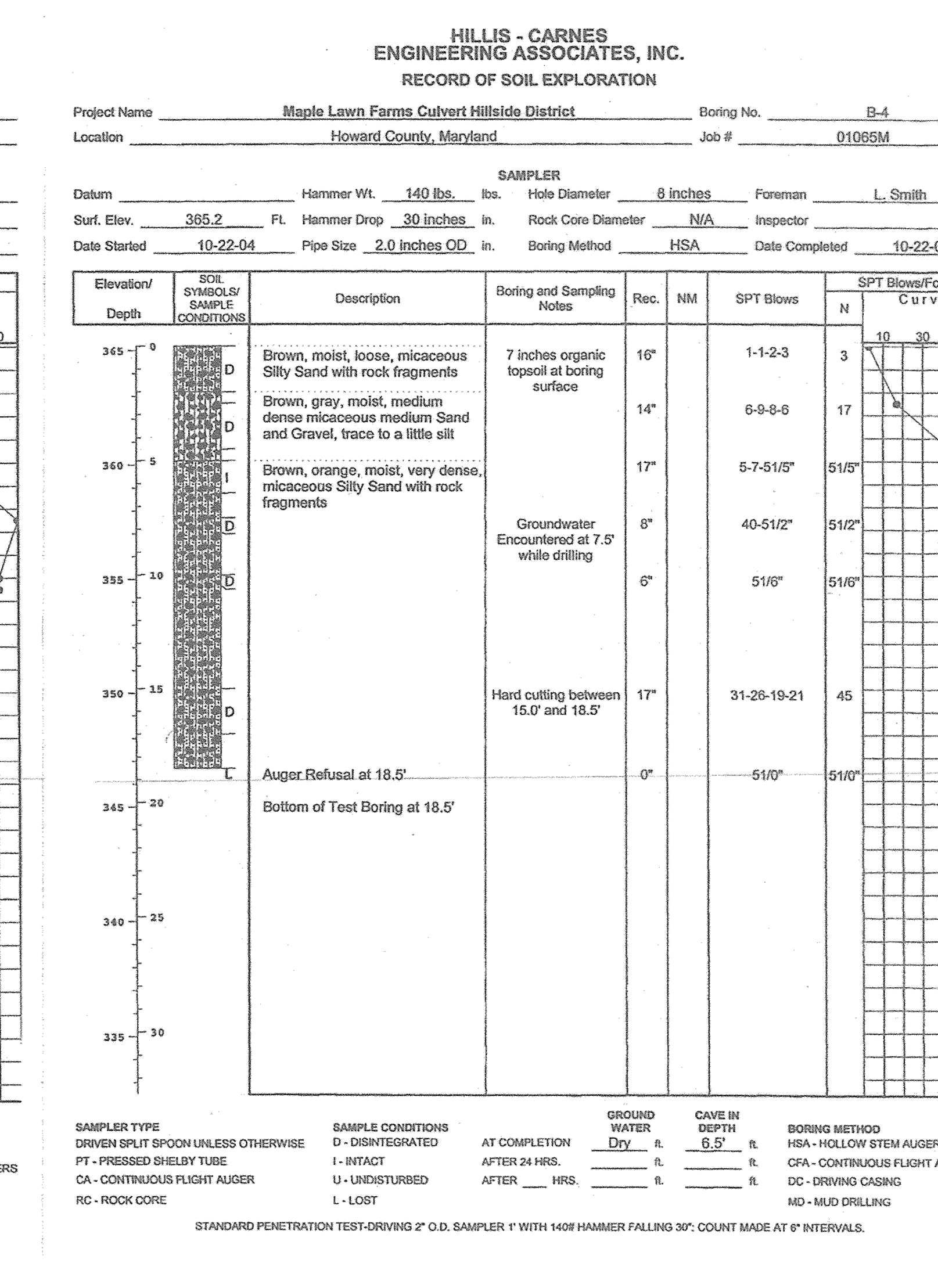


TYPICAL STONE PLACEMENT AT HW-1 AND HW-2
PROFILE VIEW (N.T.S.)









Maple Lawn Farms Culvert System
Geotechnical Report **HCEA Project No. 01065M**

5.0 EVALUATIONS AND RECOMMENDATIONS

Our findings indicate that the site conditions are adequate for a project of the intended scope. Special consideration should be given to the dewatering necessary in order to accomplish the required excavation, undercutting and bedding construction for the culverts. Dense decomposed rock materials in HCEA boring B-4 at elevation El 359.2 may require non-conventional excavation techniques like the use of rippers, excavators with rock teeth, hoe ramming etc. to achieve planned foundation bedding invert levels.

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 and revised, if necessary.

5.1 Culverts

Culvert structures can be planned to bear on medium dense, or very dense natural ground materials encountered at the boring locations. Soft/loose surficial soil conditions are anticipated to extend locally to depths of 2 to 5 feet below culvert invert levels at locations of borings B-2 and B-3 based on topographic information provided and the boring results. Pockets of organic alluvium could be encountered in areas of the existing stream, or in lowlying wetland areas adjacent to the stream.

Foundation bedding materials should extend through surficial organic soils and/or loose/soft materials that were encountered periodically in the upper two feet to five feet of site grades during the investigation. Undercut materials can be replaced with clean, crushed #57 stone or other freely draining material approved by the Geotechnical Engineer.

Dewatering of the culvert foundation to accomplish undercutting and to place bedding for support of the new culvert structures at Hammond Branch will be required. Depending upon the depths of proposed culvert bedding materials, undercut requirements and proximity of excavations to the existing stream; extensive groundwater flows through upper granular soils could require the need for an elaborate perimeter dewatering system like deep wells or well points. An effective system should maintain water levels a minimum of two feet below excavation invert levels.

Interested contractors should adequately familiarize themselves with the site conditions and the information provided prior to bidding the project. Specialty, foundation and/or dewatering contractors familiar with Piedmont geology in general and Howard County soils in particular should be solicited to identify project construction requirements and to perform the work.

Backfill materials and methods are extremely important in the construction of metal pipe arch culvert structures. Backfill of the haunch areas adjacent to the pipe are extremely critical to the performance or behavior of the completed structure. A "select fill structural backfill zone" consisting of the haunch areas under the culverts and a minimum 10 foot wide horizontal width beyond the sidewalls of the super-span structures is typically specified to be backfilled with coarse select granular borrow meeting AASHTO M-145 Classification A-1-b, or better. Manufacturer's representatives should be contacted directly for backfill requirements for their particular structure types.

Select backfill materials should be constructed in maximum 8-inch thick compacted lifts and to minimum in-place densities equal to 92 percent of Modified Proctor maximum dry density. Other suitable and compactable materials from onsite cuts can be used in the structural backfill zone of culverts beyond the 10-foot "select fill structural zone".

Culvert structures founded and backfilled as recommended and in accordance with all other Manufacturer Backfill Requirements are considered to have adequate bearing capacity to support structural loads and the soil envelope with minimal differential settlements. Settlements resulting from the silt and sand soils encountered in the investigation are expected to be elastic and to occur during backfilling and final grading operations. No long-term consolidation settlements are expected.

Hammond Branch waters have not been tested for pH and resistivity as part of this program. Manufacturers should be contacted directly with regard to specific concerns and/or testing requirements about corrosion protection.

Prior to beginning the stream diversion and culvert foundation excavation work, a special preconstruction conference on the culvert is recommended. The purpose of the meeting would be to review the contractors proposed construction means and methods. A representative of the Owner, Civil Engineer, Prime Contractor, Specialty subcontractors, Manufacturer and Geotechnical Engineer responsible for monitoring the construction should be in attendance.

Retaining walls-either consisting of poured in place concrete walls or a combination of poured in-place headwalls and segmental retaining walls-are assumed to be required for culvert end-sections. Walls should be designed for retained soils, surcharge loads and hydrostatic or seepage pressures as required by the road and culvert design.

An angle of internal friction of 32 degrees and an in-place moist or wet density of 138 pcf is recommended for walls retaining A-1, select granular backfill materials. For wall systems retaining on site, granular mixtures of sand and silt, we recommend an angle of internal friction of 30 degrees and a moist unit weight of 135 pcf. Clay soils should not be used to backfill structures.

Retaining walls must be designed for the full range of potential modes of failure including base sliding, overturning, bearing capacity, internal shear capacity and global stability.

Drainage systems are recommended for retaining wall designs. Depending on the size and height of the wall, drainage may include aggregate drainage material or man-made products like Mira-drain boards and a blanket drain with a discharge pipe and gravity flow to a suitable outfall. In the event that backfill soils retained by the wall are subject to horizontal water flows (i.e. seepage), additional chimney drains with outfalls to the blanket drain may also be required for upstream walls. Drainage materials may also require geotextile filter cloth for protection from fines associated with seepage. These details need to be considered in the particular wall design.

6.0 RECOMMENDED ADDITIONAL SERVICES

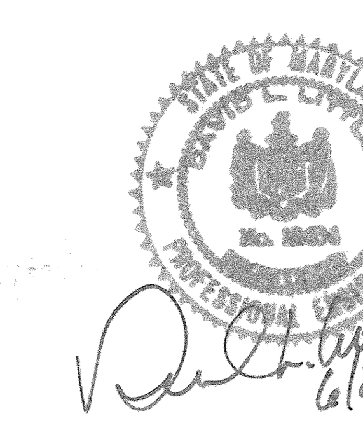
Additional soil and foundation engineering, testing, and consulting services recommended for this project are summarized below:

Site Preparation and Proofrolling: A Geotechnical Engineer or experienced Soils Inspector should inspect the site after it has been stripped and excavated. The inspector should determine if any undercutting or in-place densification is necessary to prepare a subgrade for fill placement or for slab support.

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.

Footing Excavation Inspections: A Geotechnical Engineer or experienced Soils Inspector should inspect the footing excavations for the building foundations. He should verify that the design bearing pressure is available and that no loose pockets exist beneath the bearing surfaces of the footing excavations. Based on the inspection, the Inspector would either approve the bearing surfaces or recommend that loose or soft soils be undercut to expose satisfactory bearing materials.

HILLIS-CARNES ENGINEERING



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — 7/15/05
Chief, Development Engineering Division — 7/14/05

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.

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

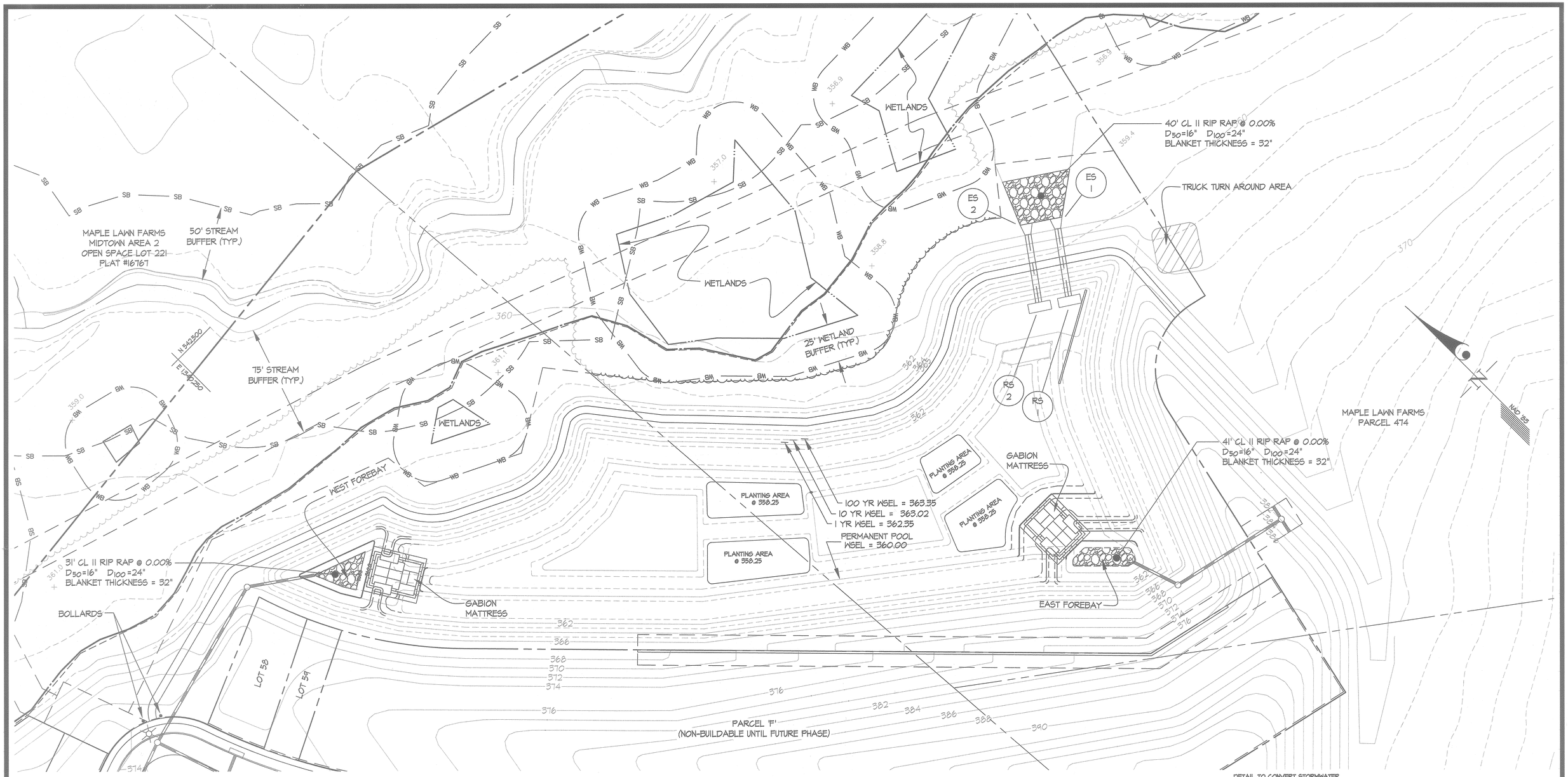
HAMMOND BRANCH CROSSING DETAILS & NOTES

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	26 OF 32

F-05-81



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: 6-22-05

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: 6/22/05

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: 6/28/05

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: 6/28/05

STATE OF MARYLAND — CHRISTOPHER V. GUTSCHICK — No. 12973 — REGISTERED PROFESSIONAL ENGINEER

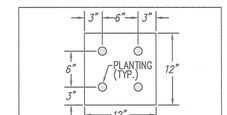
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date: 7-6-05

HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date: 7/5/05

Chief, Development Engineering Division MK — Date: 7/14/05



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.

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DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

STORMWATER MANAGEMENT POND CONVERSION PLAN

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41-22	27 OF 32

F-05-81

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

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Boring Number: E-12
Location: Howard County, Maryland | Job #: 01065I

SAMPLER
Datum: | Hammer Wt. 140 Lbs. | Hole Diameter | Foreman: Ola Aranmolate
Surf. Elev. 363.6 | Hammer Drop 30 Inches | Rock Core Dia. | Inspector
Date Started 05-27-04 | Pipe Size 2.0 Inches OD | Boring Method HSA | Completed 05-27-04

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					0" Topsoil
	Brown, moist, soft, sandy silt, trace mica and root matter (ML) Possible Fill	2.5		I	1-2-2	1	14"	Groundwater encountered at 8.0' while drilling
	Orange/gray, moist to very moist, clayey silt, trace fine sand and mica (ML-CL)		5.0	I	1-1-1	2	18"	
		8.0		I	1-3-3	3	13"	
	Dark brown, very moist to wet, medium dense micaceous silty sand with rock fragments	13.0		D	4-7-11	4	18"	Caved in at 8.4' at Completion; Caved in at 7.5' after 24 hours
	Auger Refusal at 13.0' Bottom of Test Hole at 13.0'		15.0					
			20.0					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. T-PRESSED SHELBY TUBE; CA-CONTINUOUS FLIGHT AUGER; RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED; I-INTACT; U-UNDISTURBED; L-LOST
GROUND WATER DEPTH: AT COMPLETION 8.2 FT.; AFTER 24 hrs 7.0 FT.; AFTER ___ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS; CFA-CONT. FLIGHT AUGERS; DC-DRIVING CASING; MD-MUD DRILLING

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

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

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Boring Number: E-13
Location: Howard County, Maryland | Job #: 01065I

SAMPLER
Datum: | Hammer Wt. 140 Lbs. | Hole Diameter | Foreman: Ola Aranmolate
Surf. Elev. 362.5 | Hammer Drop 30 Inches | Rock Core Dia. | Inspector
Date Started 05-27-04 | Pipe Size 2.0 Inches OD | Boring Method HSA | Completed 05-27-04

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					0" Topsoil
	Brown, moist, soft, sandy silt trace mica and rootmatter (ML) Possible Fill	2.5		D	1-2-2	1	14"	
	Orange/tan/gray, moist medium stiff clayey silt, trace mica and fine sand (ML-CL)			D	2-2-5	2	18"	Groundwater encountered at 8.0' while drilling; Caved in at 3.6' at Completion; Caved in at 3.8' after 24 hours
		8.0	5.0	D	3-3-5	3	14"	
	Orange brown to gray brown, wet, loose to medium dense, micaceous silty sand with weathered rock (SM)			D	5-3-4	4	8"	
		15.0		D	4-10-15	5	12"	
	Botom of Test Hole at 15.0'		20.0					

GROUND WATER DEPTH: AT COMPLETION 3.6 FT.; AFTER 24 hrs 3.6 FT.; AFTER ___ FT.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. T-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-CONT. FLIGHT AUGERS; DC-DRIVING CASING; MD-MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

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

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Boring Number: E-14
Location: Howard County, Maryland | Job #: 01065I

SAMPLER
Datum: | Hammer Wt. 140 Lbs. | Hole Diameter | Foreman: Ola Aranmolate
Surf. Elev. 361.2 | Hammer Drop 30 Inches | Rock Core Dia. | Inspector
Date Started 06-02-04 | Pipe Size 2.0 Inches OD | Boring Method HSA | Completed 06-02-04

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Brown, moist, medium stiff to stiff micaceous sandy silt trace clay and quartz rock fragments (ML)			I	2-3-6	1	12"	Groundwater encountered at 13.5' while drilling
		5.5		I	5-6-8	2	14"	
	Brown/tan, moist to very moist, dense to loose fine to coarse silty sand with quartz rock fragments and mica (SM)			I	16-17-21	3	14"	
				I	4-4-5	4	N/A	Caved in at 9.0' at Completion; Caved in at 7.0' after 24 hours
		15.0		I	4-6-7	5	12"	
	Bottom of Test Hole at 15.0'		20.0					

GROUND WATER DEPTH: AT COMPLETION 8.0 FT.; AFTER 24 hrs 3.5 FT.; AFTER ___ FT.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. T-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-CONT. FLIGHT AUGERS; DC-DRIVING CASING; MD-MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

361.7 ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Boring Number: E-15
Location: Howard County, Maryland | Job #: 01065I

SAMPLER
Datum: | Hammer Wt. 140 Lbs. | Hole Diameter | Foreman: Ola Aranmolate
Surf. Elev. | Hammer Drop 30 Inches | Rock Core Dia. | Inspector
Date Started 05-28-04 | Pipe Size 2.0 Inches OD | Boring Method HSA | Completed 05-28-04

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Brown, very moist to wet, medium stiff to very soft, fine sandy silt, little clay, trace mica (ML)			I	2-3-3	1	14"	Groundwater encountered at 6.0' while drilling
				D	1-1-1	2	16"	
		8.0		D	1-2-3	3	6"	
	Gray, wet, medium stiff silty clay, trace fine sand and mica (CL) Alluvial			D	2-3-5	4	16"	Caved in at 9.0' at Completion; Caved in at 6.0' after 24 hours
		15.0		D	3-3-4	5	2"	
	Bottom of Test Hole at 15.0'		20.0					

GROUND WATER DEPTH: AT COMPLETION 4.5 FT.; AFTER 24 hrs 3.5 FT.; AFTER ___ FT.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. T-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-CONT. FLIGHT AUGERS; DC-DRIVING CASING; MD-MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

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

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Boring Number: I-12
Location: Howard County, Maryland | Job #: 01065I

SAMPLER
Datum: | Hammer Wt. 140 Lbs. | Hole Diameter | Foreman: Ola Aranmolate
Surf. Elev. 365.0 | Hammer Drop 30 Inches | Rock Core Dia. | Inspector
Date Started 06-02-04 | Pipe Size 2.0 Inches OD | Boring Method HSA | Completed 06-02-04

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Brown, moist, medium stiff sandy silt trace rootmatter (ML) Possible Fill	2.5		I	3-3-4	1	13"	
	Orange brown, moist, medium stiff, clayey silt, trace mica and fine sand (ML-CL)	6.0		I	3-4-7	2	16"	Groundwater encountered at 10.0' while drilling
	Brown, moist to wet, loose to very dense, micaceous silty sand with weathered rock (SM)			D	10-17-22	3	14"	
				D	7-3-4	4	14"	Caved in at 10.0' at Completion; Set insitu pipe at 10.0
		15.0		D	7-17-34	5	14"	Caved in at 8.5' after 24 hours
	Bottom of Test Hole at 15.0'		20.0					

GROUND WATER DEPTH: AT COMPLETION 10.5 FT.; AFTER 24 hrs 6.0 FT.; AFTER ___ FT.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. T-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-CONT. FLIGHT AUGERS; DC-DRIVING CASING; MD-MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

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

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Boring Number: I-13
Location: Howard County, Maryland | Job #: 01065I

SAMPLER
Datum: | Hammer Wt. 140 Lbs. | Hole Diameter | Foreman: Ola Aranmolate
Surf. Elev. 370.7 | Hammer Drop 30 Inches | Rock Core Dia. | Inspector
Date Started 06-02-04 | Pipe Size 2.0 Inches OD | Boring Method HSA | Completed 06-02-04

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Red brown, moist, medium stiff sandy silt trace clay mica and rock fragments (ML)	3.0		I	3-4-4	1	14"	No groundwater encountered while drilling
	Brown/gray, moist medium dense to very dense micaceous silty sand with rock fragments (SM)			D	15-38-17	2	15"	
				D	6-6-7	3	3"	Caved in at 7.0' at Completion
		13.0		D	4-4-7	4	14"	Set insitu pipe at 10.0; Caved in at 7.0' after 24 hours
	Auger Refusal at 13.0' Bottom of Test Hole at 13.0'		15.0		51/0"	5	N/A	
			20.0					

GROUND WATER DEPTH: AT COMPLETION Dry FT.; AFTER 24 hrs Dry FT.; AFTER ___ FT.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. T-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-CONT. FLIGHT AUGERS; DC-DRIVING CASING; MD-MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

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

Page 1 of 1

Project Name: Maple Lawn - Hillside SWM | Boring Number: P-6
Location: Howard County, Maryland | Job #: 01065I

SAMPLER
Datum: | Hammer Wt. 140 Lbs. | Hole Diameter | Foreman: Brian Ewing
Surf. Elev. 366.2 | Hammer Drop 30 Inches | Rock Core Dia. | Inspector
Date Started 05-27-04 | Pipe Size 2.0 Inches OD | Boring Method HSA | Completed 05-27-04

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					Boring offset 5' NW and refused at 4.5'
	Red/brown, moist, soft to hard micaceous sandy silt with quartz rock fragments (ML)			D	1-1-2	1	12"	0" Topsoil
		4.0		D	4-6-33	2	18"	No groundwater encountered while drilling
	Auger Refusal at 4.0' Bottom of Test Hole at 4.0'		5.0					Caved in at 2'10' at Completion
			10.0					
			15.0					
			20.0					

GROUND WATER DEPTH: AT COMPLETION Dry FT.; AFTER 24 hrs Dry FT.; AFTER ___ FT.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. T-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-CONT. FLIGHT AUGERS; DC-DRIVING CASING; MD-MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

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

Page 1 of 2

Project Name: Maple Lawn - Hillside SWM | Boring Number: P-7
Location: Howard County, Maryland | Job #: 01065I

SAMPLER
Datum: | Hammer Wt. 140 Lbs. | Hole Diameter | Foreman: Ola Aranmolate
Surf. Elev. 367.5 | Hammer Drop 30 Inches | Rock Core Dia. | Inspector
Date Started 05-28-04 | Pipe Size 2.0 Inches OD | Boring Method HSA | Completed 05-28-04

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Brown to red/brown, moist soft to very stiff sandy silt trace clay, mica and quartz rock fragments (ML)			I	2-2-2	1	13"	
		5.5		I	8-10-10	2	14"	Groundwater encountered at 10.0' while drilling
	Brown, very moist to wet, loose to medium dense, micaceous silty sand (SM)			I	3-3-4	3	8"	
	USDA: Loamy Sand			D	1-3-4	4	16"	Caved in at 10.0' at Completion; Caved in at 8.3' after 24 hours
		18.0		D	2-8-16	5	12"	
	Dark brown, very moist, very dense, micaceous silty sand with weathered rock (SM) Decomposed Rock			D	17-33-43	6	14"	

GROUND WATER DEPTH: AT COMPLETION 10.0 FT.; AFTER 24 hrs 8.0 FT.; AFTER ___ FT.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. T-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-CONT. FLIGHT AUGERS; DC-DRIVING CASING; MD-MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

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

Page 2 of 2

Project Name: Maple Lawn - Hillside SWM | Boring Number: P-7
Location: Howard County, Maryland | Job #: 01065I

SAMPLER
Datum: | Hammer Wt. 140 Lbs. | Hole Diameter | Foreman: Ola Aranmolate
Surf. Elev. | Hammer Drop 30 Inches | Rock Core Dia. | Inspector
Date Started 05-28-04 | Pipe Size 2.0 Inches OD | Boring Method HSA | Completed 05-28-04

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
			20.0					
	Dark brown, very moist, very dense, micaceous silty sand with weathered rock (SM) Decomposed Rock	24.0		D	51/6"	7	6"	
	Bottom of Test Hole at 24.0'		25.0					
			30.0					
			35.0					
			40.0					

GROUND WATER DEPTH: AT COMPLETION 10.0 FT.; AFTER 24 hrs 8.0 FT.; AFTER ___ FT.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. T-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-CONT. FLIGHT AUGERS; DC-DRIVING CASING; MD-MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

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

Page 1 of 2

Project Name: Maple Lawn - Hillside SWM | Boring Number: P-8
Location: Howard County, Maryland | Job #: 01065I

SAMPLER
Datum: | Hammer Wt. 140 Lbs. | Hole Diameter | Foreman: Ola Aranmolate
Surf. Elev. 365.3 | Hammer Drop 30 Inches | Rock Core Dia. | Inspector
Date Started 06-02-04 | Pipe Size 2.0 Inches OD | Boring Method HSA | Completed 06-02-04

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Red/brown, moist, stiff to very stiff clayey silt little fine sand and mica trace quartz rock fragments (ML-CL)			I	2-2-10	1	12"	Groundwater encountered at 20.0' while drilling
	USDA - Sandy Clay Loam	5.5		I	10-11-11	2	14"	Caved in at 19.0' at Completion
	Orange brown to brown, moist to wet loose to medium dense micaceous silty sand with weathered rock (SM)			I	6-4-6	3	16"	Caved in at 16.0' after 24 hours
				D	4-6-8	4	14"	
				D	6-6-7	5	14"	
				D	5-8-10	6	16"	

GROUND WATER DEPTH: AT COMPLETION 10.0 FT.; AFTER 24 hrs 7.0 FT.; AFTER ___ FT.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. T-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-CONT. FLIGHT AUGERS; DC-DRIVING CASING; MD-MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

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

Page 2 of 2

Project Name: Maple Lawn - Hillside SWM | Boring Number: P-8
Location: Howard County, Maryland | Job #: 01065I

SAMPLER
Datum: | Hammer Wt. 140 Lbs. | Hole Diameter | Foreman: Ola Aranmolate
Surf. Elev. | Hammer Drop 30 Inches | Rock Core Dia. | Inspector
Date Started 06-02-04 | Pipe Size 2.0 Inches OD | Boring Method HSA | Completed 06-02-04

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
			20.0					
	Orange brown to brown, moist to wet loose to medium dense micaceous silty sand with weathered rock (SM)	25.0		D	12-17-18	7	8"	
	Bottom of Test Hole at 25.0'		30.0					
			35.0					
			40.0					

GROUND WATER DEPTH: AT COMPLETION 10.0 FT.; AFTER 24 hrs 7.0 FT.; AFTER ___ FT.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. T-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-CONT. FLIGHT AUGERS; DC-DRIVING CASING; MD-MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30":COUNT MADE AT 6" INTERVALS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/13/05

Chief, Development Engineering Division MK — Date 7/14/05

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 6-22-05

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 6/22/05

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 6/28/05

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 6/28/05

STATE OF MARYLAND — CARLTON K. GUTSCHICK — 12973 — PROFESSIONAL ENGINEER

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

\DRAWINGS\04001\04001A\Finals\04001aSWM28.dwg | DES. | DRN. AWL | CHK. DEV

DATE	REVISION	BY	APP'R.

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410-484-8400

SOIL BORING DETAILS
MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1
LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
JUNE, 2005	41-22	28 OF 32

F-05-81

CONSTRUCTION PERIOD PROTECTION PROGRAM

1. The limit of forest retention shall be staked and flagged.

2. A pre–construction meeting at the site should be held to confirm the limits of clearing specified. The meeting should include the owner or the owner's representative, the on–site foreman in charge of land disturbance, the environmental consultant and the appropriate Howard County inspectors.

3. Forest protection devices and signs (see details) shall be installed prior to any clearing or grading. The protection devices and signs shall be maintained during the entire construction period. None of the devices shall be anchored or attached in any way to the trees to be saved. The maintenance time frame may be extended to accommodate subsequent phases of development..

4. Equipment, vehicles and building materials shall not be within the protected area. Activities strictly to implement any reforestation planting and maintenance (i.e. watering, fertilizing thinning, pruning, removal of dead and diseased trees where necessary, etc.) of the conservation area are permitted. Clearing for the purpose of sodding or planting grass is not permitted within the forest conservation area once it's established.

5. At the end of the construction period, the designated qualified professional shall convey certification to the administrator of the Howard County Forest Conservation Program that all forest retention areas have been preserved, all reforestation and/or afforestation plantings (if applicable) have been installed as required by the forest conservation plan, and that all protection measures required for the post–construction period have been installed.

Upon review of the final certification document for completeness and accuracy, the program coordinator will notify the owner of release from the construction period obligations. The 2–year (min.) post–construction management and protection period then commences.

FOREST CONSERVATION PROGRAM SEQUENCE

(NOTE: REFER TO SEQUENCE OF CONSTRUCTION ON SHEET 11)

1. OBTAIN ALL NECESSARY PERMITS.
2. STAKEOUT LIMITS OF DISTURBANCE.
3. FIELD MEETING TO REVIEW AND VERIFY LIMIT OF DISTURBANCE FOR THE LIMITS OF GRADING AND CONSTRUCTION.
4. INSTALL FOREST CONSERVATION SIGNS (SEE DETAIL ON THIS SHEET) AND FOREST PROTECTION DEVICES ALONG THE FCE AREAS. (FENCES) ALONG THE PORTION OF THE LIMIT OF DISTURBANCE (THAT INVOLVES CLEARING AND/OR RETENTION OF TREES) SEE ALSO THE SEDIMENT CONTROL PLANS FOR OTHER PROTECTION MEASURES.
5. COMMENCE SITE CONSTRUCTION.
6. INSPECTION AND CERTIFICATION FOR THE RELEASE OF THE CONSTRUCTION PERIOD OBLIGATIONS; START OF POST–CONSTRUCTION MANAGEMENT PERIOD.
7. POST–CONSTRUCTION MANAGEMENT FOR A PERIOD OF 2 YEARS (MIN.).
8. FINAL INSPECTION AND CERTIFICATION FOR THE RELEASE OF THE OWNER'S FOREST CONSERVATION OBLIGATION.

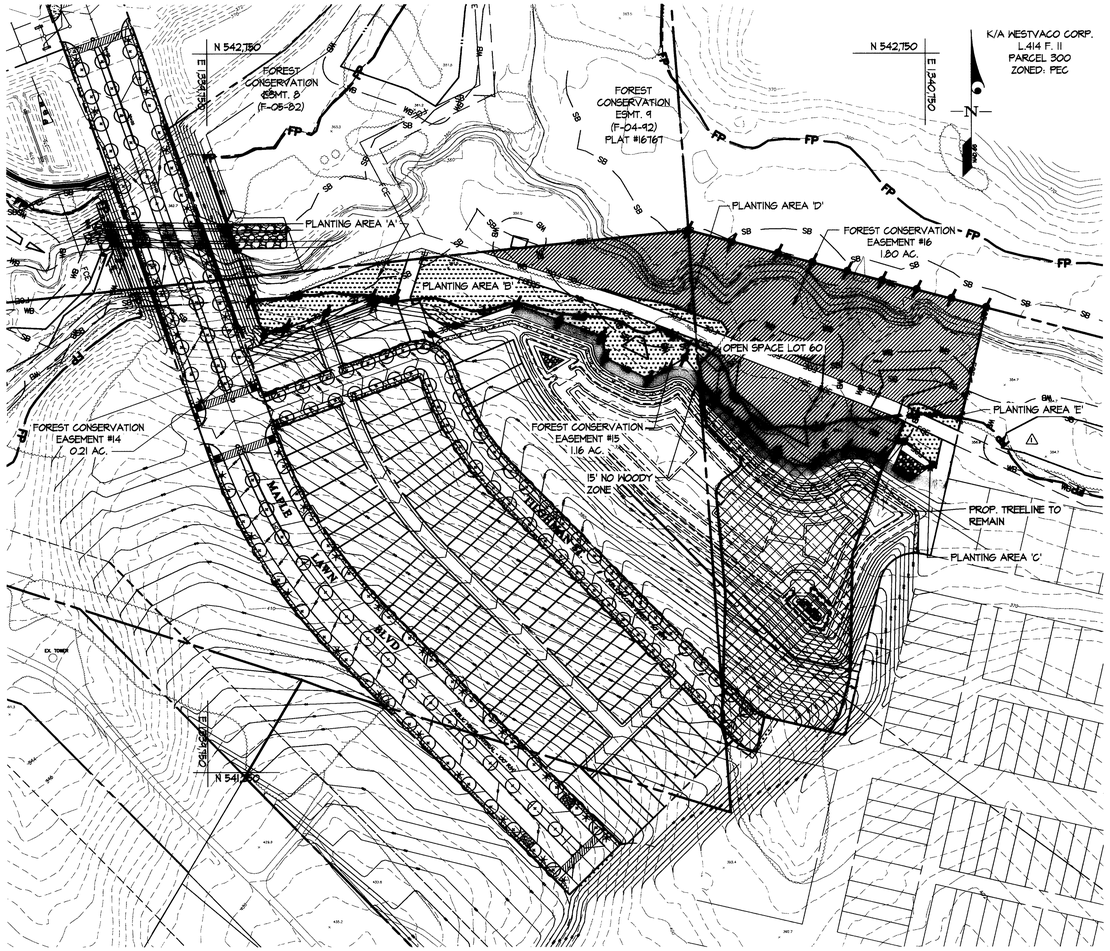
GENERAL NOTES

1. This afforestation plan is provided in accordance with the requirements of Subtitle 12 "Forest Conservation" of the Howard County Code.
2. Implementation of this plan must be performed by a contractor that is knowledgeable and experienced in afforestation/reforestation techniques and practices.
3. The owner is responsible for a 2–year (min.) post–construction maintenance period which involves activities necessary to ensure survival and growth of the conservation area. Two inspections per year by a qualified professional at beginning and end of the growing season, are recommended in order to take remedial steps as necessary. If, after one year, the possibility exists that the original planting (If applicable) will not meet survival rate standards, the applicant may choose to establish reinforcement plantings.
4. At the end of the post–construction management and protection period, certification by a qualified consultant will be required before to the owner can be released from his/her forest conservation obligation to the administrator of the Howard County Forest Conservation program.
5. The contractor is responsible for the location of any existing utilities.The repair of any utilities damaged by the contractor shall be at the contractor's expense.
6. Street trees provided at Final Plan Stage. Landscape and Buffering requirements to be provided at Final Plan Stage or Site Plan Stage.
7. The forest conservation easements shown on this plan will be established to fulfill the requirements of the Forest Conservation Program. No clearing, grading or construction is permitted within the forest conservation easements, however, forest management practices as defined in the Deed of Forest Conservation Easement are allowed.

⚠8. The forest conservation requirements per Section 16.1202 of the Howard County Code and the Forest Conservation manual for Phase 4 of this project with an afforestation and reforestation obligation of 3.48 acres will be fulfilled with retention in the amount of 0.27 acres, afforestation planting in the amount of 0.85 acres and utilizing 2.35 acres of excess afforestation planting from previous phases, which leaves 6.65 acres of excess afforestation planting being done in advance as forest conservation credit for future phases of this project.

9. Disturbed areas within the 100 year floodplain must be stabilized according to the riparian planting notes on sheet 13.

NOTES:
1. THE TREE PROTECTION FENCING SHOWN ON THESE PLANS IS TEMPORARY AND SHALL REMAIN IN PLACE DURING CONSTRUCTION ACTIVITY, BUT THE FOREST CONSERVATION SIGNAGE IS PERMANENT AND SHALL REMAIN IN PLACE AROUND THE FOREST CONSERVATION EASEMENTS AFTER THE REMOVAL OF THE TREE PROTECTION FENCING.
2. FOREST CONSERVATION SIGNAGE SHALL BE INSTALLED ALONG THE PERIMETER OF THE CONSERVATION EASEMENT AT 50' TO 100' APART AND AT ALL CORNERS WHERE THE EASEMENT CHANGES DIRECTION.
3. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.



SITE DATA

GROSS AREA – PHASE IVa:	15.48
NET TRACT AREA:	12.48

CONSERVATION ESMT #14:
AREA: 0.21 Ac
FOREST RETENTION IN NET TRACT: 0.00 Ac
FOREST RETENTION IN FLOOD PLAIN: 0.00 Ac
FOREST PLANTING IN NET TRACT: 0.11 Ac
FOREST PLANTING IN FLOOD PLAIN: 0.10 Ac

CONSERVATION ESMT #15: ⚠
AREA: 1.14 Ac
FOREST RETENTION IN NET TRACT: 0.27 Ac
FOREST RETENTION IN FLOOD PLAIN: 0.26 Ac
FOREST PLANTING IN NET TRACT: 0.32 Ac
FOREST PLANTING IN FLOOD PLAIN: 0.29 Ac

CONSERVATION ESMT #16:
AREA: 1.80 Ac
FOREST RETENTION IN NET TRACT: 0.00 Ac
FOREST RETENTION IN FLOOD PLAIN: 1.74 Ac
FOREST PLANTING IN NET TRACT: 0.01 Ac
FOREST PLANTING IN FLOOD PLAIN: 0.05 Ac

LEGEND

- EXISTING TOPOGRAPHY
- PROPOSED CONTOURS
- EXISTING TREE LINE
- EXISTING STRUCTURES
- SOILS
- STREAM BUFFER
- WETLANDS
- FLOODPLAIN
- FOREST AREA TO BE CLEARED
- TREE PROTECTION SIGN
- FOREST CONSERVATION EASEMENT LINE
- TREE PLANTING AREA
- EXISTING FOREST RETENTION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/15/05

Chief, Development Engineering Division MK — Date 7/14/05

GLW GUTSCHICK LITTLE & WEBER, P.A.
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\DRAWINGS\04001\04001A\Finals\04001aFC29.dwg | DES. TWL | DRN. AWL | CHK. KAF

DATE	REVISION	BY	APP'R.
2/22/06	revised forest conservation per easement proposed under Fdp-05	K.L.F	

PREPARED FOR:
G&R MAPLE LAWN INC.
SUITE 410 WOODHOLME CENTER
1829 REISTERSTOWN ROAD
BALTIMORE, MD 21208
ATTN: CHARLIE O'DONOVAN
410–484–8400

FINAL FOREST CONSERVATION PLAN & NOTES

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	MXD–3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41–22	29 OF 32

F-05-81

RETENTION / AFFORESTATION / REFORESTATION SUMMARY TABLE FOR MAPLE LAWN FARM PROJECT											
PHASE NO.	GROSS AC.	FLOODPLAIN AC.	NET TRACT AREA	EXG. FOREST IN AC.	FOREST CLEARED	FOREST RETAINED	EXCESS RETENTION	REF/AFF REQUIRED	CREDITED PLANTING PROVIDED	EXCESS FOREST CON (PLANTING+RETENTION)	COMMENTS
1	51.98	3.40	48.58	9.45	0.51	8.94	0.63	0.00	4.56	5.19	Per F-03-07
2	(1) 75.20	2.38	72.82	0.00	0.00	0.00	0.00	10.92	(3) 6.67	-4.25	Per F-03-90
2	(1) 5.70	0.00	5.70	0.00	0.00	0.00	0.00	0.86	0.00	-0.86	Per SDP-03-140
3	(2) 19.09	14.85	4.24	0.21	0.00	0.21	0.00	0.43	10.49	10.06	Per F-04-92
3	–	–	–	–	–	–	–	–	-1.16	-1.16	(4) Per F-05-82
4	15.48	3.00	12.48	1.92	1.65	0.27	0.00	3.21	△ 0.88	-2.33	Per F-05-81
TOTAL	167.45	23.63	143.82	11.58	2.16	9.42	0.63	15.42	21.44	6.65	

(1) Includes future phase areas of Maple Lawn Farms. When those areas are recorded in future phases, the forest conservation requirements will already have been met.
(2) 19.09 ACRES = 59.80 ACRES (Phase 3 site total) – 40.71 ACRES (Area of forest con. in Phase 3 already provided by F-03-90 (35.01 Ac) and SDP-03-140 (5.70 Ac.))
(3) Reduced from 6.97 Ac. as shown on F-03-90 to 6.67 Ac. because of the 0.16 Ac. reduction of Conservation Easement #4 on F-04-79 and the 0.14 Ac. reduction of Conservation Easement #5 on F-04-88.
(4) F-05-82 is a revision of Open Space Lots 221 & 222, and a conversion of Parcel 'E' to R/W. Forest Conservation Easement (FCE) #7 will abandon 0.25 ac. and FCE #8 will abandon 0.91 ac.

THE SURETY AMOUNT FOR FOREST PLANTING IS FOR 0.90 Ac : 39,204 s.f. x $0.50 = $19,602.
THE SURETY AMOUNT FOR FOREST RETENTION AREA OUTSIDE THE FLOOD PLAIN IS 0.27 Ac (11,761 S.F. x $ 0.20)=$2,352.00
THE TOTAL SURETY AMOUNT IS $21,954.

	TABULATION OF PROPOSED FOREST CONSERVATION AREAS				
	FOREST CONSERVATION ESMT	14	15	16	TOTAL
CREDITED	FOREST PLANTING PROVIDED IN THE 100-YR FLOOD PLAIN	0.10 Ac	0.29 Ac	0.05 Ac	0.44 Ac
CREDITED	FOREST PLANTING PROVIDED OUTSIDE THE 100 YR FLOOD PLAIN	0.11 Ac	0.32 Ac	0.01 Ac	0.44 Ac
NON-CREDITED	FOREST RETENTION INSIDE THE 100-YR FLOOD PLAIN	0.00 Ac	0.26 Ac	1.74 Ac	2.00 Ac
CREDITED	FOREST RETENTION OUTSIDE THE 100-YR FLOOD PLAIN	0.00 Ac	0.27 Ac	0.00 Ac	0.27 Ac
	TOTAL AREA OF EACH FOREST CONSERVATION AREA	0.21 Ac	1.14 Ac	1.80 Ac	3.15 Ac

FOREST CONSERVATION WORKSHEET

SITE DATA

A. GROSS SITE AREA 15.48
B. AREA WITHIN 100-YEAR FLOOD PLAIN 3.00
C. NET TRACT AREA 12.48
D. LAND USE CATEGORY MXD-3

E. AFFORESTATION THRESHOLD (15% x NET TRACT AREA) 1.87
F. CONSERVATION THRESHOLD (15% x NET TRACT AREA) 1.87

EXISTING FOREST COVER

G. EXISTING FOREST ON NET TRACT AREA 1.92
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD (On Net Tract Area) 0.05
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD (On Net Tract Area) 0.05

PROPOSED FOREST CLEARING

J. FOREST AREAS TO BE CLEARED (On Net Tract Area) 1.65
K. FOREST AREAS TO BE RETAINED (On Net Tract Area) 0.27

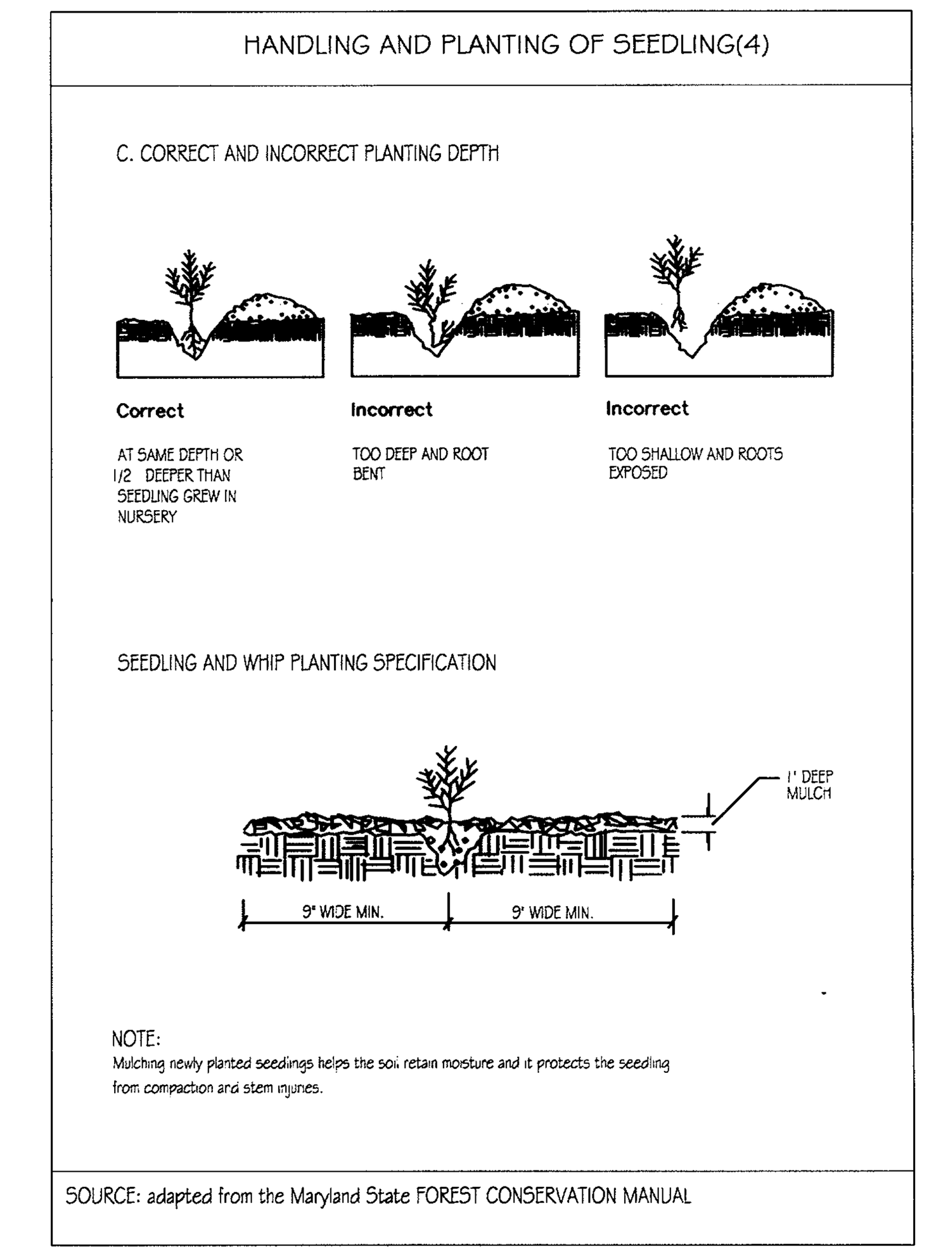
PLANTING REQUIREMENTS
TOTAL REFORESTATION ABOVE THRESHOLD REQUIRED (I x 0.25) 0.01
TOTAL REFORESTATION REQUIRED ((J–I)x 2.00) 3.20
TOTAL AFFORESTATION REQUIRED (E – G) 0.00
TOTAL AFFORESTATION AND REFORESTATION REQUIRED 3.21

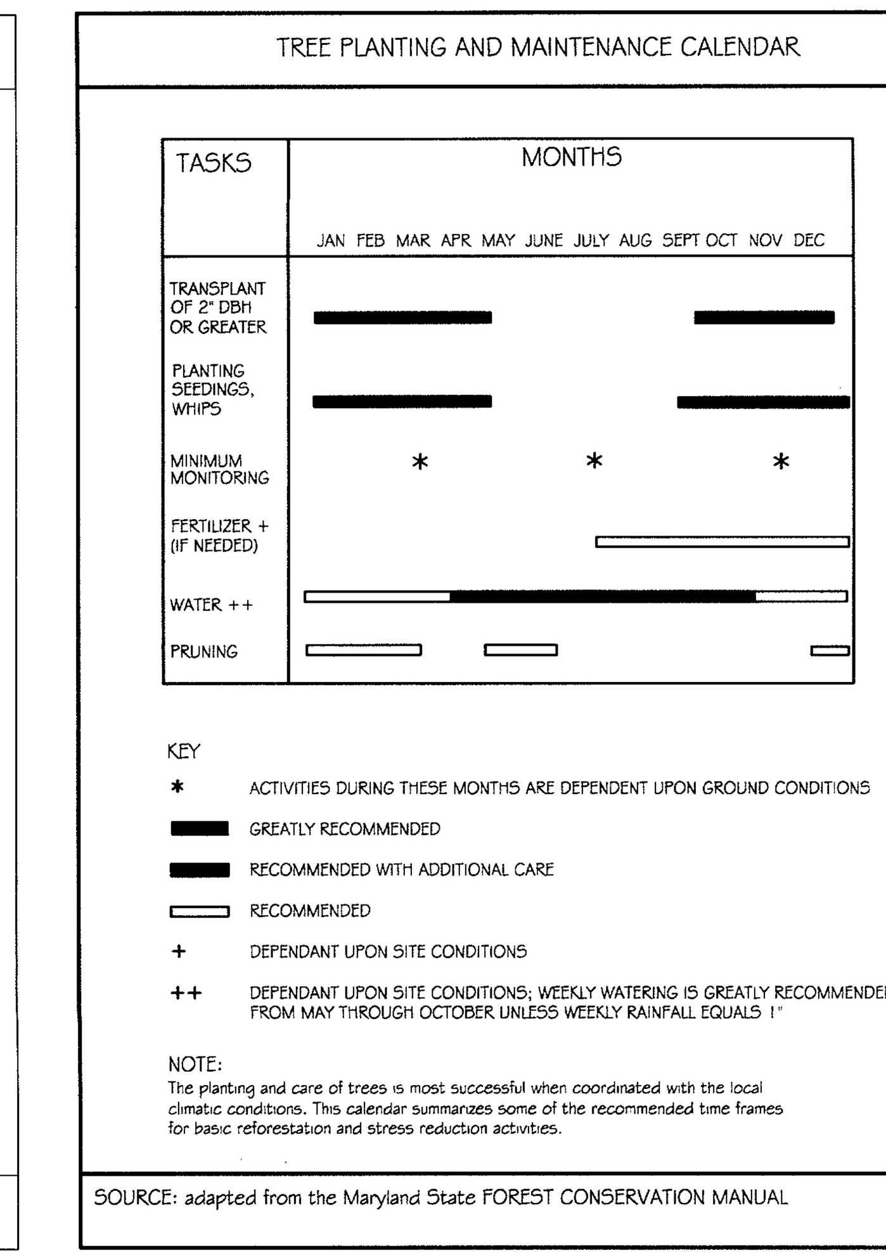
PLANTING TO BE PROVIDED 0.

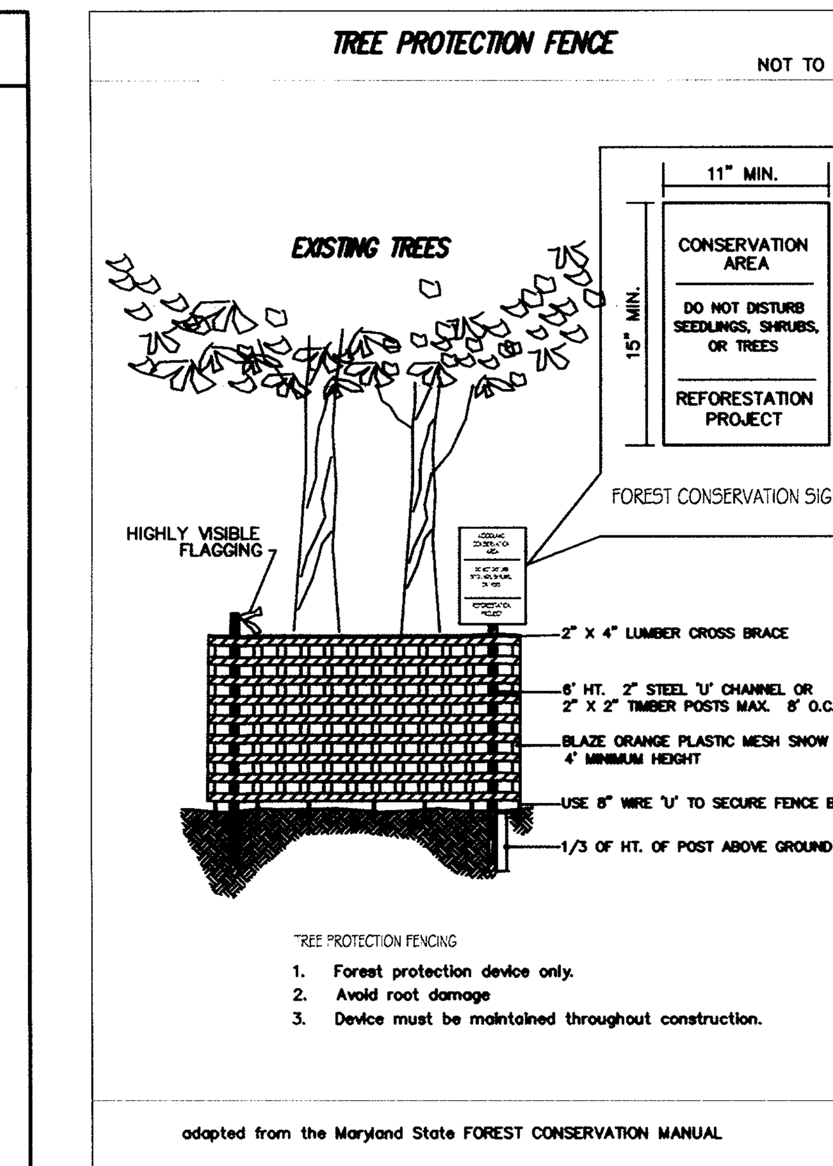
FOREST CONSERVATION PLANTING QUANTITY SCHEDULE					
FOREST PLANTING LOCATION NO.	A (esmt.14)	B (esmt.15)	C (esmt.15)	D (esmt.16)	E (esmt.16)
AREA TO BE PLANTED (IN AC.)	0.21	0.57	0.04	0.04	0.02
BASE QUANTITY OF 2" CAL. TREES REQUIRED (AT 100 TREES/AC.)	21	57	4	4	2
CREDIT FOR LANDSCAPE TREES	N/A	N/A	N/A	N/A	N/A
REQUIRED QUANTITY OF 2" CAL. TREES TO BE PLANTED	21	57	4	4	2

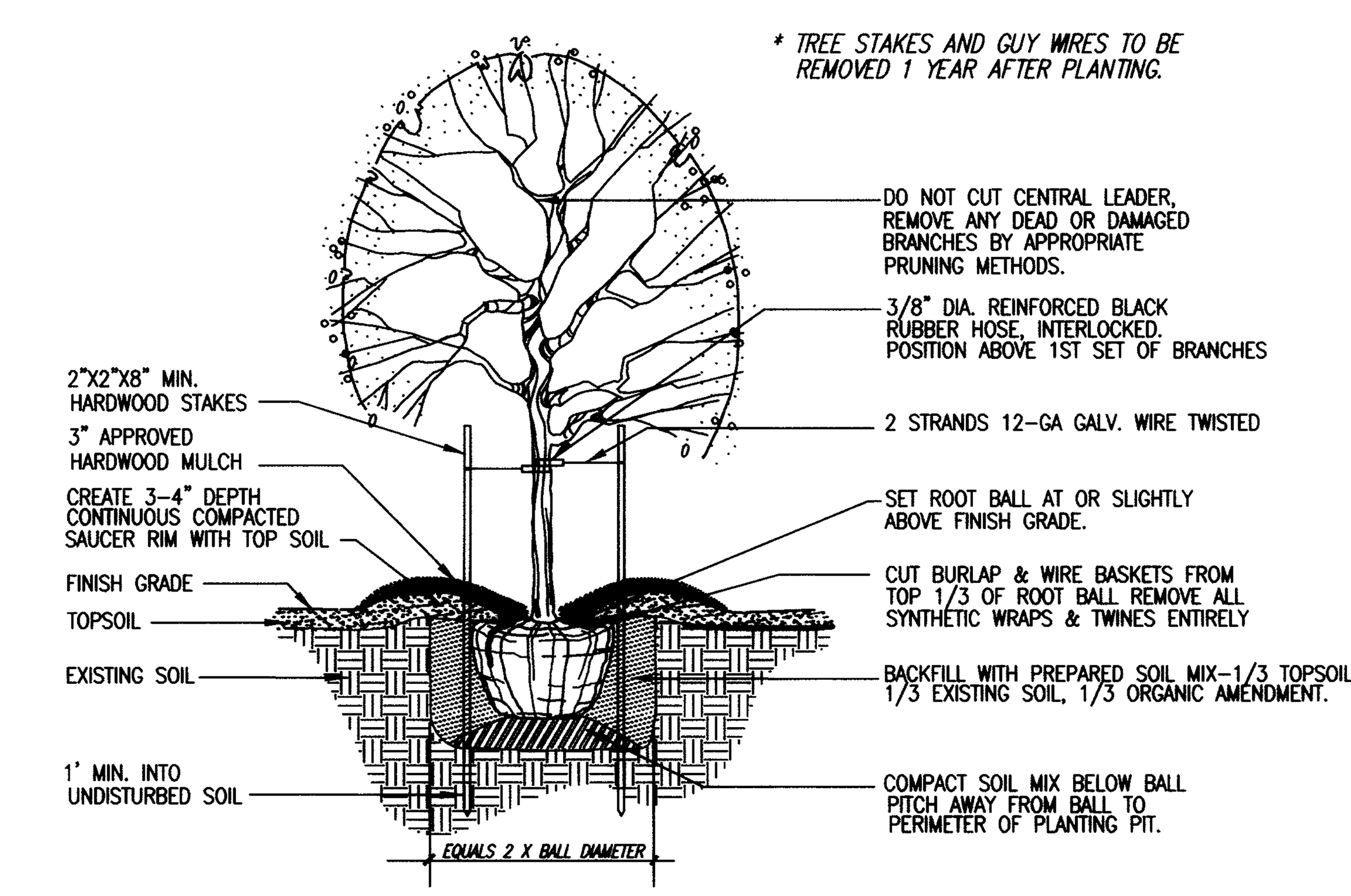
FOREST CONSERVATION PLANT LIST					
PLANT NAME (BOTANICAL/COMMON)	FOREST PLANTING AREA				
	A	B	C	D	E
CORNUS KOUSA/KOUSA DOGWOOD	2	5			
ACER RUBRUM/RED MAPLE	2	5	1	4	2
CERCIS CANADENSIS/EASTERN REDBUD	2	5	1		
LIRIODENDRON TULIPFERA/TULIP TREE	2	5			
PLATANUS OCCIDENTIALIS/ AMERICAN SYCAMORE (PLANETREE)	2	5			
QUERCUS PALUSTRIS/PIN OAK	2	5			
LIQUIDAMBAR STYRACIFLUA/SWEET GUM	2	8			
QUERCUS RUBRUM/RED OAK	2	5			
QUERCUS BICOLOR/SWAMP WHITE OAK	2	5	1		
PINUS STROBUS/WHITE PINE	3	9	1		

NOTES:
1. THE QUANTITY SHOWN ABOVE IS FOR PLANTING WITH 2 1/2" CAL. TREES AT 20' X 20' SPACING. EVERGREEN TREES SHALL BE 6'-8' HT.

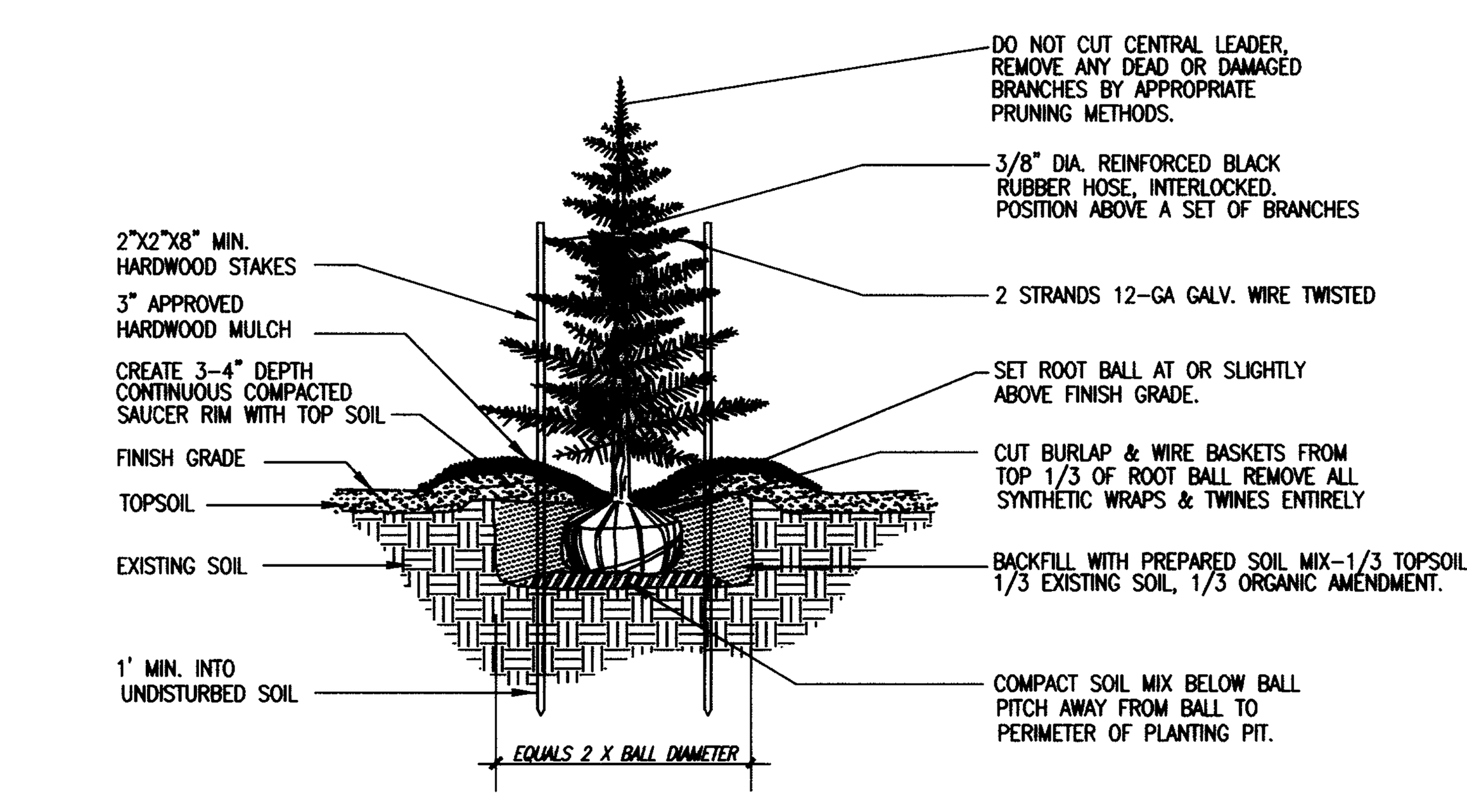








DECIDUOUS TREE PLANTING DETAIL FOR PLANTING MATERIAL UP TO 3 1/2" CALIPER — NTS



EVERGREEN TREE PLANTING DETAIL — NTS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 7/15/05
Chief, Development Engineering Division MK — Date 7/14/05

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DATE	REVISION	BY	APP'R.
2-22-06	△ rev. forest conservation per easement proposed under P-06-05	K.L.F.	

PREPARED FOR:
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ATTN: CHARLIE O'DONOVAN
410-484-8400

FINAL FOREST CONSERVATION DETAILS AND NOTES

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	MXD-3	04001a
DATE	TAX MAP – GRID	SHEET
JUNE, 2005	41–22	30 OF 32

PLANT LIST

SYMBOL		QTY.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	ROOT	COMMENTS
SHADE TREES						
	AR	14	Acer rubrum 'Autumn Flame' Autumn Flame Maple	2 1/2-3" Cal.	B&B	
	QP	14	Quercus palustris Pin Oak	2 1/2-3" Cal.	B&B	
EVERGREEN TREES						
	PS	23	Pinus strobus White Pine	6'-8' Ht.	B&B	
	PO	24	Picea omorika Serbian Spruce	6'-8' Ht.	B&B	

NOTE:
SEE PLAN SHEET 14 AND PROFILE SHEETS 18, 22, AND 25 FOR RIP RAP INFORMATION.

DEVELOPERS' 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. I/We further certify that upon completion of the landscape installation, a letter of notice, accompanied with an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Name — Date 6-22-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/5/05

Chief, Development Engineering Division — Date 7/14/05

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ATTN: CHARLIE O'DONOVAN
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FINAL LANDSCAPE PLAN

MAPLE LAWN FARMS
HILLSIDE DISTRICT - AREA 1

LOTS 1 THROUGH 59, OS LOT 60, COMMON OPEN AREAS 61 & 62, AND NON-BUILDABLE PARCELS 'F' & 'G'
A SUBDIVISION OF PARCELS 129, 205 AND 474 AND A RESUBDIVISION OF PARCEL E, PLAT NO. 16767

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	MXD-3	04001a
DATE	TAX MAP - GRID	SHEET
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F-05-81

PERIMETER PLANTING SCHEDULE – SCHEDULE A

PERIMETER	LAND USE	ADJACENT LAND USE	TYPE OF BUFFER	LINEAR FEET OF ROADWAY FRONTAGE/ 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			HOW REQUIRED BUFFER IS BEING PROVIDED
							SHADE TREES	ORNAMENTAL TREES	EVERGREEN TREES	
EXTERNAL PERIMETER 1	OPEN SPACE	COMMERCIAL	'A' Buffer *	429'	429 L.F. OF EXISTING FOREST	NO	0	0	0	---

* FOLLOWS COMPREHENSIVE SKETCH PLAN GUIDELINE REQUIREMENTS

STORMWATER MANAGEMENT AREA LANDSCAPING – SCHEDULE D

PERIMETER	PROPOSED LAND USE	ADJACENT LAND USE	TYPE OF BUFFER	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 (F-03-90)	ROADWAY	'C' Buffer*	190 L.F.	NO	NO	5	10	5	10	PROVIDED UNDER THIS FINAL PLAN
SWM-2	SWM	ROADWAY	'C'Buffer *	217 L.F.	NO	NO	6	11	7	11	PROVIDED UNDER THIS FINAL PLAN
SWM-3	SWM	RESIDENTIAL	'B'Buffer *	687 L.F.	NO	NO	14	17	16	26	PROVIDED UNDER THIS FINAL PLAN

* FOLLOWS COMPREHENSIVE SKETCH PLAN GUIDELINE REQUIREMENTS

RESIDENTIAL LOT INTERNAL LANDSCAPING CHART

BUILDING TYPE	FRONT YARD		SIDE AND REAR YARD	
	NUMBER OF PLANTS REQUIRED SHADE TREES	SHRUBS	NUMBER OF PLANTS REQUIRED SHADE TREES	SHRUBS
SINGLE FAMILY ATTATCHED	NONE REQUIRED	1:4' OF LOT WIDTH AT BRL	NONE REQUIRED	NONE REQUIRED

NOTES

1. THE BUFFERS SHOWN IN THE SCHEDULES ARE IN ACCORDANCE WITH THE LANDSCAPE MANUAL. ACCORDING TO THE COMPREHENSIVE SKETCH PLAN CRITERIA, THE FOLLOWING ARE THE MINIMUM PLANTING TO BE PROVIDED ALONG A PERIMETER EDGE:
   SHADE TREE: 1:80 LINEAR FEET OF MEASURED PERIMETER EDGE, AND
   SMALL ORNAMENTAL DECIDUOUS TREE: 1:60 LINEAR FEET OF MEASURED PERIMETER EDGE AND
   EVERGREEN TREE: 1:20 LINEAR FEET OF MEASURED PERIMETER EDGE.
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.
3. AFFORESTATION PLANTING SIZE SHALL BE LARGE ENOUGH TO MEET THE LANDSCAPE BUFFERING REQUIREMENT ALONG EXTERNAL PERIMETERS WHERE APPLICABLE.

RESIDENTIAL LANDSCAPE PERIMETER REQUIREMENTS SCHEDULE

RESIDENTIAL LOT LINE	LENGTH OF SIDE PERIMETER	BUFFER REQUIRED	NUMBER OF PLANTS REQUIRED *SHADE TREES	EVERGREEN TREES **SHRUBS	HOW LANDSCAPING WILL BE PROVIDED – DEFER TO SDP –
R-1	95'	PER MAPLE LAWN	PER RESIDENTIAL LOT		
R-2	95'	LANDSCAPE DESIGN	INTERNAL LANDSCAPING		
R-3	95'	CRITERIA	CRITERIA		
R-4	95'				
R-5	100'				
R-6	100'				
R-7	95'				
R-8	95'				
R-9	100'				
R-10	100'				

*Shade trees are not required in the front yard where the building fronts a thoroughfare with street trees. Where there is no thoroughfare (such as an attached green or parking/drive aisle) trees shall be spaced to conform with the spacing of the adjoining thoroughfare and not less than 40' on center.

**Shrubs are not required where the building fronts a thoroughfare and the sidewalk abuts the storefront. Where the sidewalk does not continuously abut the storefront, 1 shrub per 4 linear feet of storefront shall be required.

Projected Bond Requirement – Surety for Schedule A:

Schedule 'A' Number of Shade Trees for bonding:	0	x $300	= $	0.00
Schedule 'A' Number of Evergreen and Ornamental Trees for bonding:	0	x $150	= $	0.00
Schedule 'A' Number of Shrubs for bonding:	0	x $ 30	= $	0.00
Schedule 'D' Number of required Shade Trees for bonding:	25	x $300	= $	7,500.00
Schedule 'D' Number of required Evergreen Trees for bonding:	38	x $150	= $	5,700.00
			$	13,200.00

COMMENTS:

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 7-6-05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 7/5/05

Chief, Development Engineering Division MK — Date 7/14/05

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