ROADWAY AND STORM DRAIN PLANS

ORCHARD ESTATES

LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

5th ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

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GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION" PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.

2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.

3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AY LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.

4. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.

5. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY PREPARED BY PATTON HARRIS RUST AND ASSOCIATES DATED SEPT. 2004.

6. THE COORDINATES SHOWN HEREON ARE BASED UPON THE MARYLAND COORDINATE SYSTEM NAD 83 (MCS). HOWARD COUNTY MONUMENT NOS. 41CG AND 41GB.

7. PRIVATE WELLS WILL BE USED TO SERVE THIS PROPERTY.

8. PRIVATE INDIVIDUAL SEPTIC AREAS WILL BE USED TO SERVE THIS PROPERTY

9. STORMWATER MANAGEMENT FOR THIS SITE WILL BE PROVIDED BY ONE DRY EXTENDED DETENTION POND AND TWO BIO-RETENTION FACILITIES. DRY EXTENDED DETENTION POND WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED BY HOWARD COUNTY AND HOA. BIO-RETENTION FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY HOA.

10. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.

11. THERE ARE NO WETLANDS ON-SITE STUDY FOR THIS PROJECT AS DETERMINED BY PATTON HARRIS RUST AND ASSOCIATES FIELD WALKED, DATED DECEMBER 2004. DRY EXTENDED DETENTION POND WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED BY HOWARD COUNTY AND HOA. BIO-RETENTION FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED BY HOA.

12. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY TRAFFIC CONCEPTS INC. DATED DECEMBER 2004.

13. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.

14. THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY PATTON HARRIS RUST AND ASSOCIATES DATED SEPTEMBER 2004.

15. SUBJECT PROPERTY ZONED RR-DEO PER 2-02-04 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING AMENDMENTS DATED 7/28/06.

16. ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.

17. SEE DEPARTMENT OF PLANNING AND ZONING FILE NO'S.: SP 05-15, RE 06-007.

18. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.

19. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.

20. NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.

21. DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOL. III. ALL 40' RIGHT OF WAYS 25 M.P.H.

22. ALL STREET CURB RETURNS SHALL HAVE 25' RADII UNLESS OTHERWISE NOTED.

23. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE STREAM OR REQUIRED BUFFER, AND FOREST CONSERVATION EASEMENT AREAS.

24. BASED ON AVAILABLE COUNTY MAPS AND RECORDS, THERE ARE NO HISTORIC STRUCTURES OR KNOWN CEMETERIES LOCATED ON THE SUBJECT PROPERTY.

25. THE FOREST CONSERVATION OBLIGATION FOR THE PROPOSED SITE DEVELOPMENT HAS BEEN MET BY PLACING 1.56± AC (67,953.60 SF±) OF FOREST IN AN ON-SITE FOREST RETENTION EASEMENT. FOREST CONSERVATION SURETY IN THE AMOUNT OF $13,590.72 (67,953.60 SF X $0.20/SF) WILL BE POSTED.

THE REMAINING OBLIGATION OF 2.15 AC (93,654 SF) WILL BE SATISFIED BY OFFSITE FOREST CONSERVATION EASEMENTS ON THE RUSSELL HOLLAND PROPERTY AT TAX MAP 7, PARCEL 101, AND TAX MAP 8, PARCEL 4 (F-07-130). A 4.3 ACRE (187,308 SF) OFFSITE RETENTION EASEMENT SATISFIES THE REMAINING OBLIGATION OF 2.15 ACRES (93,654 SF). OFFSITE FOREST CONSERVATION SURETY IN THE AMOUNT OF $37,461.60 (187,308 x $0.20/SF) WILL BE POSTED.

26. PRESERVATION PARCELS A, B & C HAVE NO FURTHER SUBDIVISION POTENTIAL.

27. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.

28. LAND DEDICATED TO HOWARD COUNTY, MARYLAND, FOR PURPOSES OF A PUBLIC ROAD IS 1.1071 ACRES.

29. PARCELS A,B, & C WILL BE PRIVATELY OWNED. THE EASEMENT HOLDERS FOR PARCELS A, B, & C WILL BE THE HOMEOWNER'S ASSOCIATION AND HOWARD COUNTY.

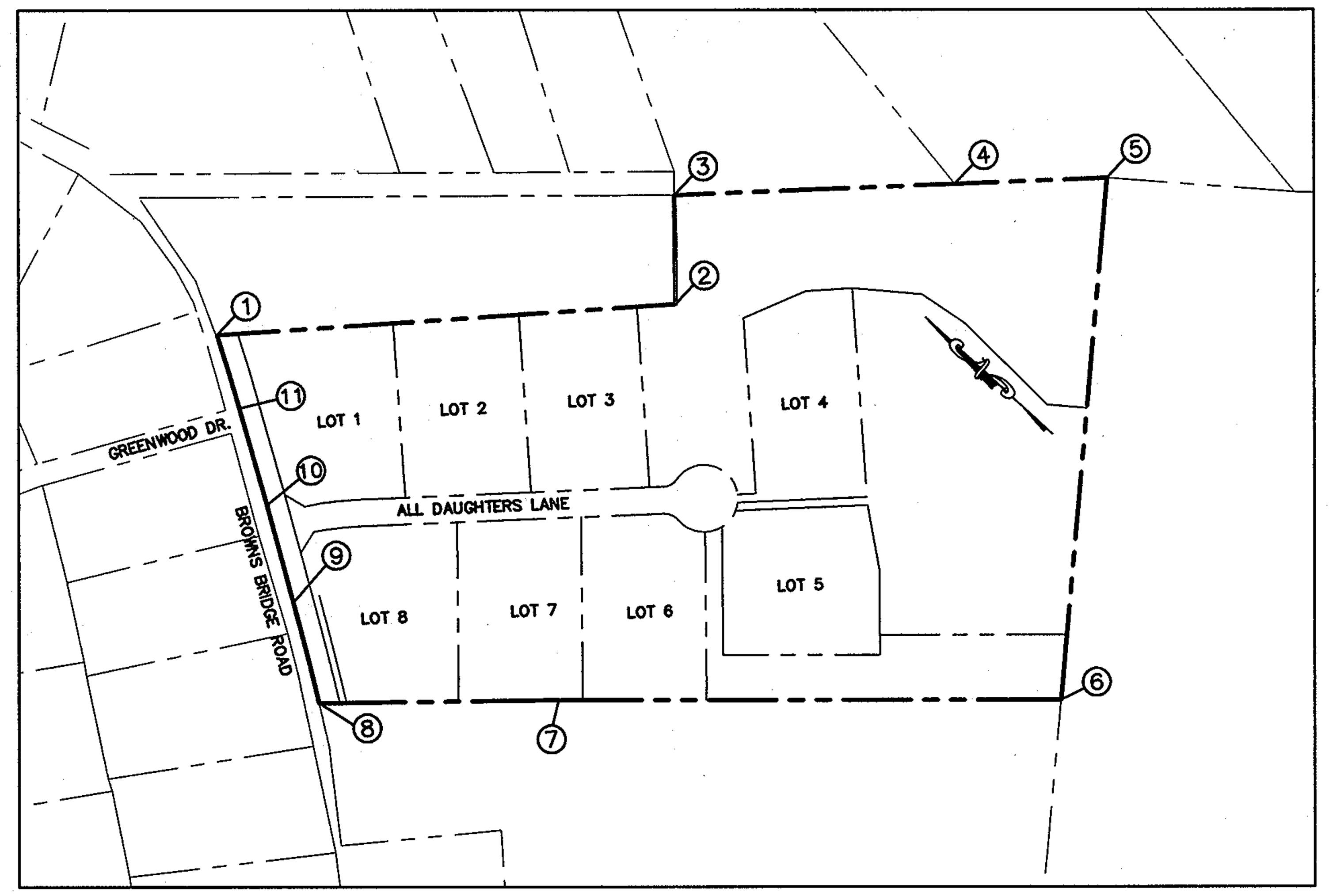
30. 95% COMPACTION IS REQUIRED IN FILL AREAS UNDER ROADS AND PROPOSED STORM DRAIN PIPES PER AASHTO T-180 STANDARDS.

31. ALL SIGN POSTS 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 GA.) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED, SQUARE TUBE SLEEVE (12 GA.) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

32. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE AMENDED ZONING REGULATIONS PER COUNCIL BILL NO. 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS/PARCELS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE BUILDING/GRADING PERMIT APPLICATIONS.

33. 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 REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF $26,550.00 FOR 74 SHADE TREES, 0 ORNAMENTAL TREES, 29 EVERGREEN TREES, AND 0 SHRUBS.

34. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE AMENDED ZONING REGULATIONS PER COUNCIL BILL NO. 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS/PARCELS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE BUILDING/GRADING PERMIT APPLICATIONS.



PLAN
SCALE: 1" = 200'

WATER AND SEWER GENERAL NOTES:

1. THIS AREA ▨ DESIGNATES A PRIVATE SEPTIC EASEMENT OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL . IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A REVISED SEWAGE EASEMENT SHALL NOT BE NECESSARY.

2. PERC HOLES SHOWN HEREON HAVE BEEN FIELD LOCATED BY PATTON HARRIS RUST AND ASSOCIATES,PC IN AUGUST 2004.

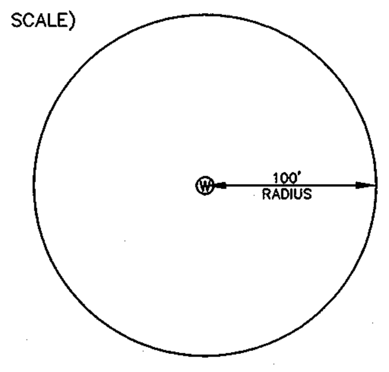
3. ⌖ B51 DENOTES PASSING PERC TEST.

4. ● B30 DENOTES FAILED PERC TEST.

5. WELLS AND SEPTIC SYSTEMS WITHIN 100 FEET OF THE PROPERTY BOUNDARY HAVE BEEN SHOWN TO THE BEST OF OUR KNOWLEDGE AND INFORMATION FROM AVAILABLE COUNTY RECORDS.

6. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARLAND DEPARTMENT OF THE ENVIRONMENT AND HOWARD COUNTY.

7. DENOTES WELL (NOT TO SCALE)



8. ALL WELLS TO BE DRILLED PRIOR TO FINAL PLAT APPROVAL. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED "GOVERNMENT DELAY" IF THE WELL DRILLING HOLDS UP THE HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT.

COORDINATE LIST

1	N 545,449.73	E 1,328,318.94
2	N 544,979.55	E 1,328,814.70
3	N 545,090.87	E 1,328,933.29
4	N 544,795.48	E 1,329,228.27
5	N 544,635.17	E 1,329,388.08
6	N 544,158.91	E 1,328,769.82
7	N 544,707.98	E 1,328,262.93
8	N 544,966.70	E 1,328,018.45
9	N 545,096.19	E 1,328,102.52
10	N 545,223.42	E 1,328,182.95
11	N 545,351.35	E 1,328,260.99

SITE TABULATION

EXISTING ZONING	RR-DEO
GROSS AREA OF PROPERTY	18.57 AC (809,079 SF)
AREA IN 100 YR. FLOODPLAIN	0 AC
AREA OF STEEP SLOPE	0.21 AC
NET TRACT AREA	18.36 AC
AREA OF RIGHT OF WAY	1.11 AC
AREA OF PROPOSED BUILDABLE LOTS	12.45 AC
AREA OF PROPOSED NON-BUILDABLE PRESERVATION PARCELS	5.01 AC
MINIMUM LOT SIZE SELECTED	47,000 SF
AREA OF REQUIRED OPEN SPACE	NONE
NUMBER OF BUILDABLE LOTS	8 *
NUMBER OF BUILDABLE PRESERVATION PARCELS	1
NUMBER OF NON-BUILDABLE PRESERVATION PARCELS	2
NUMBER OF OPEN SPACE LOTS	N/A
PROPOSED WATER AND SEWER	PRIVATE WELL AND SEPTIC

* DENSITY EXCHANGE OPTION WILL BE USED TO IMPORT DENSITY UNITS TO THIS PARCEL.

BASE DENSITY = 18.57 AC/4.25 = 4.36 OR 4 UNITS
DEO OPTION DENSITY = 18.36 AC/2 = 9 UNITS
TOTAL DEO UNITS REQUIRED = 9-4=5 UNITS

EXISTING STRUCTURE LIST

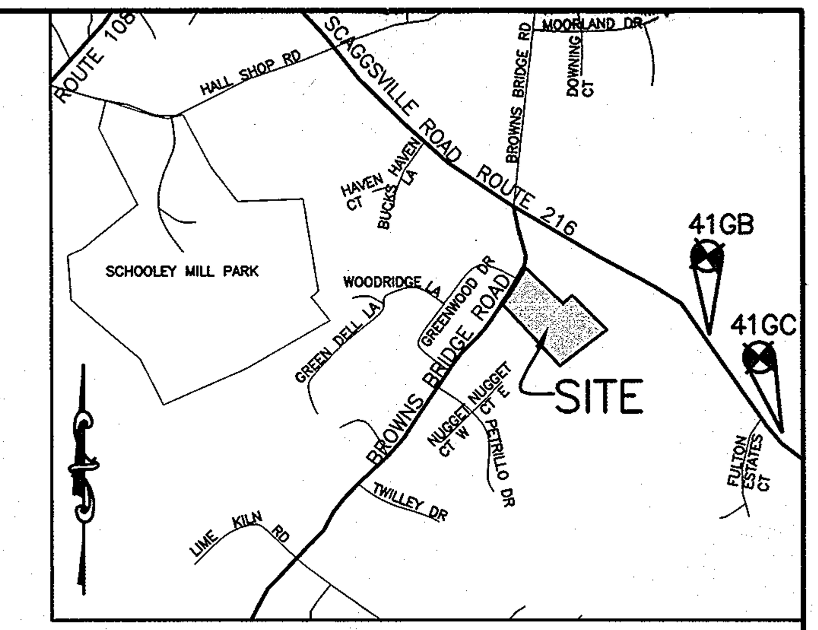
LOCATION	AGE	USE FOR	REMOVE/RETAIN
N 544936 E 1328089	–	–	REMOVE
N 544612 E 1328374	–	–	REMOVE
N 544571 E 1328388 (EX. FENCE)	–	PROTECT PROPERTY LINE	RETAIN

MINIMUM LOT SIZE CHART

LOT NO.	GROSS AREA	PIPESTEM AREA	MIN LOT SIZE
1	52,439	–	52,439
2	49,245	–	49,245
3	47,077	–	47,077
4	49,747	327	49,420
5	49,938	–	49,938
6	49,896	–	49,896
7	49,677	–	49,677
8	54,347	–	54,347
A	140,111	2,332	137,779

ALL AREAS SHOWN ABOVE ARE IN SQUARE FEET

PRESERVATION PARCEL A, B & C – JUSTIFICATION
THREE PRESERVATION PARCELS HAVE BEEN CREATED IN THIS CLUSTER SUBDIVISION. THE NON-BUILDABLE PRESERVATION PARCEL B HAS BEEN CREATED TO PRESERVE THE ON-SITE FOREST RESOURCES. PRESERVATION PARCEL A HAS BEEN CREATED TO PROVIDE A BUILDABLE HOUSE SITE. IN ADDITION, ALL OF THE PROJECT'S WATER QUALITY AND QUANTITY MANAGEMENT FACILITIES WILL BE LOCATED ON THE NON-BUILDABLE PRESERVATION PARCELS B & C. THE EXISTING HEDGEROWS AND VEGETATION ALONG THE PROPERTY BOUNDARIES ARE BEING PRESERVED.



VICINITY MAP
SCALE: 1"=2000'

BENCH MARK
HOWARD COUNTY CONTROL STATION 41GC
N 543290.6332
E 1331697.8591
ELEV. 468.374

HOWARD COUNTY CONTROL STATION 41GB
N 544580.3747
E 1330741.3820
ELEV. 475.304

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

[signature] 11-20-07
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cindy Hamilton 11/30/07
CHIEF, DIVISION OF LAND DEVELOPMENT BC — DATE

[signature] 11/27/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A &
NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
TITLE SHEET

Patton Harris Rust & Associates,pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07
DATE

STATE OF MARYLAND — DOMENICK W. COLANGELO — NO. 27200 REGISTERED PROFESSIONAL ENGINEER

DOMENICK W. COLANGELO #27200

CHECKED BY:	DWC
DESIGNED BY :	NS
DRAWN BY:	EMR/JMK
PROJECT NO:	13043/1-0/ENGR/PLANS/FINAL/C000COV.DWG
DATE :	NOVEMBER 6, 2007
SCALE :	AS SHOWN
DRAWING NO.	1 OF 21

F-07-005

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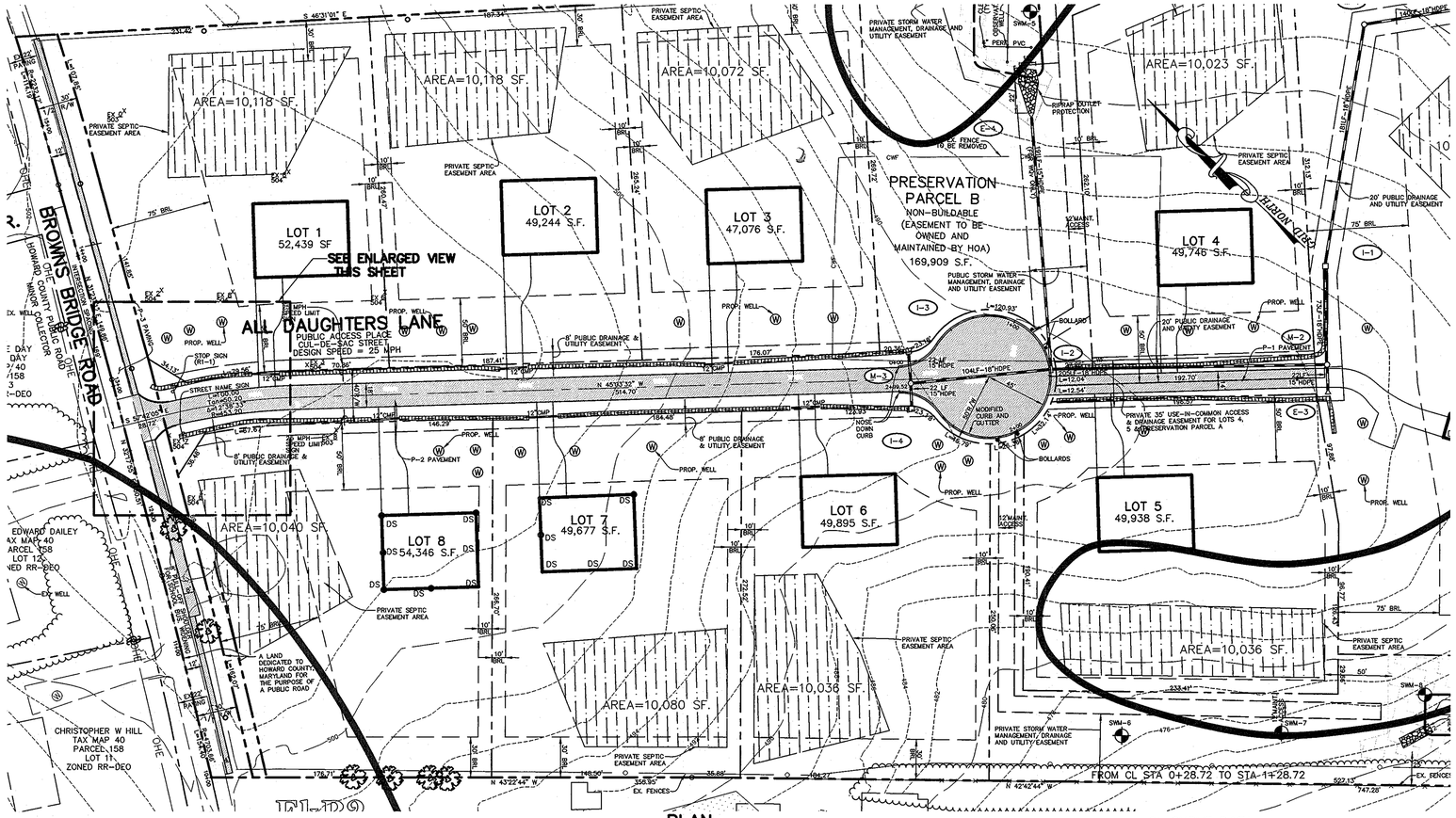
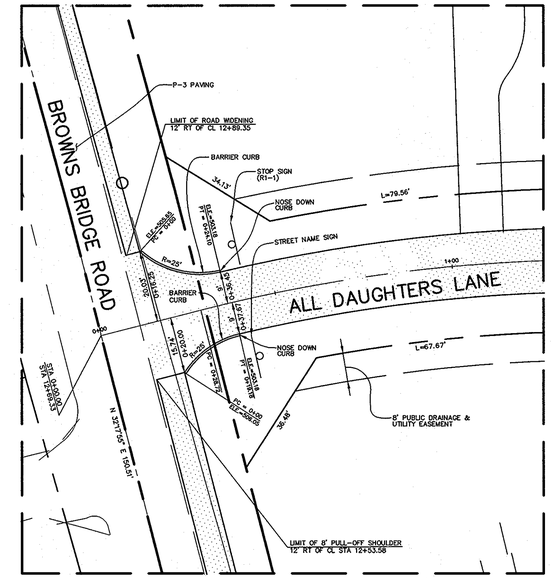


PLAN

GRAPHIC SCALE 1"=50'

25' 0' 50' 100'



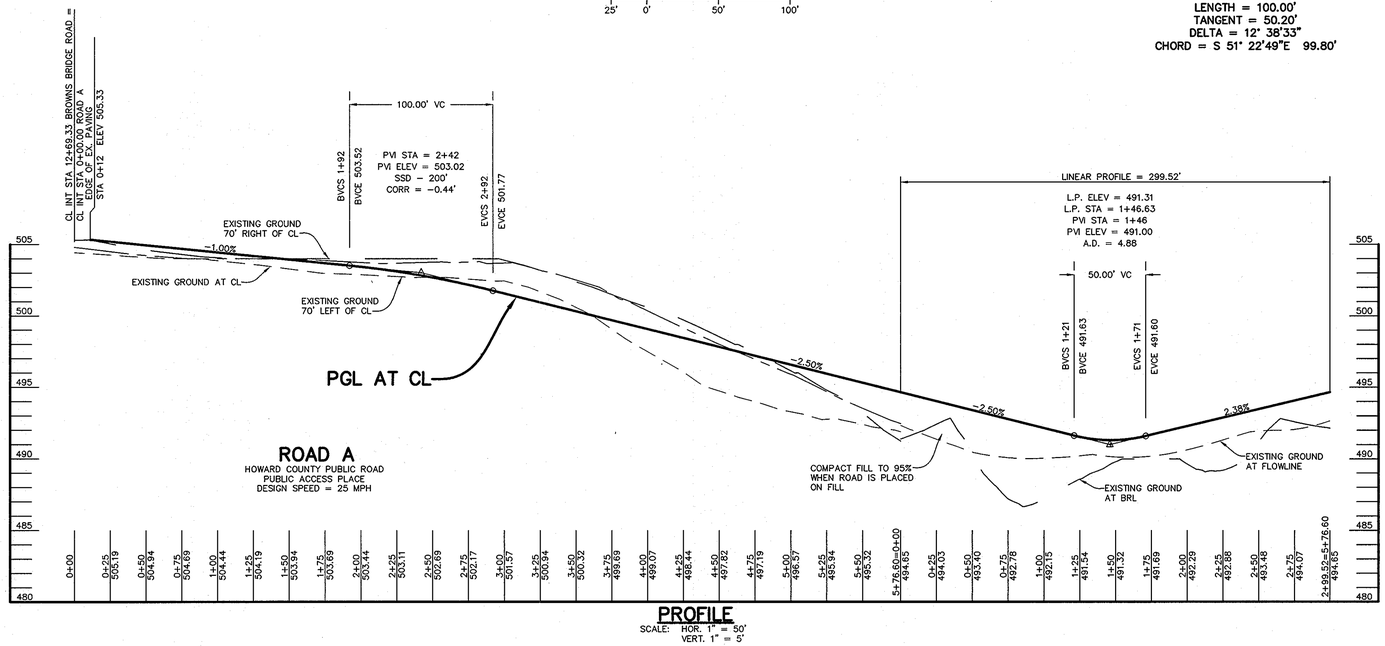
ENLARGED VIEW

GRAPHIC SCALE 1"=20'

10' 0' 20' 40'

CL CURVE DATA

RADIUS = 453.20'
LENGTH = 100.00'
TANGENT = 50.20'
DELTA = 12° 38'33"
CHORD = S 51° 22'49"E 99.80'



ROAD A

HOWARD COUNTY PUBLIC ROAD
PUBLIC ACCESS PLACE
DESIGN SPEED = 25 MPH

PROFILE

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

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/20/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A &
NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
PLAN AND PROFILE OF ALL DAUGHTERS LANE

Patton Harris Rust & Associates, pc
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8818 Centre Park Drive
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F 410.997.9282

10/22/07
DATE

STATE OF MARYLAND — DOMENICK WILLIAM COLANGELO — NO. 27200 — PROFESSIONAL ENGINEER

DOMENICK W. COLANGELO #27200

CHECKED BY:	DWC
DESIGNED BY :	NS
DRAWN BY:	EMR\JMK
PROJECT NO:	13043/1-0/ENGR/PLANS/FINAL/C400ROAD.DWG
DATE :	NOVEMBER 6, 2007
SCALE :	AS SHOWN
DRAWING NO.	2 OF 21

F-07-005

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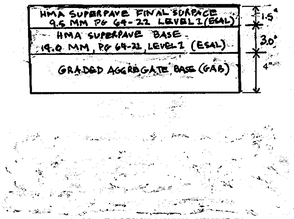
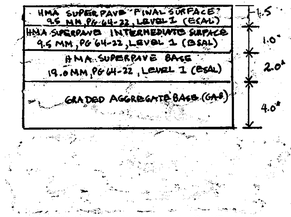


HOWARD COUNTY DESIGN MANUAL VOLUME IV– STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R–2.01)

THE PAVING SECTION SHOWN HAS NOT BEEN DESIGNED FOR ACTUAL SOIL CONDITIONS, IN PLACE COMPACTION RESULTS, OR TRAFFIC VOLUMES SPECIFIC TO THIS PROJECT. IT IS RECOMMENDED THAT THE USER CONSULT WITH A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER FOR A SPECIFIC PAVING DESIGN BASED ON THE APPROPRIATE PARAMETERS PRIOR TO INSTALLATION OF THIS PAVING SECTION.

P–1 PAVING



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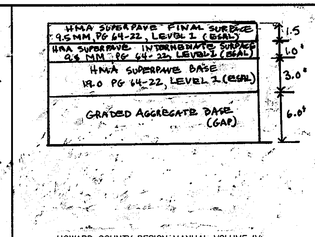
P–2 PAVING



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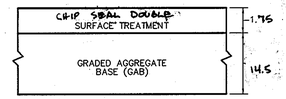
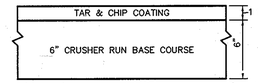
P–3 PAVING



HOWARD COUNTY DESIGN MANUAL VOLUME IV– STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R–2.02)

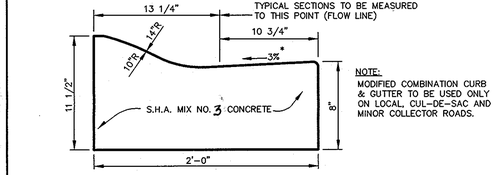
THE PAVING SECTION SHOWN HAS NOT BEEN DESIGNED FOR ACTUAL SOIL CONDITIONS, IN PLACE COMPACTION RESULTS, OR TRAFFIC VOLUMES SPECIFIC TO THIS PROJECT. IT IS RECOMMENDED THAT THE USER CONSULT WITH A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER FOR A SPECIFIC PAVING DESIGN BASED ON THE APPROPRIATE PARAMETERS PRIOR TO INSTALLATION OF THIS PAVING SECTION.

P–7 PAVING



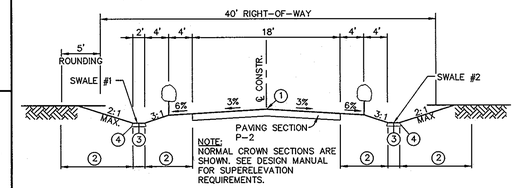
DRIVEWAYS

NOT TO SCALE



MODIFIED COMBINATION CURB AND GUTTER

* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB AND GUTTER.



OPEN SECTION

(1) PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.

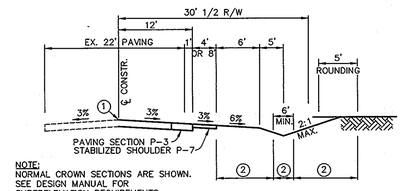
(2) INDICATES 2" TOPSOIL, SEED AND MULCH.

(3) DITCH CROSS SECTION SLOPE MAY BE FLATTENED TO PROVIDE A SWALE AT OR NEAR THE CREST OF VERTICAL CURVES WHERE QUANTITY OF SWALE FLOW IS SMALL, AS APPROVED BY DPW.

(4) EROSION CONTROL MATTING

TYPICAL SECTION OF ALL DAUGHTERS LANE

NOT TO SCALE

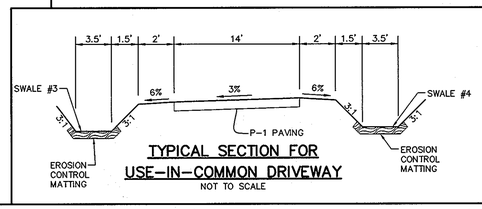


(1) PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.

(2) INDICATES 2" TOPSOIL, SEED AND MULCH.

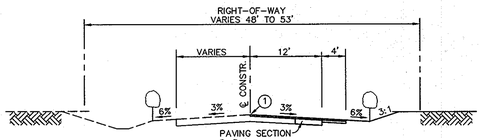
TYPICAL SECTION BROWNS BRIDGE ROAD

NOT TO SCALE



TYPICAL SECTION FOR USE–IN–COMMON DRIVEWAY

NOT TO SCALE

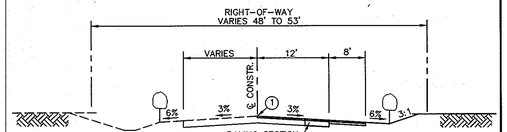


OPEN SECTION

(1) PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.

TYPICAL SECTION OF BROWNS BRIDGE ROAD STA. 10+00 TO STA. 11+19.37

NOT TO SCALE

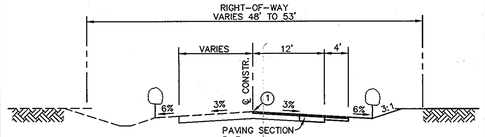


OPEN SECTION

(1) PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.

TYPICAL SECTION OF BROWNS BRIDGE ROAD STA. 11+19.37 TO STA. 12+53.58

NOT TO SCALE

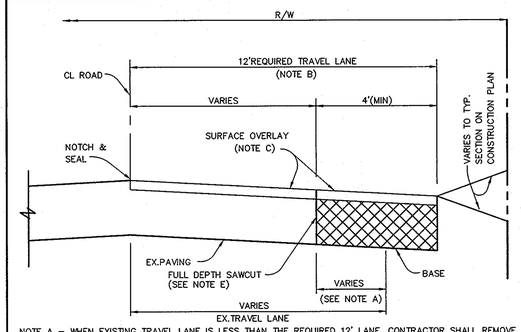


OPEN SECTION

(1) PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.

TYPICAL SECTION OF BROWNS BRIDGE ROAD STA. 12+89.35 TO STA. 15+63

NOT TO SCALE



NOTE A – WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE, CONTRACTOR SHALL REMOVE ENOUGH OF THE EXISTING ROAD BED TO PROVIDE A MINIMUM BASE WIDENING OF 4'.

NOTE B – THE SURFACE OVERLAY SHALL BE CARRIED TO THE CL OF THE ROAD AND NOTCHED AND SEALED.

NOTE C – SURFACE OVERLAY COURSE TO BE EQUAL TO SURFACE COURSE OF TYPICAL PAVING SECTION OF SUBDIVISION.

NOTE D – CL OF ROAD TO BE MILLED AT DEPTH OF 1 1/2"x1'WIDE USING A MILLING MACHINE.

NOTE E – PROVIDE FULL DEPTH SAWCUT ONE FOOT MINIMUM ONTO EXISTING BROWNS BRIDGE ROAD.

WIDENING STRIPS ALONG BROWNS BRIDGE ROAD

NOT TO SCALE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/20/07

DATE	NO.	REVISION

OWNER

CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410–531–5539

DEVELOPER

RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410–365–0414

PROJECT

ORCHARD ESTATES
LOTS 1–8, PRESERVATION PARCEL A & NON–BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR–DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

ROAD SECTIONS AND DETAILS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07 DATE

DOMENICK W. COLANGELO #27200

CHECKED BY:	DWC
DESIGNED BY :	NS
DRAWN BY:	EMR\JMK
PROJECT NO:	13043/1–0/ENGR/PLANS/FINAL/C400ROADSECT
DATE :	NOVEMBER 6, 2007
SCALE :	AS SHOWN
DRAWING NO.	3 OF 21

F–07–005

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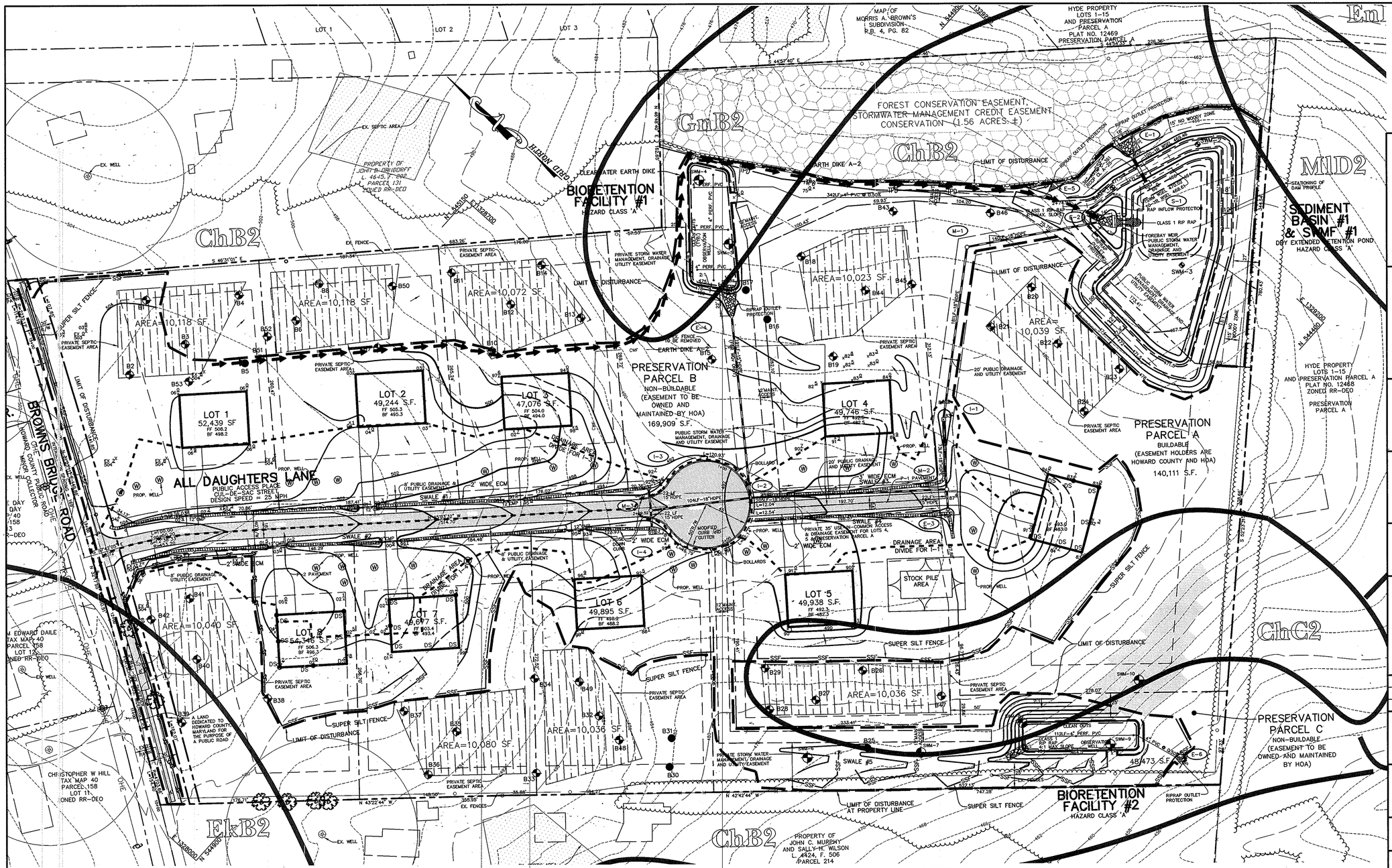

GRAPHIC SCALE 1"=50'
25' 0' 50' 100'

FOR DRAINAGE AREA 1A, NON-ROOFTOP RUNOFF AND GRASS CHANNEL CREDITS WILL BE APPLIED TOWARDS THE WQv AND Rev REQUIREMENTS FOR THAT AREA THAT DOES NOT DRAIN TO BIORETENTION FACILITY #1. THE BIORETENTION FACILITY WILL PROVIDE FOR THE REMAINING WQv AND THE ROAD SIDE SWALES WILL PROVIDE Rev. Cpv WILL BE PROVIDED WITH A DRY EXTENDED DETENTION POND.

FOR DRAINAGE AREA 1B, THE NATURAL AREA CONSERVATION CREDIT WILL BE USED TO MEET THE REQUIRED WQv. Rev WILL BE PROVIDED FOR IN DRAINAGE AREA 1A. Cpv IS NOT REQUIRED BECAUSE THE 1-YEAR PEAK DISCHARGE IS LESS THAN 2 CFS.

FOR DRAINAGE AREA 2A, THE DISCONNECTION OF ROOFTOP RUNOFF CREDIT WAS APPLIED TOWARDS THE Rev REQUIREMENTS AND WAS USED TO REDUCE THE RCN FROM 67 TO 65. THE WQv WILL BE PROVIDED IN BIORETENTION FACILITY #2. THE REMAINING Rev WILL BE TREATED BY CREDITS IN DRAINAGE AREA 1A. Cpv IS NOT REQUIRED BECAUSE THE 1-YEAR PEAK DISCHARGE IS LESS THAN 2 CFS.

STORMWATER MANAGEMENT SUMMARY TABLE

	DRAINAGE AREA (AC)	WQv (CF)	Rev (CF)	Cpv (AC-FT)	Qp 1 (CFS)	Qp 10 (CFS)	Qp 100 (CFS)	COMMENTS
DA 1A (POND)	10.0	7569	1904	0.267	0.11	9.92	29.0	CREDITS, BIORETENTION AND DRY POND
DA 1B	7.0	309	70	N/A	1.13	9.77	19.5	CREDITS Cpv < 2 CFS
DA 2A	6.4	4559	1148	N/A	1.98	13.91	26.8	CREDITS, BIORETENTION Cpv < 2 CFS
SP #1	17.0	–	–	–	1.18	19.31	48.4	
SP #2	30.7	–	–	–	18.74	81.86	145.0	

SOILS CHART

MAP SYMBOL	NAME	STRUCTURAL LIMITATIONS DWELLINGS	EROSION HAZARD	HYDRIC	SLOPE (%)
ChB2	CHESTER SILT LOAM	SLIGHT	MODERATE	NO	3-8%
ChC2	CHESTER SILT LOAM	MODERATE	MODERATE	NO	8-15%
ExB2	ELIOAK SILT LOAM	SLIGHT	MODERATE	NO	3-8%
GnB2	GLENVILLE SILT LOAM	MODERATE	MODERATE	NO+	3-8%
MID2	MANOR LOAM	MODERATE/SEVERE	MODERATE	NO	15-25%

* SOIL MAY CONTAIN HYDRIC INCLUSIONS

DRAINAGE AREA CHART

INLET NO.	AREA (AC.)	C	% IMP
I-1	0.70	0.21	21
I-2	0.17	0.86	47
I-3	1.13	0.21	19
I-4	0.88	0.21	31

LEGEND

EROSION CONTROL MATTING
EXISTING FENCE
EXISTING CONTOUR
PROPOSED CONTOUR
EXISTING WELL
TEMPORARY PROPOSED CONTOURS
STEEP SLOPE AREA
PROPERTY LINE
LIMIT OF DISTURBANCE
EXISTING SOILS
PROPOSED SEPTIC AREA
EXISTING BUILDING
PROPOSED BUILDING
EXISTING TREELINE
EXISTING SEPTIC AREA
PROPOSED WELL
WET SEASON SOILS
INLET DRAINAGE AREA DIVIDES

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER _____ 10/24/07 DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

ENGINEER _____ 10/22/07 DATE

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

NATURAL RESOURCES CONSERVATION SERVICE _____ DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT _____ 11/5/07 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS _____ 11-20-07 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT _____ 11/20/07 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ 11/20/07 DATE

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
GRADING, SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07 DATE

STATE OF MARYLAND DOMENICK WILLIAM COLANGELO No. 27200 REGISTERED PROFESSIONAL ENGINEER

DOMENICK W. COLANGELO #27200

CHECKED BY:	DWC
DESIGNED BY :	NS
DRAWN BY:	EMR\JMK
PROJECT NO:	13043/1-0/ENGR/PLANS/FINAL/C600GRA.DWG
DATE :	NOVEMBER 6, 2007
SCALE :	1" = 50'
DRAWING NO.	4 OF 21

F-07-005

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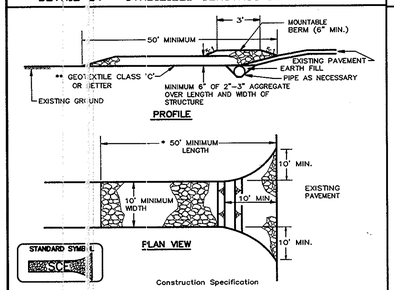
DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



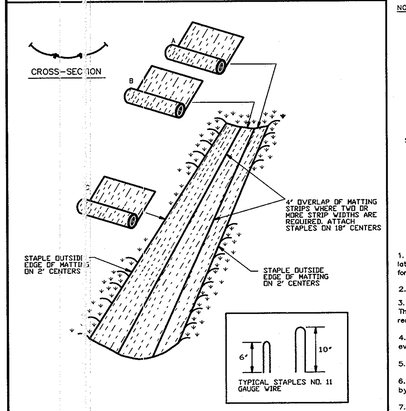
STANDARD SYMBOL: SCE

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 a 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 construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

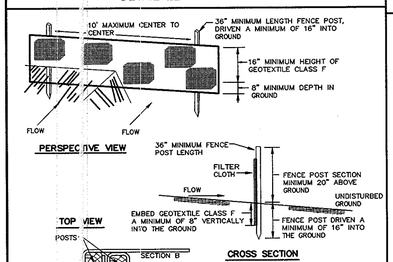
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 30 - EROSION CONTROL MATTING



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

DETAIL 22 - SILT FENCE



STANDARD SYMBOL: SF

JOINING TWO ADJACENT SILT FENCE SECTIONS:

Construction Specifications

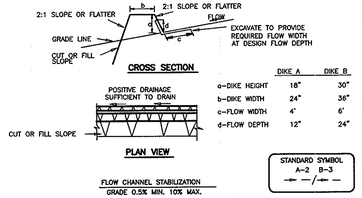
1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear 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 ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

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

DETAIL 1 - EARTH DIKE



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

STANDARD SYMBOL: A-2 B-3

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

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

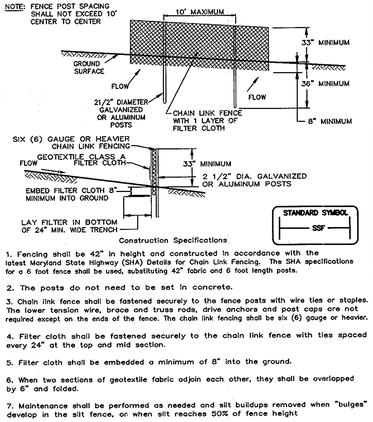
Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
8. Inspection and maintenance must be provided periodically and after each rain event.

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

DETAIL 33 - SUPER SILT FENCE

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



STANDARD SYMBOL: SSF

Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway (SHA) Details for Chain Link Fencing. The SHA specifications for a 6 foot fence shall be used, substituting 42" fabric and 6 foot length posts.
2. The posts do not need to be set in concrete.
3. Chain link fence shall be fastened securely to the fence posts with wire ties or staples. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence. The chain link fencing shall be six (6) gauge or heavier.
4. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
5. Filter cloth shall be embedded a minimum of 8" into the ground.
6. When two sections of geotextile fabric adjoin each other, they shall be overlapped by 6" and folded.
7. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

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

30.0 – DUST CONTROL

DEFINITION

CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.

PURPOSE

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCE ON AND OFF-SITE DAMAGE, HEALTH HAZARDS, AND IMPROVE TRAFFIC SAFETY.

CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

SPECIFICATIONS

TEMPORARY METHODS

1. MULCHES – SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
2. VEGATATIVE COVER – SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
3. TILLAGE – TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12" APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
4. IRRIGATION – THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW.
5. BARRIERS – SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING.
6. CALCIUM CHLORIDE – APPLY AT RATES THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

PERMANENT METHODS

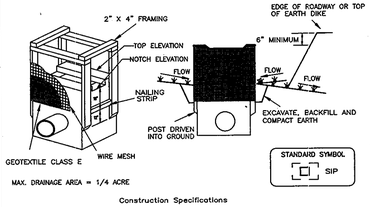
1. PERMANENT VEGETATION – SEE STANDARDS FOR PERMANENT VEGETATIVE COVER, AND PERMANENT STABILIZATION WITH SOD. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
2. TOPSOILING – COVERING WITH LESS EROSIVE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
3. STONE – COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

REFERENCES

1. AGRICULTURE HANDBOOK 346. WIND EROSION FORCES IN THE UNITED STATES AND THEIR USES IN PREDICTING SOIL LOSS.
2. AGRICULTURE INFORMATION BULLETIN 354. HOW TO CONTROL WIND EROSION, USDA-ARS.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 30 - 1	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23A – STANDARD INLET PROTECTION



STANDARD SYMBOL: SIP

MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.
2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.
3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
4. Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

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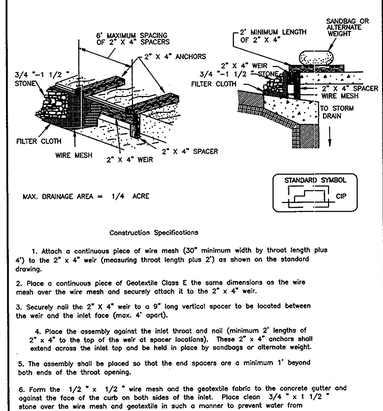
DETAIL 23C – CURB INLET PROTECTION



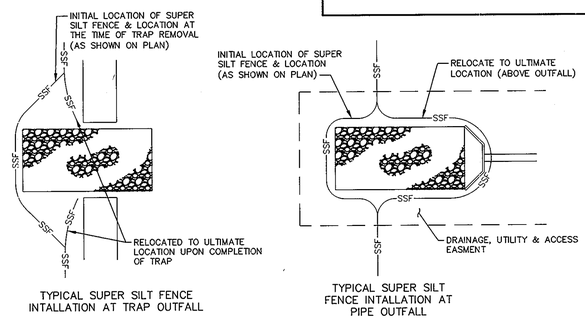
STANDARD SYMBOL: CIP

MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4") to the 2" x 4" weir (measuring throat length plus 2") as shown on the standard drawing.
2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.
3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).
4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.
5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.
6. Form the 1/2 " x 1/2 " wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4 " x 1 1/2 " stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.
7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

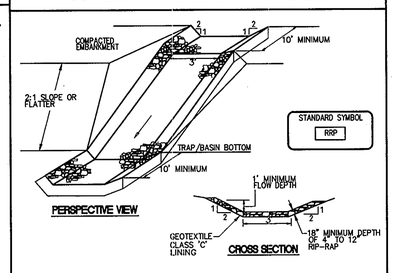
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 58	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



SUPER SILT FENCE OUTFALL PROTECTION

NO SCALE

DETAIL 5 - RIP-RAP INFLOW PROTECTION

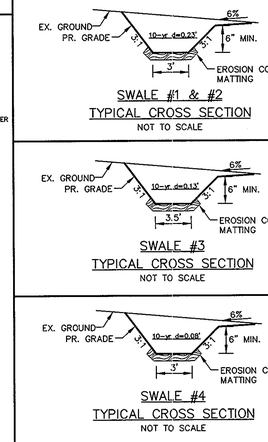


STANDARD SYMBOL: RRP

CONSTRUCTION SPECIFICATIONS

1. RIP-RAP LINED INFLOW CHANNELS SHALL BE 1' IN DEPTH, HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND 3' (MIN.) BOTTOM WIDTH. THE CHANNEL SHALL BE LINED WITH 4" TO 12" RIP- RAP TO A DEPTH OF 18".
2. FILTER CLOTH SHALL BE INSTALLED UNDER ALL RIP-RAP. FILTER CLOTH SHALL BE GEOTEXTILE CLASS C.
3. ENTRANCE AND EXIT SECTIONS SHALL BE INSTALLED AS SHOWN ON THE DETAIL SECTION.
4. RIP-RAP USED FOR THE LINING MAY BE RECYCLED FOR PERMANENT OUTLET PROTECTION IF THE BASIN IS TO BE CONVERTED TO A STORMWATER MANAGEMENT FACILITY.
5. GABION INFLOW PROTECTION MAY BE USED IN LIEU OF RIP-RAP INFLOW PROTECTION.
6. RIP-RAP SHOULD BLEND INTO EXISTING GROUND.
7. RIP-RAP INFLOW PROTECTION SHALL BE USED WHERE THE SLOPE IS BETWEEN 4:1 AND 10:1. FOR SLOPES FLATTER THAN 10:1 USE EARTH DIKE OR TEMPORARY SWALE LINING CRITERIA.

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



SWALE #1 & #2
TYPICAL CROSS SECTION
NOT TO SCALE

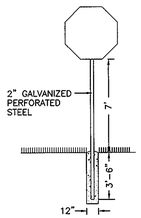
SWALE #3
TYPICAL CROSS SECTION
NOT TO SCALE

SWALE #4
TYPICAL CROSS SECTION
NOT TO SCALE

SWALE #5
TYPICAL CROSS SECTION
NOT TO SCALE

NOTE:
ALL SIGN POSTS 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 GA.) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED, SQUARE TUBE SLEEVE (12 GA.) – 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

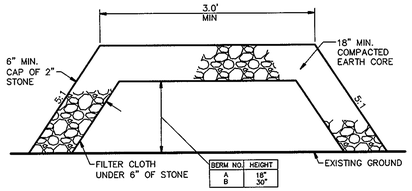
PAVING TYPE	ROAD CLASIFICATION	DESIGN SPEED
P-2	PUBLIC ROAD	25 M.P.H.



HEIGHT & CLEARANCE OF SIGNS (FOR ROADWAY SIGN)

SIGN STANDARDS

NOT TO SCALE



FILTER CLOTH SHALL BE GEOTEXTILE CLASS 'C', OR BETTER.

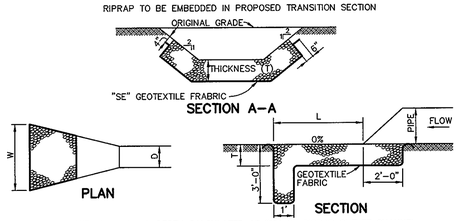
MOUNTABLE BERM

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. THE SUBGRADE FOR THE FILTER, RIP–RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP–RAP OR FILTER.
3. "SE" GEOTEXTILE OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED SECTION, WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC, IT SHALL BE A MINIMUM OF ONE FOOT.
4. STONE FOR THE RIP–RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR RIP–RAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP–RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMANGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
5. THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

RIPRAP TO BE EMBEDDED IN PROPOSED TRANSITION SECTION



NOTE: Q_{10}, V_{10} & DEPTH CALCULATED AT END OF RIPRAP OUTLET CHANNEL.

STRUCTURE	MEDIAN STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)	Q_{10}	V_{10}
E-2	6" CL I	14'	12'	18"	5.15	2.91
E-4	6" CL I	22'	12'	12"	2.79	1.58
E-5	6" CL I	8'	5'	12"	22.49	–
E-6	6" CL I	8'	5'	12"	13.91	–

STRUCTURE	MEDIAN STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)	Q_{100}	V_{100}
E-1	6" CL I	15'	18'	30"	28.99	9.53

RIPRAP OUTLET PROTECTION DETAIL

NO SCALE

NOTE:
ALL SIGN POSTS 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 GA.) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED, SQUARE TUBE SLEEVE (12 GA.) – 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER — DATE 10/24/07

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

ENGINEER — DATE 10/22/07

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

NATURAL RESOURCES CONSERVATION SERVICE — DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 11/15/07

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/20/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
CONSTRUCTION AND EROSION AND SEDIMENT CONTROL DETAILS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07 DATE

STATE OF MARYLAND — DOMENICK W. COLANGELO — No. 27200 — REGISTERED PROFESSIONAL ENGINEER

DOMENICK W. COLANGELO #27200

CHECKED BY:	DWC
DESIGNED BY :	NS
DRAWN BY:	EMR/JMK
PROJECT NO.:	13043/1-0/ENGR/PLANS/FINAL/ C9OODET.DWG
DATE :	NOVEMBER 6, 2007
SCALE :	AS SHOWN
DRAWING NO.	5 OF 21

F-07-005

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MD-378 STANDARDS AND SPECIFICATIONS

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

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.

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 the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tire or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be 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).

Cutoff 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 compacted with construction equipment, rollers, or hand tampers to assure maximum density and maximum 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 2000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to 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 inched 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 that 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 (10mil) 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 Specifications M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

   Materials – (Aluminum Pipe) – This pipe and its appurtenances shall conform to to the requirements of AASHTO Specifications 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 the need 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 mat 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 coted as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at 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 band width. The following type connections are acceptable for pipes less than 24" in diameter; flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, compressed 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 ends. A 24 inch wide by 3/8 inch thick closed cell circular neoprene gasket will be installed with 12 inch 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 Designation C-361.

2. Bedding – All reinforcec 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 side 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 stanard. 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 pipe:

1. Materials – PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4 – 10 inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" shall meet the requirements of AASHTO M294 Type S.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding – The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to Structure "Backfill".

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

CONCRETE

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

ROCK RIPRAP

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

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

CARE OF WATER DURING CONSTRUCTION

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

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.

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

TEMPORARY SEEDING NOTES

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

Seedbed Preparation : Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

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

Seeding : For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual rye (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching : Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

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

PERMANENT SEEDING NOTES

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

Seedbed Preparation : Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

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

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

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

Seeding : For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options :

1) 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring.

2) Use sod.

3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching : Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

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

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND SHOWN HEREON SHALL BE PERFORMED AT LEAST ONCE ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATION FOR PONDS" (MD378). THE POND OWNER AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION

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

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

I. This practice is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   c. The original soil is 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 Experimentation Station.

II. Topsoil Specifications – Soil to be used as topsoil must meet the following:

   i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by 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 1" in diameter.

   ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

   iii. Where 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.

III. For sites having disturbed areas under 5 acres:
   i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – bSection I – Vegetative Stabilization Methods and Materials.

IV. 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 to 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 – BSection I – Vegetative Stabilization Methods and Materials.

V. Topsoil Application

   i. When topsoiling, 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 topsoiled, which have been previously established, shall be maintained, albeit 4" – 8" higher in elevation.

   iii. Topsoil shall be uniformly distributed in a 4" – 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling 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 amendments may be applied as specified below:

   i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for site having disturbed areas under 5 acres shall conform to the following requirements:
      a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
      b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
      c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
      d. Composted sludge shall be amended 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.

OPERATION AND MAINTENANCE SCHEDULE FOR HOMEOWNERS ASSOCIATION OWNED AND MAINTAINED BIORETENTION FACILITIES

1. ANNUAL MAINTENANCE OF MULCH LAYER, SAND FILTER, PLANTING SOIL AND GRAVEL IS REQUIRED. MAINTENANCE OF MULCH, PLANTING SOIL AND SAND FILTER LIMITED TO CORRECTING AREAS OF EROSION OR WASH–OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING.

2. REMOVE DEBRIS AND UNUSED SEDIMENT MATERIAL. MATERIAL SHOULD BE REMOVED WITHIN 3–4 DAYS AFTER EACH STORM.

3. REPLACE GEO–TEXTILE FABRIC EVERY 2 YEARS AND REPLACE AFTER HEAVY STORM.

STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES 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 1994 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.

4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THE PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, 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, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. G.). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHED 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	18.57 ACRES
AREA DISTURBED	10.77 ACRES
AREA TO BE ROOFED OR PAVED	1.45 ACRES
AREA TO BE VEGETATIVELY STABILIZED	9.32 ACRES

OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT.

*QUANTITIES ARE FOR COUNTY FEE PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ACTUAL QUANTITIES.

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

9. ADDITIONAL SEDIMENT 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.

12. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.

13. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.

14. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL, NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.

OPERATION AND MAINTENANCE SCHEDULE FOR HOMEOWNERS ASSOCIATION OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT POND

ROUTINE MAINTENANCE BY HOA:

1. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.

2. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.

3. WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, AND UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS, SEDIMENT SHALL BE REMOVED FROM THE POND.

4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON–ROUTINE MAINTENANCE BY HOWARD COUNTY:

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.

2. 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 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT.

2. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SUPER SILT FENCE, AND BYPASS SWALE. CONTRACTOR TO CONSTRUCT ONLY THE PORTION OF THE SWALE THAT DOES NOT DRAIN INTO THE BASIN AND IS TO STABILIZE BYPASS SWALE IMMEDIATELY.

3. INSTALL SEDIMENT BASIN. (3 WEEKS).

4. UPON ACCEPTANCE BY THE COUNTY INSPECTOR, CONTRACTOR TO PROCEED WITH ROUGH GRADING OF ENTIRE SITE. (1 WEEK) CONTRACTOR TO PROVIDE DUST CONTROL AS NECESSARY AND AS DIRECTED BY THE INSPECTOR.

5. INSTALL WATER, SEWER AND STORM DRAINS AS SUBGRADE ELEVATIONS ARE REACHED. (3 WEEKS)

6. INSTALL CURB AND GUTTER AND PAVE. (1 WEEK)

7. PERFORM FINE GRADING, SIDEWALK, LIGHTING AND LANDSCAPING. (1 WEEK)

8. APPLY TOPSOIL AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 WEEKS)

9. UPON PERMISSION OF COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND CONVERT SEDIMENT BASINS TO PERMANENT STORM WATER MANAGEMENT FACILITIES. CONVERT FACILITY IN THE FOLLOWING STEPS:
A. PUMP OUT STANDING WATER IN BASIN USING PUMPING STATION. (2 DAYS)
B. REMOVE ACCUMULATED SEDIMENT AND FILL IN BOTTOM OF SEDIMENT BASIN TO MEET PROPOSED BOTTOM ELEVATION OF SWMF #1. (2 DAYS)
C. REMOVE TEMPORARY DRAW DOWN DEVICE AND PLYWOOD COVERING OUTLET WEIR. (1 DAY)
D. LOWER TOP OF SEDIMENT BASIN EMBANKMENT TO MEET PROPOSED ELEVATIONS OF SWMF #1 EMBANKMENT. (2 DAYS)
E. INSTALL POND DRAIN AND ORIFICE METAL PLATE. (3 DAYS)
F. INSTALL FOREBAY AND CLAY LINER. (5 DAYS)
G. STABILIZE REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (3 DAYS)

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON–SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER — DATE 10/24/07

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

ENGINEER — DATE 10/22/07

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

NATURAL RESOURCES CONSERVATION SERVICE — DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 11/15/07

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/20/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410–531–5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410–365–0414

PROJECT
ORCHARD ESTATES
LOTS 1–8, PRESERVATION PARCEL A & NON–BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR–DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
EROSION AND SEDIMENT CONTROL NOTES

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07 DATE

DOMENICK W. COLANGELO #27200

CHECKED BY:	DWC
DESIGNED BY :	NS
DRAWN BY:	EMR/JMK
PROJECT NO:	13043/1–0/ENGR/PLANS /FINAL/C900DET2.DWG
DATE :	NOVEMBER 6, 2007
SCALE :	AS SHOWN
DRAWING NO.	6 OF 21

F–07–005

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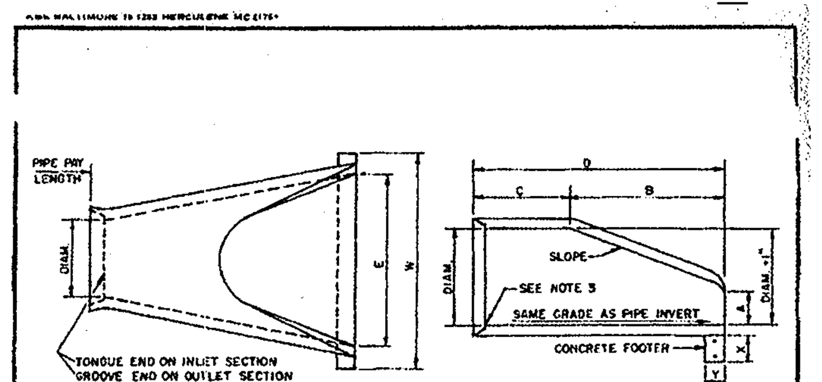


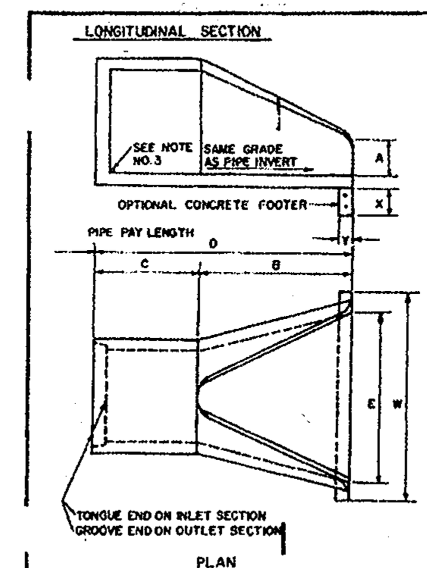
NOTES:
1. END SECTIONS MUST BE REINFORCED TO CONFORM WITH CLASS IV PIPE.
2. CONCRETE FOOTER SHALL BE USED. COST OF CONCRETE FOOTER TO BE PAID PER CUBIC YARD OF CLASS A-1 CONCRETE FOR MISCELLANEOUS STRUCTURES. REINFORCEMENTS TO BE NO.3 BARS.
3. INVERT ELEVATION TO BE AT THE PIPE END OF THE STD. END SECTION. ELEVATIONS TO BE NOTED ON CONSTRUCTION PLANS.
4. CONTRACTOR HAS OPTION OF FURNISHING END SECTIONS CONFORMING TO DETAILS ON THIS SHEET OR END SECTIONS CONFORMING TO DETAILS ON STD. NO. 5.52

CONCRETE END SECTION							CONCRETE FOOTER		
DIAM	SLOPE	A	B	C	D	E	W	X	Y
15"	3:1	6-1/2"	2'-4"	3'-10"	6'-2"	2'-8"	3'-6"	12"	9"
18"	3:1	10-1/4"	2'-2"	4'-0"	6'-2"	3'-0"	4'-0"	12"	9"
24"	3:1	11"	3'-7"	2'-7"	6'-3"	5'-0"	5'-0"	15"	9"
30"	3:1	1'-1"	4'-5"	1'-10"	6'-3"	5'-0"	6'-0"	15"	9"
36"	3:1	1'-3-1/2"	5'-3"	3'-1"	8'-1-1/2"	6'-0"	7'-3"	15"	9"
42"	3:1	1'-9-1/4"	5'-5"	2'-10"	8'-3"	6'-6"	7'-9"	15"	9"
48"	3:1	2'-1"	6'-0"	2'-2"	8'-2"	7'-0"	8'-6"	18"	12"
54"	2.4:1	2'-5"	5'-2"	2'-10"	8'-0"	7'-6"	9'-0"	18"	12"
60"	2:1	2'-7"	4'-11"	3'-8-1/2"	8'-7-1/2"	8'-0"	9'-6"	18"	12"
66"	2:1	2'-4"	6'-6"	1'-9"	8'-3"	9'-6"	10'-0"	18"	12"
72"	2:1	2'-10"	6'-6"	1'-9"	8'-3"	9'-0"	10'-9"	18"	12"

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature] 10-8-90
Chief - Bureau of Engineering

CONCRETE END SECTION
CIRCULAR CONCRETE PIPE

DRAWN BY R.K.H.
CHECKED BY J.L.R.
SCALE NONE
D-5.51



NOTES:
1. END SECTIONS MUST BE REINFORCED TO CONFORM WITH CLASS IV PIPE.
2. CONCRETE FOOTER SHALL BE USED WHEN SPECIFIED ON THE PLANS. COST OF CONCRETE FOOTER TO BE PAID PER CUBIC YARD OF CLASS P-1 CONCRETE FOR MISCELLANEOUS STRUCTURES. REINFORCEMENT TO BE NO. 3 BARS.
3. INVERT ELEVATION TO BE AT THE PIPE END OF THE STANDARD END SECTION. ELEVATIONS TO BE NOTED ON CONSTRUCTION PLANS.
4. CONTRACTOR HAS OPTION OF FURNISHING END SECTIONS CONFORMING TO DETAILS ON THIS SHEET OR END SECTIONS CONFORMING TO DETAILS ON STANDARD NO. 5.51.

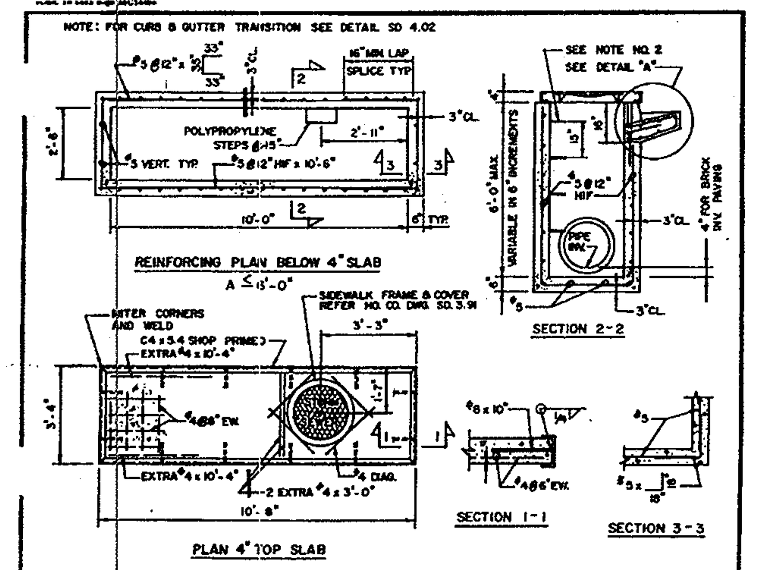
TABLE OF DIMENSIONS									
CONCRETE END SECTION							CONCRETE FOOTER		
DIAM.	SLOPE	A	B	C	D	E	W	X	Y
12"	3:1	4"	2'-0"	4'-0 7/8"	6'-0 7/8"	2'-0"	3'-0"	12"	9"
15"	3:1	6"	2'-3"	3'-10"	6'-1"	2'-6"	3'-6"	12"	9"
18"	3:1	9"	2'-3"	3'-10"	6'-1"	3'-0"	4'-0"	12"	9"
21"	3:1	9"	3'-0"	3'-1 1/2"	6'-1 1/2"	3'-6"	4'-6"	12"	9"
24"	3:1	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	5'-0"	15"	9"
27"	3:1	10 1/2"	4'-1 1/2"	2'-0"	6'-1 1/2"	4'-6"	5'-6"	15"	9"
30"	3:1	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	6'-0"	15"	9"
36"	3:1	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	7'-3"	15"	9"
42"	3:1	1'-8" OR 1'-9"	6'-3"	2'-11"	8'-2"	6'-6"	7'-9"	18"	9"
48"	3:1	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	8'-6"	18"	12"
54"	2.4:1	2'-3"	6'-6"	2'-9 1/4"	8'-2 1/4"	7'-6"	9'-0"	18"	12"

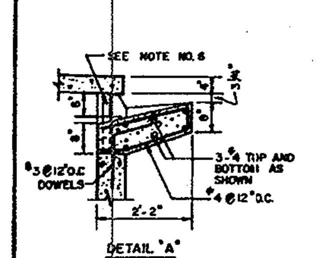
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature] 10-8-90
Chief - Bureau of Engineering

CONCRETE END SECTION
CIRCULAR CONCRETE PIPE

DRAWN BY R.M.P.
CHECKED BY J.L.R.
SCALE NONE
D-5.51

NOTE: FOR CURB & GUTTER TRANSITION SEE DETAIL SD 4.02



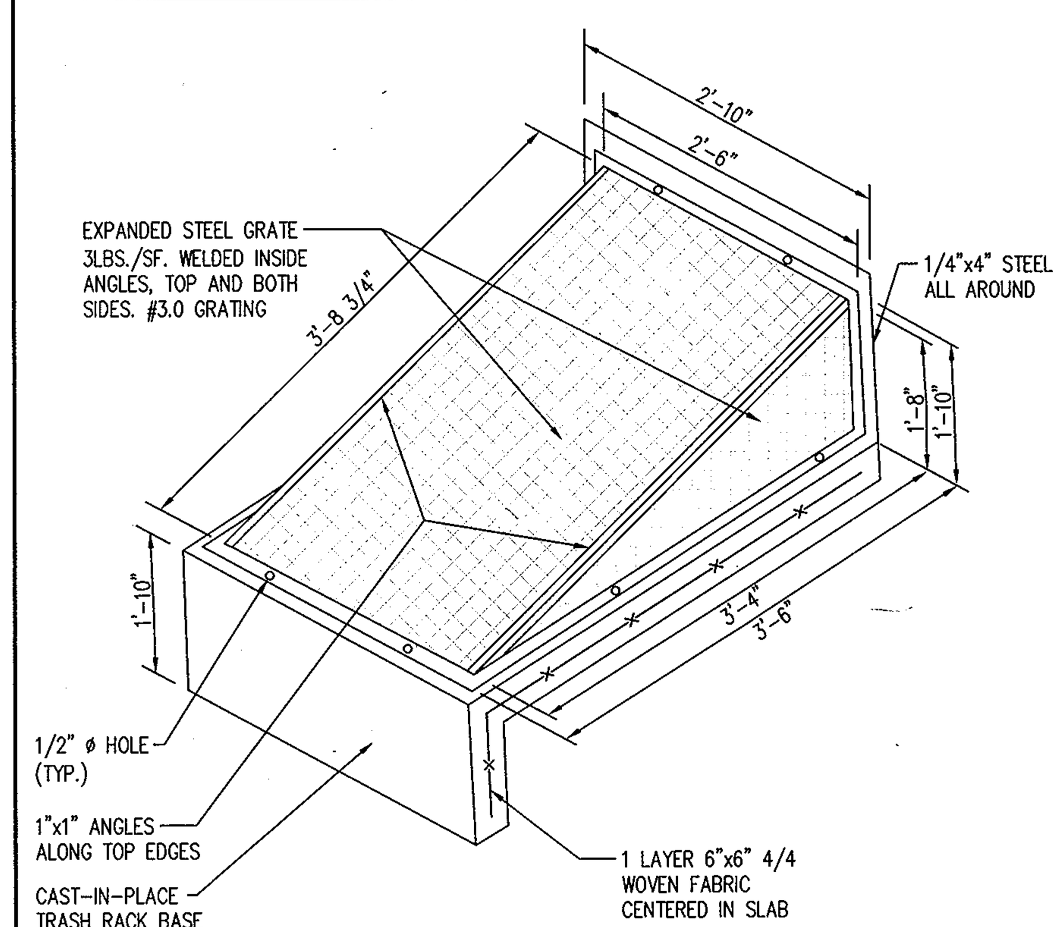


NOTES:
1. CONCRETE SHALL CONFORM TO MARYLAND DOT STANDARD SPECIFICATION FOR CONSTRUCTION & MATERIALS 1982, MIX NO. 6 IN ADDITION, f'c = 4500 PSI @ 28 DAYS, CEMENT SHALL BE TYPE III, AND #8 COARSE AGGREGATE SHALL BE USED.
2. POLYPROPYLENE STEPS SHALL BE TYPE PS 4 OR PS 5 AS MANUFACTURED BY M.A. INDUSTRIES, INC. STEP SHALL BE INSTALLED INLINE WHERE A) 3'-6" (SEE G 5.21)
3. REFERENCE DRAWING FOR TYPE A-10 INLET IS HOWARD COUNTY STANDARD DRAWING NO. SD 4.02
4. REINFORCING SCHEDULE IS BASED ON USD METHOD AND DESIGN LOADS AS SPECIFIED IN AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES, 13 th EDITION, 1983 AND INTERIM SPECIFICATIONS.
5. WEIGHTS: 4" TOP SLAB WT. = 2,000# MAX. INLET BOX WT. = 24,000# (10' HEIGHT, I.D.) RISER WT/VF = 2,000#/VF
6. PROVIDE 3"Ø RUST PROOF STEEL PIPE, PAINTED GRAY AT MID POINT OF THROAT, FILL WITH CONCRETE.

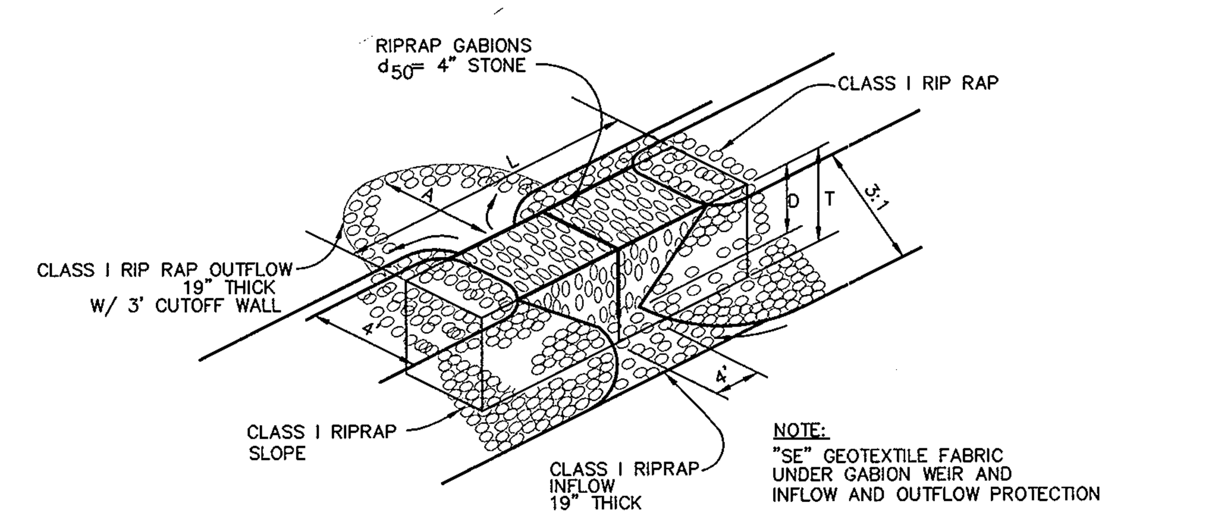
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature]
Chief - Bureau of Engineering

PRECAST STANDARD
TYPE A-10 INLET

DRAWN BY: V.P.
CHECKED BY: W.H.
SCALE: NONE
D-4.03



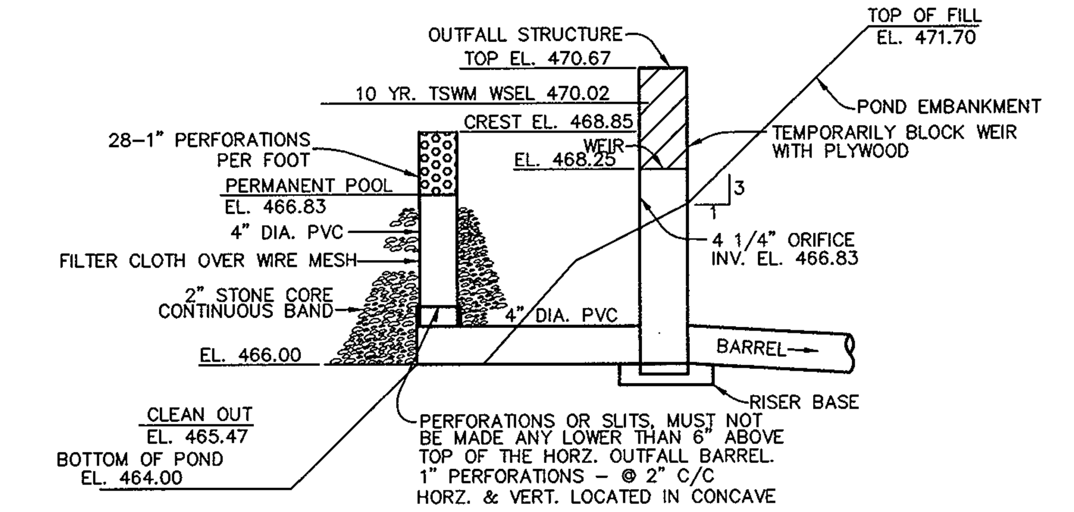
EXPANDED METAL TRASH RACK
NO SCALE



FOREBAY WEIR CHART

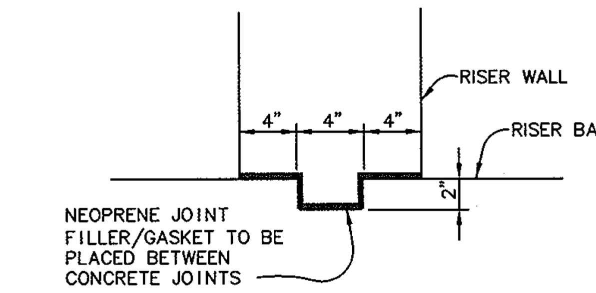
POND	GABIONS	TOP EL.	D	L	T	A
1	4.0' x 3.0'	470.0	1.0'	18'	2.5'	16'

FOREBAY WEIR DETAIL
NO SCALE



SEDIMENT BASIN – TEMPORARY DEWATERING DEVICE
NO SCALE

1. PERFORATIONS ON THE DRAW-DOWN DEVICE SHALL NOT EXTEND INTO THE WET STORAGE.
2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE INTERNAL ORIFICE.
3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.



TYPICAL KEY JOINT DETAIL
NO SCALE

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[signature] 10/24/07
DEVELOPER DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

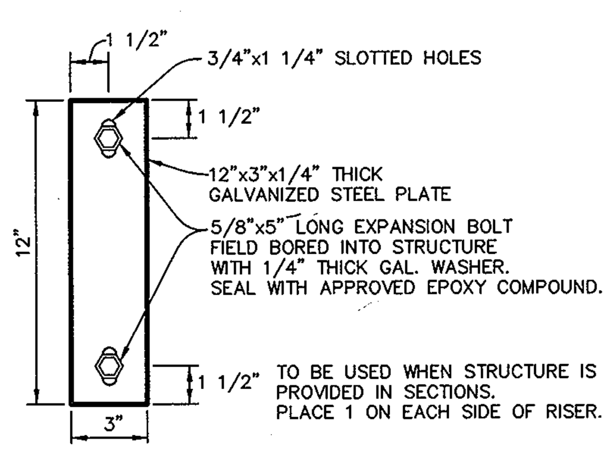
[signature] 10/22/07
ENGINEER DATE

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

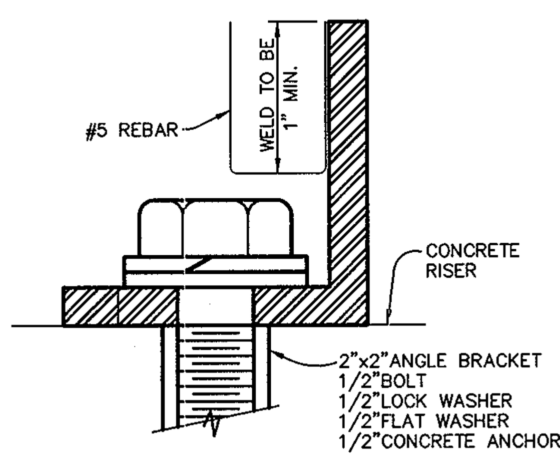
NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

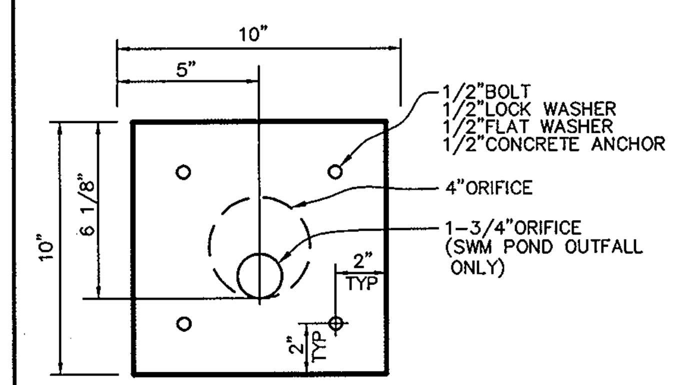
[signature] 11/15/07
HOWARD SOIL CONSERVATION DISTRICT DATE



RISER JOINT FASTENER
NO SCALE



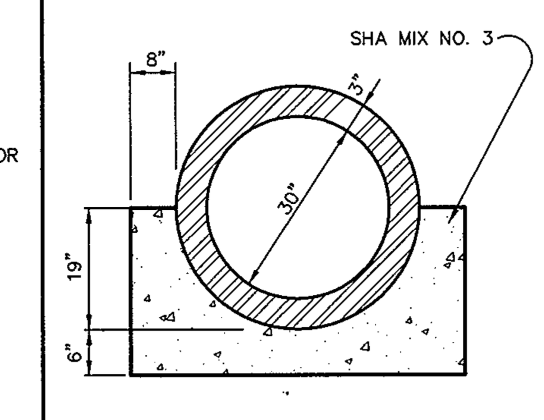
ENLARGEMENT A
NO SCALE



METAL PLATE TO BE 1/4"THICK

METAL PLATE A
SCALE 1"=2'

GALVANIZE METAL PLATE AFTER FABRICATION AND PAINT BATTLESHIP GRAY.



CLASS 'A' DAMS LESS THAN 50' HIGH

A-2 CONCRETE CRADLE
NO SCALE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

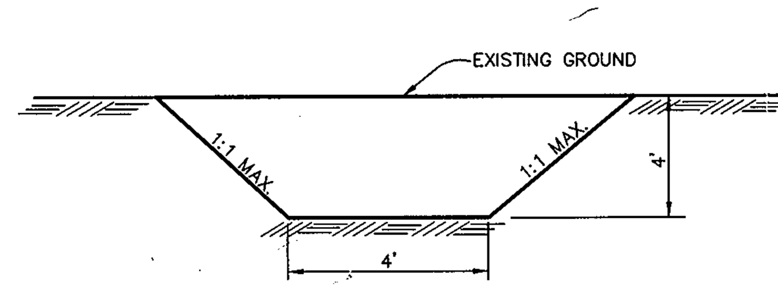
[signature] 11-20-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[signature] 11/30/07
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

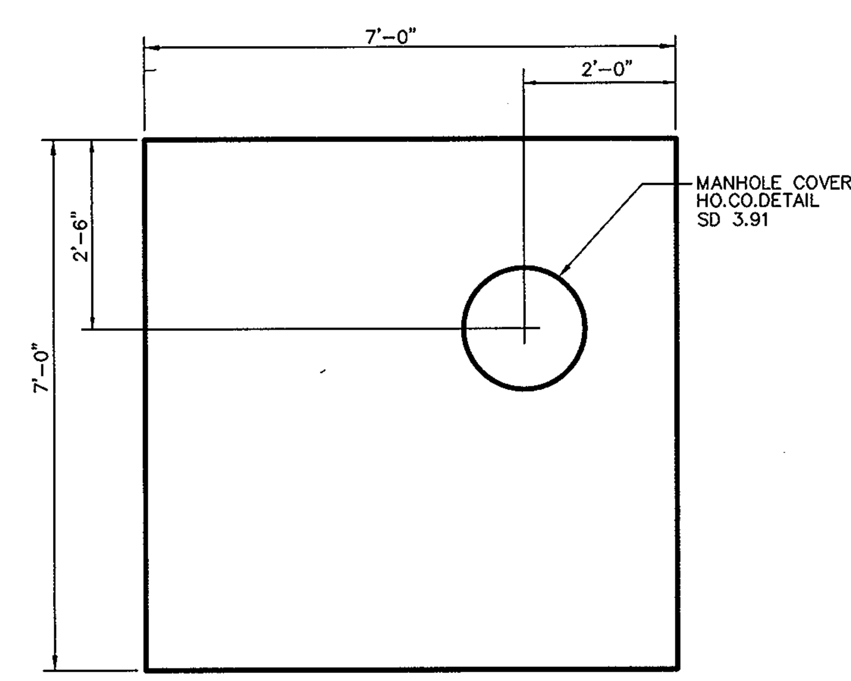
[signature] 11/27/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION



NOTE: GC, SC, CH, OR CL MATERIAL SHALL BE USED FOR CORE TRENCH. IF UNSUITABLE MATERIAL EXISTS ON SITE, ACCEPTABLE MATERIAL WILL NEED TO BE TRUCKED TO SITE.

CORE TRENCH DETAIL
NO SCALE



TOP VIEW

DAM CONSTRUCTION NOTES:

1. THE AREAS OF THE SWM FACILITIES SHOULD BE TRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH THE SOIL CONVERSATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIAL 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 SUITABLY FIRM SOIL, AND THEN RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.

2. 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 AND WITH NRCS-MD CODE NO. 378 POND STANDARDS/SPECIFIATIONS, SOILS CONSIDERED SUITABLE FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CL, OR CH AND HAVE AT LEAST 30% PASSING THE #200 SIEVE.

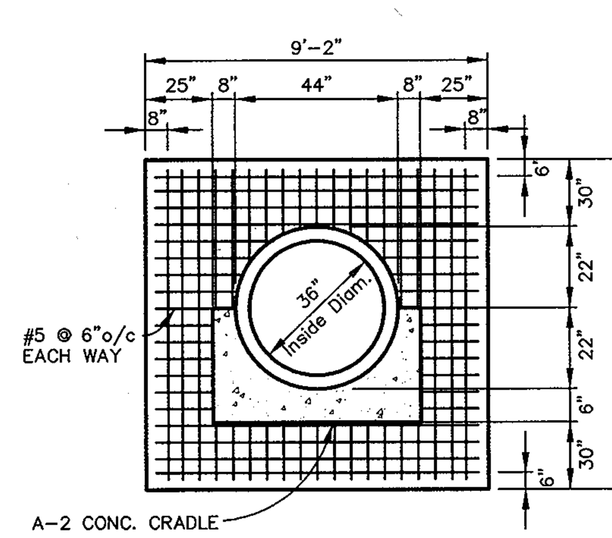
3. IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE, A FINE-GRAINED SOIL, INCLUDING SILT (ML-MH) WITH A PLASTICITY INDEX OF 10 OR MORE, CAN BE UTILIZED FOR THE CENTER OF THE AND CORE TRENCH, IF APPROVED BY THE GEOTECHNICAL ENGINEER. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH NRCS-MD CODE NO. 378 SPECIFICATIONS.

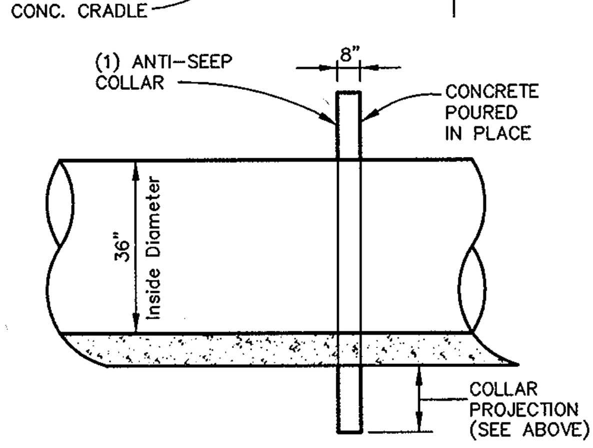
REMOVABLE TRASH RACK NOTES:

1. STEEL SHALL CONFORM TO ASTM A-36. #5 BARS SHALL BE SMOOTH. SEE DETAIL FOR SPACING.
2. ALL REBAR SHALL BE WELDED AT ALL INTERSECTIONS.
3. ALL BENDS TO BE 2" RADIUS. 2"X2" ANGLE IRON AND 1/2" DIAMETER ANCHOR BOLTS SHALL BE USED FOR TRASH RACK FRAME.
4. GALVANIZE TRASH RACK AFTER FABRICATION AND PAINT 2-COATS BATTLESHIP GRAY.

RISER STRUCTURE NOTES

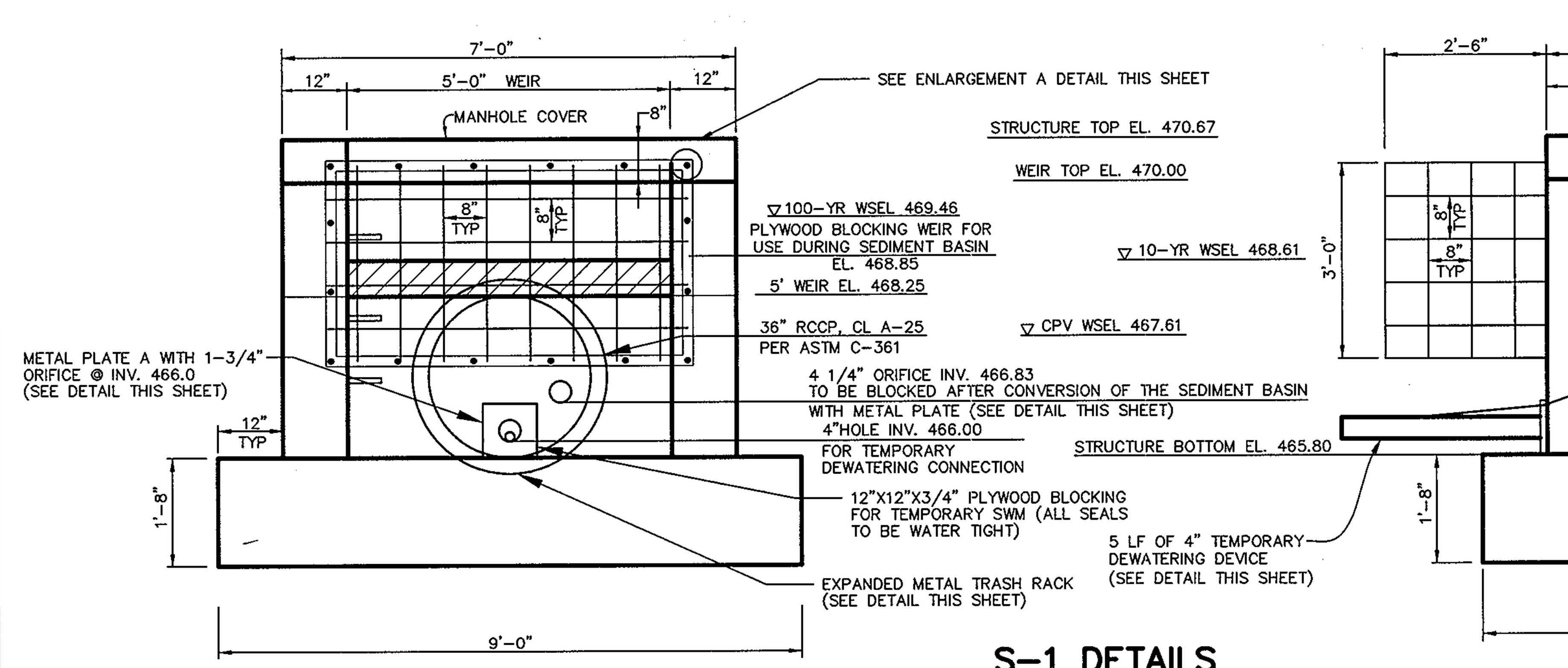
1. RISER SHALL BE PRE-CAST. SHOP DRAWINGS FOR ALL CONCRETE STRUCTURES SHALL MEET THE MINIMUM ASTM REQUIREMENTS FOR CAST-IN-PLACE STRUCTURES. A SHOP DRAWING SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION AND SHALL BE SIGNED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER.
2. CONCRETE SHALL BE MSHA MIX NO. 3 (fc=3,500 psi MINIMUM)
3. REFER TO HOWARD COUNTY STD. G-5.21 FOR MANHOLE STEP DETAILS.
4. ALL PIPE CONNECTIONS SHALL PROVIDE RUBBER GASKET FOR WATERTIGHTNESS.
5. RISER SHALL BE PLACED ON A FIRMLY COMPACTED SUBGRADE AND SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER.



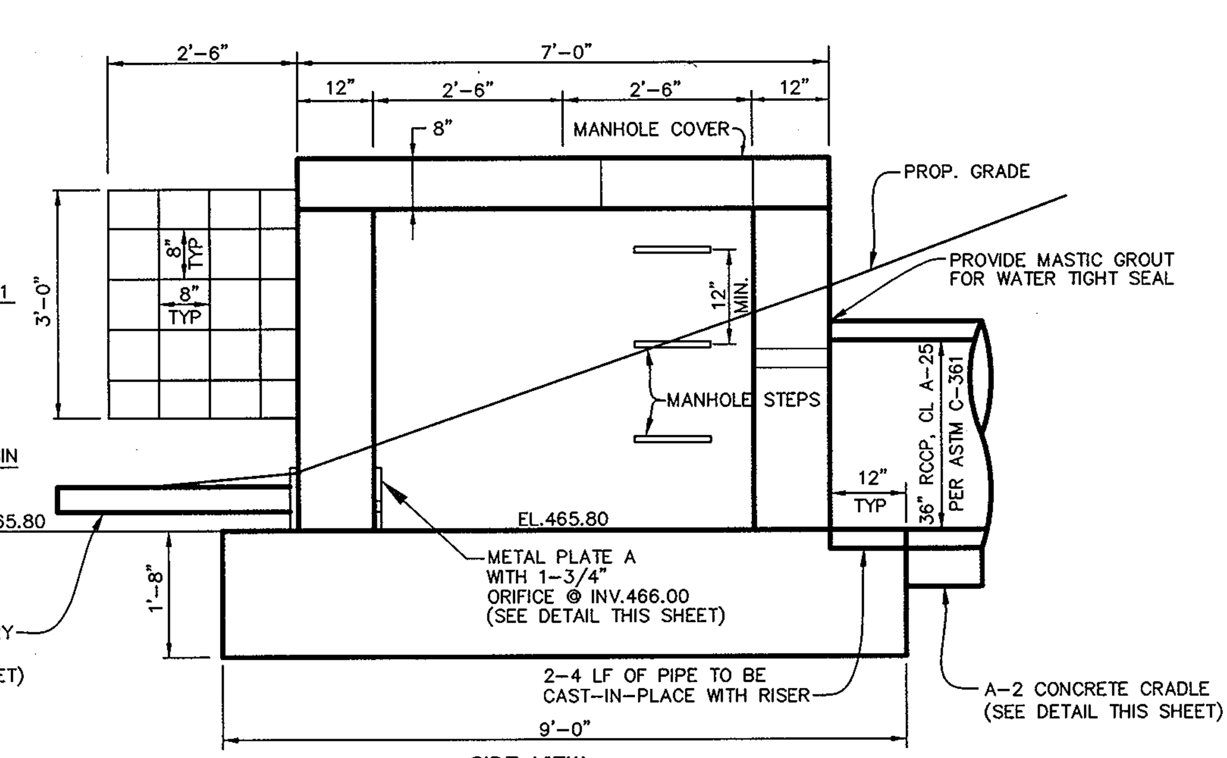


NOTES:
1. LOCATE COLLAR A MINIMUM OF TWO FEET FROM PIPE JOINT.
2. COLLAR/PIPE CONNECTION SHALL BE WATERTIGHT.

CONCRETE ANTI-SEEP COLLAR
NO SCALE



FRONT VIEW



SIDE VIEW

S-1 DETAILS
NOT TO SCALE

NOTE:
SEE HO.CO STANDARD DETAIL SD 4.02 FOR REINFORCEMENT.

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

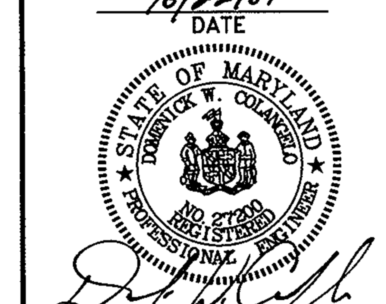
PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
SWM DETAILS

Patton Harris Rust & Associates,pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07
DATE



DOMENICK W. COLANGELO #27200

CHECKED BY: DWC
DESIGNED BY : NS
DRAWN BY: EMR/JMK
PROJECT NO: 13043/1-0/ENGR/PLANS/FINAL/C901DET.DWG
DATE : NOVEMBER 6, 2007
SCALE : AS SHOWN
DRAWING NO. 7 OF 21

F-07-005

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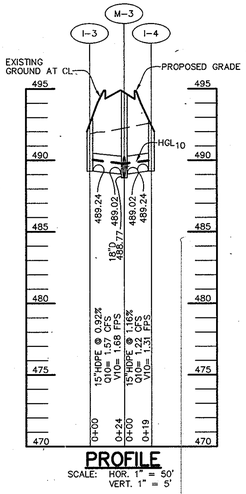
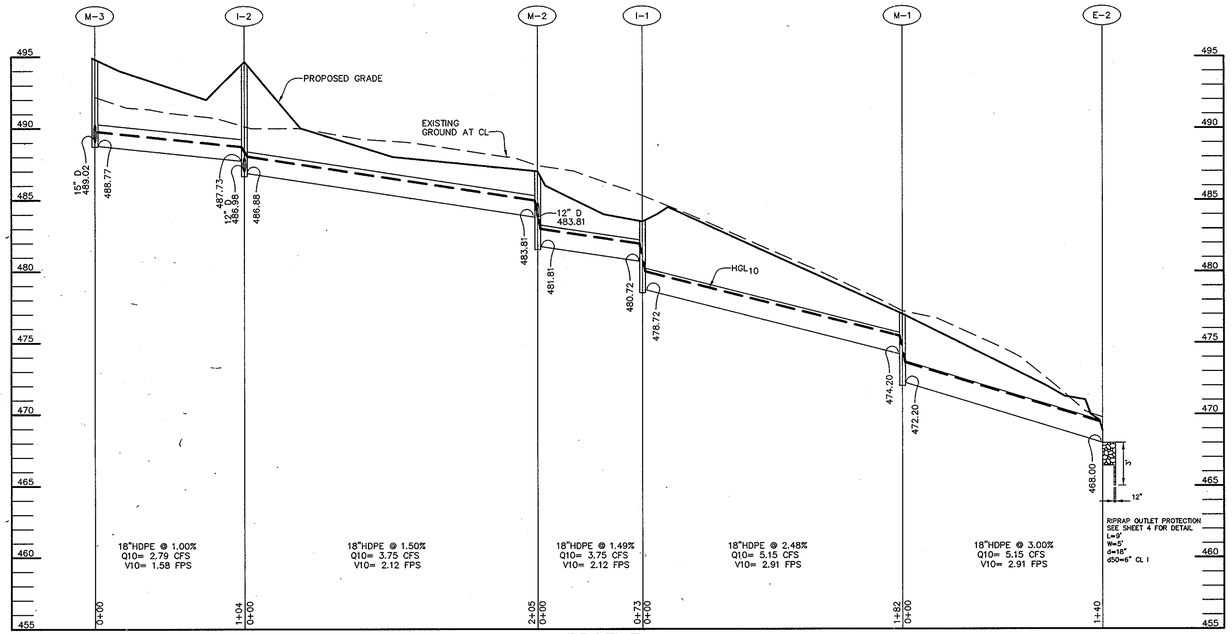


PROFILE

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



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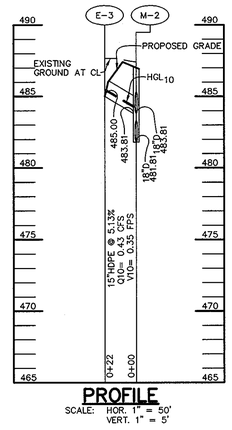
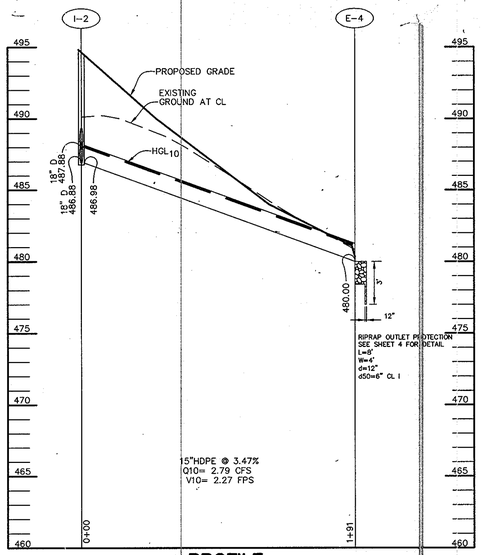


PROFILE

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

PIPE SCHEDULE

PIPE LENGTH	SIZE	TYPE
125'	12"	CMP
256'	15"	HDPE
703'	18"	HDPE
36'	36"	ASTM C-361 RCCP



PROFILE

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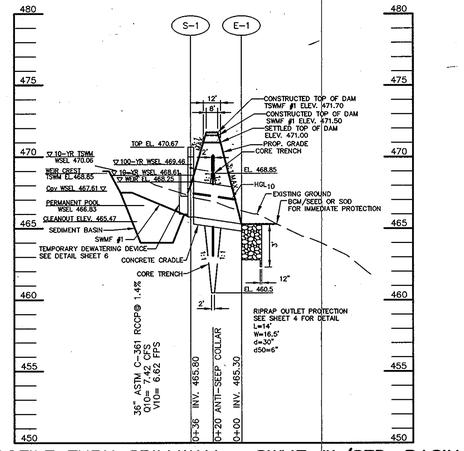

PROFILE THRU SPILLWAY - SWMF #1/SED. BASIN

SCALE :
HOR.-1"=50'
VERT.-1"=5'

STRUCTURE SCHEDULE

STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
I-1	YARD INLET	N 544627 E 1328861	480.72	478.72	483.50	HOCO STD. DETAIL D-4.14
I-2	A-5 INLET	N 544723 E 1328665	487.88	486.98 (E-4) 486.88 (M-2)	494.65	HOCO STD. DETAIL D-4.01
I-3	TYPE S INLET	N 544808 E 1328603	-	489.24	492.00	HOCO STD. DETAIL D-4.22
I-4	TYPE S INLET	N 544777 E 1328573	-	489.24	492.00	HOCO STD. DETAIL D-4.22
M-1	4' DIA. MANHOLE	N 544729 E 1329011	474.20	472.20	477.00	HOCO STD. DETAIL G-5.12
M-2	4' DIA. MANHOLE	N 544576 E 1328809	483.81 (E-3) 483.81 (I-2)	481.81	487.00	HOCO STD. DETAIL G-5.12
M-3	4' DIA. MANHOLE	N 544791 E 1328588	489.02	488.77 (I-3 AND I-4)	494.90	HOCO STD. DETAIL G-5.12
E-1	END SECTION	N 544636 E 1329263	-	-	-	HOCO. STD. DETAIL D-5.51
E-2	END SECTION	N 544645 E 1329121	-	468.00	-	HOCO. STD. DETAIL D-5.51
E-3	END SECTION	N 544561 E 1328794	485.00	483.81	-	HOCO. STD. DETAIL D-5.51
E-4	END SECTION	N 544862 E 1328793	-	480.00	-	HOCO. STD. DETAIL D-5.51
S-1	MODIFIED STRUCTURE	N 544610 E 1329241	466.00	465.00	470.67	SEE SHEET 6

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/22/07

DATE	NO.	REVISION

OWNER

CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER

RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT

ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A &
NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

STORM SEWER AND POND PROFILES

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07
DATE

STATE OF MARYLAND
DOMENICK W. COLANGELO
No. 27200
REGISTERED PROFESSIONAL ENGINEER

DOMENICK W. COLANGELO #27200

CHECKED BY:	DWC
DESIGNED BY :	NS
DRAWN BY:	BCL
PROJECT NO:	13043/1-0/ENGR/PLANS/FINAL/C500PRO.DWG
DATE :	NOVEMBER 6, 2007
SCALE :	AS SHOWN
DRAWING NO.	8 OF 21

F-07-005

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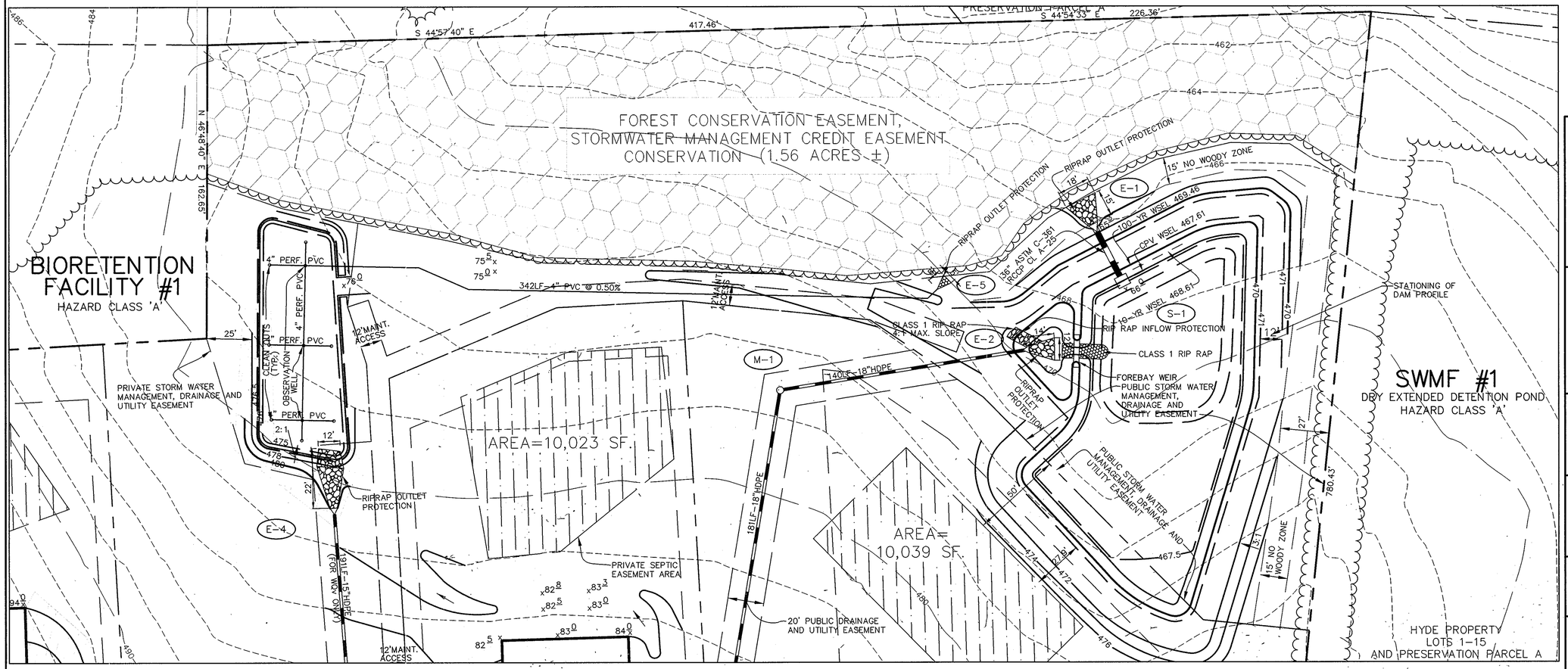
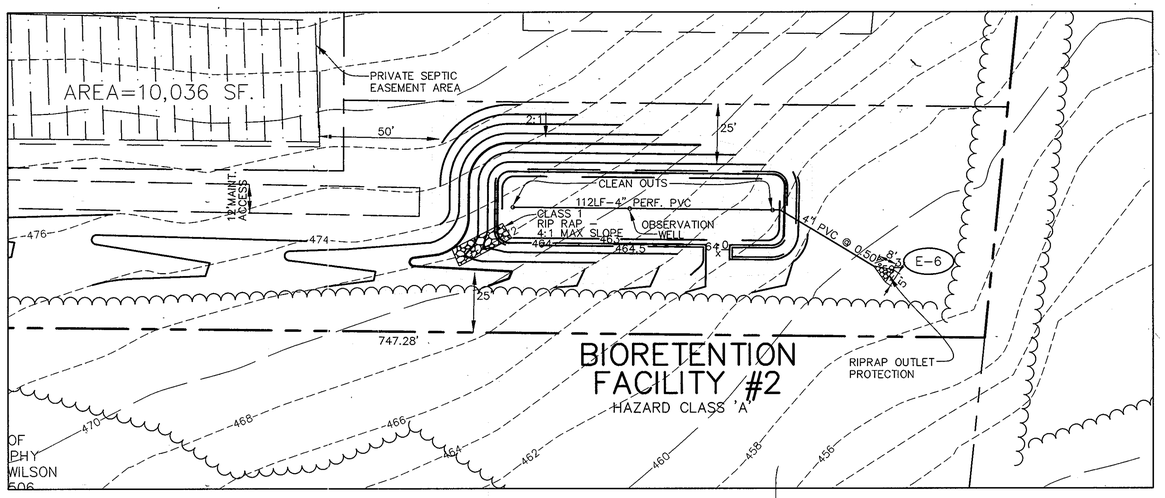


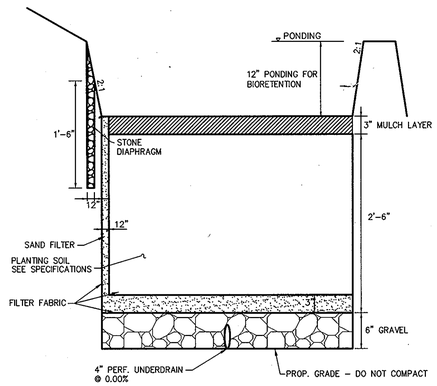
DETAIL BIORETENTION FACILITY #1 AND SWMF #1

SCALE: 1" = 30'



BIORETENTION FACILITY #2

SCALE: 1" = 30'



TYPICAL BIORETENTION FACILITY #1 & #2 SECTION

NOT TO SCALE

ELEVATION TABLE

FACILITY	TOP OF EMBANKMENT	BOTTOM OF EMBANKMENT	WQv WEIR ELEVATION
1	480.0	475.0	476.0
2	466.0	463.0	464.0

BY THE DEVELOPER :

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HOWARD SOIL CONSERVATION DISTRICT — DATE 11/15/07

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

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DATE	NO.	REVISION

OWNER

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RUPPERT PROPERTIES
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PROJECT

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LOTS 1-8, PRESERVATION PARCEL A &
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AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
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TITLE

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10/22/07
DATE

STATE OF MARYLAND — DOMENICK W. COLANGELO — NO. 27200 — REGISTERED PROFESSIONAL ENGINEER

DOMENICK W. COLANGELO #27200

CHECKED BY:	DWC
DESIGNED BY :	NS
DRAWN BY:	EMR/JMK
PROJECT NO:	13043/1-0/ENGR/PLANS/FINAL/C9000ET5.DWG
DATE :	NOVEMBER 6, 2007
SCALE :	AS SHOWN
DRAWING NO.	9 OF 21

F-07-005

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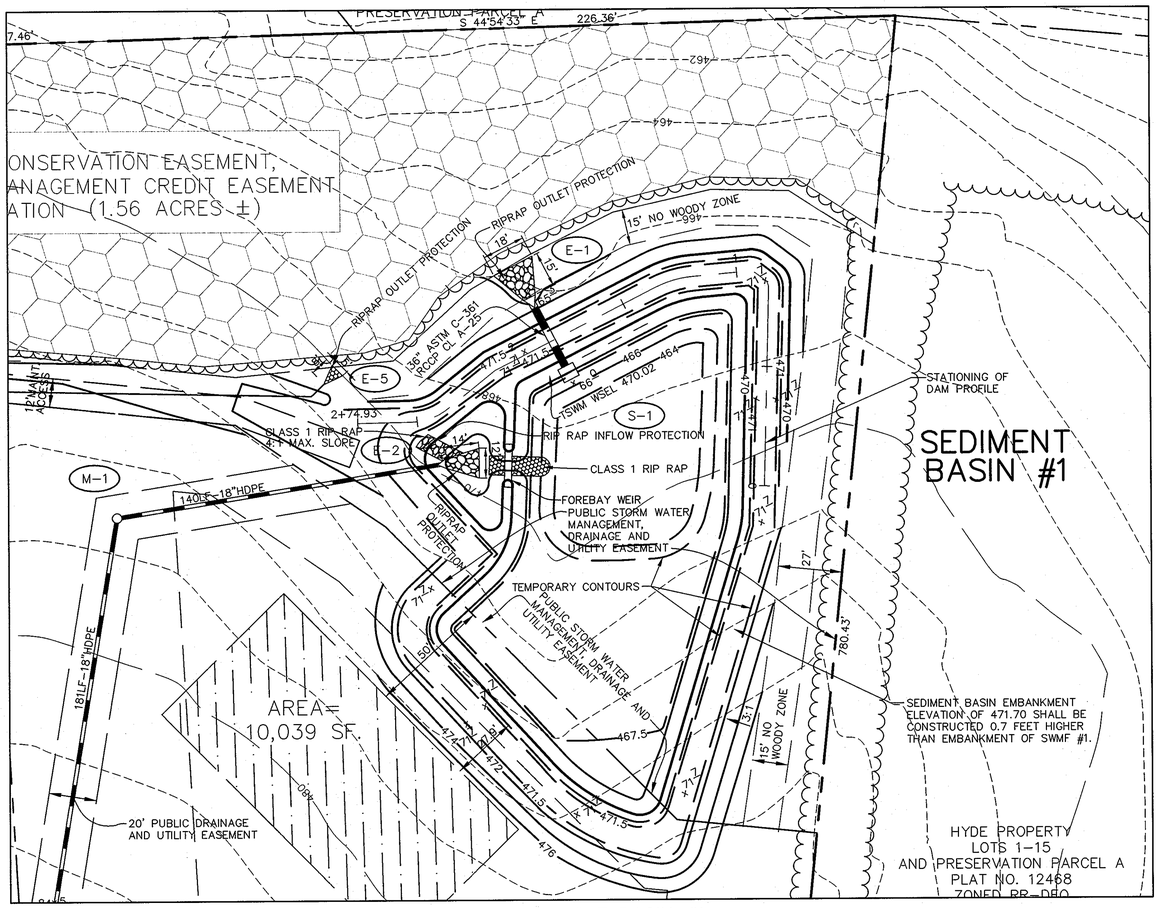
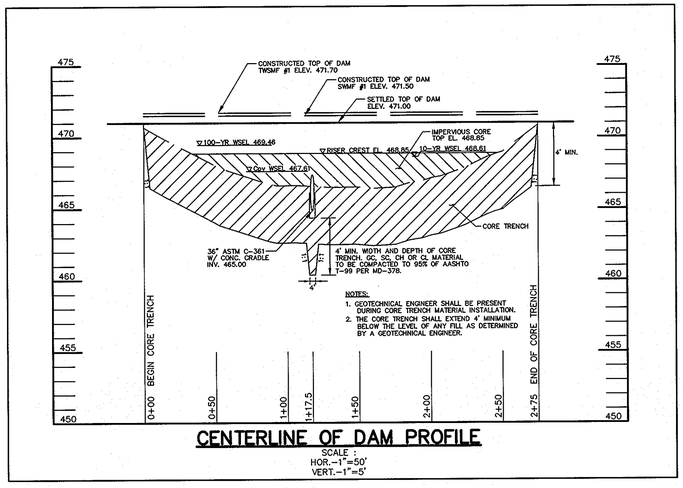


DETAIL SEDIMENT BASIN #1

SCALE: 1" = 30'

TR-20 ELEVATION SUMMARY TABLE		
	TSWM Elv. (ft)	SWM WSEL Elv. (ft)
1-YR	468.83	467.61
10-YR	470.06	468.61
100-YR	N/A	469.46
Cleanout	465.47	N/A
Permanent Pool	466.83	N/A
Bottom of Basin	464.00	466.00
Weir Elv.	468.85	468.25



CENTERLINE OF DAM PROFILE

SCALE
HOR.-1"=50'
VERT.-1"=5'

SEDIMENT BASIN SCHEDULE			
BASIN #1			
Drainage Area Exist (Ac.)	15.50	Weir Crest Elv. (ft)	468.85
Drainage Area Prop (Ac.)	8.20	TSWM Perm Pool Elv.(ft)	466.83
Storage Required (cf)	65,673	TSWM Perm Pool Vol.(cf)	14,442
Elev. @ Req. Storage (ft)	470.06	Cleanout Elv. (ft)	465.47
Storage Provided (cf)	85,939	Bottom Elv. (ft)	464.00
Elev. @ Prov. Storage (ft)	471.00	Q_1 Exist (cfs)	0.60
Weir Length #1 (ft.)	5.00	Q_1 Bare Soil (cfs)	0.60
Riser Size (in.)	N/A	Q_1 Post (cfs)	0.10
Depth Below Outlet Elv.(ft.)	1.80	Embankment Elv. (ft)	471.70

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

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THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 11/15/07

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/27/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A &
NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
SWM AND SEDIMENT BASIN FACILITY DETAILS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07
DATE

STATE OF MARYLAND — DOMENICK W. COLANGELO — No. 27200 — PROFESSIONAL ENGINEER

DOMENICK W. COLANGELO #27200

CHECKED BY:	DWC
DESIGNED BY :	NS
DRAWN BY:	EMR/JMK
PROJECT NO:	13043/1-0/ENGR/PLANS /FINAL/C900DET6.DWG
DATE :	NOVEMBER 6, 2007
SCALE :	AS SHOWN
DRAWING NO.	10 OF 21

F-07-005

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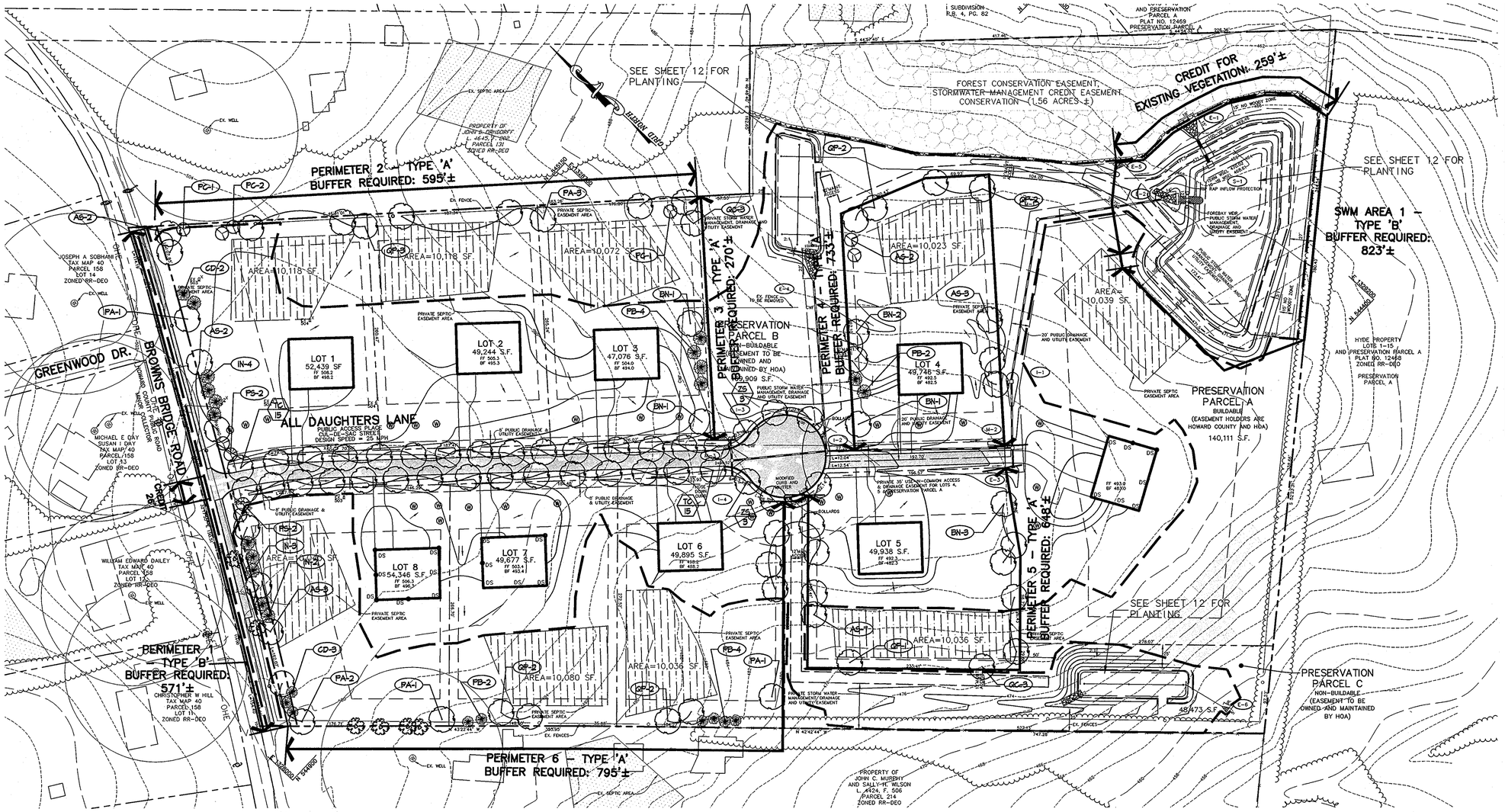


LEGEND

- EXISTING TREELINE
- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- SOIL CLASSIFICATION AND BOUNDARY (CaB2)
- EXISTING BUILDING
- LIMIT OF DISTURBANCE LINE
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED SHRUBS
- STREET TREE LANDSCAPE REQUIREMENT (CV 1)
- PERIMETER LANDSCAPE REQUIREMENT (AR-3)
- SWM PERIMETER LANDSCAPE REQUIREMENT AND BIORETENTION PLANTINGS (BN 1)
- PERIMETER LANDSCAPE EDGE LIMITS
- PROPOSED PERENNIALS

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.

SIGNATURE — DATE 10/24/07

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/21/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1–8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
FINAL LANDSCAPE PLAN, NOTES AND SCHEDULES

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10-25-07 DATE

PETER J. STONE # 3068

CHECKED BY:	DWC
DESIGNED BY :	NS
DRAWN BY:	BCL
PROJECT NO:	13043/1-0/ENGR/PLANS /FINAL/ L200LND.DWG
DATE :	NOVEMBER 6, 2007
SCALE :	1" = 60'
DRAWING NO.	11 OF 21

SCHEDULE A – PERIMETER LANDSCAPE EDGE

	ADJACENT TO PERIMETER PROPERTIES					ADJACENT TO ROADWAYS
PERIMETER	2	3	4	5	6	1
LANDSCAPE TYPE	A	A	A	A	A	B
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	595'±	270'±	733'±	648'±	795'±	571'±
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO –	NO –	NO –	NO –	NO –	– –
CREDIT FOR WALL, FENCE, BERM OR DRIVE AISLE (YES/NO/LINEAR FEET)	NO –	NO –	NO –	NO –	NO –	YES 26'
LINEAR FEET REMAINING	595'±	270'±	733'±	648'±	795'±	545'±
NUMBER OF PLANTS REQUIRED						
SHADE TREES	10	5	12	11	13	11
EVERGREEN TREES	0	0	0	0	0	14
SHRUBS	0	0	0	0	0	0
NUMBER OF PLANTS PROVIDED						
SHADE TREES	8	3	10	11	10	9
EVERGREEN TREES	0	4	2	0	6	14
ORNAMENTAL TREES	4	0	2	0	0	4

SCHEDULE 'A' NOTES:
* REGULATIONS DO NOT REQUIRE LANDSCAPE EDGES, BUFFERING, OR SCREENING BETWEEN INTERNAL LOTS OR PARCELS WITHIN THE SAME DEVELOPMENT. (PAGE 17 OF THE HOWARD COUNTY LANDSCAPE MANUAL)

SUBSTITUTION NOTES:
1. FOR PERIMETER 1, FOUR (4) ORNAMENTAL TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
2. FOR PERIMETER 2, FOUR (4) ORNAMENTAL TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
3. FOR PERIMETER 3, FOUR (4) EVERGREEN TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
4. FOR PERIMETER 4, TWO (2) ORNAMENTAL TREES AND TWO (2) EVERGREEN TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
5. FOR PERIMETER 6, SIX (6) EVERGREEN TREES WERE SUBSTITUTED FOR THREE (3) SHADE TREES.

PERIMETER PLANT SCHEDULE

SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
SHADE TREES					
AS	17	ACER SACCHARUM 'GREEN MOUNTAIN' GREEN MOUNTAIN SUGAR MAPLE	2 1/2"–3" CAL.	B & B	PLANT AS SHOWN
QP	12	QUERCUS PHELLOS WILLOW OAK	2 1/2"–3" CAL.	B & B	PLANT AS SHOWN
BN	8	BETULA NIGRA 'HERITAGE' HERITAGE CLUMP RIVER BIRCH	10'–12' HT.	B & B	MULTI-STEM
QC	6	QUERCUS COCCINEA SCARLET OAK	2 1/2"–3" CAL.	B & B	PLANT AS SHOWN
PA	8	PLATANUS x ACERIFOLIA 'BLOODGOOD' BLOODGOOD LONDON PLANE	2 1/2"–3" CAL.	B & B	PLANT AS SHOWN
ORNAMENTAL TREES					
PC	4	PRUNUS CERASIFERA ATROPURPUREA 'THUNDERCLOUD' THUNDERCLOUD PURPLELEAF PLUM	1 1/2"–2" CAL.	B & B	PLANT AS SHOWN
PS	4	PRUNUS SERRULATA 'KWANZAN' KWANZAN CHERRY	1 1/2"–2" CAL.	B & B	PLANT AS SHOWN
AG	2	ACER GRISEUM PAPERBARK MAPLE	1 1/2"–2" CAL.	B & B	PLANT AS SHOWN
EVERGREEN TREES					
IN	9	ILEX 'NELLIE R. STEVENS' NELLIE STEVENS HOLLY	5'–6' HT.	B & B	PLANT AS SHOWN
CD	5	CEDRUS DEODARA DEODAR CEDAR	6'–8' HT.	B & B	PLANT AS SHOWN
PB	12	PICEA ABIES NORWAY SPRUCE	6'–8' HT.	B & B	PLANT AS SHOWN

STREET TREE PLANT SCHEDULE

SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
SHADE TREES					
TC	30	TILIA CORDATA 'GREENSPIRE' GREENSPIRE LITTLELEAF LINDEN	2 1/2"–3" CAL.	B & B	PLANT AS SHOWN
ZS	6	ZELKOVA SERRATA 'VILLAGE GREEN' VILLAGE GREEN JAPANESE ZELKOVA	2 1/2"–3" CAL.	B & B	PLANT AS SHOWN

GENERAL NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $26,550.
74 SHADE TREES @ $300 = $22,200
0 ORNAMENTAL TREES @ $150 = $0
29 EVERGREEN TREES @ $150 = $4,350
0 SHRUBS @ $30 = $0

3. THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.

4. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.

5. ALL MATERIAL SELECTED SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE "USA STANDARD FOR NURSERY STOCK", LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.

6. ALL MATERIAL SHALL BE PLANTED IN ACCORDANCE WITH THE MINIMUM STANDARDS CITED IN THE LATEST EDITION OF "LANDSCAPE SPECIFICATION GUIDELINES" PUBLISHED BY THE LANDSCAPE CONTRACTORS ASSOCIATION.

7. AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS SHALL BE OF THE PROPER HEIGHT AND/OR SPREAD REQUIREMENTS IN ACCORDANCE WITH THIS PLAN AND THE HOWARD COUNTY LANDSCAPE MANUAL.

8. NO SUBSTITUTIONS OR RELOCATION OF PLANTS MAY BE MADE WITHOUT PRIOR APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING OF HOWARD COUNTY. ANY DEVIATION FROM THIS LANDSCAPE PLAN MAY RESULT IN A REQUIREMENT FOR SUBMITTAL OF AN OFFICIAL "REDLINE REVISION" TO THE SITE DEVELOPMENT PLAN(S) AND/OR DENIAL IN THE RELEASE OF LANDSCAPE SURETY.

9. SEE SHEET 11, FINAL LANDSCAPE NOTES, DETAILS AND TABULATIONS FOR ENLARGED PLANS WITH STORMWATER MANAGEMENT PERIMETER PLANTINGS, BIORETENTION FACILITIES PLANTINGS, AND THEIR ASSOCIATED SCHEDULES.

STREET TREE CALCULATIONS

ROAD A	1423'/40	36 LARGE TREES
TOTAL TREES REQUIRED		36 LARGE TREES

F-07-005

PLANTING SPECIFICATIONS

1. PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION, AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN. WHERE DISCREPANCIES EXIST BETWEEN STANDARDS & GUIDELINES REFERENCED WITHIN THESE SPECIFICATIONS AND THE HOWARD COUNTY LANDSCAPE MANUAL, THE LATTER TAKES PRECEDENCE.

2. ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, THAT IS NOT NURSERY GROWN, UNIFORMLY BRANCHED, DOES NOT HAVE A VIGOROUS ROOT SYSTEM, AND DOES NOT CONFORM TO THE MOST RECENT EDITION OF THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) STANDARDS WILL BE REJECTED. PLANT MATERIAL THAT IS NOT HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUNSCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS WILL BE REJECTED. 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 BE REJECTED. ALL B & B PLANTS SHALL BE FRESHLY DUG; NO HEALED-IN PLANTS OR PLANTS FROM COLD STORAGE WILL BE ACCEPTED.

3. UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATIONS SHALL CONFORM TO THE MOST RECENT EDITION OF THE "LANDSCAPE SPECIFICATION GUIDELINES BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF MD, DC, & VA", (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS.

4. CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION ON 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.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL RELEVANT AND APPROPRIATE UTILITY COMPANIES, UTILITY CONTRACTORS, AND "MISS UTILITY" A MINIMUM OF 48 HOURS PRIOR TO THE BEGINNING OF ANY WORK. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID CONFLICTS WITH UTILITIES. MAJOR CHANGES WILL REQUIRE THE APPROVAL OF THE LANDSCAPE ARCHITECT. DAMAGE TO EXISTING STRUCTURE AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.

6. PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE ACCOMPLISHED VIA THE TEMPORARY INSTALLATION OF 4 FOOT HIGH SNOW FENCE AT THE DRIP LINE, SEE DETAIL.

7. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN GROWING SEASON OF COMPLETION OF SITE CONSTRUCTION. DO NOT PLANT PINUS STROBUS OR XCUPRESSACYPARIS LEYLANDII BETWEEN NOVEMBER 15 AND MARCH 15. LANDSCAPE PLANTS ARE NOT TO BE INSTALLED BEFORE SITE IS GRADED TO FINAL GRADE.

8. CONTRACTOR TO REGRADE, FINE GRADE, SOD, HYDROSEED AND STRAW MULCH ALL AREAS DISTURBED BY THEIR WORK.

9. BID SHALL BE BASED ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM ACTUAL SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.

10. 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. WHERE DISCREPANCIES ON THE PLAN EXIST BETWEEN THE SYMBOLS AND THE CALLOUT LEADER, THE NUMBER OF SYMBOLS TAKE PRECEDENCE.

11. ALL SHRUBS AND GROUNDCOVER AREAS SHALL BE PLANTED IN CONTINUOUS PLANTING BEDS, PREPARED AS SPECIFIED, UNLESS OTHERWISE INDICATED ON PLANS. (SEE SPECIFICATION 13). BEDS TO BE MULCHED WITH MINIMUM 2" AND MAXIMUM 3" OF COMPOSTED, DOUBLE-SHREDDED HARDWOOD MULCH THROUGHOUT.

12. POSITIVE DRAINAGE SHALL BE MAINTAINED ON PLANTING BEDS (MINIMUM 2 PERCENT SLOPE).

13. BED PREPARATION SHALL BE AS FOLLOWS: TILL INTO A MINIMUM DEPTH OF 6" 1 YARD OF COMPRO OR LEAFGRO PER 200 SF OF PLANTING BED, AND 1 YARD OF TOPSOIL PER 100 SF OF BED. ADD 3 LBS OF STANDARD 5-10-5 FERTILIZER PER CUBIC YARD OF PLANTING MIX AND TILL. ERICACEOUS PLANTS (AZALEAS, RHODODENDRONS, ETC.): TOP DRESS AFTER PLANTING WITH IRON SULFATE OR COMPARABLE PRODUCT ACCORDING TO PACKAGE DIRECTIONS. TAXUS BACCATA 'REPANDENS' (ENGLISH WEEPING YEWS): TOP DRESS AFTER PLANTING WITH 1/4 TO 1/2 CUP LIME EACH.

14. PLANTING MIX: FOR TREES NOT IN A PREPARED BED, MIX 50% COMPRO OR LEAFGRO WITH 50% SOIL FROM TREE HOLE TO USE AS BACKFILL, SEE TREE PLANTING DETAIL.

15. WEED & INSECT CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. FOR TREE PLANTING, APPLY A PRE-EMERGENT ON TOP OF SOIL AND ROOT BALL BEFORE MULCHING. CAUTION: FOR AREAS TO BE PLANTED WITH A GROUND COVER, BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUNDCOVER TO BE TREATED. MAINTAIN THE MULCH WEED-FREE FOR THE EXTENT OF THE WARRANTY PERIOD. UNDER NO CIRCUMSTANCES IS A PESTICIDE CONTAINING CHLORPYRIFOS TO BE USED AS A MEANS OF PEST CONTROL.

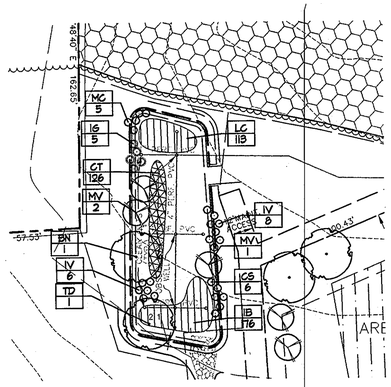
16. WATER: ALL PLANT MATERIAL PLANTED SHALL BE WATERED THOROUGHLY THE DAY OF PLANTING. ALL PLANT MATERIAL NOT YET PLANTED SHALL BE PROPERLY PROTECTED FROM DRYING OUT UNTIL PLANTED. AT A MINIMUM, WATER UNPLANTED PLANT MATERIAL DAILY AND AS NECESSARY TO AVOID DESSICATION.

17. PRUNING: DO NOT HEAVILY PRUNE TREES AND SHRUBS AT PLANTING. PRUNE ONLY BROKEN, DEAD, OR DISEASED BRANCHES.

18. ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED, GRASS SEED PLANTED, AND COVERED WITH STRAW MULCH.

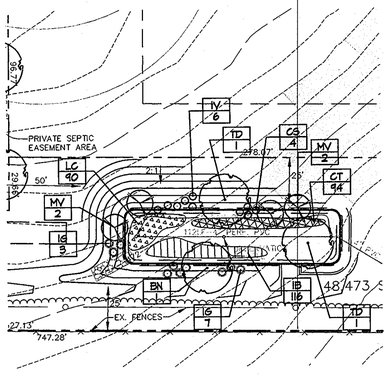
LEGEND

- EXISTING TREELINE
- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- SOIL CLASSIFICATION AND BOUNDARY (CaB2)
- EXISTING BUILDING
- LIMIT OF DISTURBANCE LINE
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED SHRUBS
- STREET TREE LANDSCAPE REQUIREMENT (CV 1)
- PERIMETER LANDSCAPE REQUIREMENT (AR-3)
- SWM PERIMETER LANDSCAPE REQUIREMENT AND BIORETENTION PLANTINGS (BN 1)
- PERIMETER LANDSCAPE EDGE LIMITS
- PROPOSED PERENNAILS



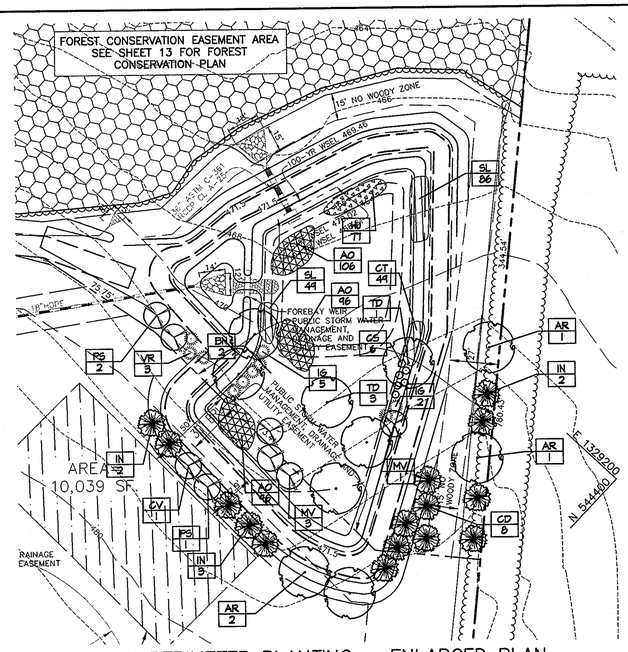
BIORETENTION FACILITY #1

SCALE: 1" = 40'



BIORETENTION FACILITY #2

SCALE: 1" = 40'



SWM PERIMETER PLANTING – ENLARGED PLAN

SCALE: 1" = 40'

BIORETENTION FACILITY #1 PLANT SCHEDULE

SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS	ZONE*
SHADE TREES						
BN	1	BETULA NIGRA 'HERITAGE' HERITAGE CLUMP RIVER BIRCH	10–12' HT.	B & B	MULTI-STEM	(2,3),4
TD	1	TAXODIUM DISTICHUM BALD CYPRESS	2 1/2"–3" CAL.	B & B	PLANT AS SHOWN	(1,2) 3
ORNAMENTAL TREES						
MV	3	MAGNOLIA VIRGINIANA SWEETBAY MAGNOLIA	1 1/2"–2" CAL.	B & B	PLANT AS SHOWN	**
SHRUBS						
CS	6	CORNUS SERICEA RED TWIG DOGWOOD	18"–24' HT.	CONT.	PLANT AS SHOWN	**
IG	5	ILEX GLABRA INKBERRY	18"–24" HT.	CONT.	PLANT AS SHOWN	(2,3), 4
IV	14	ILEX VERTICILLATA 'RED SPRITE' AND 'JIM DANDY' RED SPRITE AND JIM DANDY WINTERBERRY	18"–24" HT.	CONT.	SEE NOTE 1	1,(2,3)
MC	5	MYRICA CERIFERA SOUTHERN BAYBERRY	18"–24" HT.	CONT.	PLANT AS SHOWN	(2,3,4,),5
PERENNIALS						
CT	126	CAREX TYPHINA CAT-TAIL SEDGE	1 GAL.	CONT.	24" O.C.	(2,3),4
IB	176	IRIS VERSICOLOR 'BLUE FLAG' BLUE FLAG IRIS	1 GAL.	CONT.	24" O.C.	(1,2),3
LC	113	LOBELIA CARDINALIS CARDINAL FLOWER	1 GAL.	CONT.	24" O.C.	1(2,3),4

BIORETENTION FACILITY #2 PLANT SCHEDULE

SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS	ZONE*
SHADE TREES						
BN	1	BETULA NIGRA 'HERITAGE' HERITAGE CLUMP RIVER BIRCH	10–12' HT.	B & B	MULTI-STEM	(2,3),4
TD	2	TAXODIUM DISTICHUM BALD CYPRESS	2 1/2"–3" CAL.	B & B	PLANT AS SHOWN	(1,2) 3
ORNAMENTAL TREES						
MV	4	MAGNOLIA VIRGINIANA SWEETBAY MAGNOLIA	1 1/2"–2" CAL.	B & B	PLANT AS SHOWN	**
SHRUBS						
CS	4	CORNUS SERICEA RED TWIG DOGWOOD	18"–24' HT.	CONT.	PLANT AS SHOWN	**
IG	10	ILEX GLABRA INKBERRY	18"–24" HT.	CONT.	PLANT AS SHOWN	(2,3), 4
IV	6	ILEX VERTICILLATA 'RED SPRITE' AND 'JIM DANDY' RED SPRITE AND JIM DANDY WINTERBERRY	18"–24" HT.	CONT.	SEE NOTE 1	1,(2,3)
PERENNIALS						
CT	94	CAREX TYPHINA CAT-TAIL SEDGE	1 GAL.	CONT.	24" O.C.	(2,3),4
IB	116	IRIS VERSICOLOR 'BLUE FLAG' BLUE FLAG IRIS	1 GAL.	CONT.	24" O.C.	(1,2),3
LC	190	LOBELIA CARDINALIS CARDINAL FLOWER	1 GAL.	CONT.	24" O.C.	1(2,3),4

PLANT LIST NOTES:

* HYDROLOGIC ZONES ACCORDING TO APPENDIX A OF THE MARYLAND MODEL STORMWATER MANAGEMENT ORDINANCE JULY 2000.

** KNOWN TO TOLERATE INNUNDATION AS WELL AS DRY AREAS ACCORDING TO DIRR, MICHAEL A., MANUAL OF WOODY LANDSCAPE PLANTS.

NOTES:

1. PLANT ONE JIM DANDY WINTERBERRY PER EVERY 5 RED SPRITE WINTERBERRIES.

SCHEDULE D – STORMWATER MANAGEMENT AREA LANDSCAPING

S.W.M. POND PERIMETER	1
LANDSCAPE TYPE	B
LINEAR FEET OF TOTAL PERIMETER	878'±
CREDIT FOR EX. VEGETATION (NO OR YES & %)	YES, 259'
CREDIT FOR OTHER PROP. LANDSCAPING (NO OR YES & %)	NO
LINEAR FEET OF REMAINING PERIMETER	619'±
NUMBER OF TREES REQUIRED: SHADE TREES EVERGREEN TREES	12 15
NUMBER OF TREES PROVIDED: SHADE TREES EVERGREEN TREES ORNAMENTAL TREES SHRUBS	9 15 4 10

SUBSTITUTION NOTES:
1. FOUR (4) ORNAMENTAL TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
2. TEN (10) SHRUBS WERE SUBSTITUTED FOR ONE (1) SHADE TREE.

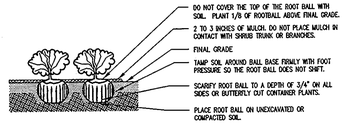
STORMWATER MANAGEMENT PERIMETER PLANT SCHEDULE

SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS	ZONE*
SHADE TREES						
AR	4	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2 1/2"–3" CAL.	B & B	PLANT AS SHOWN	
BN	2	BETULA NIGRA 'HERITAGE' HERITAGE RIVER BIRCH	10–12' HT.	B & B	MULTI-STEM	(2,3),4
TD	4	TAXODIUM DISTICHUM BALD CYPRESS	2 1/2"–3" CAL.	B & B	PLANT AS SHOWN	(1,2) 3
ORNAMENTAL TREES						
PS	3	PRUNUS SERRULATA 'KWANZAN' KWANZAN CHERRY	1 1/2"–2" CAL.	B & B	PLANT AS SHOWN	
CV	1	CRATAEGUS VIRDIS 'WINTER KING' WINTER KING HAWTHORNE	1 1/2"–2" CAL.	B & B	PLANT AS SHOWN	
MV	3	MAGNOLIA VIRGINIANA SWEETBAY MAGNOLIA	1 1/2"–2" CAL.	B & B	PLANT AS SHOWN	**
EVERGREEN TREES						
CD	8	CEDRUS DEODARA DEODAR CEDAR	6'–8' HT.	B & B	PLANT AS SHOWN	
IN	7	ILEX 'NELLIE R. STEVENS' NELLIE STEVENS HOLLY	6'–8' HT.	B & B	PLANT AS SHOWN	
SHRUBS						
CS	6	CORNUS SERICEA RED TWIG DOGWOOD	18"–24' HT.	CONT.	PLANT AS SHOWN	**
IG	7	ILEX GLABRA INKBERRY	18"–24" HT.	CONT.	PLANT AS SHOWN	(2,3), 4
VR	3	VIBURNUM RHYTIDOPHYLLUM LEATHERLEAF VIBURNUM	2 1/2"–3' HT.	B & B	PLANT AS SHOWN	
PERENNIALS						
AO	298	ALTHAEA OFFICINALIS COMMON MARSH-MALLOW	1 GAL.	CONT.	24" O.C.	(1,2,3)
CT	49	CAREX TYPHINA CAT-TAIL SEDGE	1 GAL.	CONT.	24" O.C.	(2,3),4
HU	77	HYDROCOTYLE UMBELLETA PENNYWORT	1 GAL.	CONT.	24" O.C.	(1,2),3
SL	135	SAGGITARIA LATIFOLIA ARROWHEAD	1 GAL.	CONT.	24" O.C.	(4,5),6

PLANT LIST NOTES:

* HYDROLOGIC ZONES ACCORDING TO APPENDIX A OF THE MARYLAND MODEL STORMWATER MANAGEMENT ORDINANCE JULY 2000.

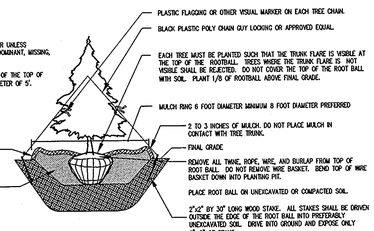
** KNOWN TO TOLERATE INNUNDATION AS WELL AS DRY AREAS ACCORDING TO DIRR, MICHAEL A., MANUAL OF WOODY LANDSCAPE PLANTS.



NOTES:
1. SEE PLANTING SPECIFICATIONS FOR PREPARATION OF PLANTING BED.
2. DO NOT HEAVILY PRUNE THE SHRUB AT PLANTING. PRUNE ONLY BROKEN, DAMAGED, OR DISEASED BRANCHES.
3. DIG PLANTING PIT 12" WIDER THAN THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 15".
4. FOR B&B SHRUBS: REMOVE ALL TWINE, ROPE, AND BURLAP FROM TOP OF ROOT BALL.
5. ALL CONTAINERS SHALL BE REMOVED BEFORE INSTALLATION.

SHRUB BED PLANTING DETAIL – B&B AND CONTAINER SHRUBS

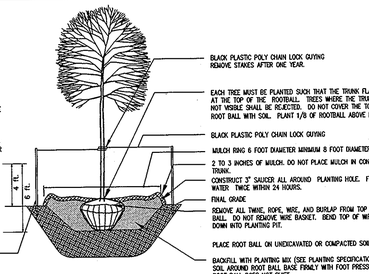
NOT TO SCALE



EVERGREEN B&B TREE PLANTING DETAIL

NOT TO SCALE

NOTES:
1. SELECT ONLY NURSERY STOCK WITH A SINGLE LEADER UNLESS OTHERWISE SPECIFIED ON PLAN. PLANTS WITH CO-DOMINANT, MISSING, OR DAMAGED LEADERS SHALL BE REJECTED.
2. STAKE TREES AS SHOWN.
3. DIG PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.



4. TIGHTEN GUYS ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. GUYS SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 IN. OF GROWTH AND BUFFER ALL BRANCHES.
5. TUCK ANY LOOSE ENDS OF THE GUY SO THAT NO LOOSE ENDS ARE EXPOSED.

DECIDUOUS B&B TREE PLANTING DETAIL (TREES 3" CAL. OR SMALLER)

NOT TO SCALE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/21/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/27/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
FINAL SWM PLANTING, LANDSCAPE NOTES, DETAILS AND SCHEDULES

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

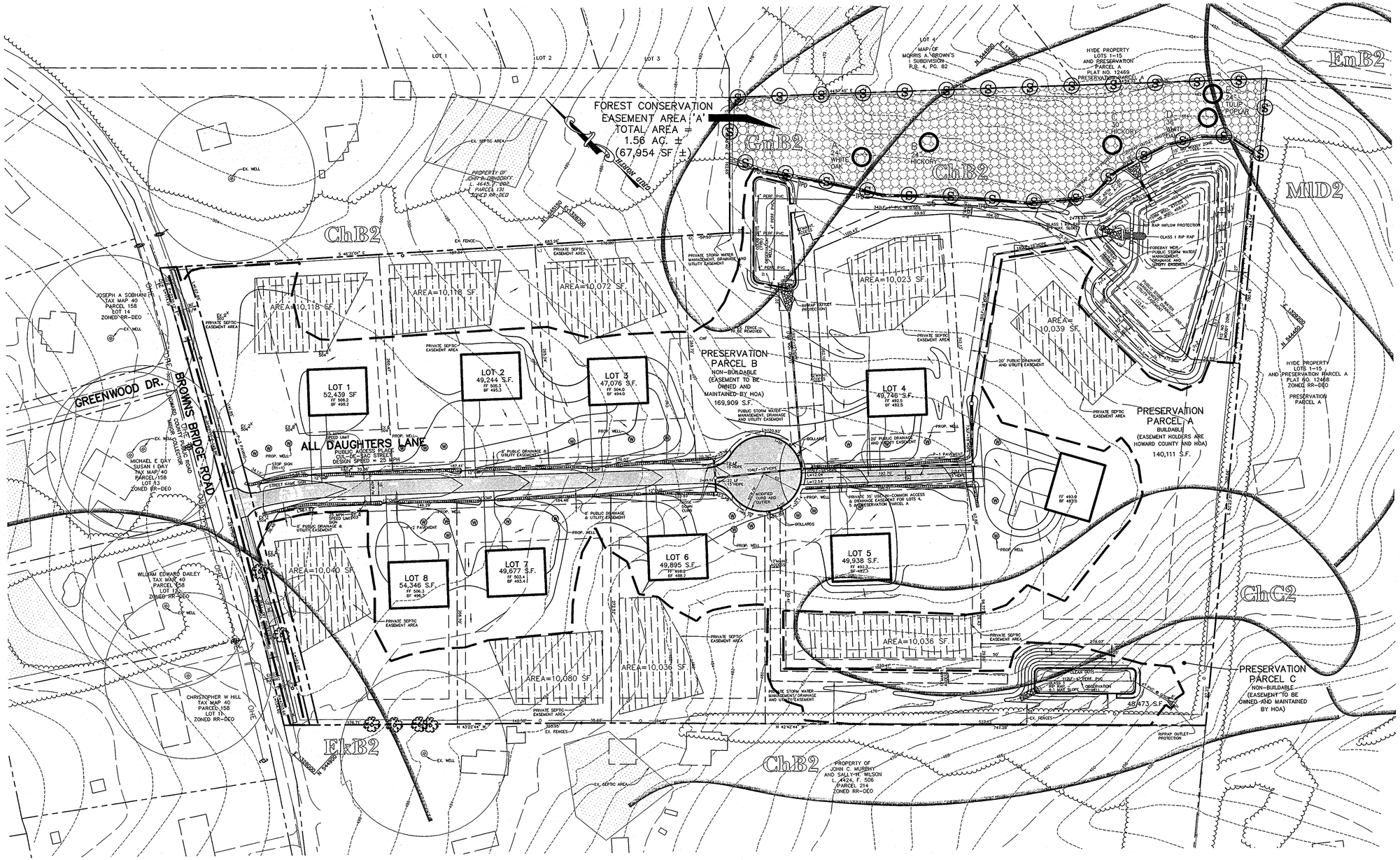
10-25-07
DATE

STATE OF MARYLAND — 3068 — PETER J. STONE — PROFESSIONAL ENGINEER

PETER J. STONE # 3068

CHECKED BY: DWC
DESIGNED BY : NS
DRAWN BY: BCL
PROJECT NO. 13043/1-0/ENGR/PLANS /FINAL/ L201LND.DWG
DATE : NOVEMBER 6, 2007
SCALE : AS SHOWN
DRAWING NO. 12 OF 21

F-07-005



LEGEND

- EXISTING TREELINE
- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- SOIL CLASSIFICATION AND BOUNDARY (ChB2)
- EXISTING BUILDING
- PROPOSED BUILDING
- LIMIT OF DISTURBANCE LINE
- FOREST CONSERVATION AREA
- FOREST CONSERVATION SIGNAGE (S)
- TREE PROTECTION DEVICE (BLAZE ORANGE PLASTIC MESH FENCING) (TPD)
- SPECIMEN TREE
- SLOPES 15-25%

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/27/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
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410-531-5539

DEVELOPER
RUPPERT PROPERTIES
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HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
FINAL FOREST CONSERVATION PLAN

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10-25-07
DATE

PETER J. STONE # 3068

CHECKED BY:	DWC
DESIGNED BY :	NS
DRAWN BY:	BCL
PROJECT NO:	13043/1-0/ENGR/PLANS/FINAL/ C200FCP.DWG
DATE :	NOVEMBER 6, 2007
SCALE :	1" = 60'
DRAWING NO.	13 OF 21

F-07-005

SEQUENCE OF OPERATIONS

PRE-CONSTRUCTION SITE PREPARATION

1. FIELD STAKE LIMITS OF DISTURBANCE (L.O.D.) AT 25' INTERVALS.

2. REVIEW L.O.D. IN FIELD AND ADJUST IF PRACTICAL.

3. INSTALL TREE PROTECTION FENCE AT THE L.O.D. AND IMPLEMENT TREE PROTECTION METHODS AS SHOWN.

4. CLEAR AND GRUB AS NECESSARY TO FACILITATE ROOT PRUNING TO A DEPTH OF 2-3 FEET WITHIN THE LIMITS OF THE PROPOSED REFORESTATION AREA. CLEAR REMAINING TREES IN A WAY THAT "SAVE TREES" ARE NOT DISTURBED. GRIND STUMPS 12" IN DIAMETER AND LARGER THAT ARE WITHIN 25' OF THE L.O.D.

5. DO NOT ATTEMPT TO SAVE TREES WITHIN 25' FROM THE L.O.D. UNLESS, IN THE OPINION OF THE CONSULTING ARBORIST, THEY HAVE A 75% CHANCE OR BETTER OF SURVIVAL.

6. PRUNE AND FERTILIZE DESIRABLE 'EDGE TREES' AS PER CONSULTING ARBORIST'S RECOMMENDATIONS.

7. THERE SHALL BE NO STAGING, STORAGE, OR STOCKPILING OF MATERIALS WITHIN THE NONTIDAL WETLANDS OR 25' NONTIDAL WETLANDS BUFFER.

8. REMOVE OR TREAT WITH AN ACCEPTABLE METHOD, NOXIOUS PLANT MATERIAL SUCH AS MULTIFLORA ROSE, TEARTHUMB, AND JOHNSON GRASS BEFORE INSTALLING REFORESTATION PLANTS.

9. INSTALL TREE PROTECTION SIGNAGE.

10. STABILIZE ANY DISTURBED AREAS USING THE SPECIFIED STABILIZATION MIXTURE WHICH ALLOWS FOR NATURAL REVEGETATION OF FOREST COMMUNITIES.

FOREST CONSERVATION SEQUENCE OF OPERATIONS

1. PRIOR TO BEGINNING ANY GRADING OPERATIONS ON THIS SITE OR ON A RESPECTIVE LOT, THERE SHALL BE A PRECONSTRUCTION MEETING HELD AT THE SITE WHICH IS TO INCLUDE THE CONTRACTOR AND REPRESENTATIVES FROM PATTON HARRIS RUST & ASSOCIATES, INC. (PHR+A). THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING (DPZ) AND THE OWNER WILL BE NOTIFIED BY THE CONTRACTOR AS TO THE TIME AND PLACE OF THE FIELD MEETING, SHOULD THEY WISH TO SEND A REPRESENTATIVE. THE PURPOSE OF THIS MEETING WILL BE TO REVIEW THE APPROVED FCP AND TO FIELD VERIFY THE CORRECT LIMITS OF DISTURBANCE (LOD).

2. THE LIMITS OF DISTURBANCE (LOD) PERTINENT TO THE PRESERVATION OF WOODED AREAS SHALL BE STAKED IN THE FIELD WITH FINAL ADJUSTMENTS BEING MADE AS NECESSARY TO INSURE ADEQUATE PROTECTION OF THE CRITICAL ROOT ZONE OF TREES DESIGNATED FOR RETENTION. STAKES TO BE USED SHALL BE THOSE SPECIFIED FOR THE "TREE PROTECTION DEVICE" TO WHICH APPROVED PROTECTIVE MATERIAL WILL BE ATTACHED. ALTERNATE MEANS OF DEFINING THE LOD MAY BE USED IF APPROVED BY THE DPZ.

3. ALL FOREST RETENTION AREAS SHALL BE PROTECTED BY HIGHLY VISIBLE, WELL ANCHORED TEMPORARY PROTECTION DEVICES (SEE DETAIL), WHICH SHALL BE SECURELY IN PLACE PRIOR TO ANY CLEARING OR GRADING OPERATIONS.

4. GRADING OPERATIONS OR OTHER CONSTRUCTION OPERATIONS WHICH COULD DISLODGE OR OTHERWISE DAMAGE THE PROTECTIVE DEVICES SHALL BE AVOIDED ALONG THE EDGES OF THE LOD LINES IF POSSIBLE. ANY PROTECTIVE DEVICES WHICH ARE DAMAGED DURING SITE CONSTRUCTION OPERATIONS SHALL BE PROPERLY REPAIRED IMMEDIATELY BY THE CONTRACTOR.

5. AFTER SITE GRADING, UTILITY ACCESS ROAD, AND DRIVEWAY CONSTRUCTION HAVE BEEN COMPLETED, ALL TREES ADJACENT TO THE LOD LINE SHALL BE INSPECTED FOR INDICATIONS OF CROWN DIE-BACK (SUMMER INDICATOR), DAMAGE WITHIN RESPECTIVE CRITICAL ROOT ZONES OR ANY DEAD WOOD OR OTHER CONDITIONS WHICH MIGHT BE HAZARDOUS TO PEDESTRIANS, BUILDINGS, UTILITY LINES VEHICULAR ACCESS WAYS OR PARKED VEHICLES.

6. SHOULD THERE BE EVIDENCE OF ANY DAMAGE TO TREE TRUNKS, BRANCHES OR THE CRITICAL ROOT ZONE OF TREES WITHIN THE PROTECTED AREAS, OR TO ISOLATED SPECIMEN TREES TO BE PRESERVED, THE DAMAGE SHALL BE EXAMINED WITHIN A PERIOD OF TWO (2) DAYS FROM THE DATE OF OBSERVANCE BY A LICENSED TREE CARE PROFESSIONAL. EXPOSED ROOTS SHOULD BE COVERED IMMEDIATELY TO A DEPTH OF 6 - 8 INCHES WITH SOIL, PREFERABLY MIXED WITH 50% PEAT MOSS OR LEAF MOLD.

7. REMOVE DAMAGED, DEAD OR DYING TREES OR LIMBS ONLY IF THE TREES OR LIMBS POSE AN IMMEDIATE SAFETY HAZARD TO BUILDINGS, UTILITY LINES, VEHICLES, OR ACCESS AND EGRESS DRIVES OR PEDESTRIAN AREAS. TREES DESIGNATED FOR PRUNING OR REMOVAL SHALL BE PRUNED OR REMOVED USING EQUIPMENT AND METHODS WHICH WILL NOT DAMAGE OR DESTROY ADJACENT LARGE TREES OR UNDERSTORY TREES OR SHRUBS DESIGNATED FOR RETENTION.

8. ALL TEMPORARY FOREST PROTECTION DEVICES WILL BE CAREFULLY REMOVED AFTER ALL GENERAL CONSTRUCTION, NECESSARY TREE SURGERY, REMOVAL OF DEBRIS, ETC. REGRADING AND RESEEDING OF SEDIMENT AND EROSION CONTROL DISTURBANCE HAVE BEEN COMPLETED AND ACCEPTANCE AND APPROVAL OF THE WORK AND SITE CONDITIONS HAVE BEEN GIVEN BY THE DPZ.

FOREST CONSERVATION PROGRAM

I. OBJECTIVE:
IT IS THE OBJECTIVE OF THE FOREST CONSERVATION PLAN OF ORCHARD ESTATES TO RETAIN ENVIRONMENTAL INTEGRITY BY PRESERVING EXISTING WOODED AREAS.

II. PRESERVATION:
FOREST PRESERVATION AREAS SHALL BE PERMANENTLY PROTECTED BY FOREST CONSERVATION EASEMENTS.

III. GENERAL CONSTRUCTION NOTE:
THERE WILL BE NO STAGING OR STORING OF EQUIPMENT WITHIN THE LIMIT OF DISTURBANCE.

IV. POST CONSTRUCTION MANAGEMENT PRACTICE:
A TWO-YEAR POSTED CONSTRUCTION AND MANAGEMENT PROGRAM TO ENSURE FOREST HEALTH IS REQUIRED AND INCLUDES THE FOLLOWING:

1-MAINTENANCE OF SIGNS, FENCES, AND TREE PROTECTION DEVICES TO
2-PREVENT UNWARRANTED INTRUSION AND DAMAGE.
3-CAREFUL REMOVAL OF ALL TEMPORARY STRUCTURES AFTER CONSTRUCTION.
4-ROUTINE INSPECTIONS OF FOREST CONSERVATION EASEMENTS.

Howard County Forest Conservation Worksheet

Project Name: Orchard Estates
County File #:
Date: October 29, 2004

			Acres
Net Tract Area			
A.	*Total Tract Area*	A =	18.57
B.	*Other Deductions*	B =	
C.	*Net Tract Area* Net Tract Area = (A-B-C)	C =	18.57
Land Use Category:	**Residential Rural Medium Density**		
D.	*Afforestation Threshold* (Net Tract Area X 20%	D =	3.71
E.	*Conservation Threshold* (Net Tract Area X 25%	E =	4.64
Existing Forest Cover			
F.	***Existing Forest Cover within the Net Tract Area***	F =	1.56
G.	*Area of Forest Above Conservation Threshold* If the Existing Forest Cover (F) is greater than Conservation Threshold (G), then G = Existing Forest Cover (F) - Conservation Threshold (E); Otherwise G = 0	G =	0.00
Break Even Point			
H.	*Break Even* (Amount of forest that must be retained so that no mitigation is required) (1) If the area of forest above the Conservation Threshold (G) is greater than zero, then H = (0.2 X the area of forest above Conservation Threshold (G)) + the Conservation Threshold (E) (2) If the area of forest above the Conservation Threshold (G) is equal to zero, then H = Existing Forest Cover (F)	H =	1.56
I.	*Forest Clearing Permitted Without Mitigation* I = Existing Forest Cover (F) - Break Even Point (H)	I =	0.00
Proposed Forest Clearing			
J.	***Total Area of Forest to be Cleared***	J =	0.00
K.	*Total Area of Forest to be Retained* K = Existing Forest Cover (F) - forest to be cleared (J)	K =	1.56
Planting Requirements			
If the Total Area of Forest to be Cleared (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); If not, calculate the planting requirement below:			
L.	*Reforestation for Clearing Above the Conservation Threshold* (1) if the total area of forest to be retained (K) is greater than the Conservation Threshold (E), then L = the area of forest to be cleared (J) X 0.25: or (2) If the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then L = area of forest above Conservation Threshold (G) X 0.25	L =	0.00
M.	*Reforestation for Clearing Below the Conservation Threshold* (1) If Existing Forest Cover (F) is greater than Conservation Threshold (E) and the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then M = 2.0 X (the Conservation Threshold (E) - the forest to be retained (K)) (2) If Existing Forest (F) is less than or equal to the Conservation Threshold (E), then M = 2.0 X Forest to be cleared (J).	M =	0.00
N.	*Credit for Retention Above the Conservation Threshold* If the area of forest to be retained (K) is greater than the Conservation Threshold (E), then N = K - E	N =	0.00
P.	*Total Reforestation Required* P = L + M - N	P =	0.00
Q.	*Total Afforestation Required* (1) If Existing Forest Cover (F) is less than the Afforestation Threshold (D) then Q = the Afforestation Threshold (D) - the Existing Forest Cover (F)	Q =	2.15
R.	*Total Planting Requirement* R = P + Q	R =	2.15

GENERAL NOTES:

1. THE MAJORITY OF THE PLAN HAS BEEN PREPARED USING PHR+A FIELD RUN TOPOGRAPHY. SPECIMEN TREE LOCATIONS WERE FIELD APPROXIMATED.

2. NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.

3. NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.

4. THERE ARE NO KNOWN CEMETERIES OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERIES INVENTORY.

5. THERE ARE TWO EXISTING STRUCTURES ON THE SITE AS SHOWN. STRUCTURES ARE PROPOSED AS SHOWN.

6. THIS SITE CONTAINS ONE SOIL WITH POSSIBLE HYDRIC INCLUSIONS, GLENVILLE SILT LOAM (GnB2).

7. THE FSD, DATED JULY 7, 2004, HAS BEEN PREPARED BY PATTON HARRIS RUST & ASSOCIATES IN CONJUNCTION WITH THESE PLANS.

8. THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THESE PLANS.

9. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION.

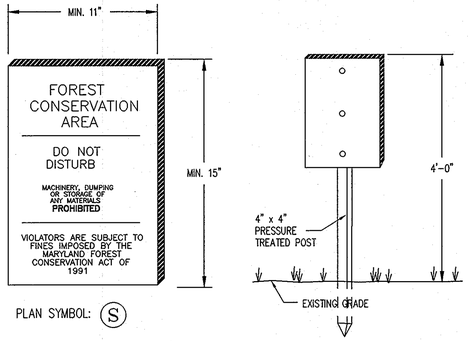
10. THE FOREST CONSERVATION OBLIGATION FOR THIS PLAN HAS BEEN SATISFIED BY THE CREATION OF A 1.56 ACRE (67,953.60 SF) ONSITE RETENTION EASEMENT. FOREST CONSERVATION SURETY IN THE AMOUNT OF $13,590.72 (67,953.60 x $0.20/SF) WILL BE POSTED.

THE REMAINING OBLIGATION OF 2.15 ACRES (93,654 SF) WILL BE SATISFIED BY OFFSITE FOREST CONSERVATION EASEMENTS LOCATED ON THE RUSSELL HOLLAND PROPERTY AT TAX MAP 7, PARCEL 101 AND TAX MAP 8, PARCEL 4 (COUNTY FILE F-07-130). A 4.3 ACRE (187,308 SF) OFFSITE RETENTION EASEMENT SATISFIES THE REMAINING OBLIGATION OF 2.15 ACRES (93,654 SF). OFFSITE FOREST CONSERVATION SURETY IN THE AMOUNT OF $37,461.60 (187,308 x $0.20/SF) WILL BE POSTED.

11. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

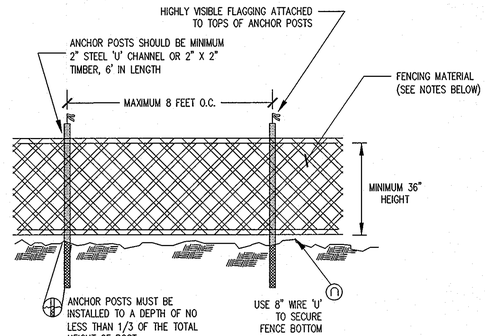
12. BEARINGS AND DISTANCES FOR FOREST CONSERVATION EASEMENTS ARE PROVIDED ON A SUBDIVISION PLAT.

FOREST CONSERVATION AREA	AREA (IN ACRES)
A	1.56 AC ±
TOTAL	1.56 AC ±



NOTES:
1. SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION EASEMENT BORDER.
2. SEE PLAN FOR SPACING.

FOREST CONSERVATION SIGN DETAIL
NOT TO SCALE



NOTES:
1. BLAZE ORANGE MESH OR SUPER SILT FENCE FOR TREE PROTECTION DEVICE, ONLY.
2. BOUNDARIES OF PROTECTION AREA WILL BE ESTABLISHED PRIOR TO GRADING AND SEDIMENT CONTROL.
3. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
4. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCING
NOT TO SCALE

SPECIMEN TREE CHART

KEY	SPECIES	SIZE	CONDITION	REMAIN OR REMOVE
A	WHITE OAK (Quercus alba)	24"	FAIR / GOOD	REMAIN
B	HICKORY	24"	FAIR / GOOD	REMAIN
C	HICKORY	30"	FAIR / GOOD	REMAIN
D	WHITE OAK (Quercus alba)	36"	FAIR / GOOD	REMAIN
E	TULIP POPLAR (Lirodendron tulipifera)	24"	FAIR / GOOD	REMAIN

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/20/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
FOREST CONSERVATION NOTES AND DETAILS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

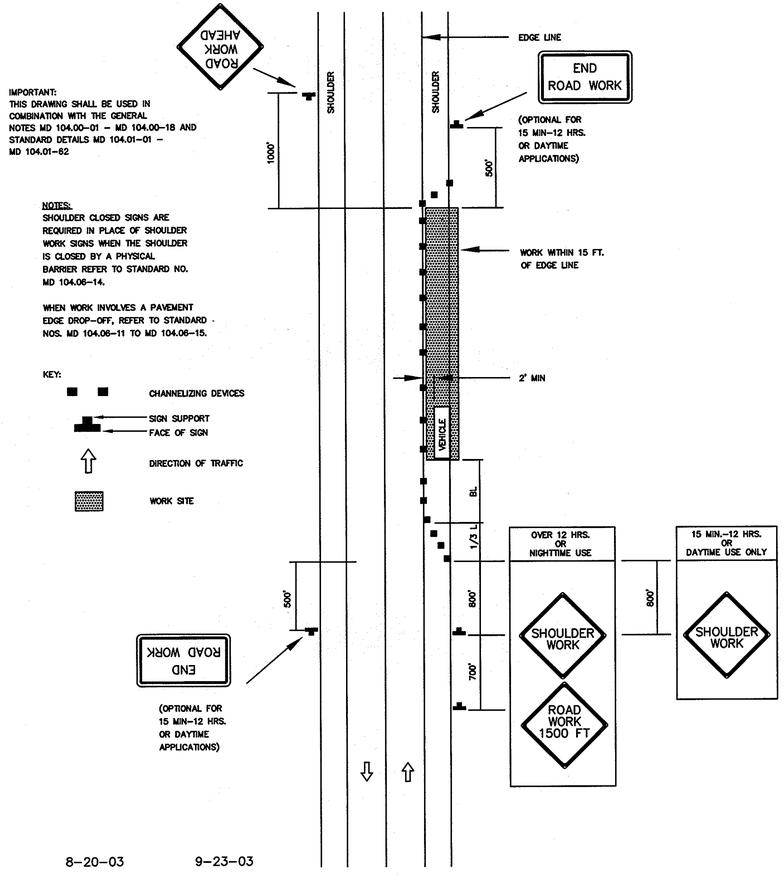
10-25-07
DATE

STATE OF MARYLAND — PETER J. STONE — 3068 — REGISTERED PROFESSIONAL ENGINEER
PETER J. STONE # 3068

CHECKED BY: DWC
DESIGNED BY : RBR+A
DRAWN BY: BCL
PROJECT NO: 13043/1-0/ENGR/PLANS/FINAL/ C201FCP.DWG
DATE : NOVEMBER 6, 2007
SCALE : AS SHOWN
DRAWING NO. 14 OF 21

F-07-005

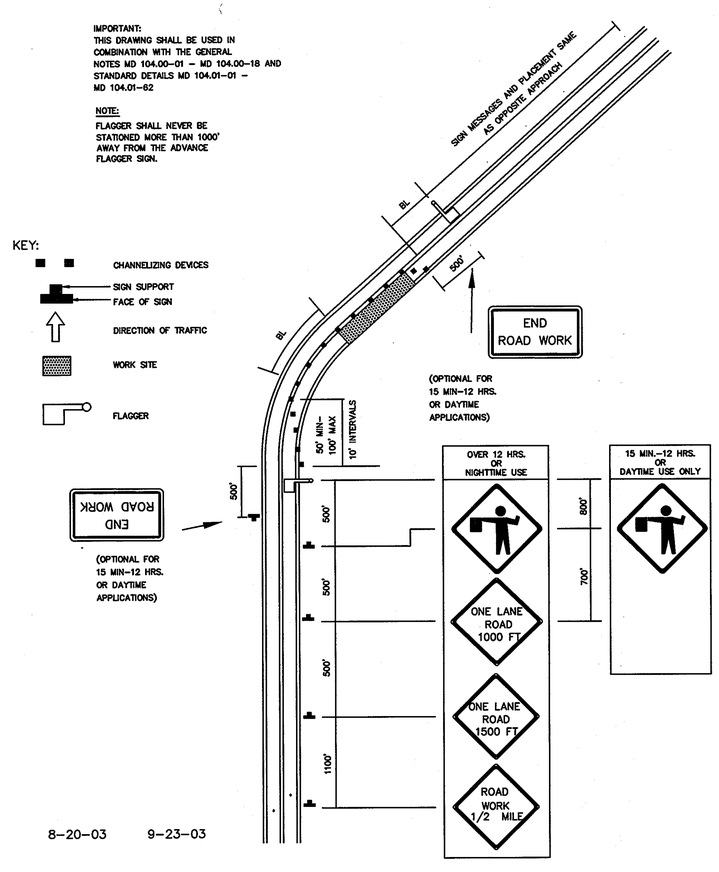
TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



8–20–03 9–23–03

MD. 104.02–02
SHOULDER WORK, 2 LANE, 2–WAY TRAFFIC, ≤ 40MPH
NO SCALE

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



8–20–03 9–23–03

MD. 104.02–10
FLAGGING OPERATION, 2 LANE, 2–WAY TRAFFIC, ≤ 40MPH
NO SCALE

NOTES
1. BROWN'S BRIDGE ROAD IS AN EXISTING 2 LANE, 2–WAY ROAD.
2. REFER TO MDSHA STANDARDS MD 104.01–80 AND MD 104.01–81 FOR BUFFER LENGTHS AND TAPER LENGTHS. FOR GENERAL NOTES FOR CHANNELIZATION DEVICES, REFER TO MDSHA STANDARD MD 104.00–10.
3. REFER TO MDSHA STANDARD MD 104.00–12 FOR GENERAL NOTES FOR FLAGGING OPERATION.

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — 11-20-07 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — 11/20/07 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 10/22/07 DATE

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410–531–5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410–365–0414

PROJECT
ORCHARD ESTATES
LOTS 1–8, PRESERVATION PARCEL A &
NON–BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR–DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
MOT PLAN

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07
DATE

STATE OF MARYLAND — DOMENICK W. COLANGELO — No. 27200 — REGISTERED PROFESSIONAL ENGINEER

DOMENICK W. COLANGELO #27200

CHECKED BY: DWC
DESIGNED BY : NS
DRAWN BY: EMR/JMK
PROJECT NO: 13043/1–0/ENGR/PLANS /FINAL/ C902DET
DATE : NOVEMBER 6, 2007
SCALE : NO SCALE
DRAWING NO. 15 OF 21

F–07–005

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HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Heyser SWM — Boring No.: SWM-1
Location: Howard County, MD — Job #: 04712A

SAMPLER
Datum: — Hammer Wt.: 140 lbs. — Hole Diameter: 6 — Foreman: Lamont Smith
Surf. Elev.: 467.21 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector: —
Date Started: 1/24/05 — Pipe Size: 2.0 in. — Boring Method: HSA — Date Completed: 1/24/05

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve
465	D	Brown, moist, soft, sandy silt, trace mica, organics, and gravel (ML)	Topsoil 7 in	12		1-2-3	5	
	I	Light brown, moist, medium stiff, clay, trace mica, with sand (CL)		15		3-3-5	8	
460	D	Light brown, moist, medium dense, silty sand, trace mica and rock fragments (SM)		17		5-7-10	17	
	D	Light brown, moist, medium dense, micaceous silty sand to sandy silt (SM-ML)		15		5-7-8	15	
455	D	Tan, moist, stiff, micaceous sandy silt (ML)		13		5-7-9	16	
	D	Tan, moist, medium dense, micaceous silty sand to sandy silt (SM-ML)		15		6-8-10	18	
		Bottom of hole at 15 ft.						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. / 10.0 ft.; AFTER 24 HRS. Dry ft. / 9.5 ft.; AFTER ___ HRS. ___ ft. / ___ ft.
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

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

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Heyser SWM — Boring No.: SWM-2
Location: Howard County, MD — Job #: 04712A

SAMPLER
Datum: — Hammer Wt.: 140 lbs. — Hole Diameter: 6 — Foreman: Lamont Smith
Surf. Elev.: 465.91 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector: —
Date Started: 1/25/05 — Pipe Size: 2.0 in. — Boring Method: HSA — Date Completed: 1/25/05

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve
465	I	Brown, moist, medium stiff, sandy silt, trace mica and organics (ML)	Topsoil 7 in	15		2-3-3	6	
	D	Light brown, moist, medium dense, micaceous silty sand, trace gravel (SM)		13		8-11-11	22	
460	D			13		3-4-8	12	
	D	Light brown, moist, stiff, micaceous sandy silt to silty sand, trace sand (ML)		10		3-4-7	14	
455	D	Light brown, moist, medium stiff, micaceous sandy silt (ML)		12		3-4-5	9	
	D	Gray, dry, very dense silty sand with rock fragments (Decomposed Rock) Auger refusal at 13 ft 8 in Bottom of hole at 13 ft 8 in	In-situ pipe installed at 13.7 ft offset from boring SWM-2	3		51/3	51/3	

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. / 6.5 ft.; AFTER 24 HRS. Dry ft. / 9.0 ft.; AFTER ___ HRS. ___ ft. / ___ ft.
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

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

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Heyser SWM — Boring No.: SWM-3
Location: Howard County, MD — Job #: 04712A

SAMPLER
Datum: — Hammer Wt.: 140 lbs. — Hole Diameter: 6 — Foreman: Lamont Smith
Surf. Elev.: 471.10 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector: —
Date Started: 1/25/05 — Pipe Size: 2.0 in. — Boring Method: HSA — Date Completed: 1/25/05

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve
470	I	Brown, moist, medium stiff, sandy silt, trace mica and organics (ML)	Topsoil 7 in	12		2-3-3	6	
	D	Light brown, moist, loose, silty sand to sandy silt, trace mica (SM-ML)		18		3-4-5	9	
465	D			14		3-5-5	10	
	D	Tan, moist, loose to medium dense, silty sand to sandy silt, with rock fragments (SM-ML)	In situ pipe installed at 7.0 ft depth offset from boring SWM-3	15		3-4-4	8	
460	D			13		3-4-7	10	
	D			13		5-7-7	14	
455	D	Bottom of hole at 15 ft.						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. / 9.0 ft.; AFTER 24 HRS. Dry ft. / 9.0 ft.; AFTER ___ HRS. ___ ft. / ___ ft.
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

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

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Heyser SWM — Boring No.: SWM-4
Location: Howard County, MD — Job #: 04712A

SAMPLER
Datum: — Hammer Wt.: 140 lbs. — Hole Diameter: 6 — Foreman: Lamont Smith
Surf. Elev.: 475.91 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector: —
Date Started: 1/26/05 — Pipe Size: 2.0 in. — Boring Method: HSA — Date Completed: 1/26/05

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve
475	I	Gray, damp, medium stiff, sandy silt, trace rock fragments (ML)	Topsoil 7 in	10		1-3-7	10	
	D	Yellowish orange, moist, medium dense, silty sand, trace rock fragments (SM)		14		9-13-13	26	
470	I	Yellowish orange, moist, medium dense, silty and clayey sand, trace gravel (SC-SM)		17		3-4-7	11	
	I	Reddish brown, moist, stiff, micaceous sandy silt, trace organics and rock fragments (ML)		16		3-5-7-7	12	
465		Bottom of hole at 10 ft.						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. / 6.0 ft.; AFTER 24 HRS. Dry ft. / 9.0 ft.; AFTER ___ HRS. ___ ft. / ___ ft.
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

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

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Heyser SWM — Boring No.: SWM-5
Location: Howard County, MD — Job #: 04712A

SAMPLER
Datum: — Hammer Wt.: 140 lbs. — Hole Diameter: 6 — Foreman: Lamont Smith
Surf. Elev.: 477.42 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector: —
Date Started: 1/26/05 — Pipe Size: 2.0 in. — Boring Method: HSA — Date Completed: 1/26/05

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve
475	D	Brown, moist, soft, silt, trace mica, with sand and organics (ML)	Topsoil 6 in	13		1-2-2	4	
	I	Light brown, moist, medium stiff, micaceous sandy silt, trace organics (ML)		18		2-3-3	6	
470	D	Yellowish orange, moist, stiff, micaceous clay, with sand (CL)		17		3-4-8	12	
	I	Brown, moist, medium stiff, micaceous silt, with sand (ML)		13		8-3-4-7	7	
465		Bottom of hole at 10 ft.						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. / 6.5 ft.; AFTER 24 HRS. 5.5 ft. / 6.0 ft.; AFTER ___ HRS. ___ ft. / ___ ft.
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

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

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Heyser SWM — Boring No.: SWM-6
Location: Howard County, MD — Job #: 04712A

SAMPLER
Datum: — Hammer Wt.: 140 lbs. — Hole Diameter: 6 — Foreman: Lamont Smith
Surf. Elev.: 475.51 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: — Inspector: —
Date Started: 1/24/05 — Pipe Size: 2.0 in. — Boring Method: HSA — Date Completed: 1/24/05

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve
475	D	Brown, moist, soft, micaceous silt, trace organics, with sand (ML)	Topsoil 4 in	6		2-2-2	4	
	D	Reddish brown, moist, stiff, micaceous sandy silt to silty sand (ML-SM)		6		4-6-7	13	
470	D			10		3-5-7	12	
	D	Tan, moist, stiff, silt, trace gravel and rock fragments (ML)		8		4-5-6-7	11	
465		Bottom of hole at 10 ft.						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. / 6.0 ft.; AFTER 24 HRS. 6.0 ft. / 6.5 ft.; AFTER ___ HRS. ___ ft. / ___ ft.
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

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

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-30-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/30/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/20/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
SOIL BORING LOGS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07 DATE

DOMENICK W. COLANGELO #27200

CHECKED BY:	DWC
DESIGNED BY :	NS
DRAWN BY:	EMR/JMK
PROJECT NO:	13043/1-0/ENGR/PLANS/FINAL/CS03DET.DWG
DATE :	NOVEMBER 6, 2007
SCALE :	AS SHOWN
DRAWING NO.	16 OF 21

F-07-005

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HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Heyser SWM — Boring No.: SWM-7
Location: Howard County, MD — Job #: 04712A

SAMPLER

Datum: ____ Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 473.89 Ft. Hammer Drop 30 in. Rock Core Diameter ____ Inspector ____
Date Started 1/24/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/24/05

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve (10 30 50)
0 / 470	D	Brown, moist, medium stiff, sandy silt, trace rock fragments and mica (ML)	Topsoil 3 in	10		1-2-3	5	
5 / 465	I	Light brown, moist, medium dense, micaceous silty sand (SM)		12		3-6-6	12	
	D			12		4-6-8	14	
	D		In-situ pipe installed at 5.0 ft depth offset from boring SWM-7	12		5-6-9-7	15	
10 / 460		Bottom of hole at 10 ft.						
15 / 455								
20 / 450								
25 / 445								
30 / 440								

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	5.5 ft.
AFTER 24 HRS.	Dry ft.	6.0 ft.
AFTER ___ HRS.	____ ft.	____ ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Heyser SWM — Boring No.: SWM-8
Location: Howard County, MD — Job #: 04712A

SAMPLER

Datum: ____ Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. ____ Ft. Hammer Drop 30 in. Rock Core Diameter ____ Inspector ____
Date Started 1/25/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/25/05

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve (10 30 50)
0	I	Reddish Brown, moist, soft, silt, trace organics and mica, with sand (ML)	Topsoil 3 In	10		2-2-2	4	
	I	Light brown, moist, loose to medium dense, silty sand to sandy silt, trace mica (SM-ML)		15		3-5-5	10	
5	D			10		2-5-8	13	
	D	Yellowish orange, moist, medium dense, silty sand, trace mica (SM)		17		4-6-7	13	
	D			13		5-8-10	18	
15	D	Tan, moist, medium dense, micaceous silty sand to sandy silt, trace rock fragments (SM-ML)		12		5-7-11	18	
		Bottom of hole at 15 ft.						
20								
25								
30								

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	10.0 ft.
AFTER 24 HRS.	Dry ft.	9.5 ft.
AFTER ___ HRS.	____ ft.	____ ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Heyser SWM — Boring No.: SWM-9
Location: Howard County, MD — Job #: 04712A

SAMPLER

Datum: ____ Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 464.69 Ft. Hammer Drop 30 in. Rock Core Diameter ____ Inspector ____
Date Started 1/25/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/25/05

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve (10 30 50)
0 / 460	I	Brown, moist, soft, sandy clay, trace organics and mica (CL)	Topsoil 7 in	17		2-2-3	5	
5	I	Light brown, moist, loose to very loose, sandy silt to silty sand, trace mica and rock fragments (SM-ML)		15		3-4-6	10	
	D			18		2-2-2	4	
	D	Yellowish orange, moist medium stiff, silt, with sand (ML)		11		2-3-6	9	
10 / 455	D	Tan, moist, loose, micaceous silty sand to sandy silt (SM-ML)		15		6-4-6	10	
15 / 450	D	Tan, moist, medium stiff, micaceous sandy silt (ML)		14		3-5-5	10	
		Bottom of hole at 15 ft.	In-situ pipe installed at 6.0 ft depth offset from boring SWM-9					
20 / 445								
25 / 440								
30 / 435								

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	10.5 ft.
AFTER 24 HRS.	9.5 ft.	10.5 ft.
AFTER ___ HRS.	____ ft.	____ ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: Heyser SWM — Boring No.: SWM-10
Location: Howard County, MD — Job #: 04712A

SAMPLER

Datum: ____ Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 469.17 Ft. Hammer Drop 30 in. Rock Core Diameter ____ Inspector ____
Date Started 1/25/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/25/05

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve (10 30 50)
0 / 465	D	Brown, damp, medium stiff, silt, some organics, trace gravel and mica (ML)	Topsoil 6 In	7		2-3-4	7	
5	I	Reddish brown, moist, loose, silty sand to sandy silt, trace mica (SM-ML)		13		3-4-6	10	
	D	Yellowish orange, moist, medium dense, silty sand, trace mica (SM)		13		3-5-6	11	
	D	Reddish brown, moist, medium dense, silty coarse sand, trace decomposed rock, with clay (SM)		15		4-6-8	14	
10 / 460	D	Greenish brown, moist, stiff, micaceous silt, trace decomposed rock (ML)		11		5-6-11	17	
15 / 455	D	Tan, moist, medium dense, silty sand, trace mica, with clay (SM)		5		4-6-8	14	
		Bottom of hole at 15 ft.	In-situ pipe installed at 2.0 ft depth offset from boring SWM-10					
20 / 450								
25 / 445								
30 / 440								

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	11.0 ft.
AFTER 24 HRS.	Dry ft.	11.0 ft.
AFTER ___ HRS.	____ ft.	____ ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/21/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
SOIL BORING LOGS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07 DATE

STATE OF MARYLAND — DOMENICK W. COLANGELO — No. 27200 — REGISTERED PROFESSIONAL ENGINEER

DOMENICK W. COLANGELO #27200

CHECKED BY: DWC
DESIGNED BY : NS
DRAWN BY: EMR/JMK
PROJECT NO: 13043/1-0/ENGR/PLANS/FINAL/C903DET.DWG
DATE : NOVEMBER 6, 2007
SCALE : AS SHOWN
DRAWING NO. 17 OF 21

F-07-005

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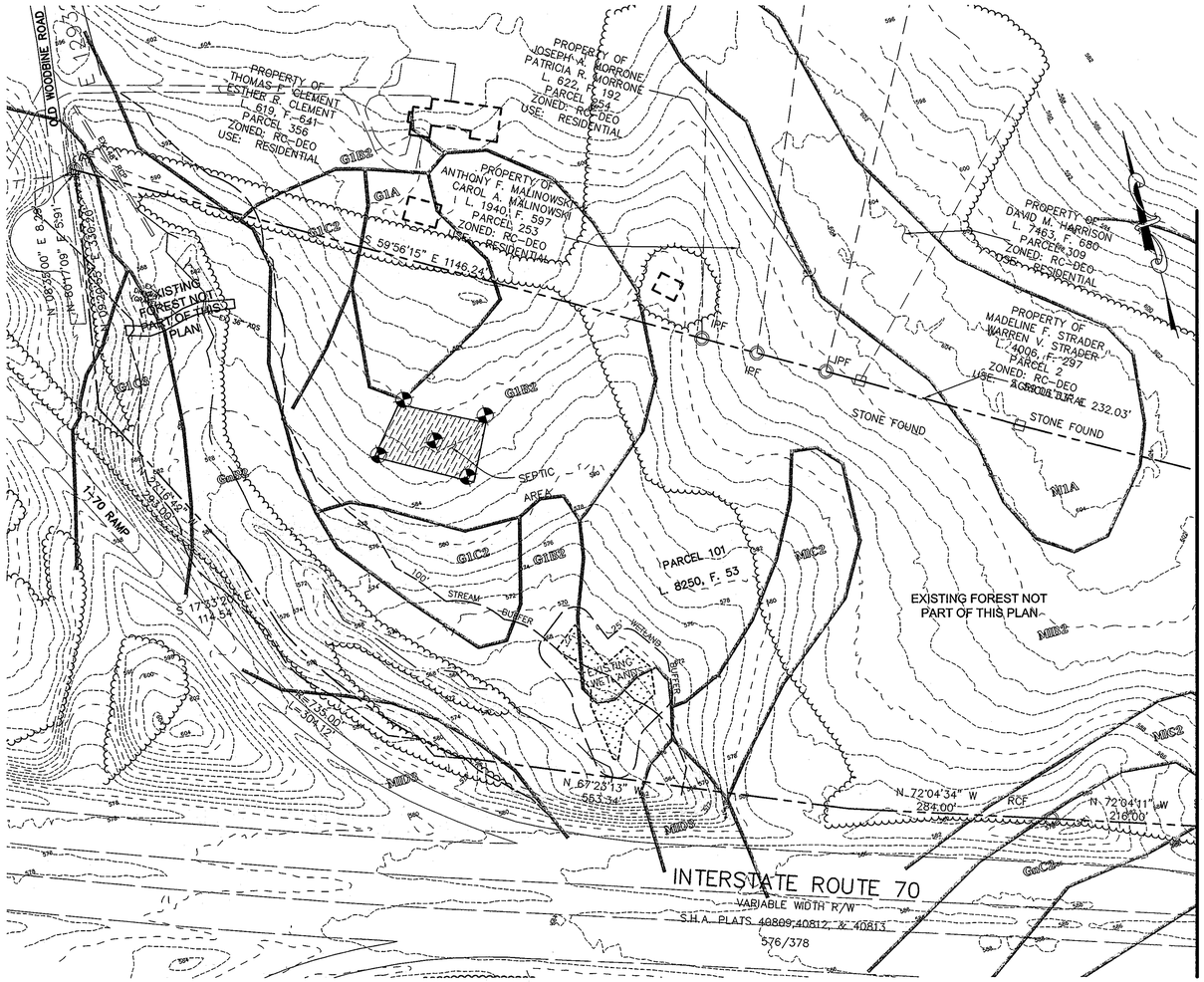
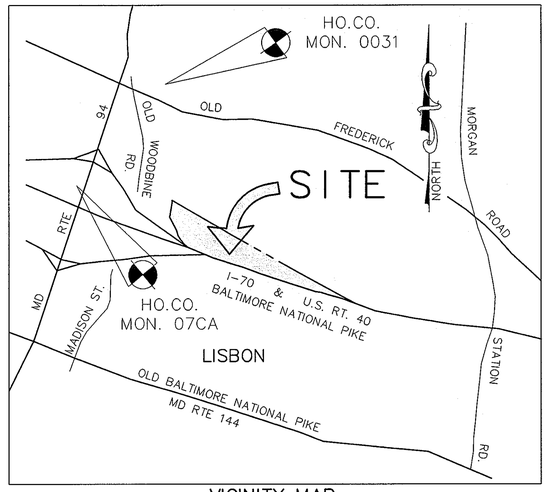


MATCHLINE - SEE SHEET 19



VICINITY MAP
SCALE: 1" = 1000'

LEGEND

- EXISTING TREELINE
- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- SOIL CLASSIFICATION AND BOUNDARY (GnB2)
- EXISTING BUILDING
- SPECIMEN TREE (1)
- STAND # (F1)
- STAND DIVISION LINE
- SLOPES 15 - 25%
- SLOPES >25%

SOILS CHART

MAP SYMBOL	NAME	STRUCTURAL LIMITATIONS DWELLINGS	EROSION HAZARD	HYDRIC	SLOPE (%)
G1A	GLENELG LOAM	SLIGHT	SLIGHT	NO	0-3%
G1B2	GLENELG LOAM	SLIGHT	MODERATE	NO	3-8%
G1C2	GLENELG LOAM	MODERATE	MODERATE	NO	8-15%
G1C3	GLENELG LOAM	MODERATE	SEVERE	NO	8-15%
GnA	GLENVILLE SILT LOAM	MODERATE	SLIGHT	NO*	0-3%
GnB2	GLENVILLE SILT LOAM	MODERATE	MODERATE	NO*	3-8%
GnC2	GLENVILLE SILT LOAM	MODERATE	MODERATE	NO	8-15%
M1A	MANOR LOAM	SLIGHT	SLIGHT	NO	0-3%
M1B2	MANOR LOAM	SLIGHT	MODERATE	NO	8-15%
M1C2	MANOR LOAM	MODERATE	MODERATE	NO	8-15%
M1C3	MANOR LOAM	MODERATE	SEVERE	NO	8-15%
M1D3	MANOR LOAM	MODERATE	SEVERE	NO	15-25%

* SOIL MAY CONTAIN HYDRIC INCLUSIONS
THIS INFORMATION TAKEN FROM THE HOWARD COUNTY SOIL SURVEY DATE JULY 1968, MAP 2

PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO PREPARE A FOREST STAND DELINEATION FOR APPROXIMATELY 4.30 ACRES OF OFFSITE FOREST TO BE UTILIZED BY ORCHARD ESTATES (F-07-005). THERE ARE FOUR EXISTING FOREST STANDS LOCATED ON THE EASTERN END OF THE SITE, AS SHOWN THE PLAN. THEY ARE ALL HIGH PRIORITY FOREST STANDS. A FOREST STAND DELINEATION WAS NOT PREPARED FOR THE REMAINDER OF THE SITE AS THIS FOREST IS NOT BEING USED FOR OFFSITE FOREST RETENTION CREDITS.

PLANT COMMUNITY SUMMARY

SYMBOL	COMMUNITY	AREA	RETENTION PRIORITY
F1	FOREST	0.24 Ac.±	HIGH
F2	FOREST	1.1 Ac.±	HIGH
F3	FOREST	2.23 Ac.±	HIGH
F4	FOREST	0.73 Ac.±	HIGH

AREA CHART

AREA	ACRES
TOTAL TRACT AREA	34.94
EXISTING FOREST	24.23
LAND WITHIN STREAM BUFFERS	5.53
LAND WITHIN FLOODPLAIN	0
FOREST WITHIN STREAM BUFFERS	2.66
FOREST WITHIN FLOODPLAIN	0
ROAD DEDICATION	0

SPECIMEN TREE CHART

KEY	SPECIES	SIZE	CONDITION
1	SCARLET OAK (QUERCUS COCCINEA)	37"	FAIR / GOOD
2	SCARLET OAK (QUERCUS COCCINEA)	33"	FAIR / GOOD
3	WHITE OAK (QUERCUS ALBA)	35"	GOOD
4	RED MAPLE (ACER RUBRUM)	30"	FAIR

GENERAL NOTES:

1. THE SITE IS LOCATED ALONG THE NORTH SIDE OF ROUTE 70 IN WESTERN HOWARD COUNTY. THE SITE CONSISTS OF PARCEL 101 (TAX MAP 7) AND PARCEL 4 (TAX MAP 8), WHICH ARE 34.94 ACRES.
2. TOPOGRAPHIC INFORMATION IS FROM HOWARD COUNTY GIS INFORMATION. BOUNDARY INFORMATION IS FROM A FIELD SURVEY PREPARED BY PATTON HARRIS RUST & ASSOCIATES.
3. THE SOILS ON SITE ARE DESCRIBED IN THE CHART ON THIS PLAN, AND ARE IN ACCORDANCE WITH THE SOIL SURVEY FOR HOWARD COUNTY, MARYLAND. STEEP SLOPES ARE PRESENT ON THE SITE AS SHOWN.
4. THE SITE IS ZONED RC-DEO (RURAL CONSERVATION WITH A DENSITY EXCHANGE OPTION OVERLAY).
5. THE SITE IS LOCATED IN THE PATUXENT WATERSHED, BRIGHTON DAM SUBWATERSHED (#2131108).
6. THERE IS NO 100-YEAR FLOODPLAIN LOCATED ON SITE AS SHOWN. STREAMS AND WETLANDS ARE LOCATED ON SITE AS SHOWN.
7. THERE ARE FOUR EXISTING FOREST STANDS LOCATED ON THE EASTERN END OF THE SITE, AS SHOWN THE PLAN. THEY ARE ALL HIGH PRIORITY FOREST STANDS. A FOREST STAND DELINEATION WAS NOT PREPARED FOR THE REMAINDER OF THE SITE AS THIS FOREST IS NOT BEING USED FOR OFFSITE FOREST RETENTION CREDITS.
8. THERE ARE 4 SPECIMEN TREES (30"+) LOCATED ON SITE, AS SHOWN ON THE PLAN.
9. FIELD WORK FOR THIS INVENTORY WAS CONDUCTED ON DECEMBER 11, 2006 BY BILL BOND OF PARKTON WOODLAND SERVICES. SEE FOREST STAND DELINEATION REPORT FOR FIELD INVESTIGATION NARRATIVE.
9. THE SITE HAS A FOREST CONSERVATION THRESHOLD OF 25% AND AN AFFORESTATION THRESHOLD OF 20%.
10. NO CEMETERIES OR HISTORIC STRUCTURES ARE LOCATED ON-SITE. NO EXISTING STRUCTURES ARE PRESENT ON THE SITE.
11. THIS FOREST STAND DELINEATION (FSD) HAS BEEN PREPARED IN ACCORDANCE WITH HOWARD COUNTY REGULATIONS.
12. THIS SITE CONTAINS SOILS WITH POSSIBLE HYDRIC INCLUSIONS, GLENVILLE SILT LOAM (GnB2 and GnA).

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/20/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
OFFSITE FOREST STAND DELINEATION PLAN

Patton Harris Rust & Associates,pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

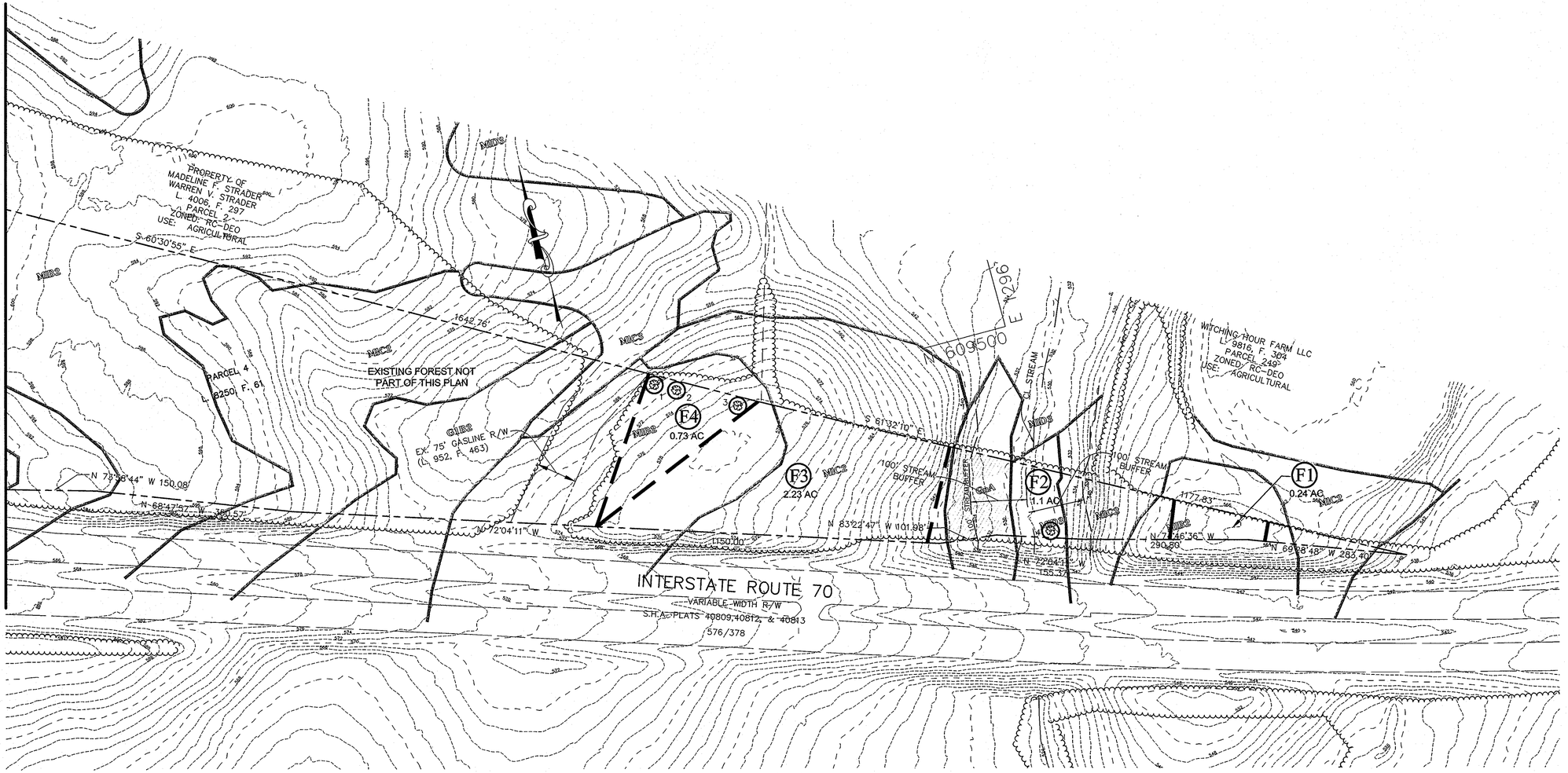
10-25-07
DATE

STATE OF MARYLAND 3068 PETER JOSEPH STONE REGISTERED PROFESSIONAL ENGINEER

PETER J. STONE # 3068

CHECKED BY: PJS
DESIGNED BY : NS
DRAWN BY: ALC
PROJECT NO: 13043/1-0/ENGR/PLANS/FINAL/C200FSD-OFFSITE.DWG
DATE : NOVEMBER 6, 2007
SCALE : 1" = 100'
DRAWING NO. 18 OF 21

F-07-005



LEGEND

- EXISTING TREELINE
- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- SOIL CLASSIFICATION AND BOUNDARY (CaB2)
- EXISTING BUILDING
- SPECIMEN TREE (1)
- STAND # (F1)
- STAND DIVISION LINE
- SLOPES 15 – 25%
- SLOPES >25%

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/20/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/27/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
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410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A &
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AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
OFFSITE FOREST STAND DELINEATION PLAN

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8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

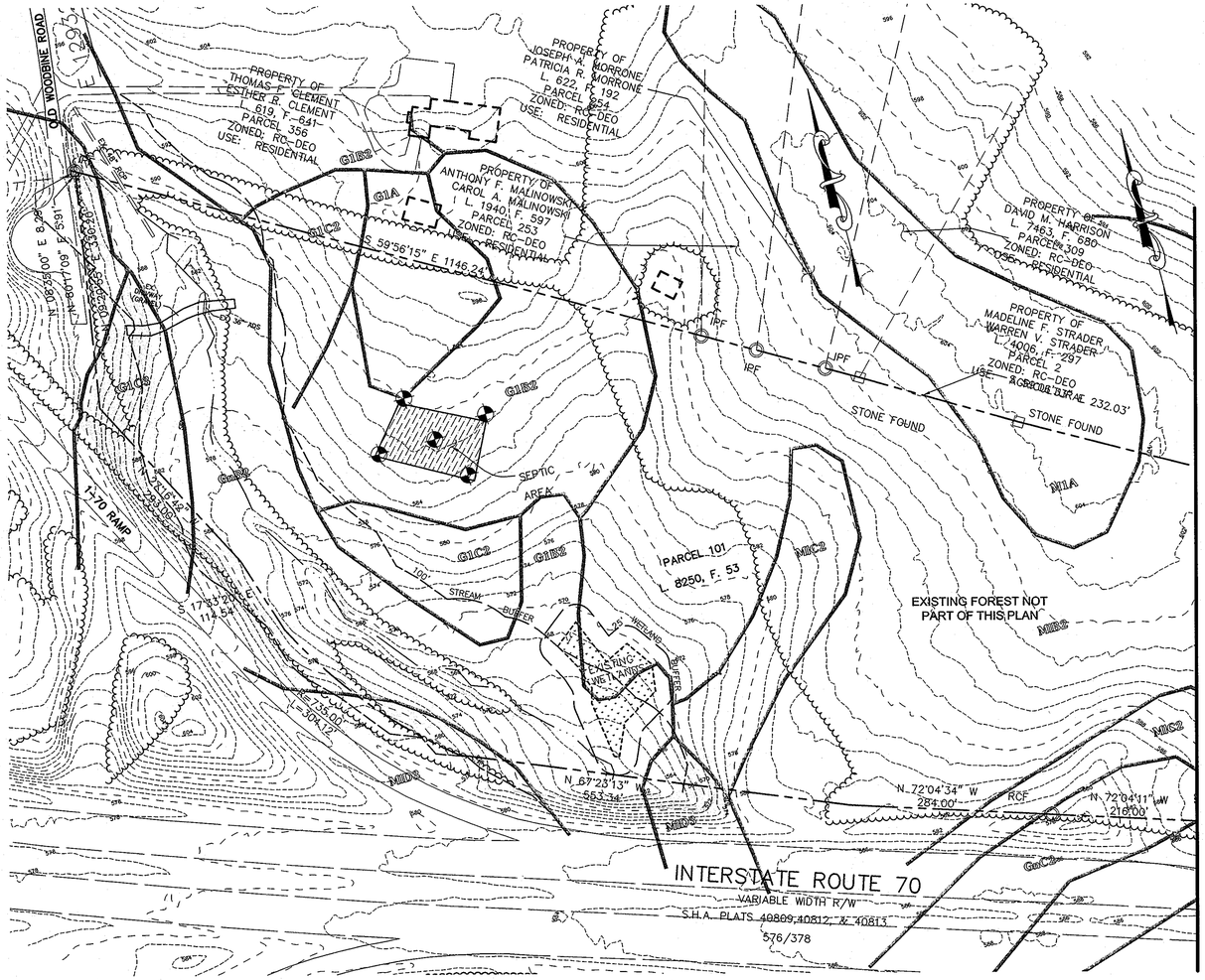
10-25-07
DATE

STATE OF MARYLAND 3068 PETER J. STONE

PETER J. STONE # 3068

CHECKED BY: PJS	
DESIGNED BY : NS	
DRAWN BY: ALC	
PROJECT NO: 13043/1-0/ENGR/PLANS/FINAL/6200FCP-OFFSITE.DWG	
DATE : NOVEMBER 6, 2007	
SCALE : 1" = 100'	
DRAWING NO. 19 OF 21	

F-07-005



PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO PREPARE A FOREST CONSERVATION EASEMENT FOR 4.30 ACRES OF OFFSITE FOREST TO BE UTILIZED BY ORCHARD ESTATES (F-07-005). THERE ARE FOUR EXISTING FOREST STANDS LOCATED ON THE EASTERN END OF THE SITE, AS SHOWN THE PLAN. THEY ARE ALL HIGH PRIORITY FOREST STANDS. A FOREST STAND DELINEATION WAS NOT PREPARED FOR THE REMAINDER OF THE SITE AS THIS FOREST IS NOT BEING USED FOR OFFSITE FOREST RETENTION CREDITS.

LEGEND

- EXISTING TREELINE
- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- SOIL CLASSIFICATION AND BOUNDARY (CaB2)
- EXISTING BUILDING
- PROPOSED BUILDING
- LIMIT OF DISTURBANCE LINE
- FOREST CONSERVATION AREA
- FOREST CONSERVATION SIGNAGE (S)
- TREE PROTECTION DEVICE (BLAZE ORANGE PLASTIC MESH FENCING) — TPD —
- SPECIMEN TREE
- SLOPES 15 - 25%
- SLOPES >25%

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/16/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/27/07

DATE	NO.	REVISION

OWNER

CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER

RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT

ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A &
NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

OFFSITE FINAL FOREST CONSERVATION PLAN

Patton Harris Rust & Associates,pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

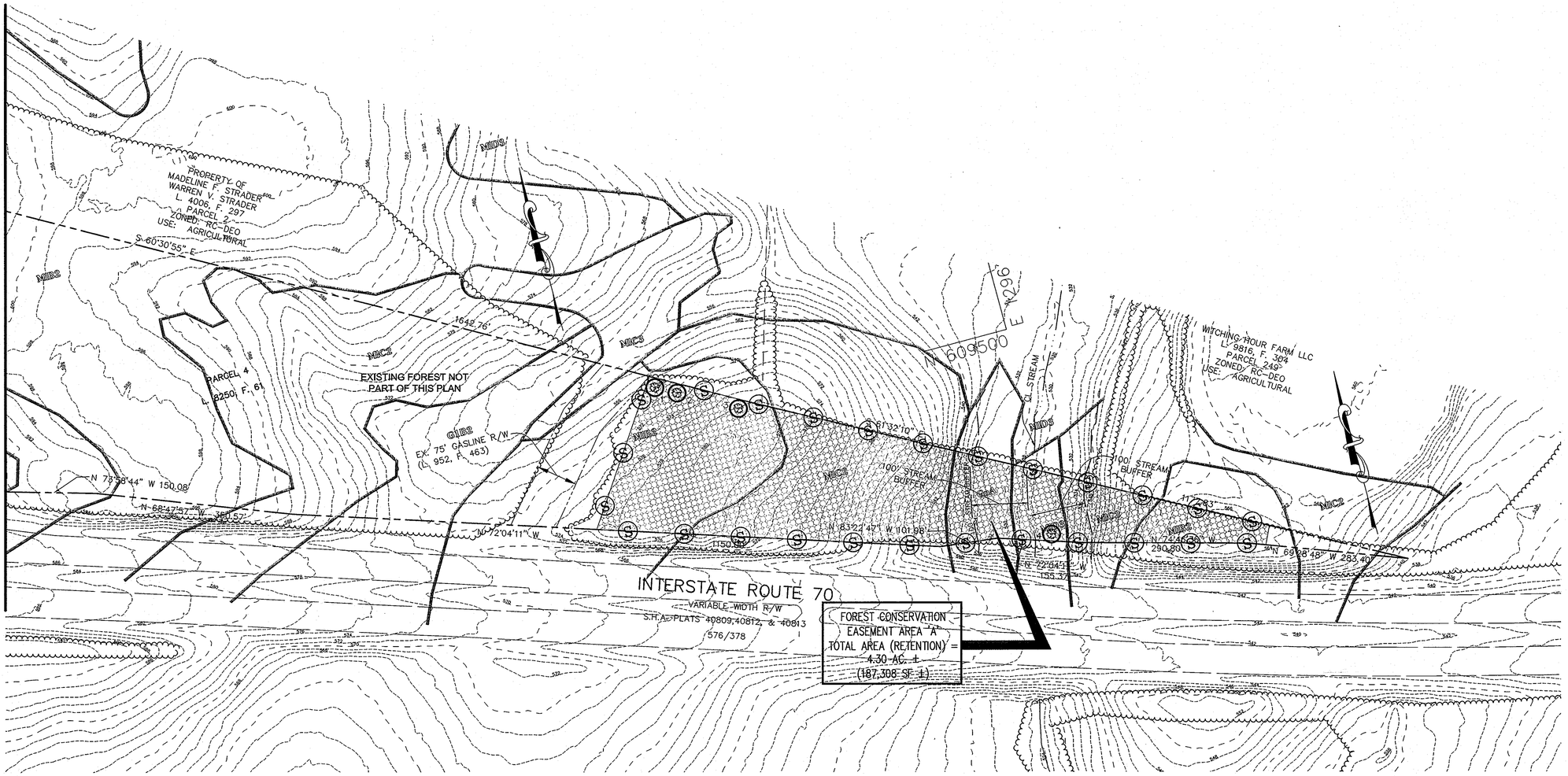
10.25.07
DATE

STATE OF MARYLAND 3068 PETER J. STONE PROFESSIONAL LANDSCAPE ARCHITECT

PETER J. STONE # 3068

CHECKED BY:	PJS
DESIGNED BY :	NS
DRAWN BY:	ALC
PROJECT NO:	13043/1-0/ENGR/PLANS/FINAL/C200FCP-OFFSITE.DWG
DATE :	NOVEMBER 6, 2007
SCALE :	1" = 100'
DRAWING NO.	20 OF 21

F-07-005



FOREST CONSERVATION EASEMENT AREA "A"
TOTAL AREA (RETENTION) =
4.30 AC. ±
(187,308 SF ±)

LEGEND

- EXISTING TREELINE
- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- SOIL CLASSIFICATION AND BOUNDARY (CnB2)
- EXISTING BUILDING
- PROPOSED BUILDING
- LIMIT OF DISTURBANCE LINE
- FOREST CONSERVATION AREA
- FOREST CONSERVATION SIGNAGE (S)
- TREE PROTECTION DEVICE (BLAZE ORANGE PLASTIC MESH FENCING) — TPD —
- SPECIMEN TREE (1)
- SLOPES 15 – 25%
- SLOPES >25%

FOREST CONSERVATION PROGRAM

I. OBJECTIVE:
IT IS THE OBJECTIVE OF THE FOREST CONSERVATION PLAN OF ORCHARD ESTATES TO RETAIN ENVIRONMENTAL INTEGRITY BY PRESERVING EXISTING WOODED AREAS IN AN OFFSITE FOREST CONSERVATION EASEMENT.

II. PRESERVATION:
FOREST PRESERVATION AREAS SHALL BE PERMANENTLY PROTECTED BY FOREST CONSERVATION EASEMENTS.

III. GENERAL CONSTRUCTION NOTE:
THERE WILL BE NO STAGING OR STORING OF EQUIPMENT WITHIN THE LIMIT OF DISTURBANCE.

IV. POST CONSTRUCTION MANAGEMENT PRACTICE:
A TWO-YEAR POSTED CONSTRUCTION AND MANAGEMENT PROGRAM TO ENSURE FOREST HEALTH IS REQUIRED AND INCLUDES THE FOLLOWING:

1–MAINTENANCE OF SIGNS, FENCES, AND TREE PROTECTION DEVICES TO
2–PREVENT UNWARRANTED INTRUSION AND DAMAGE.
3–CAREFUL REMOVAL OF ALL TEMPORARY STRUCTURES AFTER CONSTRUCTION.
4–ROUTINE INSPECTIONS OF FOREST CONSERVATION EASEMENTS.

SPECIMEN TREE CHART

KEY	SPECIES	SIZE	CONDITION	REMAIN OR REMOVE
1	SCARLET OAK (QUERCUS COCCINEA)	37"	FAIR / GOOD	REMAIN
2	SCARLET OAK (QUERCUS COCCINEA)	33"	FAIR / GOOD	REMAIN
3	WHITE OAK (QUERCUS ALBA)	35"	GOOD	REMAIN
4	RED MAPLE (ACER RUBRUM)	30"	FAIR	REMAIN

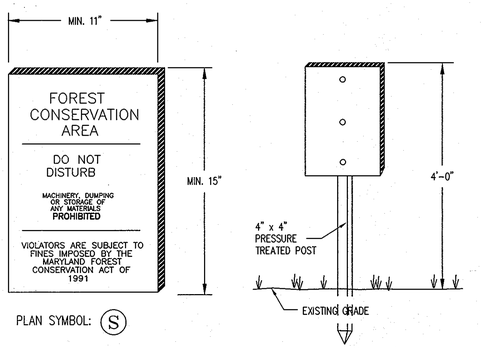
GENERAL NOTES:

1. THE MAJORITY OF THE PLAN HAS BEEN PREPARED USING HOWARD COUNTY GIS DATA. SPECIMEN TREE LOCATIONS WERE FIELD APPROXIMATED.
2. NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
3. NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
4. THERE ARE NO KNOWN CEMETERIES OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERIES INVENTORY.
5. THERE ARE NO EXISTING STRUCTURES ON THE SITE.
6. THIS SITE CONTAINS SOILS WITH POSSIBLE HYDRIC INCLUSIONS, GLENVILLE SILT LOAM (GnB2 AND GnA).
7. THE FSD, DATED DECEMBER 11, 2006, HAS BEEN PREPARED BY PARKTON WOODLAND SERVICES IN CONJUNCTION WITH THESE PLANS.
8. THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THESE PLANS.
9. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION.
10. THE FOREST CONSERVATION EASEMENT SHOWN ON THIS PLAN IN THE AMOUNT OF A 4.3 ACRE (187,308 SF) RETENTION EASEMENT SATISFIES THE REMAINING OBLIGATION OF 2.15 ACRES (93,654 SF) OF THE ORCHARD ESTATES (F-07-005) FOREST CONSERVATION REQUIREMENTS.

OFFSITE FOREST CONSERVATION SURETY IN THE AMOUNT OF $37,461.60 (187,308 x $0.20/SF) WILL BE POSTED.

11. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
12. BEARINGS AND DISTANCES FOR FOREST CONSERVATION EASEMENTS ARE PROVIDED ON A "PLAT OF CONSOLIDATION AND PLAT OF PRESERVATION EASEMENT, DENSITY SENDING RUSSELL-HOLLAND PARCEL A"(F-07-130).

FOREST CONSERVATION AREA	AREA (IN ACRES)
A	4.3 AC ±
TOTAL	4.3 AC ±



NOTES:
1. SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION EASEMENT BORDER.
2. SEE PLAN FOR SPACING.

FOREST CONSERVATION SIGN DETAIL
NOT TO SCALE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-20-07

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/30/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/27/07

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
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PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
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Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10-25-07 DATE

STATE OF MARYLAND 3068 PROFESSIONAL ENGINEER

PETER J. STONE # 3068

CHECKED BY:	PJS
DESIGNED BY :	NS
DRAWN BY:	ALC
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DRAWING NO.	21 OF 21

F-07-005