FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLAN

HOGG PROPERTY

BUILDABLE LOTS 1 - 22, OPEN SPACE LOTS 23 - 26

ZONING: R-ED

TAX MAP No. 25 GRID No. 14 PARCEL No. 64

SHEET INDEX

ROADWAY INFORMATION CHART

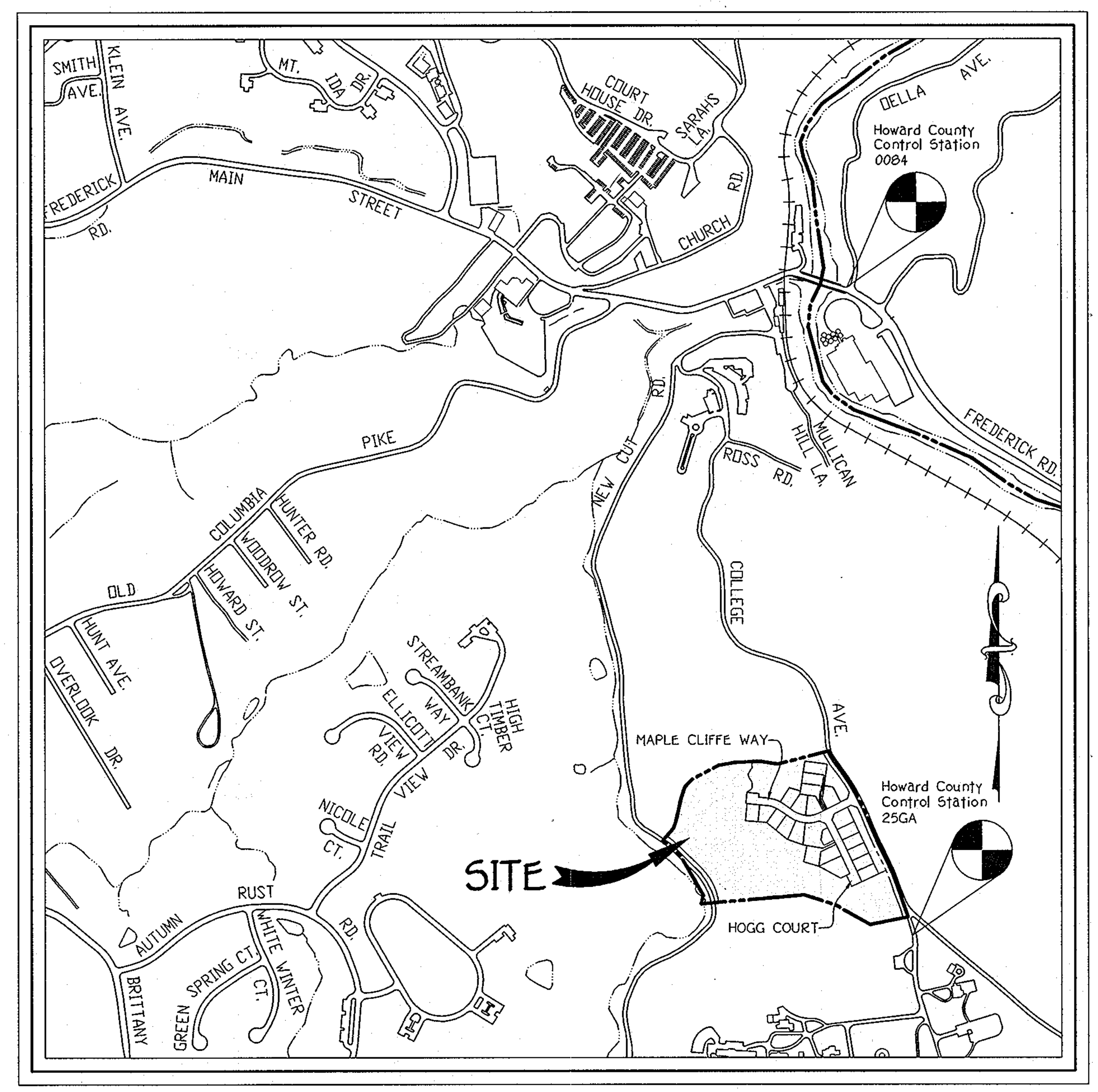
ROAD NAME	CLASSIFICATION	DESIGN SPEED	R/W WIDTH
MAPLE CLIFFE WAY	PUBLIC ACCESS PLACE	25 M.P.H.	40'
HOGG COURT	PUBLIC ACCESS PLACE	25 M.P.H.	40'

TRAFFIC CONTROL SIGNS

ROAD NAME	CENTERLINE STA.	OFFSET	POSTED SIGN	SIGN CODE
MAPLE CLIFFE WAY	0+37	14' L	STOP	R1-1
MAPLE CLIFFE WAY	1+00	14' R	SPEED LIMIT 25	R2-1
HOGG COURT	0+25	12' L	STOP	R1-1

STREET LIGHT CHART

STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
MAPLE CLIFFE WAY	C.L. STA. 0+41	26' RT.	150-WATT "premier" H.P.S. VAPOR FIXTURE, POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
MAPLE CLIFFE WAY	C.L. STA. 2+20	17' LT.	100-WATT "premier" H.P.S. VAPOR FIXTURE, POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
MAPLE CLIFFE WAY	C.L. STA. 3+58	13' LT.	100-WATT "premier" H.P.S. VAPOR FIXTURE, POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
MAPLE CLIFFE WAY	C.L. STA. 4+97	13' LT.	100-WATT "premier" H.P.S. VAPOR FIXTURE, POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
MAPLE CLIFFE WAY	C.L. STA. 6+46	17' RT.	100-WATT "premier" H.P.S. VAPOR FIXTURE, POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
HOGG COURT	C.L. STA. 3+87	18' RT.	100-WATT "premier" H.P.S. VAPOR FIXTURE, POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.



VICINITY MAP

SCALE: 1" = 600'

SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[illegible] BB 8/17/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[illegible] A.S. 8/17/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[illegible] (ACTING) HS 8/3/06
CHIEF, BUREAU OF HIGHWAYS DATE

REVISIONS

NO.	DESCRIPTION	DATE

GENERAL NOTES

1. SUBJECT PROPERTY ZONED R-ED Per 02/02/04 COMPREHENSIVE ZONING PLAN.
2. ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS ARE APPROVED.
3. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, DIVISION OF CONSTRUCTION INSPECTION AT 410-313-1880 AT LEAST (5) WORKING DAYS. PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.
5. LOCATION: COLLEGE AVENUE, EAST OF NEW CUT ROAD. TAX MAP NO. 25, PARCEL NO. 64, GRID NO. 14
6. TOPOGRAPHIC CONTOURS BASED ON WINGS AERIAL MAPPING, INC. FLOWN SURVEY DATED MARCH 25, 1995 AND SUPPLEMENTED WITH FIELD RUN TOPOGRAPHY BY FCC DATED AUGUST 2005.
7. PROPERTY IS LOCATED WITHIN METROPOLITAN DISTRICT. PUBLIC WATER AND SEWER SHALL BE UTILIZED WITHIN THIS DEVELOPMENT.
8. EXISTING UTILITIES SHOWN HEREON ARE TAKEN FROM CURRENT HOWARD COUNTY CONTRACT DRAWINGS.
   a. EXISTING WATER CONTRACT Nos. 134 - W
   b. EXISTING SEWER CONTRACT NO. 661 - W & S
9. THIS PLAN IS IN COMPLIANCE WITH THE FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THIS PROJECT IS GRANDFATHERED TO THE FIFTH EDITION OF THE SUBDIVISION REGULATIONS BECAUSE THE PRELIMINARY EQUIVALENT SKETCH PLAN SP-04-10 WAS IN PROGRESS AND APPROVED ON JUNE 16, 2005, WHICH IS PRIOR TO MAY 22, 2003, THE EFFECTIVE DATE OF THE AMENDED FIFTH EDITION. THE PLAN IS SUBJECT TO THE 2003 ZONING REGULATIONS AS AMENDED BY CB 50-2001, EFFECTIVE 1-8-02, BECAUSE SP-04-10 WAS TECHNICALLY COMPLETE ON JANUARY 31, 2005. AFTER THE 1-8-02 EFFECTIVE DATE OF CB-50-2001.
10. THIS HORIZONTAL AND VERTICAL DATUM SHOWN ARE BASED ON THE FOLLOWING NAD '83. HOWARD COUNTY CONTROL STATION Nos. 25GA AND 0084.
    ✓Sta. 25GA N 176626.9769 (meters), E 417933.9994 (meters)
    ✓Sta. 0084 N 177747.146 (meters, E 417802.381 (meters)
11. a. GROSS AREA OF TRACT = 17.98 AC.±
    b. AREA OF FLOODPLAIN = 0.00 AC.±
    c. AREA OF 25% OR GREATER SLOPES = 6.45 AC.±
    d. AREA OF WETLANDS = 0.19 AC.±
    e. NET AREA OF TRACT = (17.98 - 0.00 - 6.45) = 11.53 AC.±
12. a. AREA OF PROPOSED ROAD R/W = 2.167 AC.±
13. a. AREA OF PROPOSED BUILDABLE LOTS = 3.829 AC.±
    b. AREA OF PROPOSED OPEN SPACE LOTS = 11.986 AC.±
14. NUMBER OF LOTS PROPOSED:
    a. BUILDABLE = 22
    b. OPEN SPACE LOTS = 4 (3 H.O.A. OWNED AND MAINTAINED & 1 HOWARD COUNTY OWNED)
15. OPEN SPACE TABULATION:
    a. GROSS AREA OF TRACT = 17.98 AC.±
    REQUIRED OPEN SPACE = 8.99 AC. (50% FOR R-ED ZONE)
    PROVIDED OPEN SPACE = 11.986 AC.± (11.891 AC. CREDITED O.S. AND 0.095 AC. NON-CREDITED O.S.)
    b. RECREATIONAL OPEN SPACE REQUIRED = 300 SQ.FT. x 22 UNITS = 6,600 SQ.FT. (300 SQ.FT. PER UNIT)
    c. RECREATIONAL OPEN SPACE PROVIDED = 6,607 SQ.FT. (OPEN SPACE LOT 23)
16. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE IS TO BE PROVIDED AT THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD RIGHT-OF-WAY AND NOT ONTO THE FLAG OR PIPESTEM DRIVEWAY.
17. DRIVEWAY (S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
    A) WIDTH - 12 FEET (14 FEET SERVING MORE THAN ONE RESIDENCE)
    B) SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING
    C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45 FOOT TURNING RADIUS
    D) STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING)
    E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
    F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
    G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE
18. PRIOR HOWARD COUNTY CASE NUMBERS WITH THIS PROJECT: SP-04-10
19. ON MAY 13, 2005 THE HOWARD COUNTY PLANNING BOARD SIGNED THE DECISION AND ORDER GRANTING APPROVAL FOR THIS PLAN.
20. A LANDSCAPE SURETY ASSOCIATED WITH PERIMETER AND STORMWATER MANAGEMENT LANDSCAPING FOR 28 SHADE TREES, 35 EVERGREEN TREES AND 14 SHRUBS IN THE AMOUNT OF $14,070.00 WILL BE PROVIDED IN THE DEVELOPER'S AGREEMENT.
21. A WAIVER TO DESIGN MANUAL, VOLUME III, SECTION 2.5.2.H TABLE 2.17 WHICH REQUIRES THAT THE ALL PROPOSED ROADS 38. HAVE ADEQUATE INTERSECTION SIGHT DISTANCE. APPROVAL WAS GRANTED JANUARY 6, 2005.
22. SOILS INFORMATION TAKEN FROM SOIL MAP No. 20, SOIL SURVEY, HOWARD COUNTY, MARYLAND, JULY, 1968 ISSUE.
23. THE EXISTING DWELLING (CIRCA 1912) LOCATED ON PROPOSED LOT 10 IS TO REMAIN.
24. BOUNDARY OUTLINE BASED ON FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. DATED JUNE, 2002.
25. THERE ARE AREAS OF STEEP SLOPES LOCATED ON THIS PROPERTY AS DEFINED BY THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.116.b.
26. STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND MARYLAND 378 SPECIFICATIONS. RECHARGE VOLUME WILL BE PROVIDED THROUGH THE USE OF A DRY SWALE. WATER QUALITY AND CHANNEL PROTECTION VOLUME WILL BE PROVIDED BY A MICROPOOL EXTENDED DETENTION POND. OVERBANK FLOOD PROTECTION VOLUME AND EXTREME FLOOD VOLUME ARE NOT REQUIRED FOR THIS SITE. THE STORMWATER MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY HOMEOWNER'S ASSOCIATION.
27. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
28. THE ADJACENT FLOODPLAIN STUDY ALONG NEW CUT ROAD FOR THIS PROJECT IS THE EXISTING TIBER BRANCH CAPITAL PROJECT C-4-0119.
29. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE MARS GROUP DATED APRIL, 2003 AND APPROVED UNDER SP-04-010.
30. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY 9.17 AC. OF ON-SITE RETENTION WHICH IS SUFFICIENT TO MEET AND EXCEED THE BREAK EVEN POINT OF 5.1 ACRES OF RETENTION. EXCESS FOREST RETENTION MAY NOT BE CREDITED TO ANOTHER PROJECT. THE TOTAL SURETY AMOUNT (399,445.2 SQ.FT. x 0.20/SQ.FT. = $79,889.00) WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT.
31. THE FOREST STAND DELINEATION AND WETLAND DELINEATION FOR THIS PROJECT WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED FEBRUARY, 2004.
32. THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLIS-CARNES ENGINEERING ASSOC., INC. DATED JANUARY, 2004.
33. NO CEMETERIES EXIST WITHIN THIS SUBDIVISION.
34. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAM OR THEIR REQUIRED BUFFERS
35. A WAIVER TO DESIGN MANUAL, VOLUME III, SECTION 2.1.1.A. TABLE 2.01 WHICH REQUIRES THAT THE PROPOSED ROADS FOR THIS DEVELOPMENT BE BUILT TO THE PUBLIC ACCESS PLACE CRITERIA WAS DENIED ON APRIL 5, 2004 BY THE DEVELOPMENT ENGINEERING DIVISION.
36. "SIGN POSTS: 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."
37. STREET LIGHTS WILL BE REQUIRED IN THIS DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL. STREET LIGHT PLACEMENT AND TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." THE JUNE 1993 POLICY INCLUDES GUIDELINES FOR LATERAL AND LONGITUDINAL PLACEMENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN THE STREET LIGHT AND ANY TREE.
38. COLLEGE AVENUE IS A SCENIC ROAD. AS PART OF THE PRELIMINARY EQUIVALENT SKETCH PLAN (SP 04-10) PROCESS THE IMPACT OF THIS PROPOSED DEVELOPMENT TO COLLEGE AVENUE WAS DETERMINED TO BE ADEQUATE AND THE SCENIC ROAD STUDY WAS APPROVED.
39. ALL FILL AREAS SHALL BE COMPACTED TO A 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH AASHTO T-180 STANDARDS.

OWNER/DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY

STATE OF MARYLAND
ALDO MICHAEL VITUCCI
REGISTERED PROFESSIONAL ENGINEER

[illegible] 6-8-06
ALDO M. VITUCCI DATE

STATE OF MARYLAND
PROFESSIONAL ENGINEER
AS BUILT 12/12/12

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

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TITLE SHEET
HOGG PROPERTY
LOTS 1 - 22, OPEN SPACE LOTS 23 - 26
ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 8, 2006
SHEET 1 OF 17

F 06-109
AS BUILT

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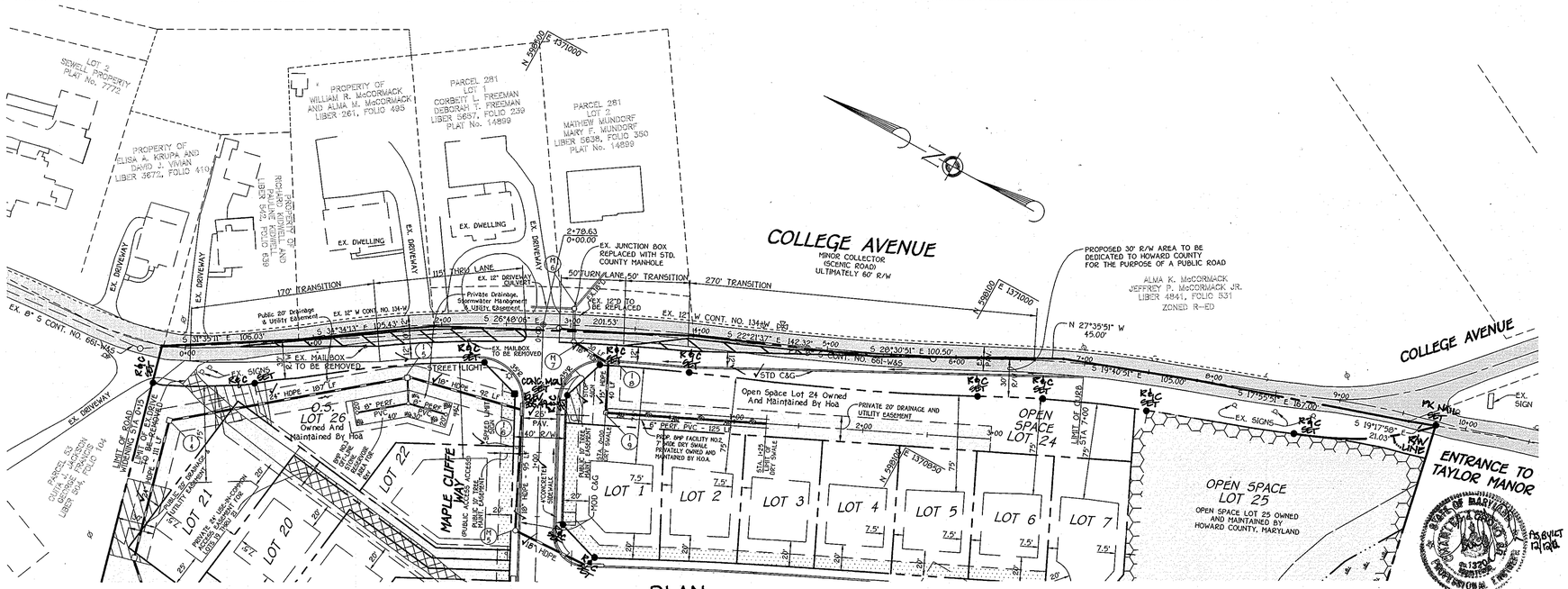
LEGEND

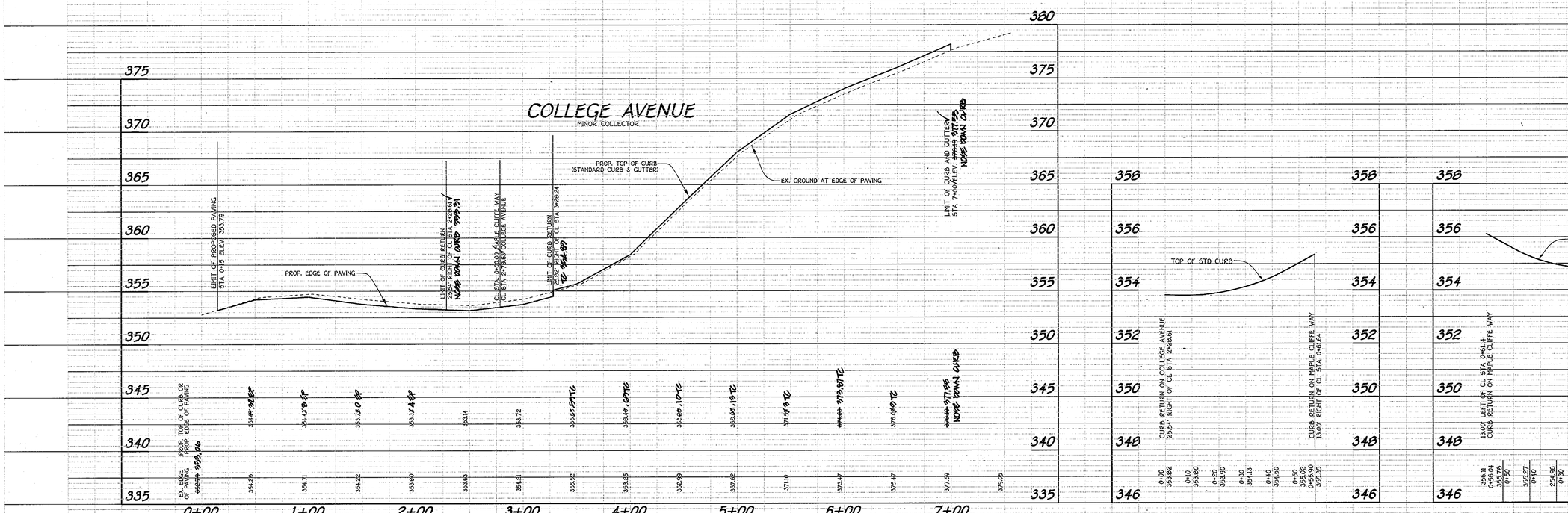
DENOTES EXISTING DRIVEWAY TO BE REMOVED

DENOTES NON-CREDIT OPEN SPACE



PLAN

SCALE: 1" = 50'



PROFILE

SCALE: HOR. : 1" = 50'
VER. : 1" = 5'

CURB RETURN PROFILES

SCALE: HOR. : 1" = 20'
VER. : 1" = 2'

NO.	DESCRIPTION	DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/11/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/11/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 8-14-06

STATE OF MARYLAND — ALBERT MICHAEL VITKUS — No. 13204 — REGISTERED PROFESSIONAL ENGINEER — 6-8-06

AS BUILT 12/12/08

HOGG PROPERTY

LOTS 1 - 22, OPEN SPACE LOTS 23 - 26

ZONED: R-ED

TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64

SECOND ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

COLLEGE AVENUE WIDENING

PLAN AND PROFILE

OWNER/DEVELOPER

DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY

SCALE: AS SHOWN	DATE: JUNE 8, 2006	DWG. NO. 2 OF 17
DES. J.C.L.	DRN. J.C.L.	CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

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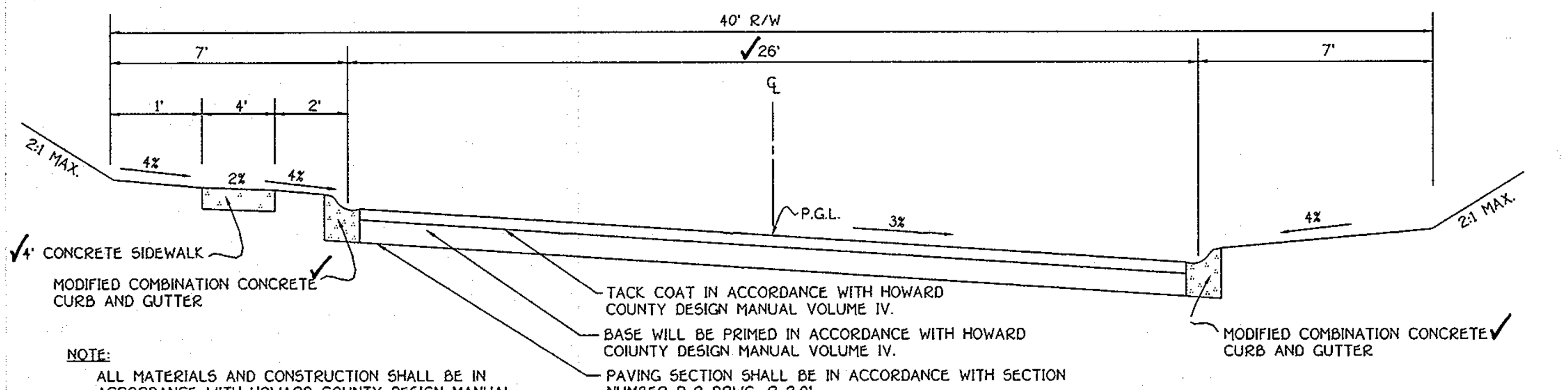


NOTE:
ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.

TYPICAL ROADWAY SECTION

NO SCALE

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS	R/W	PAVING SECTION
HOGG COURT	PUBLIC ACCESS PLACE	25 M.P.H.	R-ED	0+00 TO 3+88 ✓	40'	P-2
MAPLE CLIFFE WAY	PUBLIC ACCESS PLACE	25 M.P.H.	R-ED	0+00 TO 6+46.50 ✓	40'	P-2

STATE OF MARYLAND
[illegible] MICHAEL VITTI[illegible]
NO. 20742
REGISTERED
PROFESSIONAL ENGINEER
6-8-06

REVISIONS

NO.	DESCRIPTION	DATE

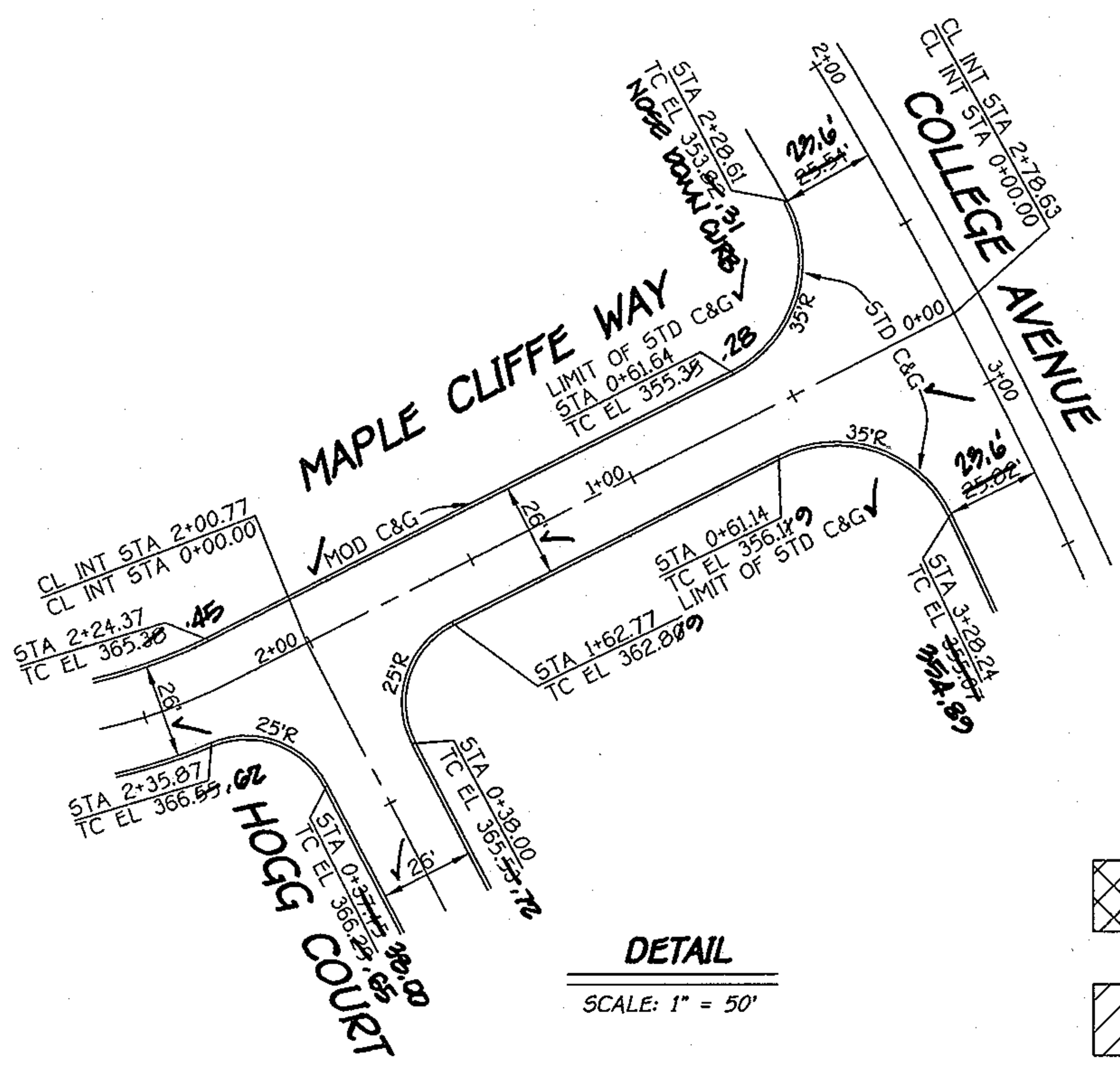
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kent Sheubrooks /for CH BB — 8/17/06
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[illegible] A.S. — 8/17/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

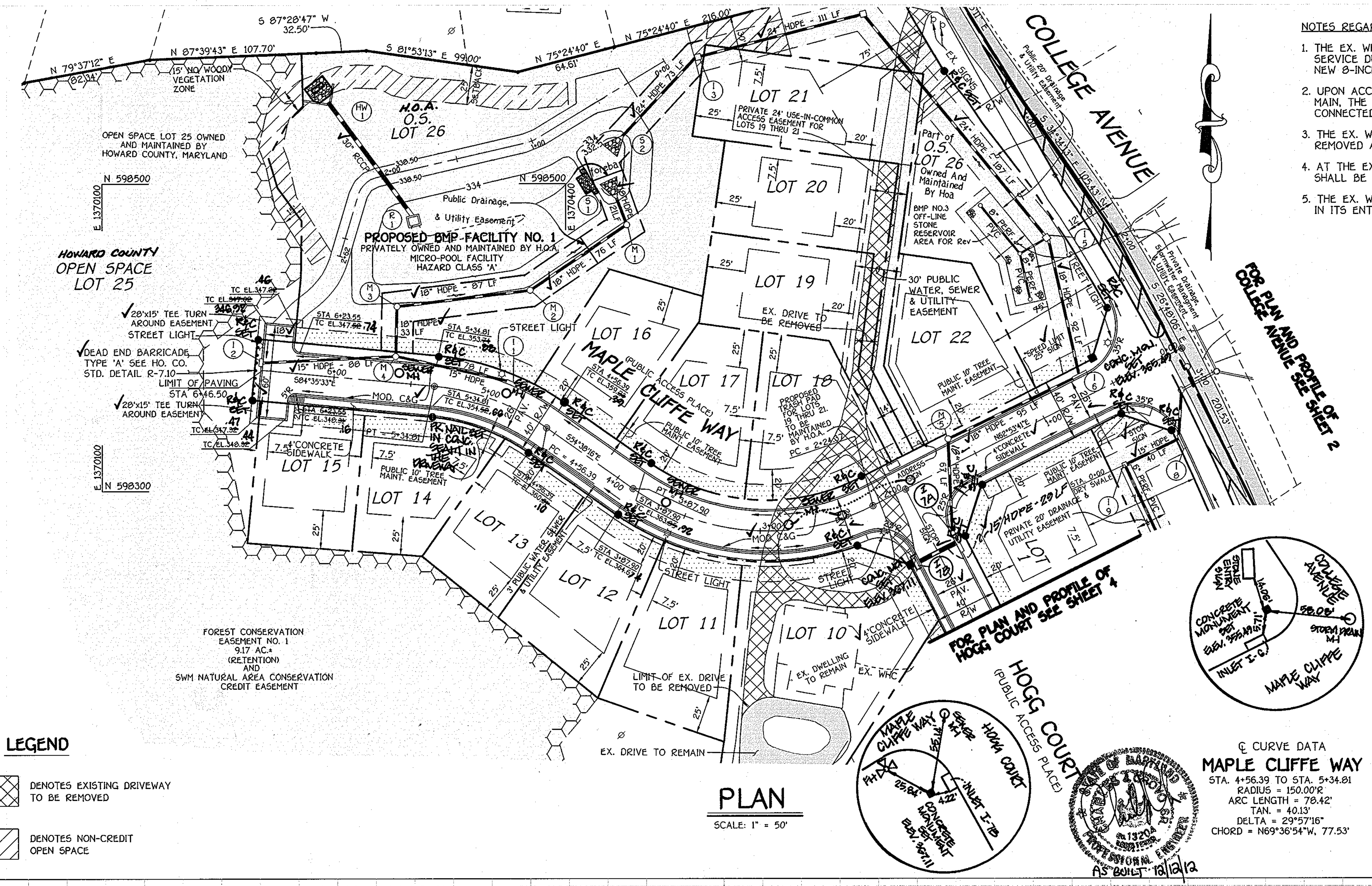
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[illegible] HS — 8-14-06
CHIEF, BUREAU OF HIGHWAYS — DATE



DETAIL

SCALE: 1" = 50'



LEGEND

▨ DENOTES EXISTING DRIVEWAY TO BE REMOVED

▨ DENOTES NON-CREDIT OPEN SPACE

PLAN

SCALE: 1" = 50'

NOTES REGARDING EX. WHC TO EX. DWELLING (TO REMAIN) ON LOT 10

1. THE EX. WHC TO THE EX. DWELLING ON LOT 10 MUST REMAIN IN SERVICE DURING INSTALLATION, TESTING AND CHLORINATION OF THE NEW 8-INCH WATER MAIN.
2. UPON ACCEPTANCE & PLACING IN SERVICE OF THE NEW 8-INCH WATER MAIN, THE EX. WHC FOR THE EX. DWELLING ON LOT 10 SHALL BE CONNECTED TO THE NEW OUTSIDE METER SETTING.
3. THE EX. WATER METER FOR THE EX. DWELLING ON LOT 10 SHALL BE REMOVED AND RETURNED TO THE BUREAU OF UTILITIES.
4. AT THE EX. 12-INCH WATER MAIN, THE EX. CORPORATION STOP ASSEMBLY SHALL BE REMOVED & A PLUG INSERTED.
5. THE EX. WHC FOR THE EX. DWELLING ON LOT 10 SHALL BE REMOVED IN ITS ENTIRETY.

℄ CURVE DATA
HOGG COURT
STA. 0+83.57TO STA. 1+95.01
RADIUS = 3000.00'R
ARC LENGTH = 111.44'
TAN. = 55.72'
DELTA = 02°07'42"
CHORD = N26°02'28"W, 111.43'

℄ CURVE DATA
MAPLE CLIFFE WAY
STA. 2+24.37 TO STA. 3+87.90
RADIUS = 150.00'R
ARC LENGTH = 163.54'
TAN. = 90.96'
DELTA = 62°28'03"
CHORD = S85°52'18"E, 155.56'

℄ CURVE DATA
MAPLE CLIFFE WAY
STA. 4+56.39 TO STA. 5+34.81
RADIUS = 150.00'R
ARC LENGTH = 78.42'
TAN. = 40.13'
DELTA = 29°57'16"
CHORD = N69°36'54"W, 77.53'

STATE OF MARYLAND
[illegible]
NO. 13204
REGISTERED
PROFESSIONAL ENGINEER
AS BUILT 12/12/12

HOGG PROPERTY

LOTS 1 – 22, OPEN SPACE LOTS 23 – 26

ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

MAPLE CLIFFE WAY

PLAN AND PROFILE

OWNER/DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY

SCALE: AS SHOWN	DATE: JUNE 8, 2006	DWG. NO. 3 OF 17
DES. J.C.L.	DRN. J.C.L.	CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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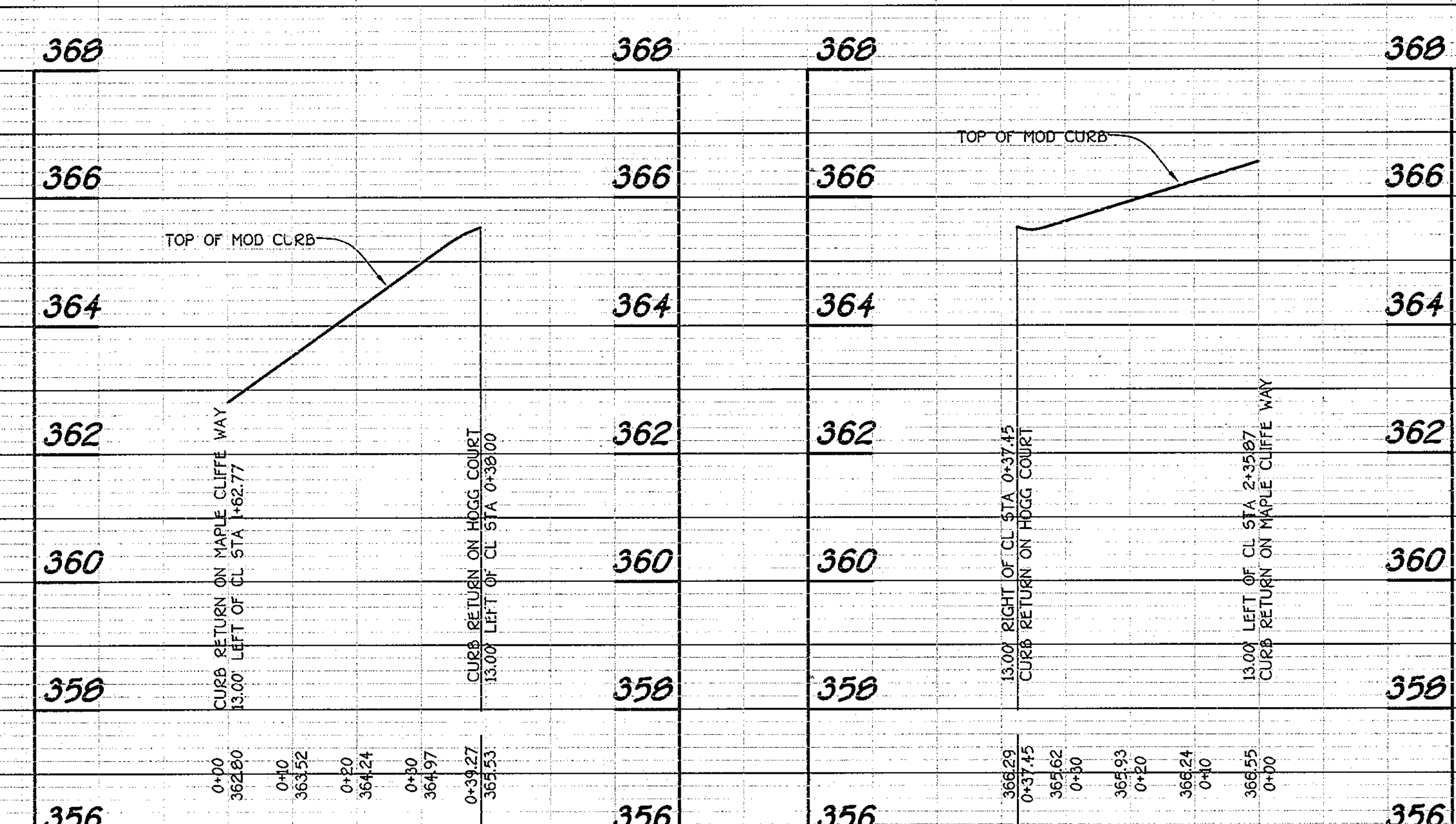
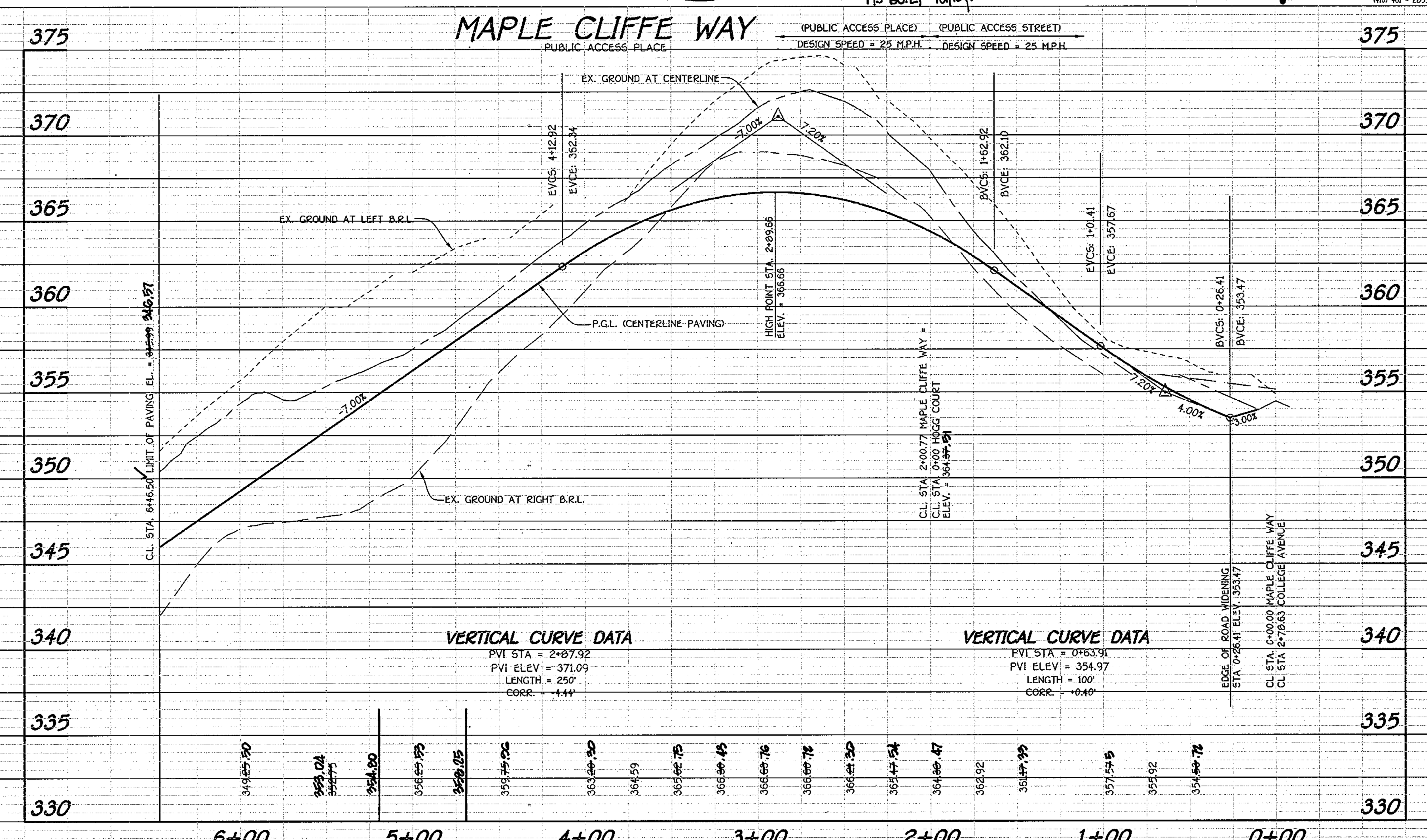


CURB RETURN PROFILES

SCALE: HOR. : 1" = 20'
VER. : 1" = 2'



PROFILE

SCALE: HOR. : 1" = 50'
VER. : 1" = 5'

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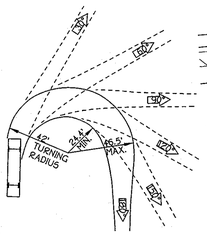
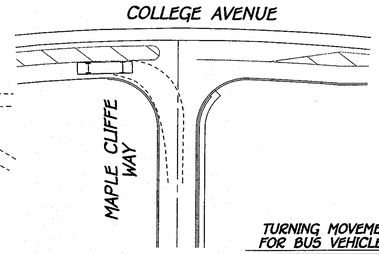
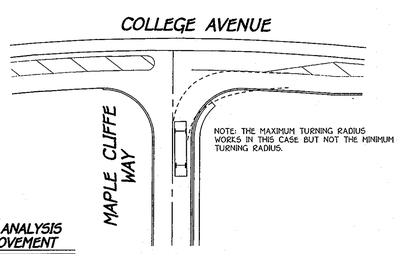


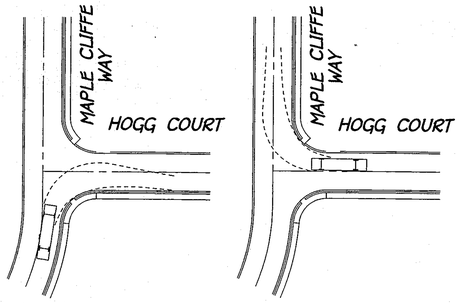


TURNING MOVEMENT ANALYSIS FOR BUS VEHICLE MOVEMENT

SCALE: 1" = 50'



NOTE: THE MAXIMUM TURNING RADIUS WORKS IN THIS CASE BUT NOT THE MINIMUM TURNING RADIUS.



TURNING MOVEMENT ANALYSIS FOR BUS VEHICLE MOVEMENT

SCALE: 1" = 50'

REVISIONS

NO.	DESCRIPTION	DATE

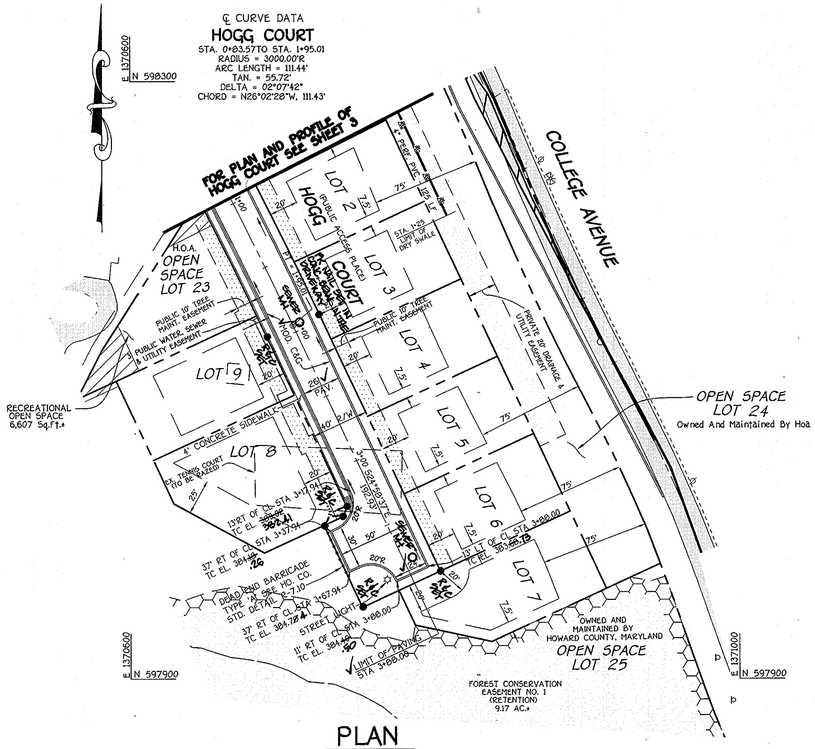
APPROVED DEPARTMENT OF PLANNING AND ZONING

DIVISION OF LAND DEVELOPMENT & SUBDIVISION — DATE 8/17/06

DIRECTOR OF PLANNING AND ZONING — DATE 8/17/06

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 8-14-06



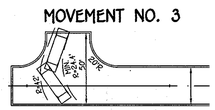
PLAN

SCALE: 1" = 50'

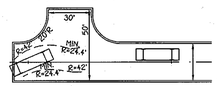
LEGEND

DENOTES NON-CREDIT OPEN SPACE

MOVEMENT NO. 3



MOVEMENT NO. 1



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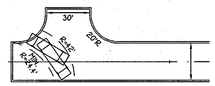
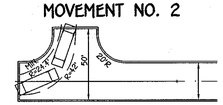


MOVEMENT NO. 2



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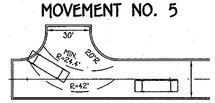


TURNING MOVEMENT ANALYSIS FOR BUS VEHICLE MOVEMENT @ HOGG COURT

SCALE: 1" = 50'

STATE OF MARYLAND — MICHAEL VITON — No. 21712 — REGISTERED PROFESSIONAL ENGINEER

AS BUILT 12/12/12

STATE OF MARYLAND — MICHAEL VITON — No. 21712 — REGISTERED PROFESSIONAL ENGINEER

6-9-08

HOGG PROPERTY

LOTS 1 - 22, OPEN SPACE LOTS 23 - 26

ZONED: R-ED

TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64

SECOND ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

HOGG COURT

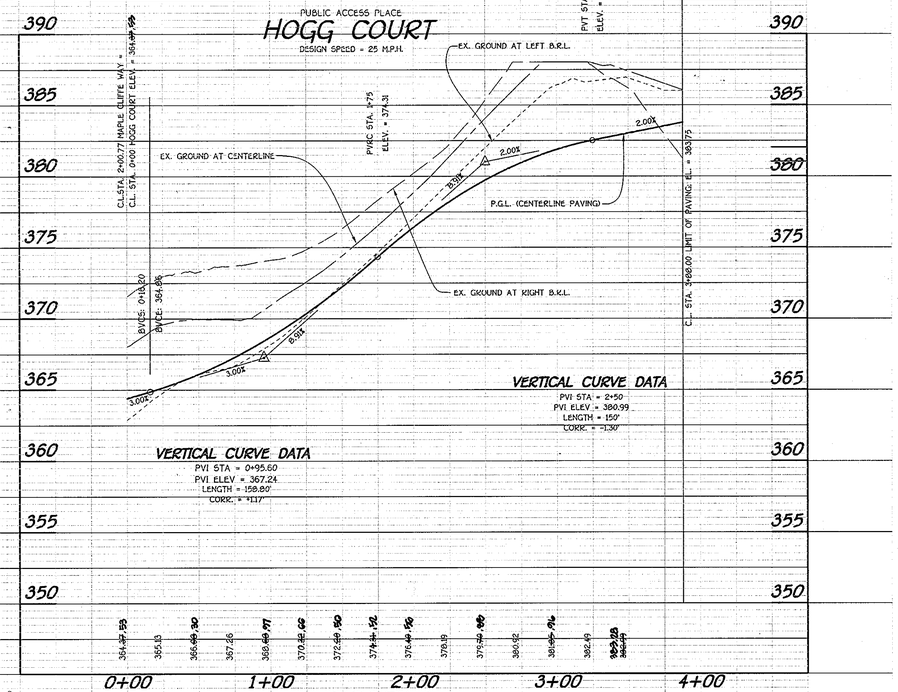
PLAN AND PROFILE

OWNER/DEVELOPER

DORSEY FAMILY HOMES
10717b BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY

SCALE: AS SHOWN	DATE: JUNE 8, 2006	DWG. NO. 4 OF 17
DES. J.C.L.	DRN. J.C.L.	CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855



VERTICAL CURVE DATA
PVI STA. = 0+95.60
PVI ELEV. = 367.24
LENGTH = 158.80'
CORR. = +1.17

VERTICAL CURVE DATA
PVI STA. = 2+50
PVI ELEV. = 380.99
LENGTH = 150'
CORR. = -1.30'

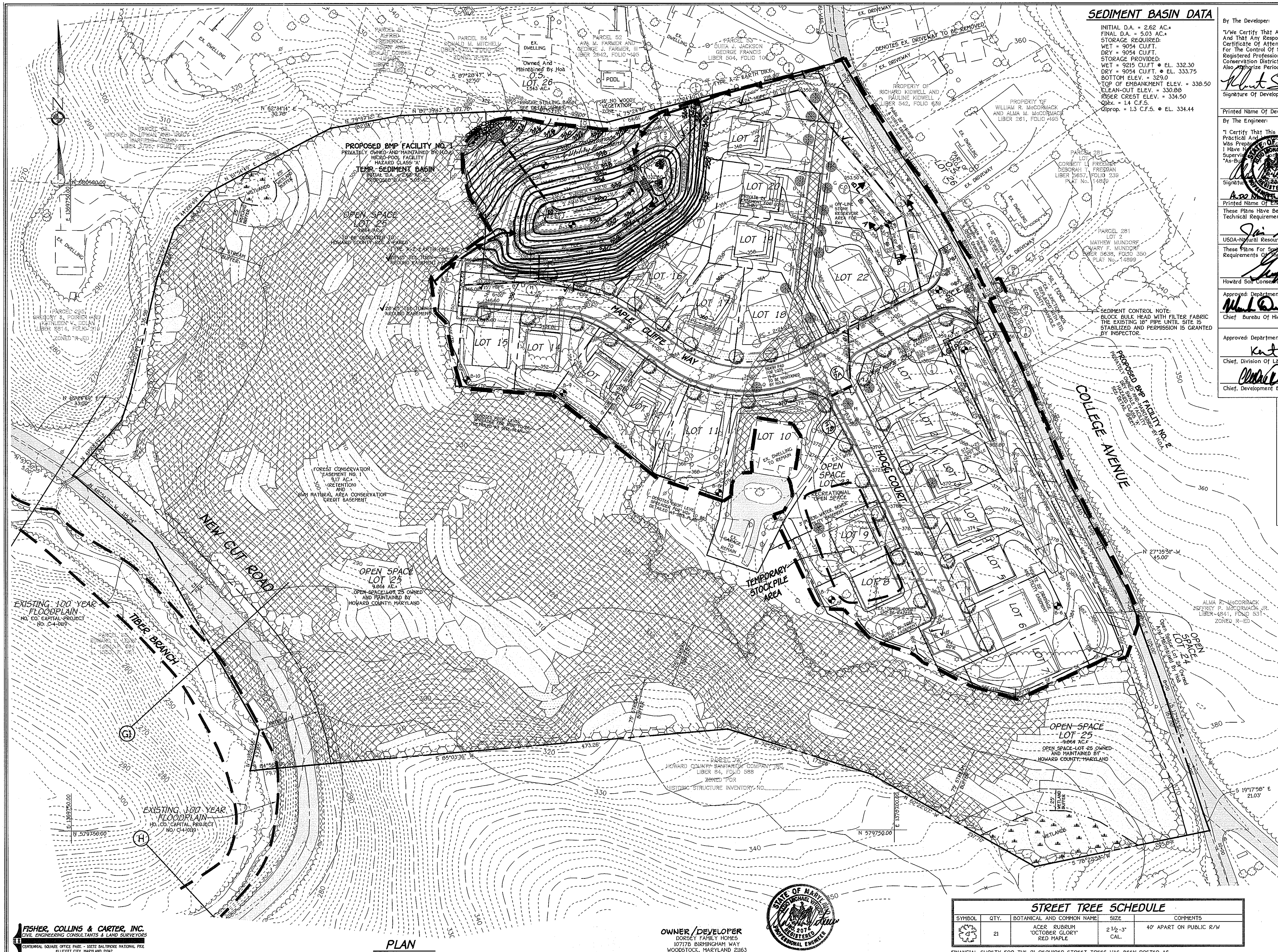
PROFILE

SCALE: HOR. : 1" = 50'
VER. : 1" = 5'

F-06-109

AS BUILT

K:\SDSK\PROJ\30772\dwg\FINAL\S30772 SHEET 4 ROAD PLAN AND PROFILE.dwg, 6/6/2008 9:47:05 AM, 1:1



SEDIMENT BASIN DATA

INITIAL D.A. = 2.62 AC.±
FINAL D.A. = 5.03 AC.±
STORAGE REQUIRED:
WET = 9054 CU.FT.
DRY = 9054 CU.FT.
STORAGE PROVIDED:
WET = 9215 CU.FT @ EL. 332.30
DRY = 9054 CU.FT. @ EL. 333.75
BOTTOM ELEV. = 329.0
TOP OF EMBANKMENT ELEV. = 338.50
CLEAN-OUT ELEV. = 330.88
RISER CREST ELEV. = 334.50
Q1ex. = 1.4 C.F.S.
Q1prop. = 1.3 C.F.S. @ EL. 334.44

By The Developer:

"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 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 — Date 6-6-06

Printed Name Of Developer

By The Engineer:

"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 Of Engineer — Date 6-8-06

Printed Name Of Engineer: Aldo Michael Viticchié

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.

USDA-Natural Resources Conservation Service — Date 6/19/06

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 6/19/06

Approved: Department Of Public Works

Chief Bureau Of Highways (ACTING) HS — Date 8/3/06

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development (for CH) BB — Date 8/17/06

Chief, Development Engineering Division A.S. — Date 8/17/06

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

Signature — P.E. No. 13204 — Date: 12/12/12

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

STATE OF MARYLAND — CHARLES A. CROVO JR. — No. 13204 — PROFESSIONAL ENGINEER

AS BUILT 12/12/12

LEGEND

Symbol	Description
— SSF — SSF — SSF —	SUPER-SILT FENCE
—TP—TP—TP—	TREE PROTECTION FENCE
I.P.	INLET PROTECTION
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
A-2	EARTH DIKE
	LIMIT OF DISTURBANCE
G.I.P.	GABION INFLOW PROTECTION
R.P.S.	REMOVABLE PUMPING STATION
	SWM NATURAL AREA CONSERVATION CREDIT EASEMENT (FOREST RETENTION)
	DENOTES EXISTING DRIVEWAY TO BE REMOVED
E.C.M.	EROSION CONTROL MATTING

STREET TREE SCHEDULE

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
	21	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2-3" CAL.	40' APART ON PUBLIC R/W

FINANCIAL SURETY FOR THE 21 REQUIRED STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $6,300.00.

PLAN

SCALE: 1" = 50'

FISHER, COLLINS & CARTER, INC.
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CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

OWNER/DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY

STATE OF MARYLAND — ALDO MICHAEL VITICCHIÉ — No. 20747 — REGISTERED PROFESSIONAL ENGINEER

STREET TREE, GRADING AND SEDIMENT CONTROL PLAN

HOGG PROPERTY

LOTS 1 - 22, OPEN SPACE LOTS 23 - 26
ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 8, 2006
SHEET 5 OF 17

F-06-109

AS BUILT

K:\SDSKPROJ\30772\dwg\FINALS\30772 SHEET 5 STREET TREE, GRADING PLAN.dwg, 6/6/2006 10:31:00 AM, 1:1

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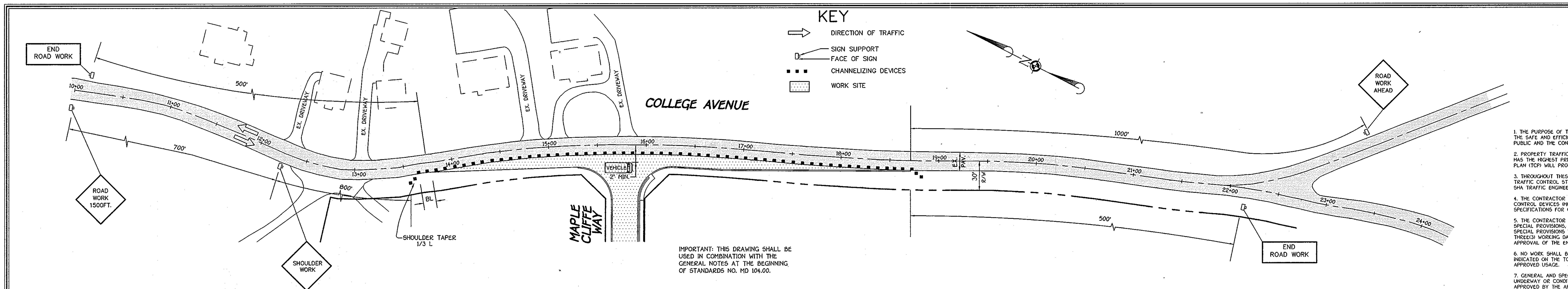
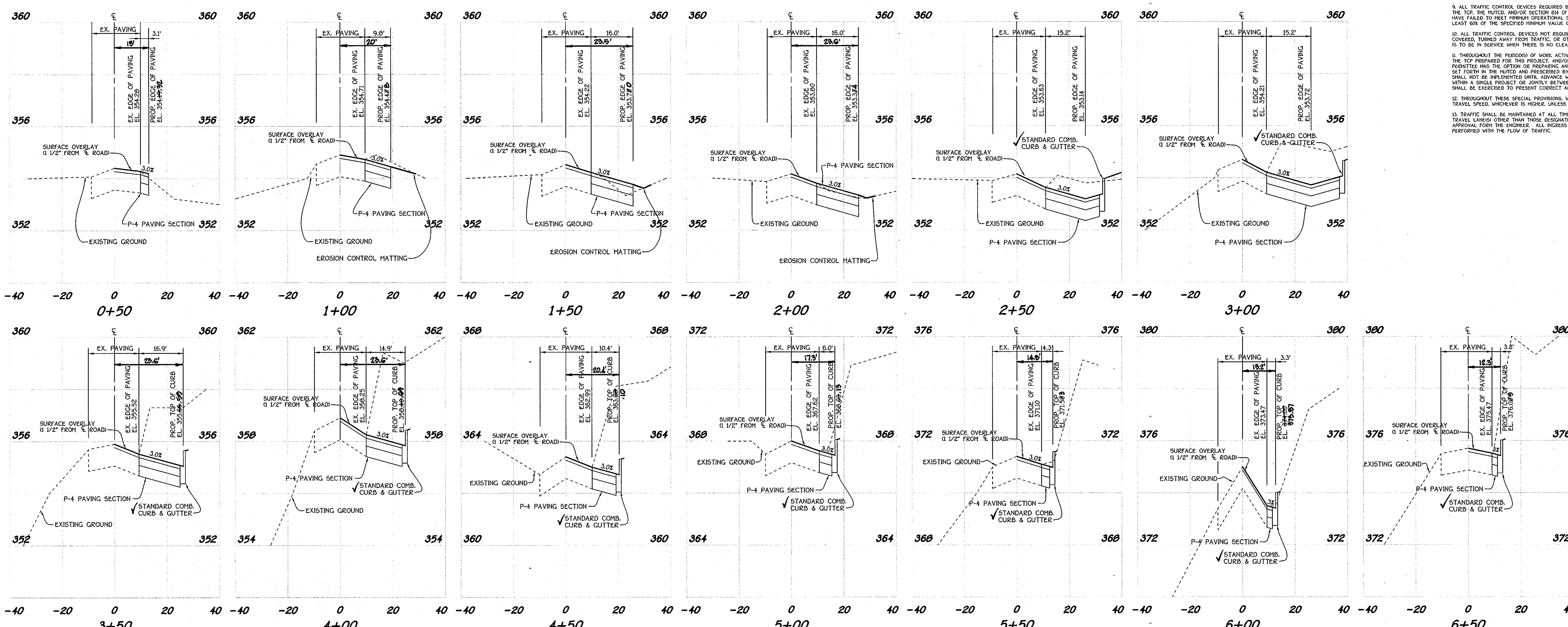
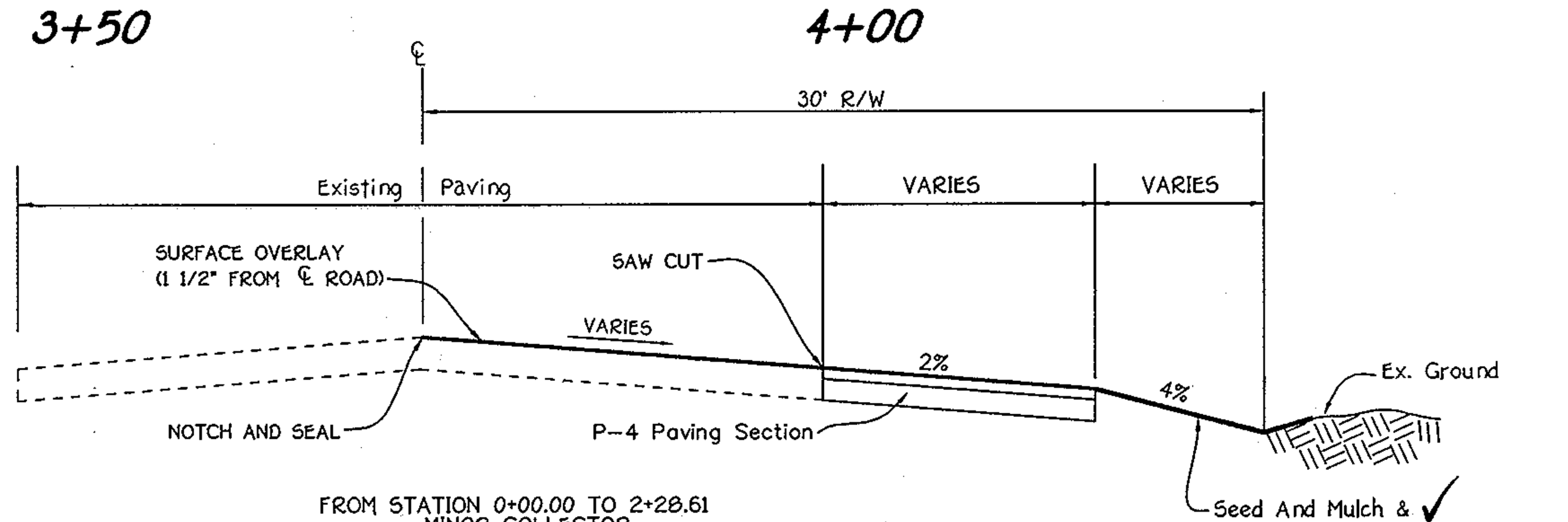


(STANDARD NO. MD 104.04-01)

TEMPORARY TRAFFIC CONTROL PLAN

NO SCALE

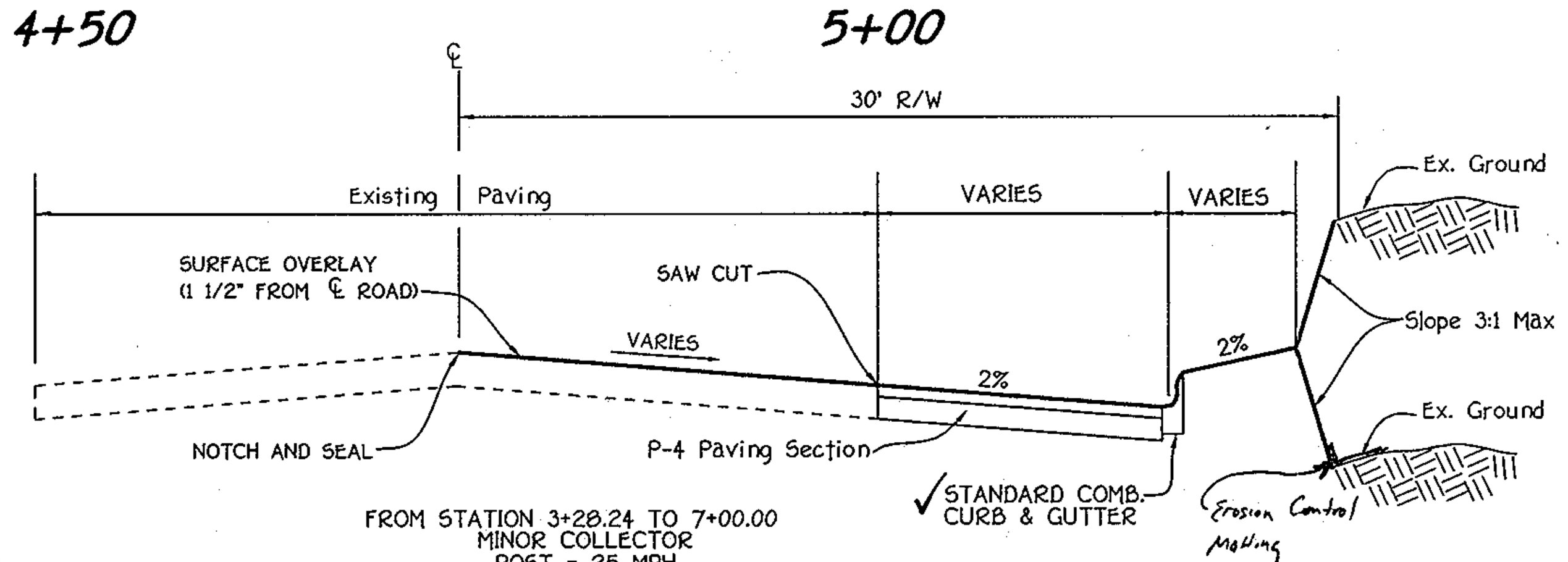




FROM STATION 0+00.00 TO 2+28.61
MINOR COLLECTOR
POST = 25 MPH
85th PERCENTILE OPERATING SPEED = 30 MPH

TYPICAL COLLEGE AVENUE WIDENING SECTION

NO SCALE



FROM STATION 3+28.24 TO 7+00.00
MINOR COLLECTOR
POST = 25 MPH
85th PERCENTILE OPERATING SPEED = 30 MPH

TYPICAL COLLEGE AVENUE WIDENING SECTION

NO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS
[illegible] (ACTING) 8/3/06
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kent Sheubrooks for CH 8/17/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[illegible] 8/17/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS

1. THE PURPOSE OF THIS PORTION OF THE SPECIAL PROVISION IS TO SET FOR THE TRAFFIC CONTROL REQUIREMENTS NECESSARY FOR THE SAFE AND EFFICIENT MAINTENANCE TO TRAFFIC WITHIN WORK AREAS, AND TO MINIMIZE ANY INCONVENIENCES TO THE TRAVELING PUBLIC AND THE CONTRACTOR AND/OR PERMITTEE.

2. PROPERTY TRAFFIC CONTROL THROUGH WORK AREAS IS ESSENTIAL FOR INSURING THE SAFETY AND THAT OF HIGHWAY WORKERS HAS THE HIGHEST PRIORITY OF ALL TASKS WITHIN THIS PROJECT. THE PROPERTY APPLICATION OF THE APPROVED TRAFFIC CONTROL PLAN (TCP) WILL PROVIDE THE DESIRED LEVEL OF SAFETY.

3. THROUGHOUT THESE SPECIAL PROVISIONS, ANY MENTION OF THE TCP SHALL BE IMPLIED TO INCLUDE ANY COMBINATION OF TYPICAL TRAFFIC CONTROL STANDARDS WHICH FORM THE OVERALL TCP FOR THIS PROJECT WHICH HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER.

4. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE PROVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 1988 EDITION, ESPECIALLY PART VI, AND TO SECTION 814 OF THE MARYLAND DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS (JANUARY, 1982; INCLUDING ALL REVISIONS AND SUPPLEMENTS TO EACH.

5. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE REQUIREMENTS SET FOR IN THE TCP AND THESE SPECIAL PROVISIONS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ANY REQUESTS TO MAKE MINOR CHANGES TO THE TCP OR THE SPECIAL PROVISIONS WITH REGARD TO THE TRAFFIC CONTROL ITEMS SHALL BE MADE IN WRITING TO THE ENGINEER A MINIMUM OF THREE(3) WORKING DAYS PRIOR TO THE PROPOSED SCHEDULING CHANGE. THE CONTRACTOR AND/OR PERMITTEE SHALL HAVE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO THE IMPLEMENTATION OF ANY CHANGE.

6. NO WORK SHALL BEGIN ON ANY WORK ACTIVITY OR WORK PHASE UNTIL ALL REQUIRED TRAFFIC CONTROL PATTERNS AND DEVICES INDICATED ON THE TCP FOR THAT ACTIVITY OR PHASE ARE COMPLETELY AND CORRECTLY IN PLACE TO HAVE BEEN CHECKED FOR APPROVED USAGE.

7. GENERAL AND SPECIFIC WARNING SIGNS SHALL ONLY BE IN PLACE WHEN SPECIFIC WORK TASKS AND ACTIVITIES ARE ACTUALLY UNDERWAY OR CONDITIONS EXIST THAT POSE A POTENTIAL HAZARD TO THE PUBLIC, AND ANY ADDITIONAL SIGNING HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER.
NOTE: THE PRACTICE OF PLACING SIGNING AND OTHER TRAFFIC CONTROL DEVICES IN ADDITION TO THOSE INDICATED ON THE APPROVED TCP IS NOT PERMITTED.

8. THE CONTRACTOR AND/OR PERMITTEE SHALL PROVIDE, MAINTAIN IN NEW CONDITION, AND MOVE WHEN NECESSARY, OR AS DIRECTED BY THE ENGINEER, ALL TRAFFIC CONTROL DEVICES USED FOR THE GUIDANCE AND PROTECTION OF MOTORISTS, PEDESTRIANS, AND WORKERS.

9. ALL TRAFFIC CONTROL DEVICES REQUIRED BY THE TCP SHALL BE KEPT IN GOOD CONDITION, FULLY PERFORMING AS SET FORTH IN THE TCP, THE MUTCD, AND/OR SECTION 814 OF THE SPECIFICATIONS. FOR REFLECTIVE DEVICES, A PARTICULAR DEVICE IS ASSUMED TO HAVE FAILED TO MEET MINIMUM OPERATIONAL STANDARDS WHEN THE DEVICE NO LONGER HAS RETRO-REFLECTANCE CAPABILITY OF AT LEAST 60% OF THE SPECIFIED MINIMUM VALUE OVER AT LEAST 90% OF THE VISIBLE REFLECTIVE SURFACE.

10. ALL TRAFFIC CONTROL DEVICES NOT REQUIRED FOR THE SAFE CONDUCT OF TRAFFIC SHALL BE PROMPTLY REMOVED, COMPLETELY COVERED, TURNED AWAY FROM TRAFFIC, OR OTHERWISE TAKEN OUT OF SERVICE. IT IS INTENDED THAT NO TRAFFIC CONTROL DEVICE IS TO BE IN SERVICE WHEN THERE IS NO CLEAR CUT REASON FOR THE DEVICE.

11. THROUGHOUT THE PERIOD(S) OF WORK ACTIVITIES, TRAFFIC SHALL BE MAINTAINED BY IMPLEMENTING THE APPROVED TCP. IN LIEU OF THE TCP PREPARED FOR THIS PROJECT, AND/OR INDIVIDUAL TYPICAL TRAFFIC CONTROL STANDARDS, THE CONTRACTOR AND/OR PERMITTEE HAS THE OPTION OR PREPARING AND SUBMITTING A TCP, WHOLLY OR IN PART, OF HIS OWN DESIGN, FOLLOWING GUIDELINES SET FORTH IN THE MUTCD AND PRESCRIBED BY THE ADMINISTRATION. A TCP DEVELOPED BY THE CONTRACTOR AND/OR PERMITTEE SHALL NOT BE IMPLEMENTED UNTIL ADVANCE WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. TCP'S MAY BE IMPLEMENTED WITHIN A SINGLE PROJECT OR JOINTLY BETWEEN TWO OR MORE PROJECTS. IN SITUATIONS WHERE TCP'S JOINTLY IMPLEMENTED, CARE SHALL BE EXERCISED TO PRESENT CORRECT AND NON-CONFLICTING GUIDANCE TO THE TRAVELING PUBLIC.

12. THROUGHOUT THESE SPECIAL PROVISIONS, WHERE SPEED OF TRAFFIC IS NOTED, THIS MEANS THE POSTED SPEED OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER, UNLESS OTHERWISE NOTED.

13. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT, UNLESS OTHERWISE NOTED. NO TRAVEL LANE(S) OTHER THAN THOSE DESIGNATED FOR POSSIBLE CLOSURE IN THE TCP SHALL BE CLOSED WITHOUT OBTAINING PRIOR APPROVAL FORM THE ENGINEER. ALL INGRESS AND EGRESS TO THE WORK AREA BY THE CONTRACTOR AND/OR PERMITTEE SHALL BE PERFORMED WITH THE FLOW OF TRAFFIC.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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(410) 461 - 2855

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OWNER/DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY

STATE OF MARYLAND
FRED MICHAEL VITALE
NO. 20748
REGISTERED
PROFESSIONAL ENGINEER
6-8-06

CROSS-SECTIONS

SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'

STATE OF MARYLAND
CHARLES E. CROVO
NO. 13204
PROFESSIONAL ENGINEER
AS BUILT 12/12/12

TEMPORARY TRAFFIC CONTROL PLAN & CROSS-SECTIONS FOR COLLEGE AVE.

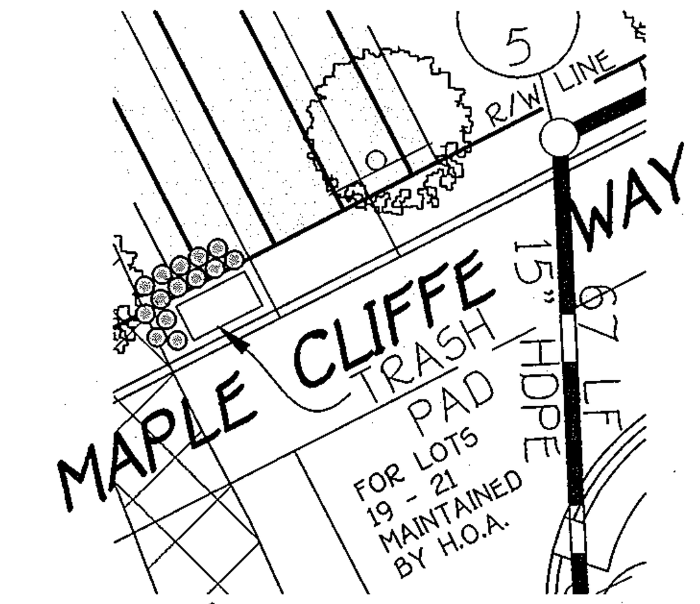
HOGG PROPERTY

LOTS 1 - 22, OPEN SPACE LOTS 23 - 26
ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 8, 2006
SHEET 6 OF 17

F-06-109

AS BUILT

K:\SDSKPROJ\30772\dwg\FINALS\30772 SHEET 6 CROSS-SECTIONS.dwg, 6/6/2006 10:29:06 AM, 1:20



TRASH PAD LANDSCAPING

SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PUBLIC WORKS	
[illegible] CHIEF, BUREAU OF HIGHWAYS	8/3/06 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Kent Sheubrooks for CH BB CHIEF, DIVISION OF LAND DEVELOPMENT	8/17/06 DATE
[illegible] CHIEF, DEVELOPMENT ENGINEERING DIVISION	8/17/06 DATE

REVISIONS

NO.	DESCRIPTION	DATE

SCHEDULE A PERIMETER LANDSCAPE EDGE

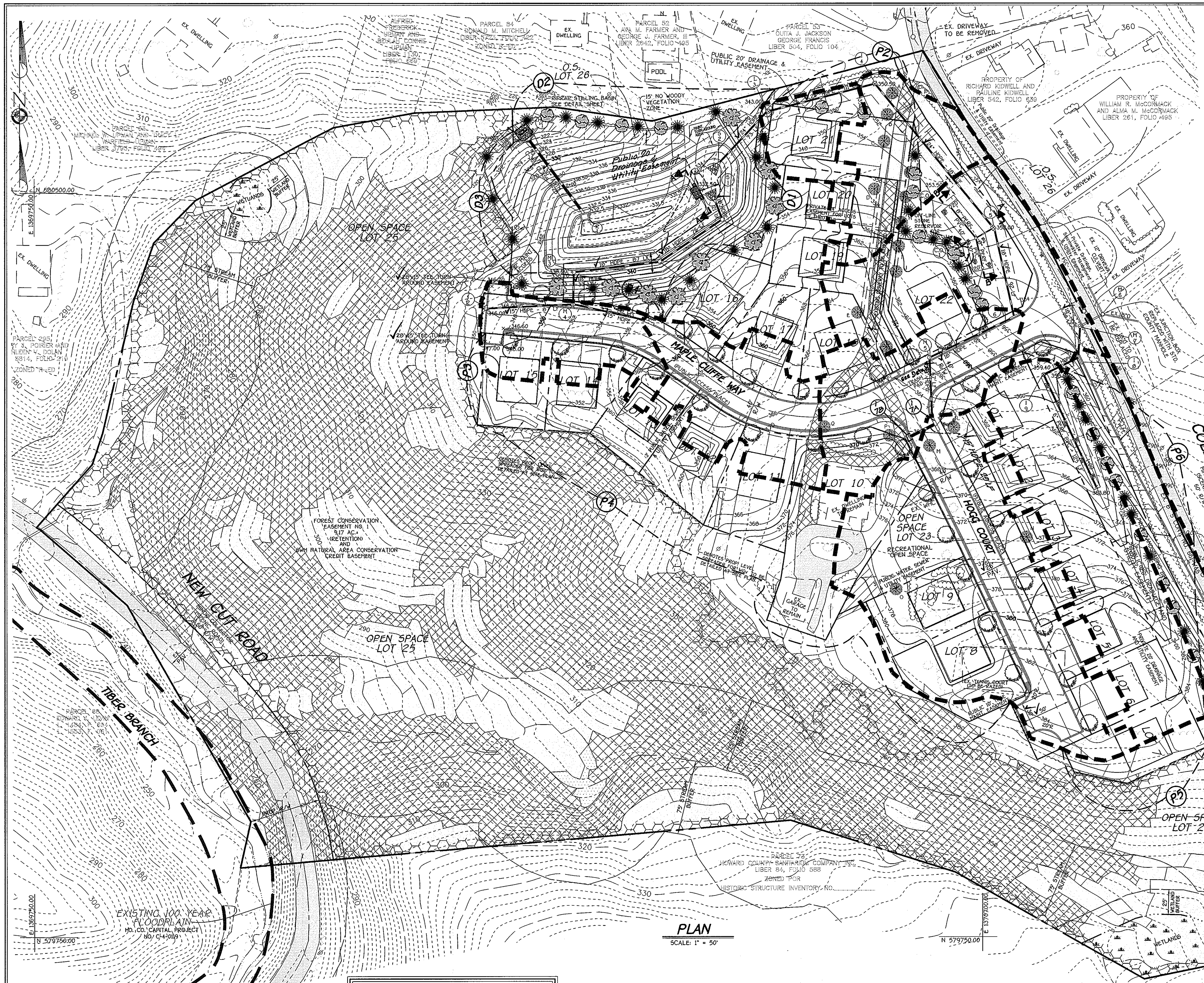
PERIMETER	CATEGORY (PROPERTIES/ ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED SHADE TREES	EVERGREEN TREES	SHRUBS	NUMBER OF PLANTS PROVIDED SHADE TREES	EVERGREEN TREES	SHRUBS
P-1	ADJACENT TO ROADWAY	B	256'	NO	NO	5	6	-	5	6	-
P-2	ADJACENT TO PERIMETER	A	121'	NO	NO	2	0	-	2	0	-
P-3	ADJACENT TO PERIMETER	A	93'	YES, 100%	NO	0	0	-	0	0	-
P-4	ADJACENT TO PERIMETER	A	706'	YES, 100%	NO	0	0	-	0	0	-
P-5	ADJACENT TO PERIMETER	A	100'	YES, 100%	NO	0	0	-	0	0	-
P-6	ADJACENT TO ROADWAY	B	397'	NO	NO	8	10	-	8	10	-
P-7	REFUSE/RECYCLE PAD	E	16'	NO	NO	1	-	4	0	-	14

THE REQUIRED SHADE TREE FOR P-7 WILL BE SUBSTITUTED WITH 10 SHRUBS.

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	D-1 : 296'	D-2 : 202'	D-3 : 118'	D-4 : 176'
NUMBER OF TREES REQUIRED: SHADE TREES EVERGREEN TREES	6 7	4 5	0 3	3 4
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO	NO	YES 100%	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	NO	NO	NO
NUMBER OF TREES PROVIDED: SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	6 7 -	4 5 -	0 3 -	3 4 -

NOTE: 100% CREDIT IS TAKEN FOR THE SHADE TREE REQUIREMENT FOR PERIMETERS D-3 (EXISTING FOREST).



PLAN

SCALE: 1" = 50'

SPECIMEN TREE DATA

KEY	SPECIES	SIZE	CONDITION
A	ACER PLATANOIDES	32" dbh	FAIR
B	ACER PLATANOIDES	42" dbh	
C	ACER PLATANOIDES	36" dbh	
D	ACER PLATANOIDES	34" dbh	
E	ACER PLATANOIDES	34" dbh	
F	ACER PLATANOIDES	40" dbh	
G	ACER PLATANOIDES	38" dbh	
H	ACER PLATANOIDES	34" dbh	POOR
I	ACER PLATANOIDES	32" dbh	
J	ACER PLATANOIDES	30" dbh	
K	ACER PLATANOIDES	40" dbh	
L	PINUS STROBUS	38" dbh	
M	PICEA ABIES	34" dbh	
N	QUERCUS RUBRA	30" dbh	
O	ACER SACCHARINUM	52" dbh	POOR
P	ACER PLATANOIDES	42" dbh	
Q	ACER PLATANOIDES	40" dbh	

LANDSCAPING PLANT LIST

QTY.	KEY	NAME	SIZE
19	❁	ACER RUBRUM 'OCTOBER GLORY' (OCTOBER RED MAPLE)	2 1/2" - 3" CALIPER FULL CROWN, B&B
9	❁	PLATANUS X ACERIFOLIA 'BLOODGOOD' BLOODGOOD LONDON PLANE	2 1/2" - 3" CALIPER FULL CROWN, B&B
35	✳	PINUS STROBUS EASTERN WHITE PINE	6' - 8' HT.
14	◎	AZALEA 'BLAAW'S PINK' BLAAW'S PINK AZALEA	18"-24" SP.

"THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL". FINANCIAL SURETY FOR THE 28 SHADE & 35 EVERGREEN REQUIRED LANDSCAPE TREES & 14 SHRUBS HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $14,070.00.

DRAINAGE AREA DATA

STRUCTURE NO.	AREA (AC)	'C'	ZONED	% IMP.
I-1	0.45	0.51	R-ED	50
I-2	0.32	0.59	R-ED	61
I-3	0.17	0.35	R-ED	30
I-4	0.39	0.38	R-ED	34
I-5	0.69	0.46	R-ED	45
I-6	0.51	0.55	R-ED	56
I-7	1.29	0.47	R-ED	44
I-8	0.83	0.24	R-ED	30
I-9	0.43	0.46	R-ED	54

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(410) 461 - 2855

K:\SDSKPROJ\30772\dwg\FINALS

OWNER/DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY

DEVELOPER'S / BUILDER'S 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 HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

[illegible] 6-6-06
NAME DATE

STATE OF MARYLAND
MICHAEL VITUCCI
NO. 207[illegible]
REGISTERED PROFESSIONAL ENGINEER
6-8-06

STATE OF MARYLAND
PROFESSIONAL ENGINEER
AS BUILT 12/12/12

LANDSCAPE PLAN & DRAINAGE AREA MAP

HOGG PROPERTY

LOTS 1 - 22, OPEN SPACE LOTS 23 - 26

ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 8, 2006
SHEET 7 OF 17

F-06-109

AS BUILT

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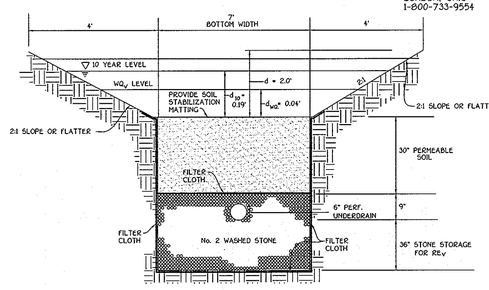
STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	LOCATION NORTH	LOCATION EAST	W	TYPE	REMARKS
I-1	357.33/.45	-	354.20/.55 (15")	580,368.41/.56	1,370,365.67/.86	2.5'	A-10	S.D. 4.41
I-2	346.60/.92	-	343.20/.30 (15")	580,383.04/.85	1,370,204.10/.36	2.5'	A-5	S.D. 4.40
I-3	342.71/343.00	√339.01 (24")	338.61/.71 (24")	580,582/1.67	1,370,485.98	-	S	S.D. 4.22 W/ S.D. 4.93
I-4	350.58/2	346.92/.12 (24")	346.32/.42 (24")	580,610/.30	1,370,592/3.53	-	S	S.D. 4.22 W/ S.D. 4.93
I-5	352.08/3	347.98/348.04 (24") 347.28/.38 (8")	347.98/348.04 (24") 347.28/.38 (8")	580,464/.29	1,370,711/.58	-	S	S.D. 4.22 W/ S.D. 4.93
I-6	355.64/.56	351.78/.88 (18")	350.58/.68 (24")	580,378.70/4.76	1,370,738/91.09	2.5'	A-10	S.D. 4.41
I-7-A	366.14/.02	362.78/.05	362.48/.58 (8")	580,266.57/70.13	1,370,651.05/55.12	2.5'	A-15	S.D. 4.41
I-8	358.76/355.22	352.06/351.07 (15")	351.56/.66 (18")	580,332.17/1.93	1,370,799.60/.46	2.5'	A-10	S.D. 4.41
I-9	359.08/6	356.26/355.00 (6")	355.46/.56 (15")	580,316/44.60	1,370,761/07/0.09	S	S.D. 4.22 W/ S.D. 4.93	
I-7B	366.14/.86	-	362.63/363.25 (15")	580,150.05	1,369,616.88	2.5	A-5	S.D. 4.40
M-1	338.59/.07	333.07/.18 (18")	333.17/.27 (18")	580,471/2.86	1,370,439/40.39	4'	PRECAST MANHOLE	G. - 5.12
M-2	338.59/.32	334.25/.35 (18")	334.45/.55 (18")	580,430.90	1,370,377/.55	4'	PRECAST MANHOLE	G. - 5.12
M-3	338.59/.75	335.59/.69 (18")	335.79/335.89 (18")	580,420/.64	1,370,298/88.71	4'	PRECAST MANHOLE	G. - 5.12
M-4	351.79/352.00	342.76/.86 (15") 342.76/.86 (15")	342.96/343.06 (15")	580,387/7.07	1,370,289/.96/8.05	4'	PRECAST MANHOLE	G. - 5.12
M-5	362.08/3	358.65/.75 (15")	358.45/.55 (18")	580,333.80/26.35	1,370,207.89	4'	PRECAST MANHOLE	G. - 5.12
M-6	354.17/353.00	351.24/.34 (18")	350.94/.04 (18")	580,374/92.05	1,370,282/18.20	4'	PRECAST MANHOLE	G. - 5.12
M-7	354.20/.46	351.20/.30 (18")	351.10/.20 (18")	580.36/71.21	1,370,79/3.80	4'	PRECAST MANHOLE	G. - 5.12
S-1	-	-	332.66/.76 (18")	580,49/1.13	1,370,43/2.62	N/A	18" HDPE END SECTION	**-SEE ADS INFO BELOW
S-2	-	-	332.58/.68 (24")	580,528/30.04	1,370,435/.82	N/A	24" HDPE END SECTION	**-SEE ADS INFO BELOW
HW-1	-	-	317.07/.17 (30")	580,558.94/4.10	1,370,246.47/3.14	N/A	TYPE 'A' HEADWALL	MODIFIED S.D. 5.11

* - DENOTES CENTER OF INLET AT FACE OF CURB

** - CONTACT ADS DRAINAGE SYSTEMS LONDON, OHIO 1-800-733-9554

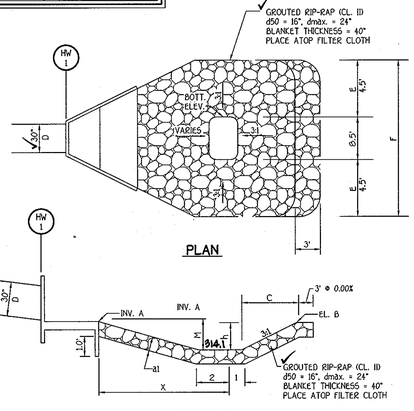


BMP FACILITY NO.2
DRY SWALE CROSS SECTION AT I-8
NO SCALE

DESIGN DATA
WQ_v = Q = 0.21 cfs, V =0.81 ft., d = 0.04 ft.
Re_v = Q = 3.42 cfs, V =2.35' ft., d = 0.19' ft.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED OPEN CHANNEL SYSTEM

A. THE open channel system shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the facility is functioning properly.
B. The open channel shall be mowed a minimum of as needed during the growing season to maintain a maximum grass height of less than 6 inches.
C. Debris and litter shall be removed during regular mowing operations and as needed.
D. Visible signs of erosion in the open channel system shall be repaired as soon as it is noticed.
E. Remove silt in the open channel system when it exceeds 25% of the original WQv.



PROFILE

TYP. STILLING BASIN OUTFALL DETAIL

NO SCALE

STILLING BASIN DATA

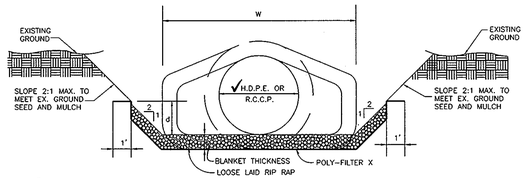
STRUCTURE NO.	INV. A	EL. B	C	D	E	F	h	M	a1	X
HW-1	317.07	316.89	4.5'	2.5'	4.5'	17.50	1.5'	2.28'	40°	12.0

PIPE SCHEDULE

SIZE	CLASS	LENGTH
6"	PVC	125
8"	PERF. PVC	70
8"	PVC	10
15"	HDPE	229
18"	HDPE	520
24"	HDPE	371
30"	ASTM	93

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

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 riprap or filter.
3. Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occassional hole, shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
4. Stone for the riprap or gabion outlets may be placed by equipment. Both shall each 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 insure that it is reasonably homogenous with the smaller stones and spalls filling the voids between larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.



RIP RAP CHANNEL DETAIL

NO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 8/3/06

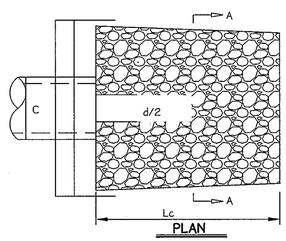
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/17/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/17/06

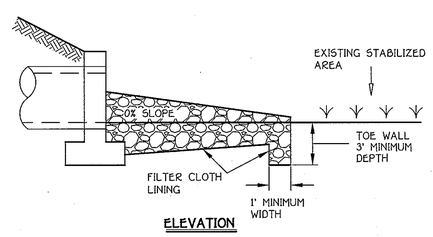
REVISIONS		
NO.	DESCRIPTION	DATE

RIP-RAP CHANNEL DESIGN DATA

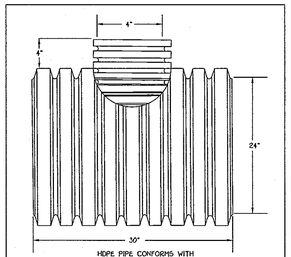
STRUCTURE	AREA	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	n	V (F.P.S.)	Q (C.F.S.)	RIP-RAP SIZE d_{50}	RIP-RAP SIZE d_{MAX}	BLANKET THICKNESS	Q_{10}	DIA.
S-1	3.06 SF	11.29'	0.2707	0.4166	0.005	0.0707	10'	0.29'	0.04	1.10	56.78	9.5"	15"	19"	3.36 CFS	18"
S-2	7.36 SF	12.91'	0.5698	0.6860	0.005	0.0707	10'	0.65	0.04	1.80	56.78	9.5"	15"	19"	13.28 CFS	24"



PLAN

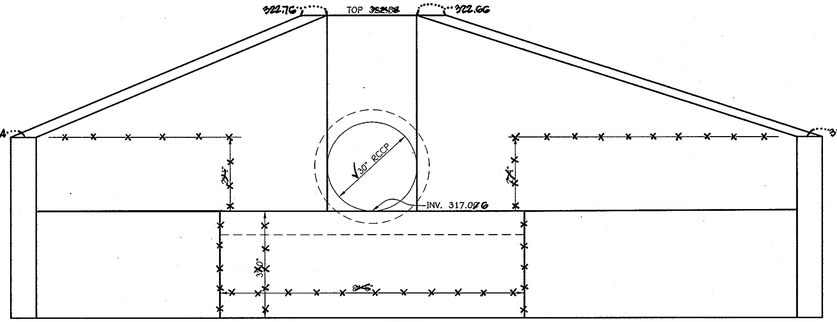


ELEVATION

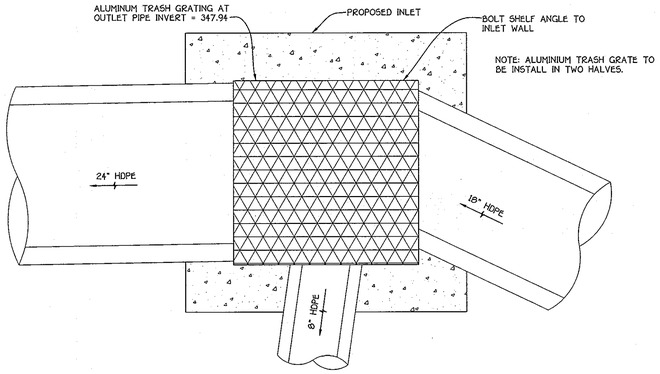


4"X24" REDUCER TEE DETAIL

NOT TO SCALE

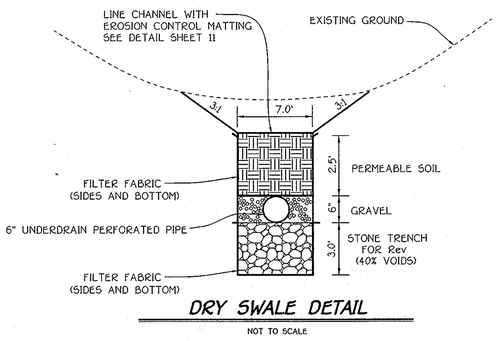


ELEVATION



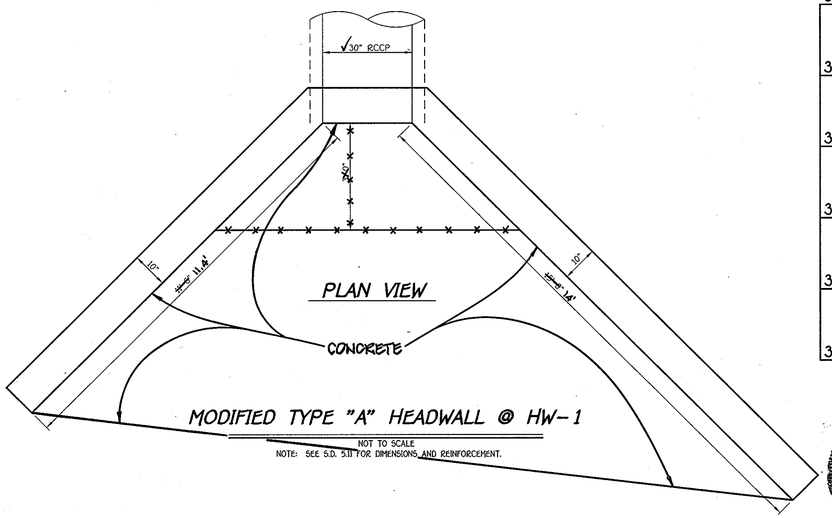
DIVERSION INLET (I-5)

SCALE: 1" = 1'



DRY SWALE DETAIL

NOT TO SCALE

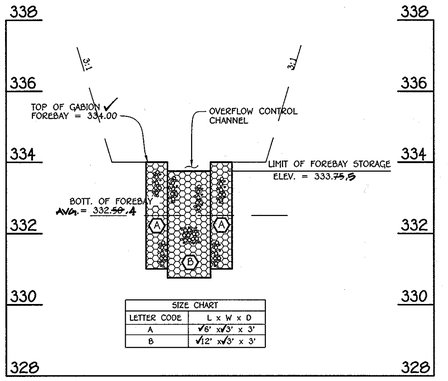


PLAN VIEW

CONCRETE

MODIFIED TYPE "A" HEADWALL @ HW-1

NOT TO SCALE
NOTE: SEE S.D. 5.11 FOR DIMENSIONS AND REINFORCEMENT.



GABION FOREBAY PROFILE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

STATE OF MARYLAND — BRAD MICHAEL VITOLO — NO. 21074 — REGISTERED PROFESSIONAL ENGINEER — 6-8-06

STATE OF MARYLAND — CHARLES E. FISHER — NO. 15324 — REGISTERED PROFESSIONAL ENGINEER — AS BUILT 11/13/12

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

OWNER / DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY

STORMWATER MANAGEMENT DETAILS, STORM DRAIN STRUCTURE SCHEDULE AND DRAINAGE DETAILS

HOGG PROPERTY

LOTS 1 - 22, OPEN SPACE LOTS 23 - 26
ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 8, 2006
SHEET 8 OF 17

F-06-109
AS BUILT

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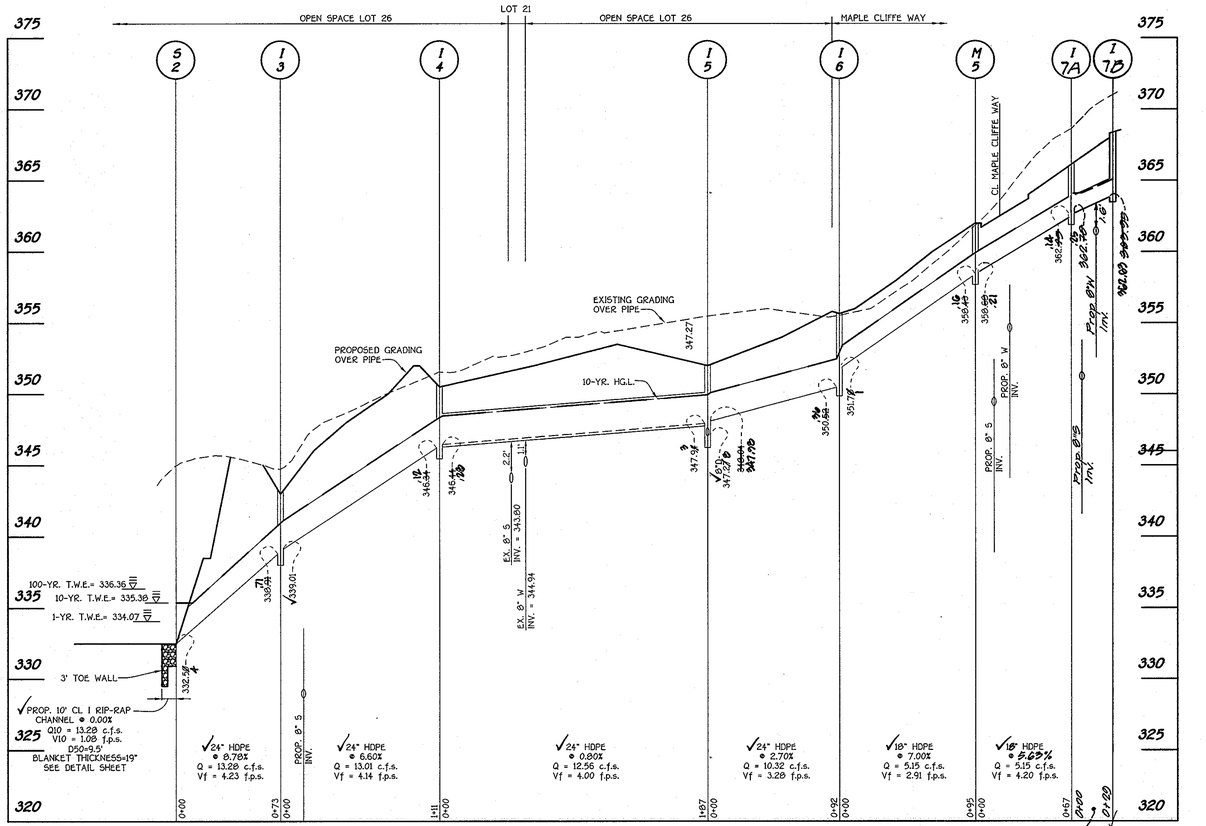
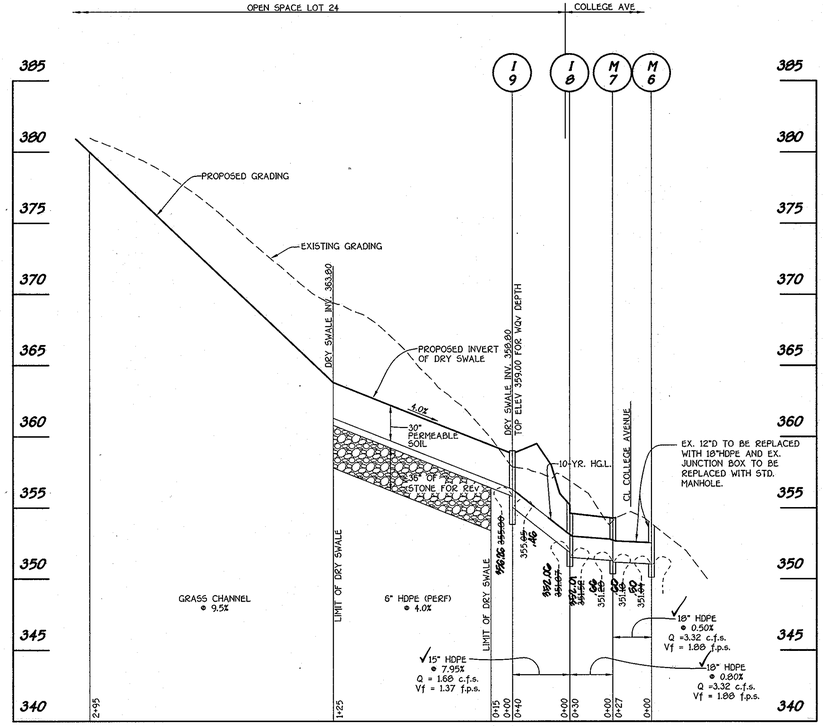


PROFILE

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



PROFILE

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

APPROVED: DEPARTMENT OF PUBLIC WORKS

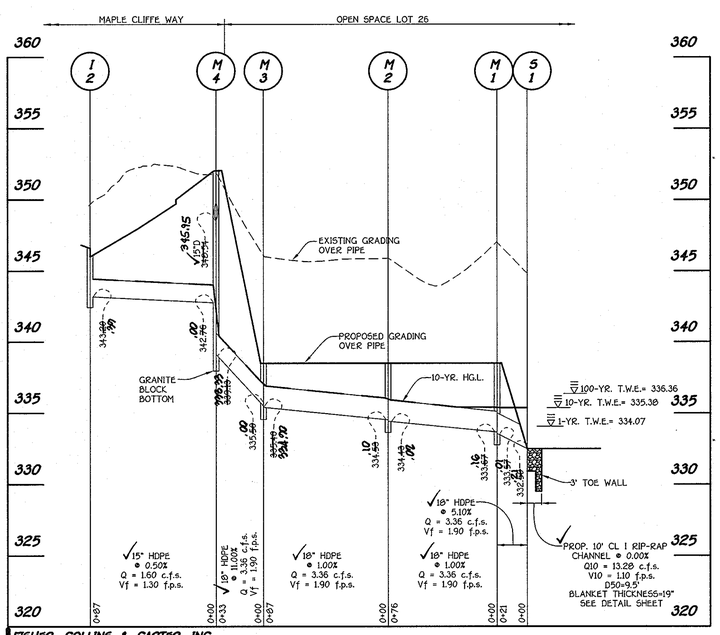
CHIEF, BUREAU OF HIGHWAYS (ACTING) — DATE 8/3/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/17/06

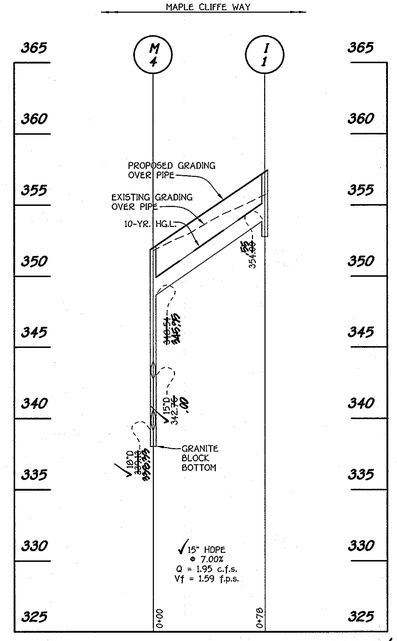
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/17/06

REVISIONS		
NO.	DESCRIPTION	DATE



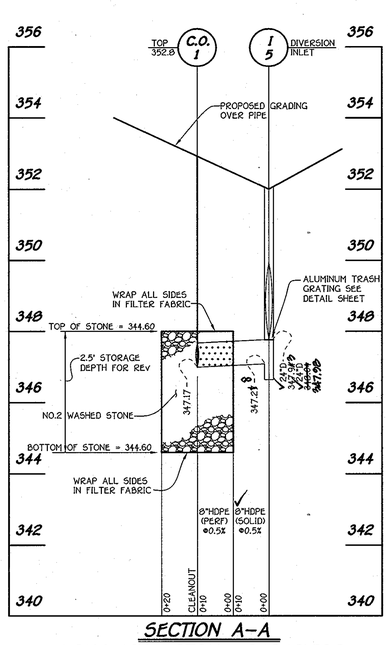
PROFILE

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



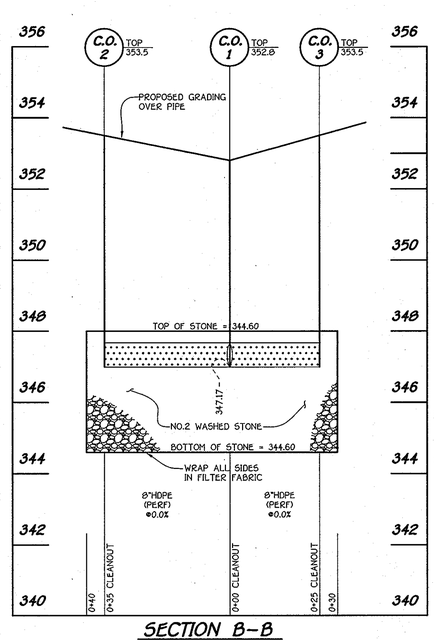
PROFILE

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



SECTION A-A
OFF-LINE STONE RESERVOIR

SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'



SECTION B-B
OFF-LINE STONE RESERVOIR

SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'

AS BUILT 12/12/12

STATE OF MARYLAND — MICHAEL S. SCHAFF — NO. 20174 — REGISTERED PROFESSIONAL ENGINEER — 8-8-06

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

OWNER/DEVELOPER
DORSEY FAMILY HOMES
1071-76 BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY

STORM DRAIN PROFILES

HOGG PROPERTY

LOTS 1 - 22, OPEN SPACE LOTS 23 - 26

ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 8, 2006
SHEET 9 OF 17

F-06-109

AS BUILT

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APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS (ACTING) — DATE 8/3/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/17/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/17/06

REVISIONS

NO.	DESCRIPTION	DATE

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Page 1 of 1

Project Name: Hogg Property SWM — Location: Howard County, Maryland — Boring Number / Job #: B-1 / 03713A

SAMPLER — Datum: — — Hammer Wt. 140 Lbs. — Hammer Drop 30 Inches — Pipe Size 2.0 Inches OD — Hole Diameter 6" — Rock Core Dia. — — Boring Method HSA — Foreman: Lamont Smith — Inspector: — — Completed: 12-31-03 — Surf. Elev.: — — Date Started: 12-31-03

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size Proportion)	STRA.	DEPTH	SCALE	CON	SAMPLE BLOWS/6"	NO.	REC.	BORING & SAMPLING NOTES
570.4	SURFACE		0.0						5" Topsoil
	Brown, moist, soft silt, trace fine sand (ML)				D	1-2-3	1	13"	No groundwater encountered while drilling
			2.0						
	Orange brown, moist, medium stiff silty clay, trace fine sand (CL)				I/D	2-3-4	2	14"	Caved in at 4.5' at Completion
			4.5						
	Orange brown, moist, medium dense to loose fine sandy silt (ML)		5.0		I	3-4-7	3	16"	
					D	2-3-3	4	18"	
	Brown, moist, dense to medium dense silty fine sand, no to trace rock fragments, trace mica (SM-ML)		9.5						
			10.0		I/D	7-10-22	5	17"	
					I/D	8-12-17	6	17"	
555.5	Bottom of Test Hole at 15.0'		15.0	15.0					
				20.0					

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

GROUND WATER DEPTH: AT COMPLETION Dry FT.; AFTER 24 hrs Dry 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: Hogg Property SWM — Location: Howard County, Maryland — Boring Number / Job #: B-2 / 03713A

SAMPLER — Datum: — — Hammer Wt. 140 Lbs. — Hammer Drop 30 Inches — Pipe Size 2.0 Inches OD — Hole Diameter 6" — Rock Core Dia. — — Boring Method HSA — Foreman: Lamont Smith — Inspector: — — Completed: 01-02-04 — Surf. Elev.: — — Date Started: 01-02-04

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size Proportion)	STRA.	DEPTH	SCALE	CON	SAMPLE BLOWS/6"	NO.	REC.	BORING & SAMPLING NOTES
553.0	SURFACE		0.0						7" Topsoil
	Brown, moist, soft to very stiff sandy clay (CL-ML)				I	1-2-2	1	13"	No groundwater encountered while drilling
			4.5						
	Orange brown, moist, medium dense to dense sandy silt, trace gravel in sample 2, trace mica (ML)		5.0		I	5-7-12	2	18"	Caved in at 5.0' at Completion
					D	7-11-12	3	18"	
			10.0		I/D	6-13-25	4	15"	
	Gray, moist, very dense silty sand (SM) Decomposed Rock		12.5		D	13-16-19	5	15"	
514	Bottom of Test Hole at 15.0'		15.0	15.0	I/D	29-42-36	6	18"	
				20.0					

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

GROUND WATER DEPTH: AT COMPLETION Dry FT.; AFTER 24 hrs Dry 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: Hogg Property SWM — Location: Howard County, Maryland — Boring Number / Job #: B-3 / 03713A

SAMPLER — Datum: — — Hammer Wt. 140 Lbs. — Hammer Drop 30 Inches — Pipe Size 2.0 Inches OD — Hole Diameter 6" — Rock Core Dia. — — Boring Method HSA — Foreman: Lamont Smith — Inspector: — — Completed: 12-31-03 — Surf. Elev.: — — Date Started: 12-31-03

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size Proportion)	STRA.	DEPTH	SCALE	CON	SAMPLE BLOWS/6"	NO.	REC.	BORING & SAMPLING NOTES
541	SURFACE		0.0						5" Topsoil
	Orange brown, moist, medium stiff silty sandy clay (CL-ML)				I/D	2-3-4	1	13"	
	Brown and gray, moist, dense sandy silt, trace clay, trace rock fragments (ML)		4.5		D	12-22-23	2	17"	Caved in at 5.0' at Completion
	Gray, moist, loose to medium dense sandy silt, trace mica (ML)		5.0		D	13-4-4	3	14"	Caved in at 6.0' at Completion
					D	4-6-9	4	15"	Groundwater encountered at 7.5' while drilling
			10.0		D	5-8-8	5	19"	
526	Bottom of Test Hole at 15.0'		15.0		D	7-10-16	6	16"	
				20.0					

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

GROUND WATER DEPTH: AT COMPLETION Dry FT.; AFTER — 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: Hogg Property SWM — Location: Howard County, Maryland — Boring Number / Job #: B-4 / 03713A

SAMPLER — Datum: — — Hammer Wt. 140 Lbs. — Hammer Drop 30 Inches — Pipe Size 2.0 Inches OD — Hole Diameter 6" — Rock Core Dia. — — Boring Method HSA — Foreman: Lamont Smith — Inspector: — — Completed: 12-31-03 — Surf. Elev.: — — Date Started: 12-31-03

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size Proportion)	STRA.	DEPTH	SCALE	CON	SAMPLE BLOWS/6"	NO.	REC.	BORING & SAMPLING NOTES
555	SURFACE		0.0						5" Topsoil
	Brown to orange brown, moist, soft to medium stiff sandy clay (CL)				D	1-1-3	1	12"	No groundwater encountered while drilling
			4.5		I	3-3-5	2	17"	Caved in at 1.5' at Completion
	Brown, moist, medium dense silt, trace clay, trace to little fine sand (ML)		5.0		I	3-4-7	3	18"	Caved in at 1.0' after 24 hours
	Orange brown and gray, moist, medium dense sandy silt, trace clay, with rock fragments (ML)		7.0		D	3-5-6	4	18"	
543.5			10.0		D	13-9-6	5	13"	
	Bottom of Test Hole at 11.5'		11.5						Backfilled after 24 hours
			15.0						
				20.0					

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

GROUND WATER DEPTH: AT COMPLETION Dry FT.; AFTER 24 hrs Dry 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: Hogg Property SWM — Location: Howard County, Maryland — Boring Number / Job #: B-5 / 03713A

SAMPLER — Datum: — — Hammer Wt. 140 Lbs. — Hammer Drop 30 Inches — Pipe Size 2.0 Inches OD — Hole Diameter 6" — Rock Core Dia. — — Boring Method HSA — Foreman: Lamont Smith — Inspector: — — Completed: 12-31-03 — Surf. Elev.: — — Date Started: 12-31-03

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size Proportion)	STRA.	DEPTH	SCALE	CON	SAMPLE BLOWS/6"	NO.	REC.	BORING & SAMPLING NOTES
563.4	SURFACE		0.0						5" Topsoil
	Orange brown, moist, medium stiff sandy clay (CL)				D	2-3-5	1	13"	No groundwater encountered while drilling
			2.0						
	Brown, tan and orange, moist, medium dense sandy silt, trace mica (ML)				D	3-5-6	2	17"	Caved in at 3.0' at Completion
			5.0		D	5-10-11	3	18"	Caved in at 3.0' after 24 hours
			7.0						
	Gray, moist, medium dense silty fine sand, trace mica (SM-ML)				D	5-8-11	4	17"	
			10.0						
552.5	Bottom of Test Hole at 11.5'		11.5		D	6-9-11	5	13"	
			15.0						Backfilled after 24 hours
				20.0					

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

GROUND WATER DEPTH: AT COMPLETION Dry FT.; AFTER 24 hrs Dry 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: Hogg Property SWM — Location: Howard County, Maryland — Boring Number / Job #: B-7 / 03713A

SAMPLER — Datum: — — Hammer Wt. 140 Lbs. — Hammer Drop 30 Inches — Pipe Size 2.0 Inches OD — Hole Diameter 6" — Rock Core Dia. — — Boring Method HSA — Foreman: Lamont Smith — Inspector: — — Completed: 12-31-03 — Surf. Elev.: — — Date Started: 12-31-03

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size Proportion)	STRA.	DEPTH	SCALE	CON	SAMPLE BLOWS/6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0						5" Topsoil
	Brown, moist, soft silt with roots ad organics (ML) Topsoil				D	2-1-3	1	5"	No groundwater encountered while drilling
			2.0						
	Brown, orange and gray, moist, medium dense silty sand (SM)				DI	8-11-16	2	18"	Caved in at 3.5' at Completion
			4.5						
	Red-brown, moist, stiff sandy clay (CL)		5.0		D	9-9-7	3	14"	Caved in at 4.0' after 24 hours
			7.0						
	Orange-brown and gray, moist, very dense silty sand with rock fragments (SM) Decomposed Rock				D	13-28-51/3"	4	13"	
			10.0						
	Refusal at 10.0'			L		51/0"	5	N/R	
			15.0						Backfilled after 24 hours
				20.0					

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

GROUND WATER DEPTH: AT COMPLETION Dry FT.; AFTER 24 hrs Dry 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: Hogg Property SWM — Location: Howard County, Maryland — Boring Number / Job #: B-8 / 03713A

SAMPLER — Datum: — — Hammer Wt. 140 Lbs. — Hammer Drop 30 Inches — Pipe Size 2.0 Inches OD — Hole Diameter 6" — Rock Core Dia. — — Boring Method HSA — Foreman: Lamont Smith — Inspector: — — Completed: 12-31-03 — Surf. Elev.: — — Date Started: 12-31-03

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size Proportion)	STRA.	DEPTH	SCALE	CON	SAMPLE BLOWS/6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0						5" Topsoil
	Orange brown, moist, soft clayey silt (ML-CL)				I/D	1-1-3	1	15"	No groundwater encountered while drilling
			2.0						
	Orange-brown and gray, moist, loose to dense sandy silt, trace mica (ML)				D	3-3-4	2	18"	Caved in at 4.5' at Completion
			5.0		D	3-4-7	3	18"	Caved in at 3.0' after 24 hours
					I	8-11-17	4	16"	
			10.0		D	15-21-29	5	16"	
	Bottom of Test Hole at 11.5'		11.5						Backfilled after 24 hours
			15.0						
				20.0					

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

GROUND WATER DEPTH: AT COMPLETION Dry FT.; AFTER 24 hrs Dry 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: Hogg Property SWM — Location: Howard County, Maryland — Boring Number / Job #: B-9 / 03713A

SAMPLER — Datum: — — Hammer Wt. 140 Lbs. — Hammer Drop 30 Inches — Pipe Size 2.0 Inches OD — Hole Diameter 6" — Rock Core Dia. — — Boring Method HSA — Foreman: Lamont Smith — Inspector: — — Completed: 12-31-03 — Surf. Elev.: — — Date Started: 12-31-03

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size Proportion)	STRA.	DEPTH	SCALE	CON	SAMPLE BLOWS/6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0						5" Topsoil
	Red-brown, moist, very soft sandy clay (CL)				I/D	2-1-2	1	14"	No groundwater encountered while drilling
			2.0						
	Orange-brown to gray, moist, medium dense sandy silt, trace mica (ML)				I	4-5-7	2	17"	Caved in at 2.7' at Completion
			4.5		I	7-7-9	3	18"	Caved in at 2.0' after 24 hours
			5.0		D	5-6-8	4	18"	
			10.0		D	8-11-12	5	14"	
	Bottom of Test Hole at 11.5'		11.5						Backfilled after 24 hours
			15.0						
				20.0					

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

GROUND WATER DEPTH: AT COMPLETION Dry FT.; AFTER 24 hrs Dry 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: Hogg Property SWM — Location: Howard County, Maryland — Boring Number / Job #: B-10 / 03713A

SAMPLER — Datum: — — Hammer Wt. 140 Lbs. — Hammer Drop 30 Inches — Pipe Size 2.0 Inches OD — Hole Diameter 6" — Rock Core Dia. — — Boring Method HSA — Foreman: Lamont Smith — Inspector: — — Completed: 12-31-03 — Surf. Elev.: — — Date Started: 12-31-03

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size Proportion)	STRA.	DEPTH	SCALE	CON	SAMPLE BLOWS/6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0						5" Topsoil
	Orange brown, moist, very soft to medium stiff silty sandy clay (CL-ML)				D	1-1-2	1	13"	No groundwater encountered while drilling
			4.5		I	3-4-6	2	17"	Caved in at 3.1 at Completion
	Brown, tan and gray, moist, medium dense sandy silt, trace mica (ML)		5.0		I/D	13-11-9	3	15"	Caved in at 3.0' after 24 hours
			10.0		D	3-6-9	4	18"	
			12.5		D	3-4-7	5	13"	Caved in at 10.0' at Completion
	Brown, moist, medium dense, micaceous silty sand to sandy silt, trace gravel (SM-ML)				D	3-4-5	6	18"	
	Bottom of Test Hole at 15.0'		15.0						
				20.0					

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

GROUND WATER DEPTH: AT COMPLETION Dry FT.; AFTER — 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: Hogg Property SWM — Location: Howard County, Maryland — Boring Number / Job #: B-11 / 03713A

SAMPLER — Datum: — — Hammer Wt. 140 Lbs. — Hammer Drop 30 Inches — Pipe Size 2.0 Inches OD — Hole Diameter 6" — Rock Core Dia. — — Boring Method HSA — Foreman: Lamont Smith — Inspector: — — Completed: 12-31-03 — Surf. Elev.: — — Date Started: 12-31-03

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size Proportion)	STRA.	DEPTH	SCALE	CON	SAMPLE BLOWS/6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0						5" Topsoil
	Dark brown moist, silt, clayey silt, with sand and organics (ML)				D	1-2-3	1	13"	No groundwater encountered while drilling
			2.0						
	Brown, moist, medium stiff to stiff, micaceous silt trace sand (ML)				I	3-3-4	2	18"	
			5.0		D	2-3-6	3	18"	
					D	3-4-6	4	18"	
			10.0		D	3-4-7	5	13"	
			12.5		D	3-4-5	6	18"	
	Brown, moist, medium dense, micaceous silty sand to sandy silt, trace gravel (SM-ML)								
	Bottom of Test Hole at 15.0'		15.0						
				20.0					

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

GROUND WATER DEPTH: AT COMPLETION Dry FT.; AFTER — 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

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

STATE OF MARYLAND — MICHAEL VITKUS — No. 20747 — REGISTERED PROFESSIONAL ENGINEER — 6-8-06

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OWNER/DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY

SOILS BORINGS
HOGG PROPERTY
LOTS 1 - 22, OPEN SPACE LOTS 23 - 26
ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 8, 2006
SHEET 10 OF 17

F-06-109
AS BUILT

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STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. 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 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. 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, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be 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).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be 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 the structure or 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 the specified for the core of the embankment or 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 Std 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.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

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

Plastic Pipe

The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following 4" - 10" inch pipe shall meet the requirement of AASHTO M-294 Type S, and 12" through 24" inch shall meet the requirement 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.

Drainage Diaphragms - when a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

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 in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

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.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

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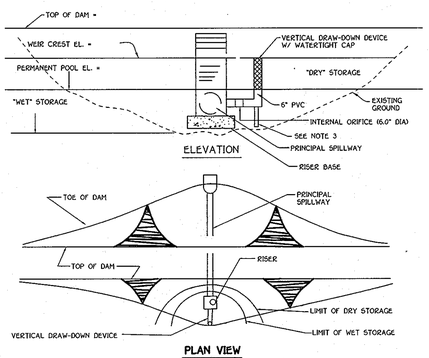
Embankment and Cut-off Trench Construction

THE AREA OF THE PROPOSED SWM POND SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFOLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.
A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL.
IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE A FINE GRAINED SOIL, INCLUDING SILT (ML) WITH A PLASTICITY INDEX OF 10 OR MORE CAN BE UTILIZED FOR THE CENTER OF THE EMBANKMENT AND CORE TRENCH. BASED ON OUR VISUAL CLASSIFICATIONS IT APPEARS THAT SOME OF THE ON-SITE SOILS, ESPECIALLY THE NEAR SURFACE SOILS, WILL BE SUITABLE FOR USE AS CORE TRENCH MATERIAL. IT IS RECOMMENDED THAT ADDITIONAL EXPLORATION AND LABORATORY TESTING BE PERFORMED PRIOR TO POND CONSTRUCTION TO IDENTIFY AND QUANTIFY POTENTIAL BORROW AREAS FOR CORE TRENCH MATERIAL. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED WITH MD SCS 378 SPECIFICATIONS.

S.W.M./SEDIMENT BASIN VERTICAL DRAW-DOWN DEVICE

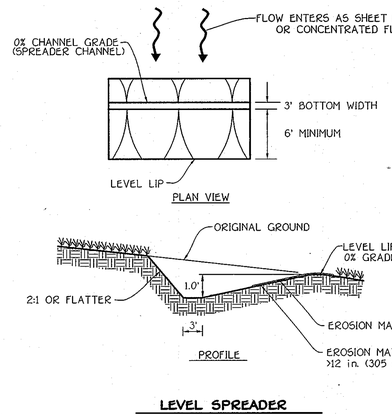


CONSTRUCTION SPECIFICATIONS

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 2 TIMES THE AREA OF THE INTERNAL ORIFICE.
3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
4. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOATATION. 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 WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.

LEVEL SPREADER CRITERIA

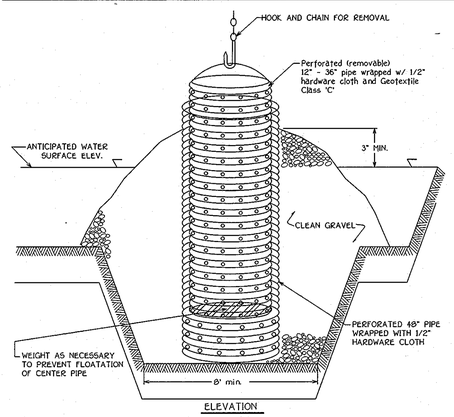
For impervious surface runoff applications:
The capacity for the level spreader is determined in the design of the filter strip to which it discharges.
The spreader shall run linearly along the entire width of the filter strip to which it discharges. In most cases, the spreader will be the same width as the contributing impervious surface. The ends of the spreader shall be tied into higher ground to prevent flow around the spreader.
The minimum depth shall be 6 inches and the minimum width shall be 6 feet for the lower side slope. Side slopes shall be 2:1 (horizontal to vertical) or flatter.
The grade of the spreader shall be 0%.
The outlet discharge area must be generally smooth and well vegetated with a maximum slope of 10%.
For all applications:
The spreader lip shall be constructed to a uniform height and zero grade over the length of the spreader. For design flows of 4 cfs or greater, a rigid lip of non-erodible materials, such as pressure-treated timbers or concrete curbing, shall be used. For flows less than 4 cfs, a vegetated lip may be used. The spreader lip shall be constructed on undisturbed soil.
When using a vegetated lip it shall be protected with an erosion control blanket to prevent erosion and allow the vegetation to become established. The blanket shall be a minimum of 4 feet wide extending a minimum of 1 foot downstream over the level lip. The blanket shall be secured with heavy-duty staples and the downstream and upstream edges shall be buried at least 6 inches deep in a vertical trench.
When using a rigid lip it shall be entrenched at least 4 inches below existing ground and securely anchored to prevent displacement. An apron of Class I rip-rap shall be placed to the top of the rigid lip and extend downslope at least 3 feet. A filter fabric shall be placed under the coarse aggregate.
Immediately after level spreader construction, seed and mulch the entire disturbed area of the spreader in accordance with the Standards and Specifications for Vegetative Stabilization.
CONSIDERATIONS
The level spreader is a relatively low-cost structure to:
1. Disperse impervious surface runoff uniformly to a filter strip or
2. Release small volumes of concentrated flow from diversions when conditions are suitable.
To accomplish these purposes, particular care must be taken to construct the spreader lip completely level. Any depressions in the lip will concentrate the flow, resulting in a loss of pollutant filtering effectiveness and/or erosion. Evaluate the outlet system to be sure that flow does not concentrate below the outlet.
For filter strip applications, the determination of whether a level spreader is needed should be based on how the runoff is entering the filter strip. If the runoff is concentrated by curb cuts, and particularly if a large area of impervious surface drains to one point, a level spreader is essential to achieve effective pollutant removal in the filter strip. A level spreader also is important if the filter strip is relatively steep in order to avoid erosion from concentrated runoff discharge. If the runoff is evenly distributed over the width of the impervious surface (e.g., a curbless, even-sloped road or parking lot), a level spreader may not be necessary.
When the level spreader is used as an outlet for temporary or permanent diversions and diversion dikes, runoff containing high sediment loads must be treated in an approved sediment trapping device.
OPERATION AND MAINTENANCE
Inspect level spreaders after every rainfall until vegetation is established, and promptly make needed repairs. After the area has been stabilized, make periodic inspections and maintain vegetation in a healthy, vigorous condition.
Verify that the level spreader is distributing flow evenly. If problems are noted, make appropriate modifications to ensure even flow distribution.



LEVEL SPREADER
NOT TO SCALE

OWNER / DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
ATTN: ROD DORSEY

REMOVABLE PUMPING STATION



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.

By The Developer:

"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 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 — 6-6-06 Date

Robert L Dorsey Jr
Printed Name Of Developer

By The Engineer:

"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 Owner In Writing 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 — 6-8-06 Date

ALAN M. WITSCHEY, No. 21075, REGISTERED PROFESSIONAL ENGINEER

Alan M. Witschey
Printed Name Of Engineer

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.

USDA-Natural Resources Conservation Service — 6/19/06 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 — 6/19/06 Date

Approved: Department Of Public Works

Chief, Bureau Of Highways — 8/3/06 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 8/17/06 Date

Chief, Development Engineering Division — 8/17/06 Date

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

Signature — P.E. No.

Date:

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

Privately Owned & Maintained
STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE

A. ROUTINE MAINTENANCE

Facility Shall Be Inspected Annually And After Major Storms. Inspections Should Be Performed During Wet Weather To Determine If The Pond Is Functioning Properly.

Top And Side Slopes Of The Embankment Shall Be Mowed A Minimum Of Two (2) Times A Year, Once In June And Once In September. Other side Slopes, The Bottom Of The Pond, And Maintenance Access Should Be Mowed As Needed.

Debris And Litter Next To The Outlet Structure Shall Be Removed During Regular Mowing Operations And As needed.

Visible Signs Of Erosion In The Pond As Well As Rip-Rap Outlet Area Shall Be Repaired As Soon As It Is Noticed.

Sediment Should Be Removed When Its Accumulation Reaches 6".

The Low Flow PVC Pipes Shall Be Visually Inspected For Clogging A Minimum Of Two (2) Times A Year, Once In June And Once In September. This Should Be Accomplished At The Same Time As The Mowing Of The Embankment.

B. NON-ROUTINE MAINTENANCE

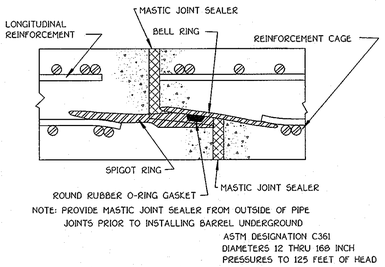
Structural Components Of The pond Such as The Dam, Riser Structure And The Pipes Shall Be Repaired Upon The Detection Of Any Damage. The Components Should Be Inspected During Routine Maintenance Operations.

Sediment Should Be Removed When Its Accumulation Significantly Reduces The Design Storage, Interfere With The Function Of The Riser, When Deemed Necessary For Aesthetic Reasons, Or When Deemed Necessary By The Howard County Department Of Public Works.

STORMWATER MANAGEMENT NOTES AND DETAILS
HOGG PROPERTY
LOTS 1 - 22, OPEN SPACE LOTS 23 - 26

ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 9, 2006
SHEET 11 OF 17

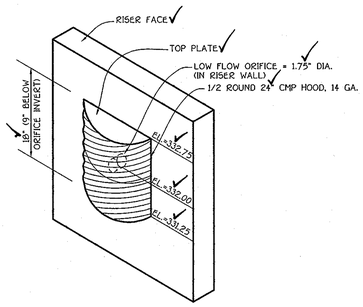
F-06-109
AS BUILT



NOTE: PROVIDE MASTIC JOINT SEALER FROM OUTSIDE OF PIPE JOINTS PRIOR TO INSTALLING BARREL UNDERGROUND
ASTM DESIGNATION C361
DIAMETERS 12 THRU 168 INCH
PRESSURES TO 125 FEET OF HEAD

CONCRETE PIPE JOINT DETAIL

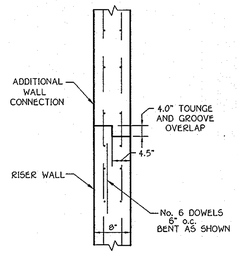
(NO SCALE)



(FOR PROTECTION OF LOW FLOW ORIFICE)

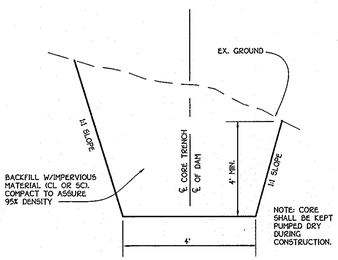
HALF ROUND CMP PIPE-HOOD

NOT TO SCALE



KEYED JOINT DETAIL
WALL SECTION TO WALL SECTION

(NO SCALE)



CORE TRENCH DETAIL

NOT TO SCALE

Bedrock

Decomposed rock materials were encountered at a depth of 12.5± ft in Boring B-2 and 7± ft in Boring B-7. Additionally, auger refusal was encountered at a depth of 10± ft in Boring B-7.

EVALUATION

Based on the State of Maryland's "2000 Maryland Stormwater Design Manual, Volumes I & II", infiltration basins and trenches are not acceptable practices when an infiltration rate of less than 0.52 inches per hour is obtained. Bioretention facilities in areas with in-situ infiltration rates of less than 0.52 inches per hour require underdrains. Also, the bottom of the facility should be located a minimum of 4 ft above the seasonally high water table and/or bedrock. Additionally, Howard County requires a minimum infiltration rate of 1.02 inches per hour.

Based on the subsurface conditions encountered in the borings, the measured in-situ infiltration rates and on the above-outlined criteria, **infiltration methods of stormwater management do not appear to be feasible for the site.**

EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION

The areas of the proposed SWM pond facility should be stripped of topsoil and any other unsuitable materials from the embankment or structure areas in accordance with Soil Conservation Guidelines. After stripping operations have been completed, the exposed subgrade materials should be proofrolled with a loaded dump truck or similar equipment in the presence of a geotechnical engineer or his representative. For areas that are not accessible to a dump truck, the exposed materials should be observed and tested by a geotechnical engineer or his representative utilizing a Dynamic Cone Penetrometer. Any excessively soft or loose materials identified by proofrolling or penetrometer testing should be excavated to suitable firm soil, and then grades re-established by backfilling with suitable soil.

A representative of the Geotechnical Engineer should be present to monitor placement and compaction of fill for the embankment and cut-off trench. In accordance with NRCS-MD Code No. 378 Pond Standards/Specifications, soils considered suitable for the center of embankment and cut-off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve.

It is our professional opinion that in addition to the soil materials described above a fine-grained soil, including Silt (ML) with a plasticity index of 10 or more can be utilized for the center of the embankment and core trench. All fill materials must be placed and compacted in accordance with NRCS-MD Code No. 378 specifications.

By The Developer:

"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 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 — Date: 6-6-06

Robert L Dorsey Jr
Printed Name Of Developer

By The Engineer:

"I Certify That These Plans 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 Prepared Or Supervised The Preparation Of And 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 — Date: 6.9.06

Alan M Hogg
Printed Name Of Engineer

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.

USDA-Natural Resources Conservation Service — Date: 6/19/06

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: 6/19/06

Approved: Department Of Public Works

Chief, Bureau Of Highways — Date: 8/3/06

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 8/17/06

Chief, Development Engineering Division — Date: 8/17/06

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature — 13304 Reg. No. — Date: 12/12/12

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

STATE OF MARYLAND — JASON MICHAEL TIMMONS — NO. 20714 — REGISTERED PROFESSIONAL ENGINEER — AS BUILT 12/12/12

STATE OF MARYLAND — ALAN MICHAEL HOGG — NO. 21403 — REGISTERED PROFESSIONAL ENGINEER

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CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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OWNER / DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY

STORMWATER MANAGEMENT DETAILS

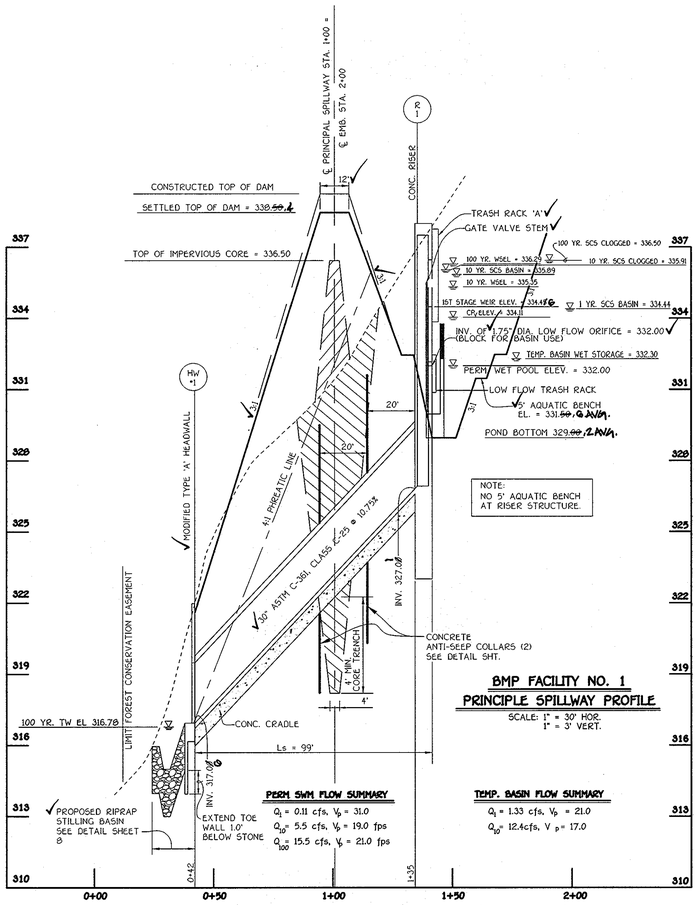
HOGG PROPERTY

LOTS 1 - 22, OPEN SPACE LOTS 23 - 26

ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 8, 2006
SHEET 12 OF 17

F-06-109

AS BUILT



NOTE:
NO 5' AQUATIC BENCH AT RISER STRUCTURE.

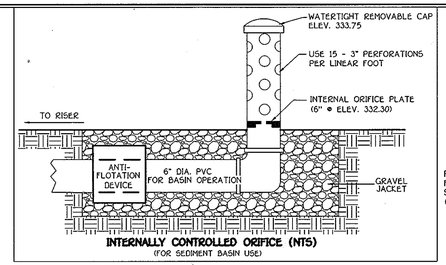
BMP FACILITY NO. 1
PRINCIPLE SPILLWAY PROFILE
SCALE: 1" = 30' HOR.
1" = 3' VERT.

PERM SWM FLOW SUMMARY

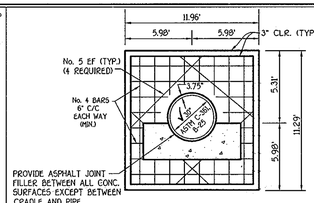
Q_1 = 0.11 cfs, V_b = 31.0
Q_{10} = 5.5 cfs, V_b = 19.0 fps
Q_{100} = 15.5 cfs, V_b = 21.0 fps

TEMP. BASIN FLOW SUMMARY

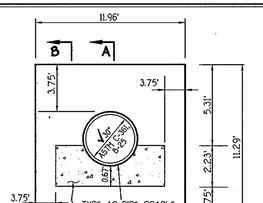
Q_1 = 1.33 cfs, V_b = 21.0
Q_{10} = 12.4cfs, V p = 17.0



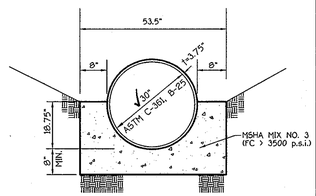
INTERNALLY CONTROLLED ORIFICE (NTS)
(FOR SEDIMENT BASIN USE)



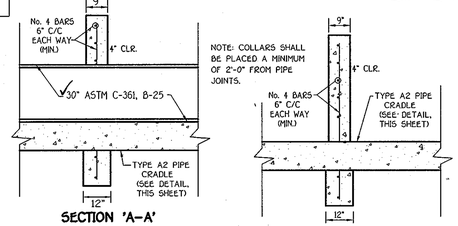
ANTI-SEEP COLLAR
NO SCALE



NOTE:
CONC. CRADLE TO BE POURED DIRECTLY AGAINST EARTH BANKS. IF BOTTOM OF TRENCH IS WIDER THAN THE CRADLE, SLOPING SIDES (FRAMED) SHALL BE USED.

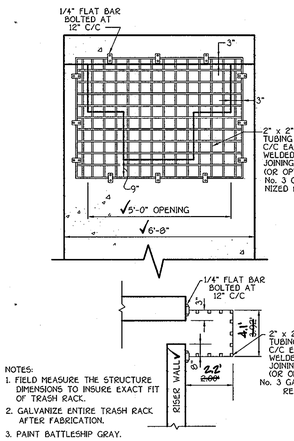


A2 CRADLE
NO SCALE



SECTION 'A-A' **SECTION 'B-B'**

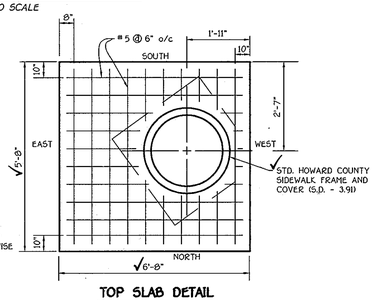
TYPICAL SECTION THROUGH BARREL, CRADLE AND ANTI-SEEP COLLAR
NO SCALE



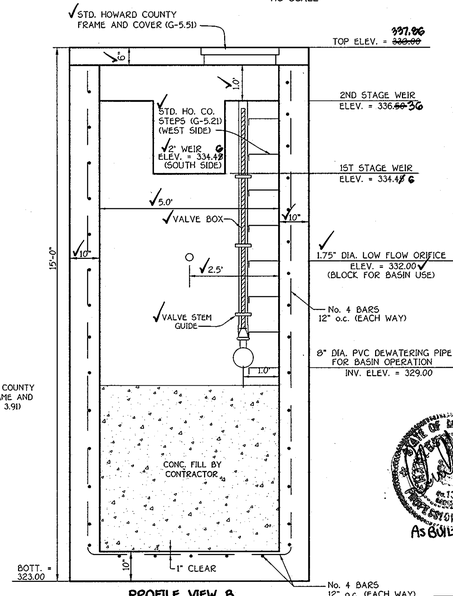
NOTES:
1. FIELD MEASURE THE STRUCTURE DIMENSIONS TO INSURE EXACT FIT OF TRASH RACK.
2. GALVANIZE ENTIRE TRASH RACK AFTER FABRICATION.
3. PAINT BATTLESHIP GRAY.

TRASH RACK 'A' DETAIL
(NO SCALE)

NOTES:
1. CONCRETE SHALL BE MSHA MIX No. 3 (f'c > 3,500 P.S.I.)
2. REINFORCING STEEL: GRADE 60
3. FOR WALLS OF STRUCTURE SHALL UTILIZE L.M. SCOFIELD CO. T-9055 FORM LINERS (RANDOM SPLIT-FACE ROCK) OPTIONAL.
4. PROVIDE ROUGH BROOM FINISH.
5. ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6.07.03.59 OF THE MSHA STANDARDS AND SPECS.
6. ALL REINFORCING SPLICES SHALL BE LAP SPLICES OF 30 BAR DIA. UNLESS OTHERWISE SHOWN.



TOP SLAB DETAIL
NO SCALE



PROFILE VIEW B
CONCRETE RISER DETAIL
R 1

By The Developer:

"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 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 — Date: 6-6-06

Robert L Dorsey Jr
Printed Name Of Developer

By the Engineer:

"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 Authorized 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 Within 30 Days Of Completion."

Signature — Date: 6-2-06

ALAN MICHAEL HOGG, No. 21074, STATE OF MARYLAND, PROFESSIONAL ENGINEER

Printed Name

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.

USDA-Natural Resources Conservation Service — Date: 6/19/06

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: 6/19/06

Approved: Department Of Public Works

Chief, Bureau Of Highways (CHIEF) — Date: 8/3/06

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 8/17/06

Chief, Development Engineering Division — Date: 8/17/06

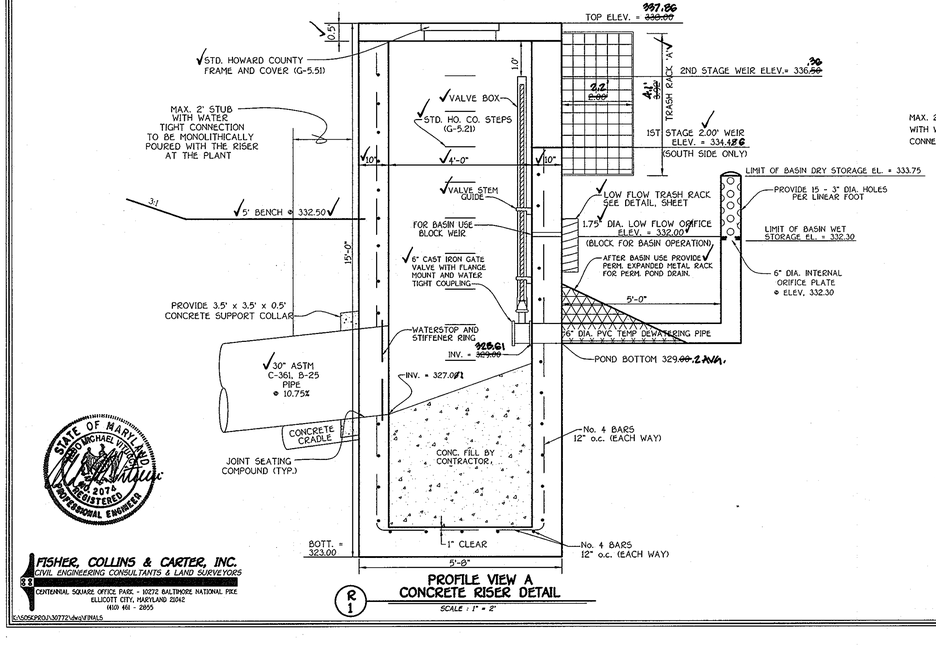
AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

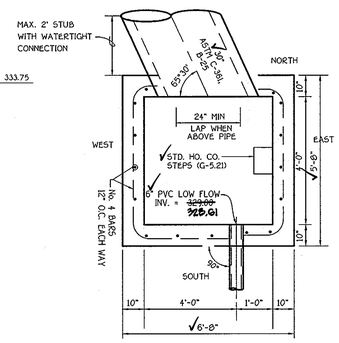
Signature — P.E. No. 13209 — Date: 12/20/12

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party from Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

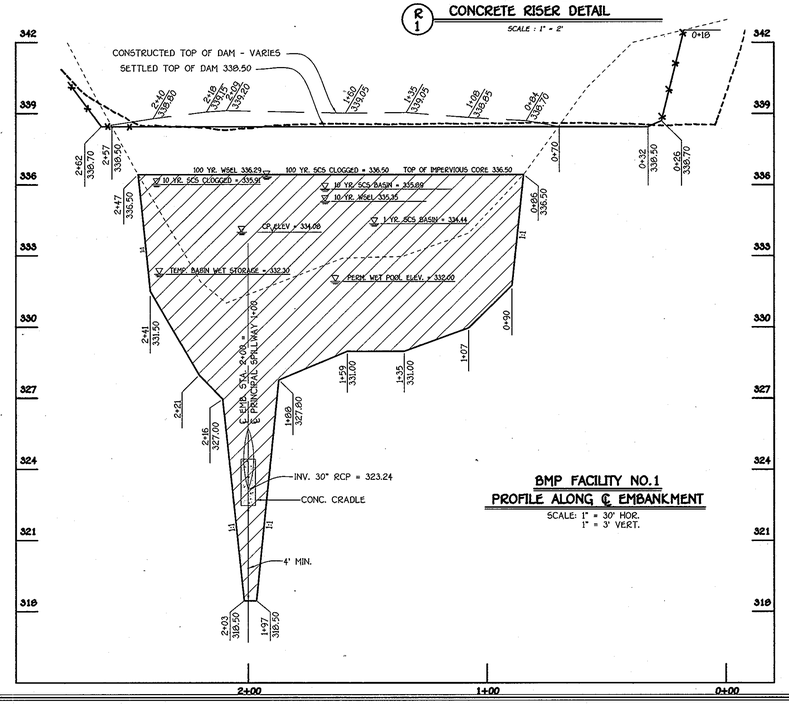
STATE OF MARYLAND — ALAN MICHAEL HOGG — No. 21074 — PROFESSIONAL ENGINEER — As Built 12/20/12



PROFILE VIEW A
CONCRETE RISER DETAIL
R 1
SCALE : 1" = 2'



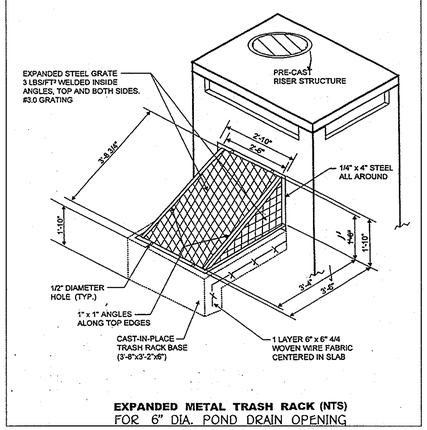
RISER PLAN VIEW
NO SCALE



BMP FACILITY NO.1
PROFILE ALONG ℄ EMBANKMENT
SCALE: 1" = 30' HOR.
1" = 3' VERT.

Appendix D.8. Miscellaneous Details for Compliance with Performance Criteria

Detail 2 Expanded Trash Rack Protection for Low Flow Orifice



EXPANDED METAL TRASH RACK (NTS)
FOR 6" DIA. POND DRAIN OPENING

OWNER/DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn ROB DORSEY

STATE OF MARYLAND — ALAN MICHAEL HOGG — No. 21074 — PROFESSIONAL ENGINEER

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

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PERMANENT BMP NO. 1 / TEMPORARY BASIN NO. 1
STORMWATER MANAGEMENT NOTES AND DETAILS
HOGG PROPERTY

LOTS 1 - 22, OPEN SPACE LOTS 23 - 26
ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 6, 2006
SHEET 13 OF 17

F-06-109

AS BUILT

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS (ACTING) — DATE 8/3/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/17/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/17/06

REVISIONS

NO.	DESCRIPTION	DATE

PROPOSED BMP FACILITY NO. 1
PRIVATELY OWNED AND MAINTAINED BY HOA
MICRO-POOL FACILITY
HAZARD CLASS 'A'

OPEN SPACE LOT 26
9.864 AC.±
TO BE DEDICATED TO HOWARD COUNTY SEE 4 PARCEL

FOREST CONSERVATION EASEMENT NO. 1
9.17 AC.±
(RETENTION)

OPEN SPACE LOT 25
9.864 AC.±
OPEN SPACE LOT 25 OWNED AND MAINTAINED BY HOWARD COUNTY, MARYLAND

OPEN SPACE LOT 23
RECREATIONAL OPEN SPACE

OPEN SPACE LOT 24

PROPOSED BMP FACILITY NO. 2
PRIVATELY OWNED AND MAINTAINED BY HOA
MICRO-POOL FACILITY
SEE DETAIL SHEET

NEW CUT ROAD

TIBER BRANCH

COLLEGE AVENUE

MAPLE GLIFTE WAY

HOGG COURT

PROPOSED 30' R/W AREA TO BE DEDICATED TO HOWARD COUNTY FOR THE PURPOSE OF A PUBLIC ROAD

PARCEL 64
GREGORY S. POWELSON
KATHLEEN V. DOLAN
LIBER 5814, FOLIO 210
ZONED R-ED

PARCEL 84
DONALD M. MITCHELL
LIBER 2400, FOLIO 322

PARCEL 55
AVA M. FARMER AND
GEORGE J. FARMER, III
LIBER 3945, FOLIO 485

PARCEL 53
GLIDA J. JACKSON
GEORGE FRANCIS
LIBER 504, FOLIO 106

PARCEL 54
ALFRED REDWICK
ROBERT AND
BEVERLY CONNER
LIBER 2400, FOLIO 322

PARCEL 66
MICHAEL W. LUPHAM AND TRACY L. WAMPLER
LIBER 13257, FOLIO 251

PARCEL 65
EDWARD L. DEAN
LIBER 1, FOLIO 1

PARCEL 52
HOWARD COUNTY SANITATION COMPANY, INC.
LIBER 84, FOLIO 388
ZONED: POR
HISTORIC STRUCTURE INVENTORY NO.

PROPERTY OF
ELISA A. KRUPA AND
DAVID J. MYAN
LIBER 3672, FOLIO 412

PROPERTY OF
RICHARD KIDWELL AND
PAULINE KIDWELL
LIBER 542, FOLIO 559

PROPERTY OF
WILLIAM R. McCORMACK
AND ALMA W. McCORMACK
LIBER 261, FOLIO 495

PARCEL 281
LOT 1
DORSETT LI FREEMAN
DEBORAH T. FREEMAN
LIBER 5657, FOLIO 239
PLAT No. 14899

PARCEL 281
LOT 2
MATHEW MUNDORF
MARY F. MUNDORF
LIBER 5838, FOLIO 350
PLAT No. 14899

ALMA R. McCORMACK
JEFFREY P. McCORMACK JR.
LIBER 4941, FOLIO 531
ZONED R-ED

OPEN SPACE LOT 24
Open Space Lot 24 Owned and Maintained by Hoa

OPEN SPACE LOT 25
9.864 AC.±
OPEN SPACE LOT 25 OWNED AND MAINTAINED BY HOWARD COUNTY, MARYLAND

Owned And Maintained By Hoa
O.S. LOT 26
1.549 AC.±

LOT 1 – LOT 22

N 27°35'51" W 45.00'

N 62°24'14" E 30.78'

N 87°39'43" E 101.76'

N 79°37'12" E 62.47'

N 87°28'47" W 32.50'

N 75°24'10" E 343.00'

N 14°20'49" E 146.60'

N 81°44'49" E 157.00'

N 18°24'10" E 33.00'

S 85°03'36" W 473.26'

N 79°22'07" W 173.58'

S 19°17'58" E 21.03'

S 78°29'58" E 295.00'

N 579750.00

E 1357250.00

E 1357700.00

PLAN
SCALE: 1" = 50'

STATE OF MARYLAND
MICHAEL W. WAMPLER
No. 21074
REGISTERED
PROFESSIONAL ENGINEER
6-9-06

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

OWNER/DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
ATTN: ROB DORSEY

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # 0CP93MD0610044B
JOHN P. CANOLES

STATE OF MARYLAND
RICHARD J. WEAVER
No. 21211
PROFESSIONAL ENGINEER
AS BUILT 12/13/06

FOREST CONSERVATION PLAN
HOGG PROPERTY
LOTS 1 – 22, OPEN SPACE LOTS 23 – 26
ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 8, 2006
SHEET 14 OF 17

F-06-109
AS BUILT

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FOREST CONSERVATION WORKSHEET

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	18.0
B. DEDUCTIONS (CRITICAL AREA, AREA RESTRICTED BY LOCAL OR PROGRAM)	--
C. NET TRACT AREA NET TRACT AREA + TOTAL TRACT (A) - DEDUCTIONS (B)	18.0
LAND USE CATEGORY: MEDIUM DENSITY RESIDENTIAL	
D. AFFORESTATION THRESHOLD (NET TRACT AREA (C) x 15%)	2.7
E. CONSERVATION THRESHOLD (NET TRACT AREA (C) x 20%)	3.6
EXISTING FOREST COVER	
F. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	10.9
G. AREA OF FOREST ABOVE CONSERVATION TRESHOLD	7.3
IF THE EXISTING FOREST COVER (F) IS GREATER THAN THE CONSERVATION TRESHOLD (E), THEN G = F - E; OTHERWISE G = 0.	
BREAKEVEN POINT	
H. BREAKEVEN POINT (AMOUNT OF FOREST THAT MUST BE RETAINED SO THAT NO MITIGATION IS REQUIRED)	5.1
(1) IF THE AREA OF FOREST ABOVE CONSERVATION TRESHOLD (G) IS GREATER THAN 0, THEN H = (0.2 x THE AREA OF FOREST ABOVE CONSERVATION TRESHOLD (G)) + THE CONSERVATION TRESHOLD (E);	
(2) IF THE AREA OF FOREST ABOVE CONSERVATION TRESHOLD (G) IS EQUAL TO 0, THEN H = EXISTING FOREST COVER (F)	
I. FOREST CLEARING PERMITTED WITHOUT MITIGATION	
I = EXISTING FOREST COVER (F) - BREAKEVEN POINT (H)	
PROPOSED FOREST CLEARING	
J. TOTAL AREA OF FOREST TO BE CLEARED	1.8
K. TOTAL AREA OF FOREST TO BE RETAINED	9.1
K = EXISTING FOREST COVER (F) - FOREST TO BE CLEARED (J)	
PLANTING REQUIREMENTS	
IF THE TOTAL AREA OF FOREST TO BE RETAINED (K) IS AT OR ABOVE THE BREAKEVEN POINT (H), NO PLANTING IS REQUIRED, AND NO FURTHER CALCULATIONS ARE NECESSARY (L=0, M=0, N=0, P=0, Q=0, R=0).	
OTHERWISE, CALCULATE THE PLANTING REQUIREMENT(S) AS FOLLOWS:	
L. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION TRESHOLD	
(1) IF THE TOTAL AREA OF FOREST TO BE RETAINED (K) IS GREATER THAN THE CONSERVATION TRESHOLD (E), THEN L = THE AREA OF FOREST TO BE CLEARED (J) x 0.25;	
(2) IF THE FOREST TO BE RETAINED (L) IS LESS THAN OR EQUAL TO THE CONSERVATION TRESHOLD (E), THEN L = AREA OF FOREST ABOVE CONSERVATION TRESHOLD (G) x 0.25	
M. REFORESTATION FOR CLEARING BELOW THE CONSERVATION TRESHOLD	
(1) IF EXISTING FOREST COVER (F) IS GREATER THAN THE CONSERVATION TRESHOLD (E) AND THE FOREST TO BE RETAINED (K) IS LESS THAN OR EQUAL TO THE CONSERVATION TRESHOLD (E), THEN M = 2.0 x (CONSERVATION TRESHOLD (E) - FOREST TO BE RETAINED (K)	
(2) IF EXISTING FOREST COVER (F) IS LESS THAN OR EQUAL TO THE CONSERVATION TRESHOLD (E), THEN M = 2.0 x FOREST TO BE CLEARED (J)	
N. CREDIT FOR RETENTION ABOVE THE CONSERVATION TRESHOLD	
IF THE AREA OF FOREST TO BE RETAINED (K) IS GREATER THAN THE CONSERVATION TRESHOLD (E), THEN N = K - E; OTHERWISE N = 0	
P. TOTAL REFORESTATION REQUIRED P = L + M - N	
Q. TOTAL AFFORESTATION REQUIRED	
IF EXISTING FOREST COVER (F) IS LESS THAN THE AFFORESTATION TRESHOLD (D), THEN Q = AFFORESTATION TRESHOLD (D) - EXISTING FOREST COVER (F)	
R. TOTAL PLANTING REQUIREMENT R = P + Q	

FCP NOTES

1. ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
2. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE, FOREST CONSERVATION ACT. 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.
3. FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.
4. LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
5. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
6. NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
7. TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE BOUNDARIES WHICH OCCUR WITHIN 15 FEET OF THE PROPOSED LIMITS OF DISTURBANCE.
8. PERMANENT SIGNAGE SHALL BE PLACED 50' - 100' APART ALONG BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS.

NOTE: THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY 9.17 AC. OF ON-SITE RETENTION WHICH IS SUFFICIENT TO MEET AND EXCEED THE BREAK EVEN POINT OF 5.1 ACRES OF RETENTION. EXCESS FOREST RETENTION MAY NOT BE CREDITED TO ANOTHER PROJECT. THE TOTAL SURETY AMOUNT (399,445.2 SQ.FT. x 0.20/SQ.FT. = $79,089.00) WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT.

LEGEND

- ▲ FOREST CONSERVATION SIGNAGE
- —TP—TP—TP— TREE PROTECTION FENCE
- ▬▬▬ LIMIT OF DISTURBANCE
- ⬡ FOREST CONSERVATION EASEMENT / FOREST RETENTION AREA

STATE OF MARYLAND — MICHAEL VITOLO — No. 21075 — REGISTERED PROFESSIONAL ENGINEER

6-0-06

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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JOHN P. CANOLES

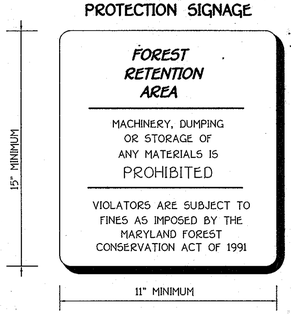
OWNER / DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 8/3/06

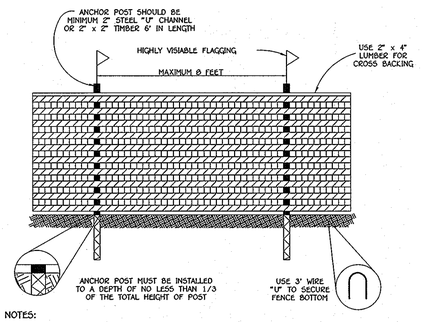
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/1/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/1/06

REVISIONS		
NO.	DESCRIPTION	DATE

FOREST RETENTION AREA PROTECTION SIGNAGE



BLAZE ORANGE PLASTIC MESH



NOTES:
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION DETAIL

NOT TO SCALE

FOREST CONSERVATION NOTES AND DETAILS

HOGG PROPERTY

LOTS 1 - 22, OPEN SPACE LOTS 23 - 26

ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 8, 2006
SHEET 15 OF 17

F-06-109
AS BUILT

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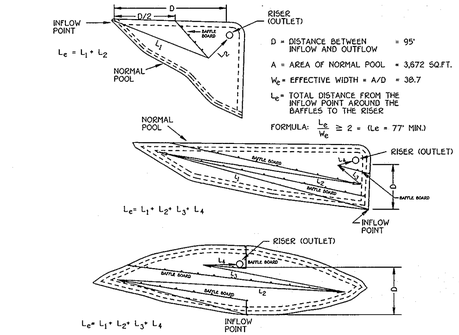
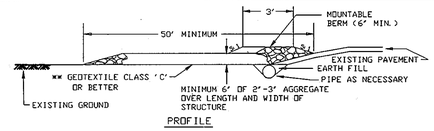
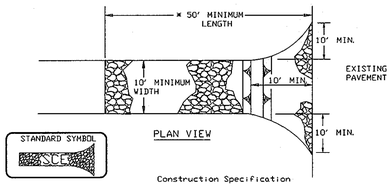


SEDIMENT BASIN BAFFLES

NOT TO SCALE





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.

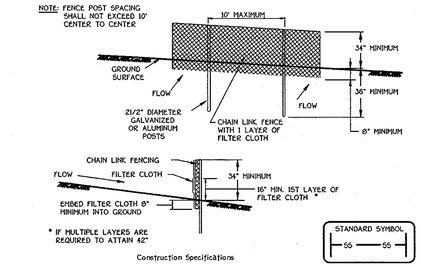
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

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.

STABILIZED CONSTRUCTION ENTRANCE - 2

NOT TO SCALE



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.

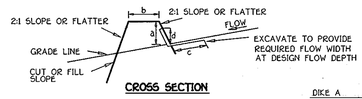
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of free height

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:

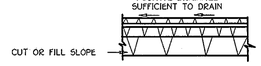
Tensile Strength	50 lbs/in (min)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min)	Test: MSMT 509
Flow Rate	0.3 gal/ft /minute (max)	Test: MSMT 322
Filtering Efficiency	75% (min)	Test: MSMT 322

DETAIL 33 - SUPER SILT FENCE

NOT TO SCALE



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



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

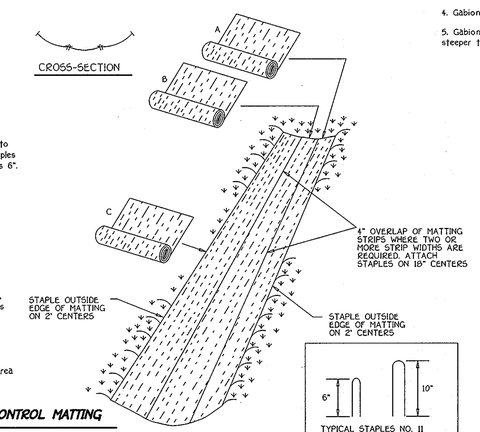
STANDARD SYMBOL
A-2 B-3

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

Construction Specifications

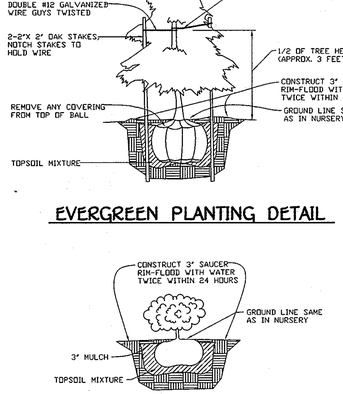
1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectionable 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.

EARTH DIKE



EROSION CONTROL MATTING

NOT TO SCALE



TREE PLANTING DETAIL

EVERGREEN PLANTING DETAIL

SHRUB PLANTING DETAIL

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.

All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug; no heated-in plants from cold storage will be accepted.

Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines For Baltimore-Washington Metropolitan Areas", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.

Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.

Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of site construction.

Bid shall be base on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications

Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plans.

Positive drainage shall be maintained in planting beds 2 percent slope).

Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs. of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.

Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific ground cover to be treated.

All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.

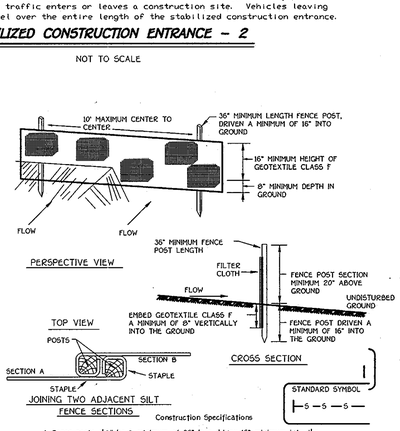
This plan is intended for landscape use only. see other plan sheets for more information on grading, sediment control, layout, etc.

TREE PLANTING DETAIL

NOT TO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

OWNER/DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn: ROB DORSEY



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:

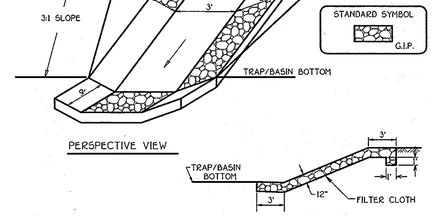
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)^2	Test: MSMT 322
Filtering Efficiency	75% (min)	Test: MSMT 322

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.

DETAIL 22 - SILT FENCE

NOT TO SCALE



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.

GABION INFLOW PROTECTION

NOT TO SCALE

ENGINEER'S CERTIFICATE

I Hereby Certify That This Plan For Erosion And Sediment Control Represents A Workable Plan Based On My Personal Knowledge Of The Site And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature — 6-8-06 Date

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature Of Developer — 6-6-06 Date

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements

U.S.D.A. - Natural Resources Conservation Service — 6/19/06 Date

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

District Howard Soil Conservation Dist. — 6/19/06 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 8/17/06 Date

Chief, Development Engineering Division — 8/7/06 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 8/3/06 Date

SEDIMENT & EROSION CONTROL DETAILS

HOGG PROPERTY

LOTS 1 - 22, OPEN SPACE LOTS 23 - 26

ZONED: R-ED

TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64

SECOND ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

DATE: JUNE 8, 2006

SHEET 16 OF 17

F-06-109

AS BUILT

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20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
   i. Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
   ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
   iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)
   i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
   ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
   iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
   iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

C. Seedbed Preparation
   i. Temporary Seeding
      a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
      b. Apply fertilizer and lime as prescribed on the plans.
      c. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
   ii. Permanent Seeding
      a. Minimum soil conditions required for permanent vegetative establishment:
         1. Soil pH shall be between 6.0 and 7.0.
         2. Soluble salts shall be less than 500 parts per million (ppm).
         3. The soil shall contain less than 40% clay, but have enough fine grained material (-30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or sericea lespedeza is to be planted, then a sandy soil (-30% silt plus clay) would be acceptible.
         4. Soil shall contain 1.5% minimum organic matter by weight.
         5. Soil must contain sufficient pore space to permit adequate root penetration.
         6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
      b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
      c. Apply soil amendments as per soil test or as included on the plans.
      d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

D. Seed Specifications
   i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.

   Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.

   ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.

E. Methods of Seeding
   i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.
      a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen maximum of 100 lbs. per acre total of soluble nitrogen P205 (phosphorous) 200 lbs/Ac. K20 (potassium) 200 lbs/Ac.
      b. Lime - use only ground agricultural limestone. Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
      c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
   ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 26S or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
      b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
   iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
      b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

F. Mulch Specifications (in order of preference)
   i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
   ii. Wood Cellulose Fiber Mulch (WCFM)
      a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
      b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformity spread slurry.
      c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
      d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
      e. WCFM material shall contain no elements or compounds at concentration levels that will be phytoi-toxic.
      f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm, pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

   Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
   i. If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in the section and maintained until the seeding season arrives. Vegetation over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.
   ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
   iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a minimum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

H. Securing Straw Mulch (Mulch Anchoring) Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard.
   i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most cost effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
   ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
   iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
   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 cuts 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.

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 10', 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 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.
   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 and placement of topsoil (if required) grading 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.

SECTION 2 - TEMPORARY SEEDING

Vegetation - Annual grass or grain used to provide cover on disturbed areas for up to 12 months.
For long term protection of vegetative cover, Permanent Seeding is required.

A. Seed mixtures - Temporary Seeding

   i. Select one or more of the species or mixtures listed in Table 26 for the Appropriate Plant Hardiness Zone (from Figure 9) and enter them in the Temporary seeding summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, then Table 26 must be put on the plans.

   ii. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

Seed Mixture (Hardiness Zone _____6b_____ From Table 26					Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
1	BARLEY	122	3/1 - 5/15, 8/15 - 10/15	1" - 2"	600 lb/ac (15 lb/1000sf)	2 tons/ac (100 lb/1000sf)
	OATS	96		1" - 2"		
	RYE	140		1" - 2"		

SECTION 3 - PERMANENT SEEDING

Seeding grass and legumes to establish ground cover for a minimum of one year on disturbed areas generally receiving low maintenance.

A. Seed mixtures - Permanent Seeding

   i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from figure 9) and enter them in the Permanent Seeding summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this summary is not put on the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Technical Field Office Guide, Section 342 - Critical Area Planting. For special lawn maintenance areas, see Sections IV Sod and V Turfgrass.

   ii. For sites having disturbed area over 5 areas, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.

   iii. For areas receiving low maintenance, apply urea-form fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lbs/ac), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

Seed Mixture (Hardiness Zone _____6b_____ From Table 25					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
3	TALL FESCUE (95%) PERENNIAL RYE GRASS (10%) KENTUCKY BLUEGRASS (5%)	125 15 10	3/1 - 5/15, 8/15 - 10/15	1" - 2"	90 lb/ac (2.0 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	2 tons/ac (100 lb/ 1000sf)
10	TALL FESCUE (80%) HARD FESCUE (20%)	120 30	3/1 - 5/15, 8/15 - 10/15	1" - 2"				

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT.
2. NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 24 HOURS BEFORE STARTING WORK.
3. INSTALL ALL TREE PROTECTION FENCE FOR TREES TO BE UNDISTURBED AS INDICATED ON THE PLANS. (2 DAYS). CLEAR AND GRUB FOR SEDIMENT BASIN/SWM POND ONLY. INSTALL STABILIZED CONSTRUCTION ENTRANCE. (2 WEEKS)
4. INSTALL SEDIMENT BASIN/SWM POND AND ASSOCIATED SILT FENCE AS INDICATED ON THE PLANS. NO BLASTING WILL BE PERMITTED FOR THE EXCAVATION OF SEDIMENT BASIN/SWM POND EMBANKMENT. WHERE NECESSARY, RIPPING AND JACK HAMMERING SHOULD BE UTILIZED IN THE EXCAVATION OF THE FACILITY. (2 WEEKS)
5. RECEIVE PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING. CLEAR AND GRUB FOR REMAINING SEDIMENT CONTROL MEASURES. INSTALL REMAINING SEDIMENT CONTROL MEASURES, EARTH DIKES, SILT FENCE, AND THE DRAINAGE SWALES ALONG THE PROPERTY BOUNDARY AS INDICATED ON THE PLANS. (1 WEEK)

   NOTE: ALL OLD AND NEW JUNK, TRASH, DEBRIS AND UNNATURAL ITEMS SHALL BE REMOVED FROM OPEN SPACE LOT 25.

6. RECEIVE PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING. CLEAR AND GRUB THE REMAINDER OF THE SITE. (3 DAYS)
7. GRADE SITE TO THE PROPOSED SUB-GRADE AND INSTALL THE SEWER AND WATER ALONG WITH THE STORM DRAIN SYSTEM. STABILIZE ALL SLOPES IMMEDIATELY UPON COMPLETION OF GRADING. (3 WEEKS)
8. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON, AFTER EACH RAINFALL AND ON A DAILY BASIS. REMOVE SEDIMENT FROM THE POND WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED. ALL SEDIMENT MUST BE PLACED UPSTREAM OF THE APPROVED TRAPPING DEVICE.
9. CONSTRUCT CURB AND GUTTER AND ROAD BASE COURSE. (2 WEEKS)
10. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES AND THE POND HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE DEVICES MAY BE REMOVED AND/OR BACKFILLED AND THE REMAINING AREAS BROUGHT TO FINAL DESIGN GRADE. STABILIZE ALL REMAINING AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 WEEKS)
11. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR FINAL INSPECTION OF THE COMPLETED PROJECT.

TOTAL DURATION = 12 WEEKS SUBJECT TO WEATHER CONDITIONS.

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition

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

Purpose

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

Conditions Where Practice Applies

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 supplies 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 representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications - Soil to be used as topsoil must neet the following:
   i. Topsoil shall be a loan, sandy loan, clay loan, silt loan, sandy clay loan, loany sand. Other soils may be used if recommended by an 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 11/2" in diameter.
   ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnson grass, 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 of 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 content greater than 500 parts per million shall not be used.
      d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-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 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

V. Topsoil Application
   i. When top soiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
   ii. Grades on the areas to be top soiled, 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 top soiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
   iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and anendments 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 anendments 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 neet these requirements, the appropriate constituents must be added to neet 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 anended with a potassium fertilizer applied at the rate of 4 lb/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.

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
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 MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. GRADING NECESSARY TO INSTALL STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES TO BE PERFORMED FIRST. REMAINDER OF THE GRADING TO BE PERFORMED AFTER STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES ARE INSTALLED.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, 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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 50, 500 (SEC. 54), TEMPORARY SEEDING (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	17.98	ACRES
AREA DISTURBED	7.4	ACRES
AREA TO BE ROOFED OR PAVED	1.2	ACRES
AREA TO BE VEGETATIVELY STABILIZED	6.2	ACRES
TOTAL CUT	28000	CU.YDS.
TOTAL FILL	4500	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION TO BE DETERMINED BY CONTRACTOR		

8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTUIBANCE.
9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY 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 THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

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STATE OF MARYLAND — DAVID MICHAEL WILLIAMS — NO 20774 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

I Hereby Certify That This Plan For Erosion And Sediment Control Represents A Workable Plan Based On My Personal Knowledge Of The Site Conditions That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

STATE OF MARYLAND — DAVID MICHAEL WILLIAMS — NO 20774 — REGISTERED PROFESSIONAL ENGINEER

Signature Of Engineer — 6-8-06 Date

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature Of Developer — 6-6-06 Date

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

U.S.D.A. - Natural Resources Conservation Service — 6/9/06 Date

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

District Manager, Soil Conservation District — 6/9/06 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 8/17/06 Date

Chief, Development Engineering Division — 8/17/06 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 6/5/06 Date

OWNER/DEVELOPER
DORSEY FAMILY HOMES
10717B BIRMINGHAM WAY
WOODSTOCK, MARYLAND 21163
Attn ROB DORSEY

SEDIMENT & EROSION CONTROL NOTES

HOGG PROPERTY

LOTS 1 - 22, OPEN SPACE LOTS 23 - 26
ZONED: R-ED
TAX MAP NO. 25 GRID NO. 14 PARCEL NO. 64
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 9, 2006
SHEET 17 OF 17

F-06-109
AS BUILT