PARKSIDE ESTATES

LOTS 2 THRU 6 AND OPEN SPACE LOTS 1 & 7

FINAL CONSTRUCTION PLANS

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- SOIL DELINEATION (MIC3 / EkB2)
- EXISTING FOREST LINE
- PROPOSED WOODS LINE
- PROPERTY BOUNDARY
- EXISTING TREES
- EXISTING TREES TO BE REMOVED
- EXISTING HOUSES
- PROPOSED HOUSES
- PROPOSED PAVEMENT
- FACILITY DRAINAGE AREA
- LIMIT OF DISTURBANCE
- 30' PUBLIC WATER, SEWER & UTILITY EASEMENT
- 24' PRIVATE ACCESS & DRAINAGE EASEMENT FOR THE BENEFIT OF LOTS 2-7
- 10' PUBLIC TREE MAINTENANCE EASEMENT
- 15' PRIVATE DRAINAGE EASEMENT

DOC STORMWATER MANAGEMENT CHART

LOT NUMBER	MICRO-BIORETENTION M-6 (NUMBER)
LOT 2	1
LOT 3	1
LOT 4	1
LOT 5	1
LOT 6	1

SITE DATA TABULATION

1. GENERAL SITE DATA

a.) PRESENT ZONING: R-SC
b.) LOCATION; TAX MAP: 50, GRID 4, PARCEL 438
c.) APPLICABLE DPZ FILE REFERENCES: ECP-12-007, WP-12-023, F-12-048, WP-13-094
d.) PROPOSED USE OF SITE: SINGLE FAMILY DETACHED RESIDENTIAL
e.) PROPOSED WATER AND SEWER SYSTEMS: PUBLIC

2. AREA TABULATION — TOTAL

a.) TOTAL AREA OF SITE.................. 1.40± AC.
b.) APPROXIMATE AREA OF 100 YEAR FLOODPLAIN..... N/A
c.) APPROX. AREA OF STEEP SLOPES (25% OR MORE).. N/A.
d.) NET AREA OF SITE.................. 1.40± AC.
e.) AREA OF THIS PLAN SUBMISSION.................. 1.40± AC
f.) AREA OF PROPOSED BUILDABLE LOTS.................. 0.83± AC.
g.) AREA OF PROPOSED PUBLIC ROAD RIGHT-OF-WAY.. 0.13± AC.
h.) APPROXIMATE AREA OF LIMIT OF DISTURBANCE......... 1.40± AC.
i.) AREA OF PROPOSED OPEN SPACE LOTS.................. 0.44± AC.
j.) AREA OF PROPOSED NON-CREDIT OPEN SPACE.......... 0.00 AC.

3. DENSITY TABULATION

a.) NET AREA OF THE SITE.................. 1.40± AC.
b.) TOTAL NUMBER OF BUILDABLE LOTS ALLOWED (4 D.U./NET AC.).................. 5
c.) TOTAL NUMBER OF BUILDABLE LOTS PROPOSED........ 5

4. UNIT/LOT TABULATION

a.) TOTAL NUMBER OF RESIDENTIAL UNITS/LOTS PROPOSED ON THIS SUBMISSION.................. 5
b.) TOTAL NUMBER OF OPEN SPACE LOTS PROPOSED..... 2
c.) TOTAL NUMBER OF NON-BUILDABLE LOTS PROPOSED..N/A

5. OPEN SPACE DATA

MINIMUM RESIDENTIAL LOT SIZE.................. 6,000 S.F.
OPEN SPACE REQUIRED (25% OF 1.40 Ac.) .... 0.35 Ac.±
AREA OF PROPOSED OPEN SPACE LOTS .... 0.44 Ac.±
AREA OF PROPOSED NON-CREDITED O.S. LOTS .... *SEE NOTE #31
AREA OF CREDITED OPEN SPACE PROVIDED .... 0.44 Ac.±

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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] 9-23-13
ENGINEER — DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

[signature] 9/26/13
DEVELOPER — DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

[signature] 9/26/13
HOWARD SCD — DATE

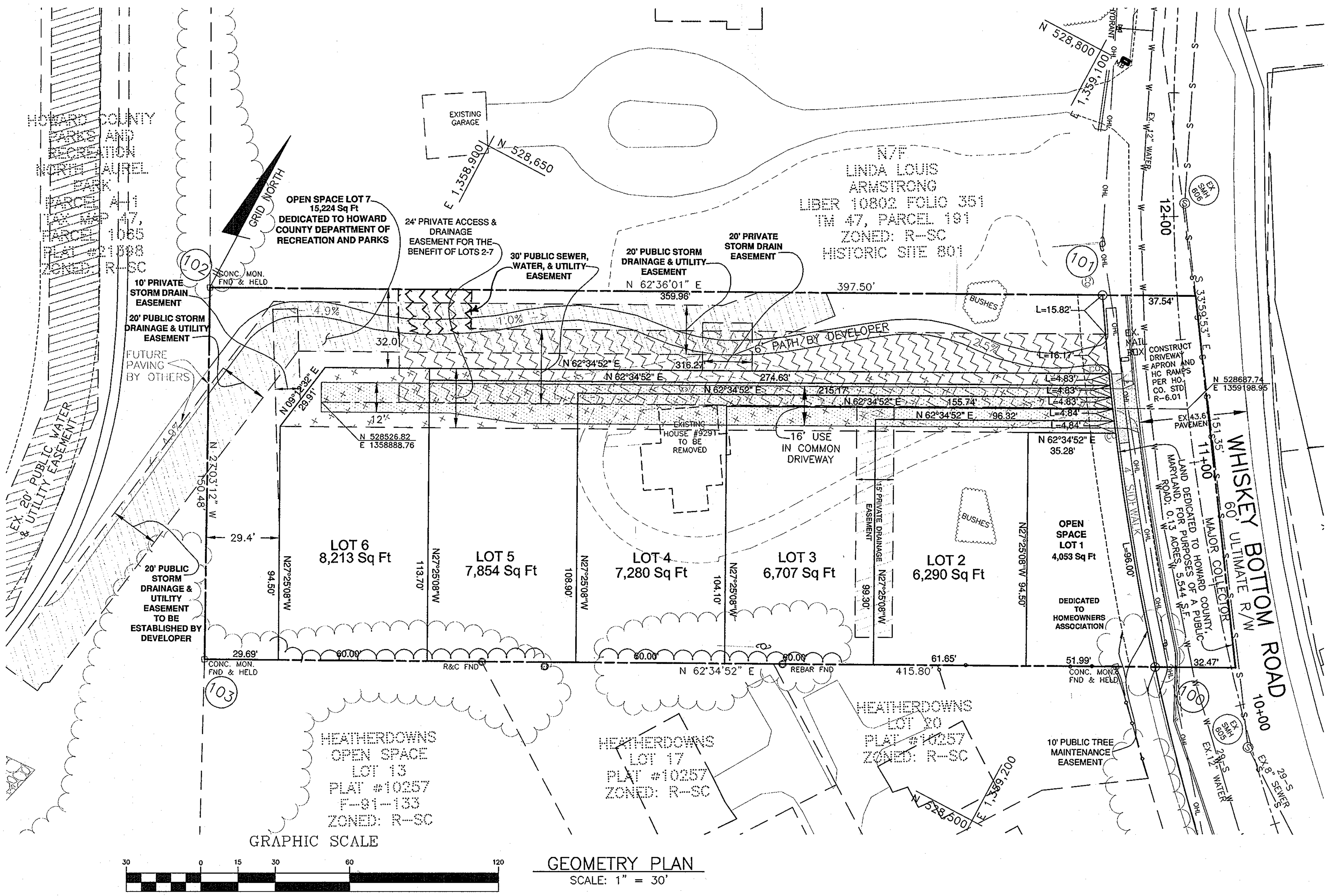
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature] 10-24-13
CHIEF, BUREAU OF HIGHWAYS — DATE:

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 11-13-13
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE:

[signature] 10-31-13
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE:

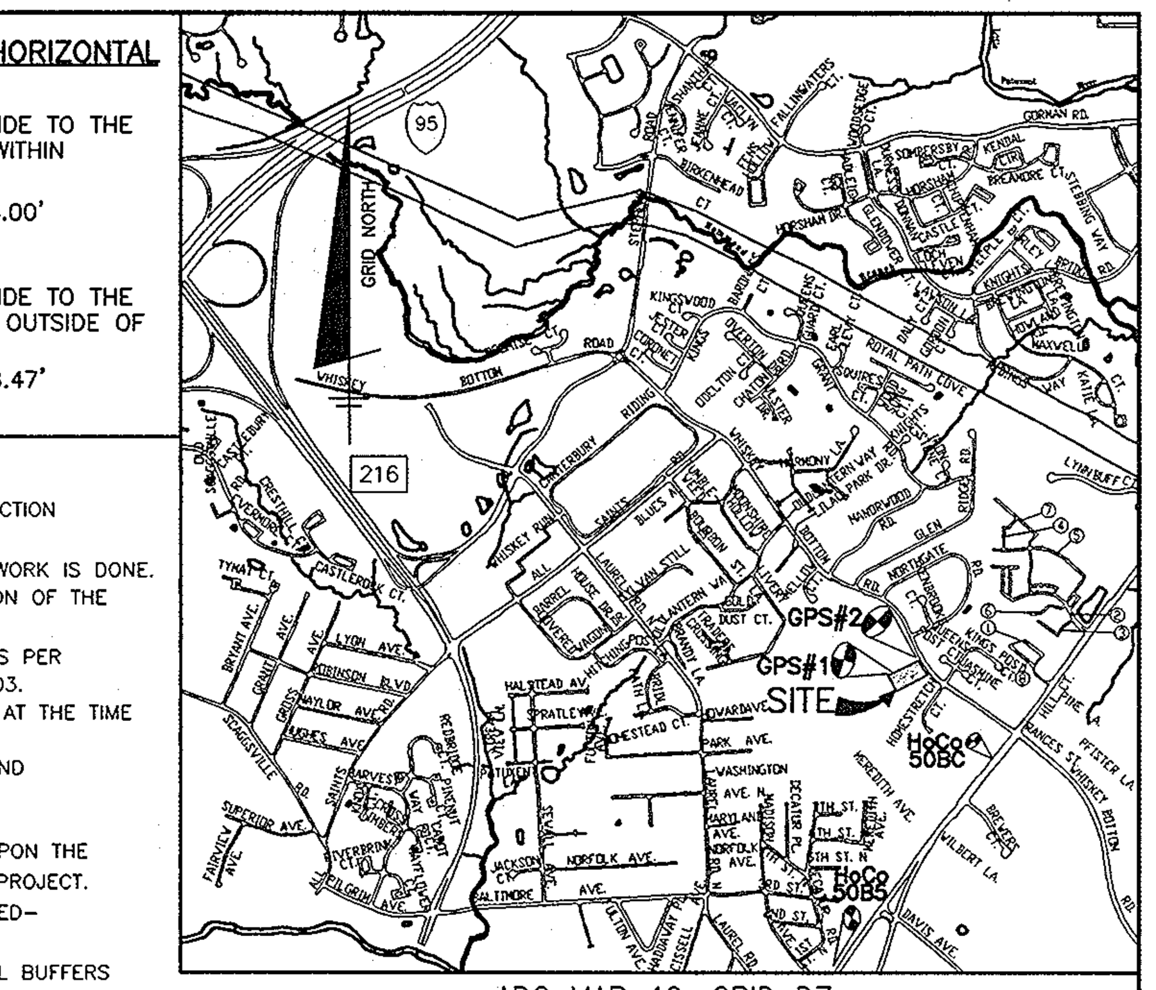


GEOMETRY PLAN
SCALE: 1" = 30'

BENCHMARKS NAD'83 HORIZONTAL

GPS#1
REBAR AND CAP SET NORTH SIDE TO THE REAR OF SUBJECT PROPERTY WITHIN PROPERTY BOUNDARY.
N 528709.91' E 1359118.00'
ELEVATION: 262.22'

GPS#2
REBAR AND CAP SET NORTH SIDE TO THE FRONT OF SUBJECT PROPERTY OUTSIDE OF PROPERTY BOUNDARY.
N 528570.97' E 1358878.47'
ELEVATION: 262.29'



ADC MAP 40, GRID D7
VICINITY MAP
SCALE: 1" = 2000'

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. SUBJECT PROPERTY ZONED R-SC PER THE 2-2-04 COMPREHENSIVE ZONING PLAN AND THE COMP LITE ZONING AMENDMENTS EFFECTIVE 7-28-06.
3. 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.
4. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK IS DONE.
5. IF APPLICABLE, TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
6. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL NO 45-2003, EFFECTIVE 10-02-03 AND THE ZONING REGULATIONS AMENDED BY COUNCIL BILL 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.
7. PROJECT BOUNDARY AND TOPOGRAPHY WITHIN THE SUBDIVISION AREA ARE BASED ON FIELD RUN BOUNDARY SURVEY AND TOPO PERFORMED BY BENCHMARK ENGINEERING INC. DATED JULY, 2011.
8. EXISTING OFFSITE TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY GIS.
9. THE COORDINATES SHOWN HEREON ARE BASED UPON GLOBAL POSITIONING SYSTEM COORDINATES WHICH ARE BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. GPS#1 AND GPS#2 AS DEFINED ON THIS SHEET WERE USED FOR THIS PROJECT.
10. PREVIOUS DPZ SUBMISSIONS: ECP-12-007 APPROVED SEPTEMBER 14, 2011, WP-12-023 (VOIDED), F-12-048 (VOIDED-WITHDRAWN MARCH 5, 2012), WP-13-094.
11. NO WETLANDS, STREAMS, FLOODPLAINS, FOREST, FOREST CONSERVATION EASEMENTS, STEEP SLOPES OR ENVIRONMENTAL BUFFERS ARE LOCATED WITHIN ON THIS SITE. A CERTIFICATION LETTER TO THIS EFFECT DATED AUGUST 15, 2011 BY ECO-SCIENCE PROFESSIONALS, INC. HAS BEEN PROVIDED.
12. PERIMETER LANDSCAPING SHALL BE PROVIDED AS SHOWN ON THE LANDSCAPE PLAN OF THE FINAL CONSTRUCTION DRAWINGS FOR THIS FINAL PLAN IN ACCORDANCE WITH SECTION 16.124 OF THE LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF $10,350 FOR 20 SHADE TREES, 29 EVERGREEN TREES SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT UNDER THIS FINAL PLAN.
13. A SIMPLIFIED FOREST STAND DELINEATION WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., AUGUST 2011.
14. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERIES LOCATED ON THIS SITE.
15. A NOISE STUDY IS NOT REQUIRED FOR THIS DEVELOPMENT.
16. WATER AND SEWER ARE PUBLIC, CONTRACT NUMBER 24-4734-D.
17. WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122.B OF THE HOWARD COUNTY CODE.
18. PUBLIC WATER AND SEWAGE ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
19. THE FOREST CONSERVATION ACT OBLIGATION FOR THIS PROJECT WILL BE MET BY PAYMENT OF FEE-IN-LIEU IN THE AMOUNT OF $6,861 FOR AN OBLIGATION OF 0.21 ACRES. (9148 S.F. X $0.75 = $6,861)
20. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH THE 2000 MDE DESIGN MANUAL AND HOWARD COUNTY REQUIREMENTS. TREATMENT IS PROVIDED USING ENVIRONMENTAL SITE DESIGN METHODS, INCLUDING MICRO-BIORETENTION FACILITIES AND NON-ROOFTOP DISCONNECTION.
21. EXISTING UTILITIES ARE BASED ON FIELD LOCATIONS AND RECORD DRAWINGS.
22. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
23. WP-12-023 WAS SUBMITTED TO REQUEST CREDIT FOR OPEN SPACE AREA WHICH DOES NOT MEET THE 35' MINIMUM WIDTH, AND WAS VOIDED WITH F-12-048.
24. NO IMPROVEMENTS SHALL BE PERMITTED TO BE CONSTRUCTED OR PLACED WITHIN THE PUBLIC WATER, SEWER AND UTILITY EASEMENTS THAT WILL IMPEDE OR HINDER ACCESS TO THE PUBLIC WATER AND SEWER MAINS. IMPROVEMENTS SUCH AS AIR CONDITIONING UNITS, DECKS, FENCING, FOUNDATION PLANTINGS AND TREES SHALL NOT BE PLACED WITHIN THE EASEMENTS.
25. A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430 FOR DETAILS AND COST ESTIMATE.
26. APPROVAL OF A SITE DEVELOPMENT PLAN IS REQUIRED FOR THE DEVELOPMENT OF ALL RESIDENTIAL LOTS WITHIN THIS SUBDIVISION PRIOR TO ISSUANCE OF ANY GRADING OR BUILDING PERMITS FOR NEW HOUSE CONSTRUCTION IN ACCORDANCE WITH SECTION 16.155 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
27. LAND DEDICATED TO HOWARD COUNTY, MARYLAND FOR PURPOSES OF A PUBLIC ROAD (0.13 ACRES, 5,544 SQUARE FEET).
28. THE EXISTING DWELLING ON LOT 4 WAS CONSTRUCTED CIRCA 1952, AND SHALL BE REMOVED PRIOR TO RECORDATION OF THE PLAT.
29. ALL TRASH AND RECYCLABLES COLLECTION WILL BE AT WHISKEY BOTTOM ROAD, WITHIN 5' OF THE PUBLIC RIGHT OF WAY.
30. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
    (a) WIDTH – 12' (16' SERVING MORE THAN ONE RESIDENCE)
    (b) SURFACE – 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2"MIN.)
    (c) GEOMETRY – MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45' TURNING RADIUS.
    (d) STRUCTURES (CULVERTS/BRIDGES) – CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
    (e) DRAINAGE ELEMENTS – CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
    (f) STRUCTURE CLEARANCES – MINIMUM 12 FEET.
    (g) MAINTENANCE – SUFFICIENT TO INSURE ALL WEATHER USE.
31. WP-13-094 WAS APPROVED JANUARY 16, 2013, WAIVING SECTION 16.121(a)(3) TO ALLOW CREDIT FOR OPEN SPACE LAND LESS THAN 35' IN WIDTH. AND SECTIONS 16.144(b) AND 16.145 TO WAIVE THE REQUIREMENT OF SKETCH OR PRELIMINARY EQUIVALENT SKETCH PLANS. THE APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
    A. THE FINAL PLAN MUST BE SUBMITTED TO DPZ ON OR BEFORE MAY 16, 2013.
    B. SECTION 16.121(a)(3)(iii) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS CONTAINS SEVERAL ITEMS THAT ARE NOT PERMITTED TO BE CREDITED TOWARD THE REQUIRED OPEN SPACE OBLIGATION. THIS WAIVER APPROVAL IS TO ALLOW OPEN SPACE CREDIT FOR NARROW STRIPS LESS THAN 35 FEET WIDE FOR OPEN SPACE LOT 7 ONLY. NOT OTHER REQUESTS ARE BEING ENDORSED BY THIS WAIVER APPROVAL.
    C. THE PROPOSED OPEN SPACE LOT SHALL ACCOMMODATE A PATHWAY THAT MEETS THE DEPARTMENT OF RECREATION AND PARKS STANDARDS, WHILE INCORPORATING A SITE DESIGN THAT PROVIDES ADEQUATE STORMWATER MANAGEMENT AND LANDSCAPING PER THE COUNTY CODE AND LANDSCAPE MANUAL.
    D. THE PROPOSAL MUST BE IN COMPLIANCE WITH THE DEPARTMENT OF RECREATION AND PARKS COMMENTS DATED SEPTEMBER 21, 2011. THE APPLICANT SHALL CONTINUE TO COOPERATE WITH THE DEPARTMENT OF RECREATION AND PARKS TO ENSURE THE PATHWAY COMES INTO FRUITION AND THE OPEN SPACE WITH THE PATHWAY DEDICATED TO THE COUNTY.
32. ON-LOT STORMWATER FACILITIES ARE SUBJECT TO DECLARATIONS OF COVENANTS, WHICH SHALL BE RECORDED IN THE HOWARD COUNTY LAND RECORDS AT THE TIME OF PLAT RECORDATION. ALL ASSOCIATED DECLARATIONS OF COVENANTS SHALL BE AMENDED, AS NEEDED, BASED ON ANY FUTURE DESIGN.
33. THIS PROJECT WAS PRESENTED TO THE HISTORIC DISTRICT COMMISSION ON MARCH 7, 2013. A TYPE C LANDSCAPE SCREENING ALONG THE NORTH PROPERTY LINE HAS BEEN REQUESTED, TO PROVIDE SCREENING FOR THE ADJACENT HISTORIC PROPERTY.
34. OPEN SPACE LOT 1 SHALL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION. OPEN SPACE LOT 7 SHALL BE DEDICATED TO HOWARD COUNTY, MARYLAND, AND MAINTAINED BY THE DEPARTMENT OF RECREATION AND PARKS.
35. A RIGHT OF ENTRY AGREEMENT MUST BE OBTAINED FROM HOWARD COUNTY REAL ESTATE SERVICES PRIOR TO PERFORMING CONSTRUCTION ACTIVITIES WITHIN THE EXISTING PARKLAND.
36. THE DEPARTMENT OF RECREATION AND PARKS (410-627-9762) MUST APPROVE STAKEOUT LOCATIONS OF PARKLAND PATH AND PLANTINGS IN THE FIELD BEFORE CONSTRUCTION AND INSTALLATION. DPR SHALL BE NOTIFIED 7 DAYS PRIOR TO THE INSTALLATION OF THE PLANTS WITHIN OPEN SPACE LOT 7 WITH THE DATE AND TIME OF PLANTING.

TRAVERSE POINT CHART (NAD '83)

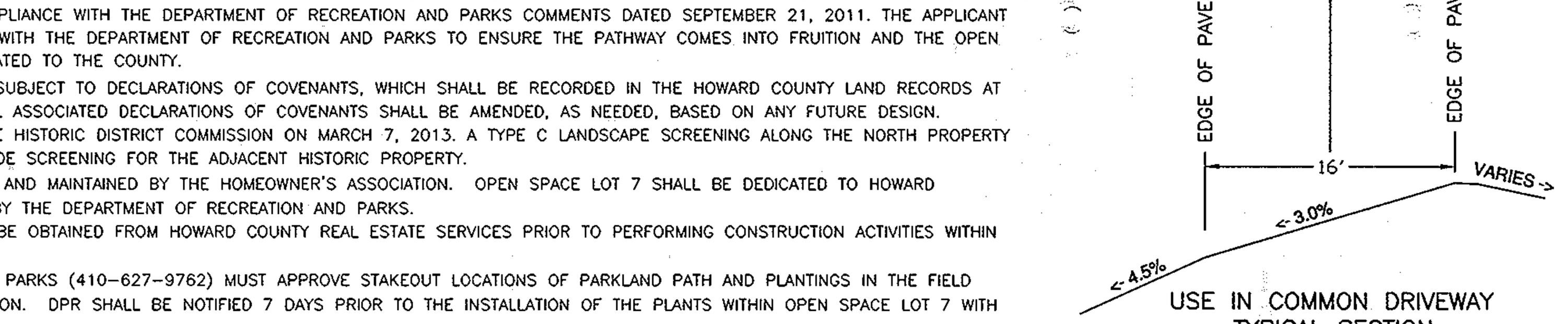
No.	NORTH	EAST
1	528,709.9060	1,359,118.0020
2	528,570.9748	1,358,878.4676
3	528,510.0430	1,358,978.0485
4	528,531.7514	1,359,175.7200

BOUNDARY COORDINATE CHART (NAD '83)

No.	NORTH	EAST
100	528,589.3339	1,359,236.1817
101	528,712.4785	1,359,147.0378
102	528,546.8361	1,358,827.4587
103	528,412.8103	1,358,895.9058
104	528,729.7561	1,359,180.3701
105	528,604.2822	1,359,264.9968

MINIMUM LOT SIZE CHART

LOT NO.	GROSS AREA	PIPESTEM AREA	MINIMUM LOT SIZE
2	6,290	168	6,122
3	6,707	461	6,246
4	7,280	746	6,534
5	7,854	1,032	6,822
6	8,213	1,317	6,896



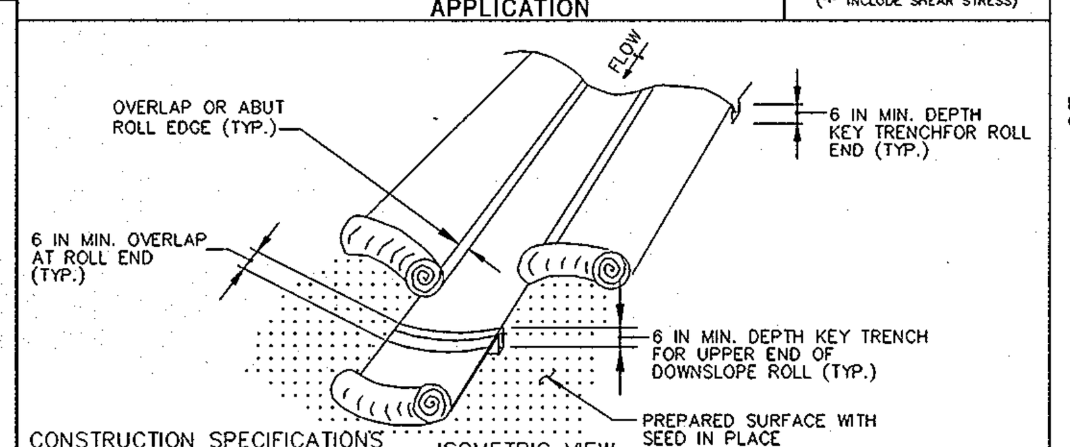
USE IN COMMON DRIVEWAY TYPICAL SECTION
NOT TO SCALE:

SHEET INDEX

NO.	DESCRIPTION
1	GEOMETRY PLAN AND SEDIMENT CONTROL DETAILS
2	STORMWATER MANAGEMENT, MAINTENANCE OF TRAFFIC, LANDSCAPE PLAN AND DETAILS
3	STORM DRAIN DRAINAGE AREA MAP AND PROFILES AND WHISKEY BOTTOM ROAD CROSS SECTIONS
4	SEDIMENT CONTROL PLAN, NOTES AND DETAILS

DETAIL B-4-6-A TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL: TSSMC – * lb/ft² (* INCLUDE SHEAR STRESS)



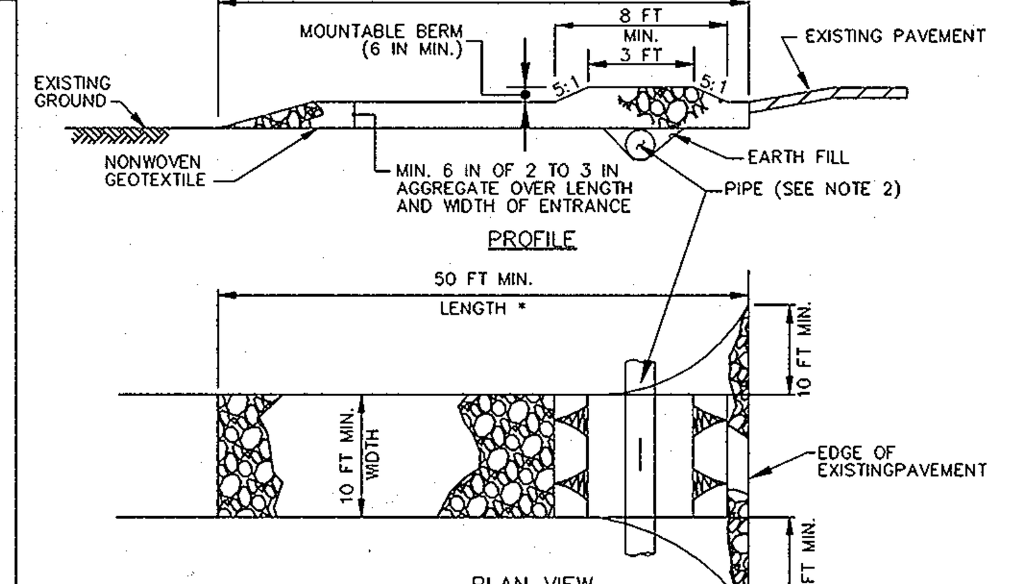
CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
7. OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

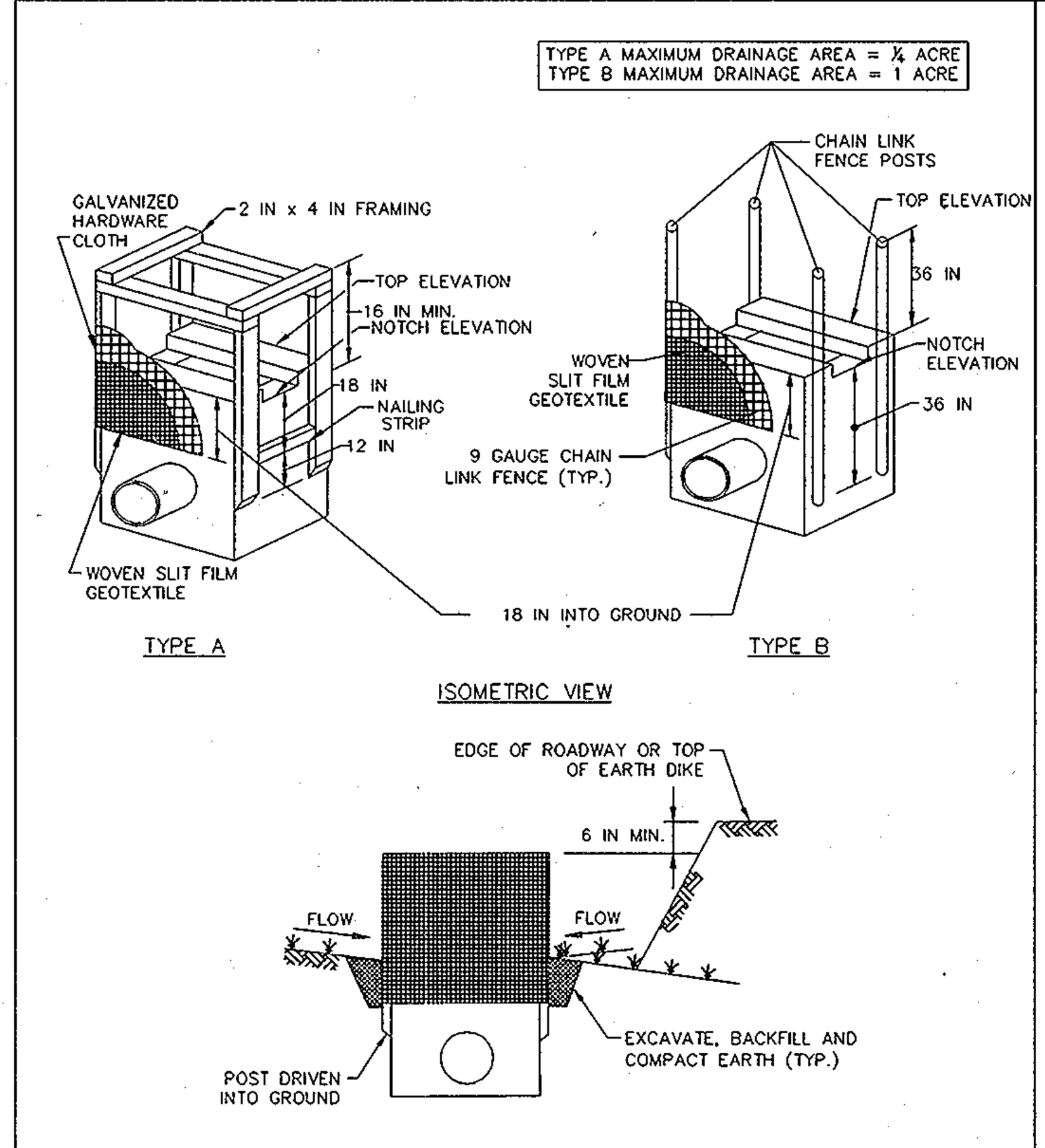
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

TYPE A MAXIMUM DRAINAGE AREA = ¼ ACRE
TYPE B MAXIMUM DRAINAGE AREA = 1 ACRE



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

CONSTRUCTION SPECIFICATIONS

1. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
3. FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT 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 2X4 FRAME AS SHOWN. STRETCH ½ INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.

   FOR TYPE B, USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST.
4. BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
5. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NO.	DATE	REVISION

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
75 THOMAS JOHNSON DRIVE ▲ SUITE E ▲ FREDERICK, MARYLAND 21702
301-710-5686
WWW.BEI-CIVILENGINEERING.COM

STATE OF MARYLAND — ALICE A. MILLER — PROFESSIONAL ENGINEER — 9-23-13
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 28376, Expiration Date: 1/1/2015.

OWNER/DEVELOPER:
CORNERSTONE HOLDINGS, LLC
9695 NORFOLK AVENUE
LAUREL, MARYLAND 20723
410-792-2565

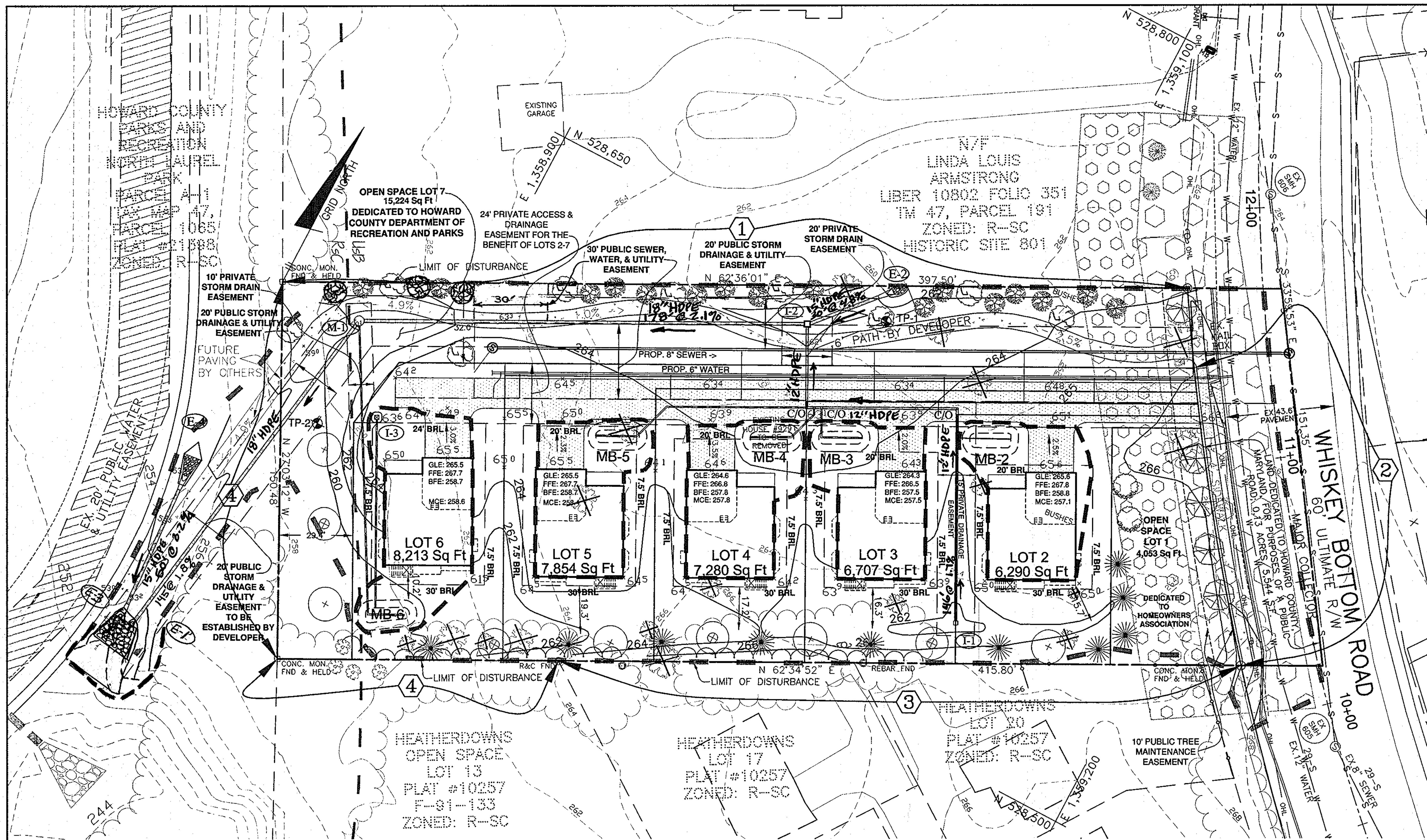
PARKSIDE ESTATES
LOTS 2-6 & OPEN SPACE LOTS 1 & 7

TAX MAP: 50 GRID: 4 PARCEL: 438
ZONED: R-SC
ELECTION DISTRICT NO. 6 – HOWARD COUNTY, MARYLAND

GEOMETRY PLAN AND SEDIMENT CONTROL DETAILS

DATE:	~~JANUARY 2013~~ SEPTEMBER 2013	BEI PROJECT NO.	2384-C
DESIGN: AAM / DRAWN: AAM — SCALE:	AS SHOWN	SHEET	1 OF 4

F-13-065

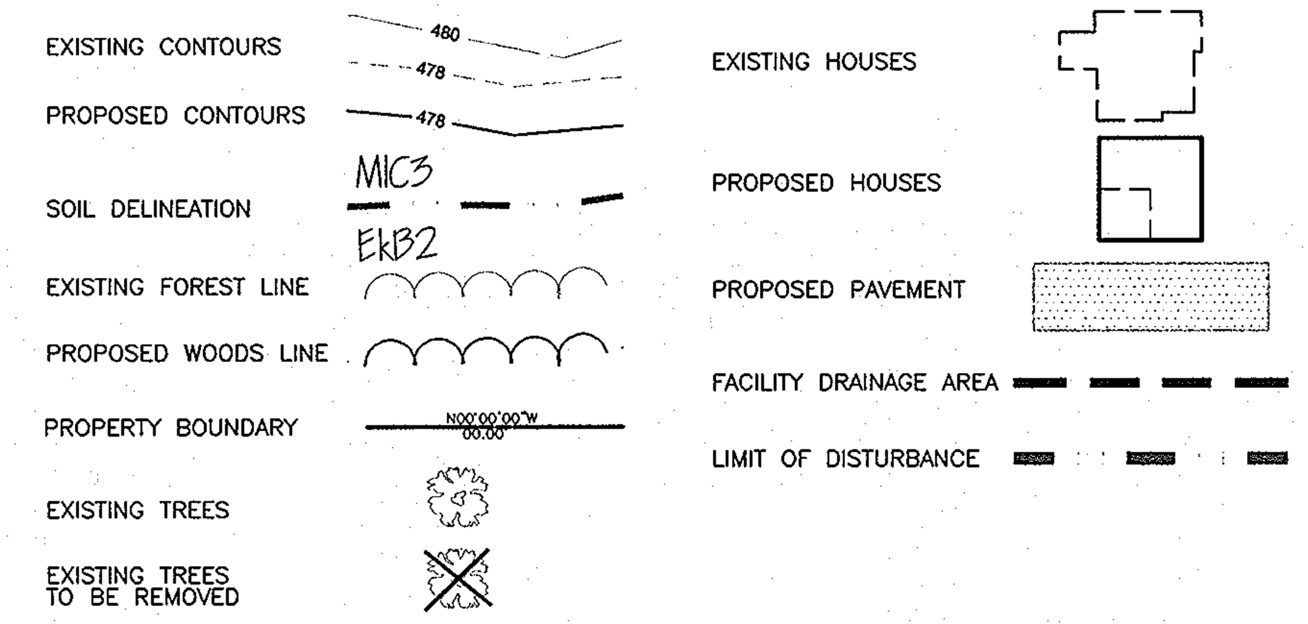


PLAN
SCALE: 1" = 30'

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

LEGEND



Practices and Sizing

Pe: 1.20 inches

Driveway - for overcomensation		Treated by Micro-Bioretention
Total Drainage Area:	5104 s.f.	
Impervious Area:	5104 s.f.	
Impervious:	100%	
Rv =	0.950	
ESDV =	161.6 c.f	
75% Req'd Storage:	121	

Driveway is treated for water quality (1.0") by disconnection. Quantity treatment above 1.0 inch (0.4") will be provided through 'extra' storage within on-lot facilities.

Drainage Area MB-2:		Treated by Micro-Bioretention
Total Drainage Area:	2580 s.f.	
Impervious Area:	1813 s.f.	
Impervious:	70%	
Rv =	0.682	
ESDV =	176.1 c.f	
75% Req'd Storage:	132	
Plus 1/5 of driveway storage:	156	

Storage Computation:

Elevation (ft)	Area (sf)	Average Area (sf)	Contour Interval (ft)	Incremental Volume (ft^3)	Total Volume (ft^3)
262.8	83				0
		158.0	1.0	158.0	
263.8	233				158

Min. Area of Filter (@ 2% DA): 51.6 OK

Drainage Area MB-3:		Treated by Micro-Bioretention
Total Drainage Area:	2441 s.f.	
Impervious Area:	1802 s.f.	
Impervious:	74%	
Rv =	0.714	
ESDV =	174.4 c.f	
75% Req'd Storage:	131	
Plus 1/5 of driveway storage:	155	

Storage Computation:

Elevation (ft)	Area (sf)	Average Area (sf)	Contour Interval (ft)	Incremental Volume (ft^3)	Total Volume (ft^3)
262.0	83				0
		158.0	1.0	158.0	
263.0	233				158

Min. Area of Filter (@ 2% DA): 48.82 OK

Drainage Area MB-4:		Treated by Micro-Bioretention
Total Drainage Area:	2480 s.f.	
Impervious Area:	1809 s.f.	
Impervious:	73%	
Rv =	0.706	
ESDV =	175.2 c.f	
75% Req'd Storage:	131	
Plus 1/5 of driveway storage:	156	

Storage Computation:

Elevation (ft)	Area (sf)	Average Area (sf)	Contour Interval (ft)	Incremental Volume (ft^3)	Total Volume (ft^3)
262.0	83				0
		158.0	1.0	158.0	
263.0	233				158

Min. Area of Filter (@ 2% DA): 49.6 OK

Drainage Area MB-5:		Treated by Micro-Bioretention
Total Drainage Area:	2377 s.f.	
Impervious Area:	1828 s.f.	
Impervious:	77%	
Rv =	0.742	
ESDV =	176.4 c.f	
75% Req'd Storage:	132	
Plus 1/5 of driveway storage:	157	

Storage Computation:

Elevation (ft)	Area (sf)	Average Area (sf)	Contour Interval (ft)	Incremental Volume (ft^3)	Total Volume (ft^3)
262.8	83				0
		158.0	1.0	158.0	
263.8	233				158

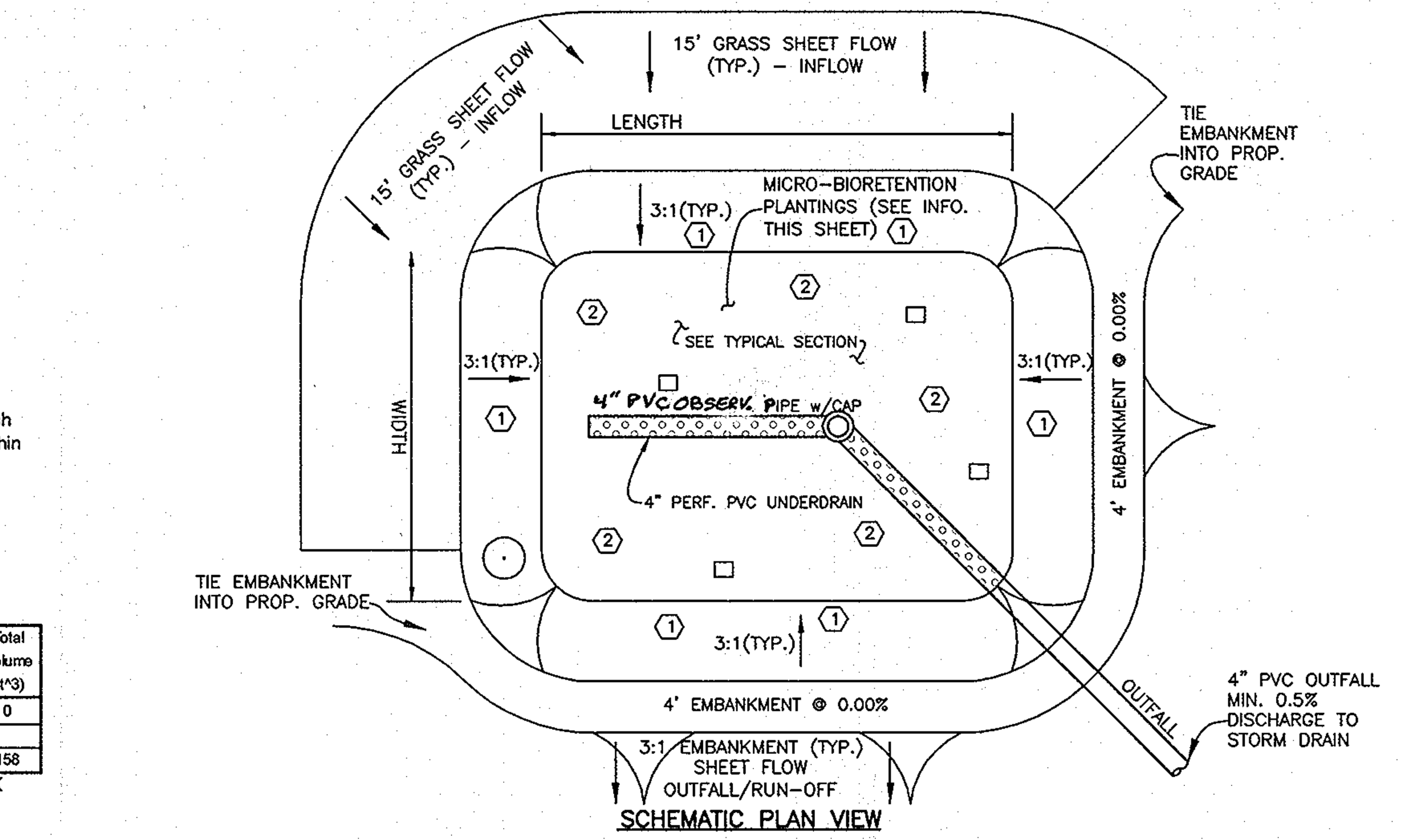
Min. Area of Filter (@ 2% DA): 47.54 OK

Drainage Area MB-6:		Treated by Micro-Bioretention
Total Drainage Area:	3066 s.f.	
Impervious Area:	1858 s.f.	
Impervious:	61%	
Rv =	0.595	
ESDV =	182.6 c.f	
75% Req'd Storage:	137	
Plus 1/5 of driveway storage:	161	

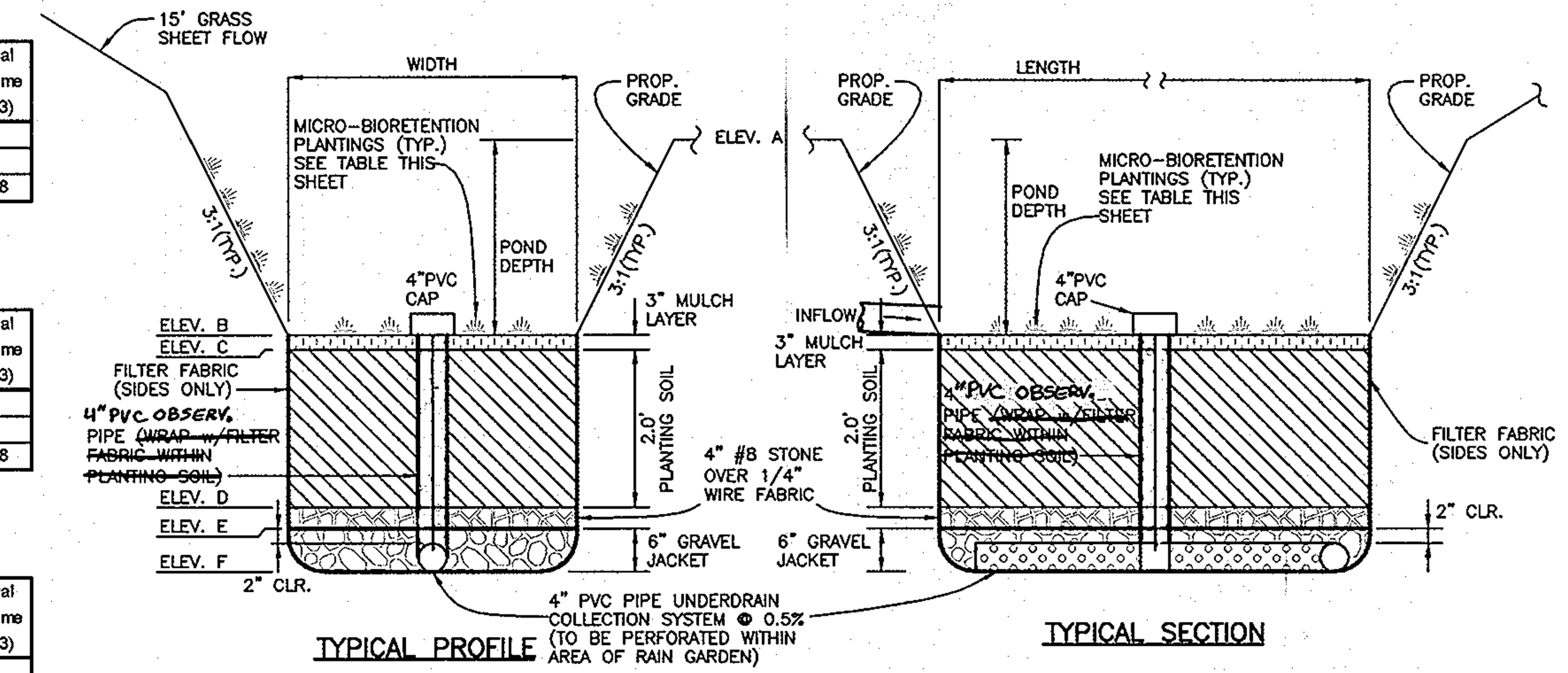
Storage Computation:

Elevation (ft)	Area (sf)	Average Area (sf)	Contour Interval (ft)	Incremental Volume (ft^3)	Total Volume (ft^3)
258.0	86				0
		163.0	1.0	163.0	
259.0	240				163

Min. Area of Filter (@ 2% DA): 61.32 OK



SCHEMATIC PLAN VIEW



TYPICAL PROFILE

TYPICAL SECTION

THESE DETAILS CONFORM TO HO.CO. STD. D-9.02

RAIN GARDEN AND MICRO-BIORETENTION DETAILS

NOT TO SCALE

MICRO-BIORETENTION GEOMETRY (M-6)									
LOT	LENGTH	WIDTH	DEPTH	A	B	C	D	E	F
MB-2	17.5'	4.5'	1.0'	263.8	262.8	262.5	260.5	260.2	259.7
MB-3	17.5'	4.5'	1.0'	263.0	262.0	261.7	259.7	259.4	258.9
MB-4	17.5'	4.5'	1.0'	263.0	262.0	261.7	259.7	259.4	258.9
MB-5	17.5'	4.5'	1.0'	263.8	262.8	262.5	260.5	260.2	259.7
MB-6	17.5'	4.5'	1.0'	259.0	258.0	257.7	255.2	254.9	254.4

OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

A. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.

B. THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.

C. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.

D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

MICRO-BIORETENTION PLANTING SCHEDULE

- 4 ⟨1⟩ IRIS VERSICOLOR –IRIS
- 4 □ RUDBECKIA SUBTOMENTOSA – SWEET CONEFLOWER
- 4 ⟨2⟩ LOBELIA CARDINALIS – CARDINAL FLOWER
- 1 (·) ACER RUBRUM – RED MAPLE

PLANTING DATA

1. PLANTINGS WITHIN THE PONDING AREA OF THE RAIN GARDEN ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE
2. PLANTINGS ALONG THE PERIMETER (BERM) AREA OF THE RAIN GARDEN ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE
3. AVOID PLANTINGS WITH EXCESSIVE ROOT MASS IN POND AREA OF THE RAIN GARDEN NEAR O.B. PIPE AND UNDERDRAIN.

SCHEDULE A PERIMETER LANDSCAPE EDGE					
CATEGORY / ADJACENT TO:	HISTORIC PROPERTY	ROAD	EXISTING HOMES	PERIMETER	TOTALS
LANDSCAPE TYPE	⟨1⟩ C	⟨2⟩ B	⟨3⟩ B	⟨4⟩ A	
LINEAR FEET OF PERIMETER	360'	120'	272'	262'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED					
SHADE TREES	9	2	5	4	20
EVERGREEN TREES	18	3	7	–	28
OTHER TREES (2:1 SUBSTITUTE)	–	–	–	–	–
SHRUBS	–	–	–	–	–
NUMBER OF PLANTS PROVIDED					
SHADE TREES	9	2	5	4	20
EVERGREEN TREES	19	3	6	1*	29
OTHER TREES (2:1 SUBSTITUTE)	–	–	–	–	–
SHRUBS (10:1 SUBSTITUTE)	–	–	–	–	–

*ONE EVERGREEN TREE RELOCATED TO PERIMETER #4 DUE TO BGE ZONE LIMITATIONS.

PERIMETER LANDSCAPE PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
(+)	5	PLANTANUS ACERFOLIA 'BLOODGOOD' (Bloodgood London Plane)	2 1/2" MIN. CAL. B&B FULL HEAD
(⊕)	4	QUERCUS COCCINEA SCARLET OAK	2 1/2" MIN. CAL. B&B FULL HEAD
(✳)	10	CEDRUS DEODORA DEODAR CEDAR	6'–8' ht. UNSHEARED
(○)	2	PRUNUS SERRULATA 'KWANZAN' KWANZAN CHERRY	1 1/2" MIN. CAL. B&B FULL HEAD
(✿)	19	ILLEX 'NELLIE R. STEVENS' NELLIE STEVENS HOLLY	5'–6' ht.
(❀)	9	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2 1/2" MIN. CAL. B&B FULL HEAD

STREET TREE CALCULATIONS WHISKEY BOTTOM ROAD

STREET TREES REQUIRED FOR 152 LF OF RIGHT-OF-WAY
152 / 30 = 5 TREES REQUIRED
5 TREES PROVIDED

STREET TREE PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
(symbol)	5	ACER GRISEUM "PAPERBACK MAPLE"	2.5"–3.0" MIN. CAL. B & B FULL HEAD

DEVELOPER'S/BUILDER'S CERTIFICATION

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF NOTICE, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME: [signature] DATE: 9/26/13

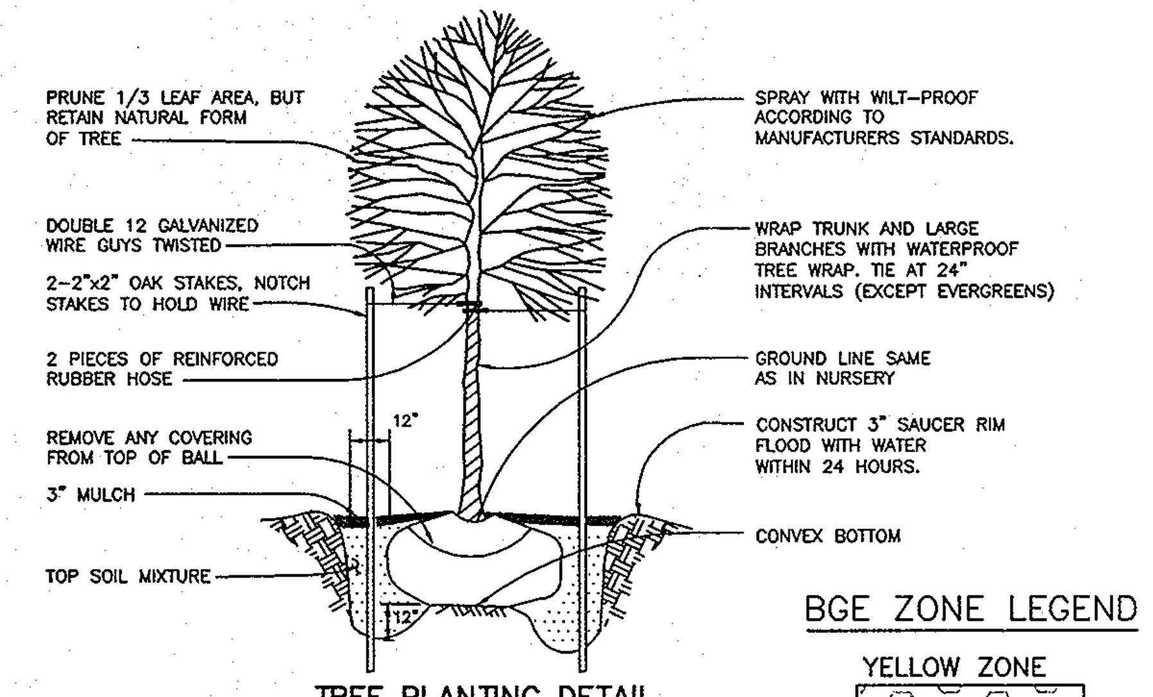
FOREST CONSERVATION WORKSHEET

Version 1.0

Project: 9291 Whiskey Bottom Road
Date: August 9, 2011

NET TRACT AREA		Acres
A. Total tract area		1.4
B. Area within 100 Year Floodplain		0
C. Area of site included in overhead transmission line		0
D. Net Tract Area		1.4
LAND USE CATEGORY: (from table 3.2.1, page 40, Manual) ARA MDR IDA HDR (X) MPD CIA		
E. Afforestation Threshold (percentage)	0.15	0.21
F. Conservation Threshold (percentage)	0.20	0.28
EXISTING FOREST COVER:		
G. Existing forest cover (excluding floodplain)		0
H. Area of forest above afforestation threshold		0
I. Area of forest above conservation threshold		0
BREAK EVEN POINT:		
J. Forest retention above threshold with no mitigation		--
Break-Even Point		--
K. Clearing permitted without mitigation		--
PROPOSED FOREST CLEARING		
L. Total area of forest to be Cleared or Retained Outside FCE		0.0
M. Total area of forest to be Retained in FCE		0.0
PLANTING REQUIREMENTS		
N. Reforestation for clearing above Conservation Threshold		0
P. Reforestation for clearing below Conservation Threshold		0
Q. Credit for retention above conservation threshold		0
R. Total reforestation required		0
S. Total afforestation required		0.21
T. Total reforestation and afforestation required		0.21

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 5006 Glen Arm, Maryland 21057



TREE PLANTING DETAIL
NOT TO SCALE

BGE ZONE LEGEND

YELLOW ZONE

GREEN ZONE

LANDSCAPING NOTES

1. PERIMETER LANDSCAPING SHALL BE PROVIDED BY THE PLANTINGS AS SHOWN ON THESE PLANS.
2. TREES MUST BE A MINIMUM OF FOUR (4) FEET FROM PAVEMENT, FIVE (5) FEET FROM ANY STORM DRAIN AND 10 FEET FORM A DRIVEWAY APRON.
3. AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.
4. IN THE BGE GREEN ZONE, ONLY TREES WITH A MATURE HEIGHT OF LESS THAN 25 FEET SHALL BE ALLOWED.
5. IN THE BGE YELLOW ZONE, ONLY TREES WITH A MATURE HEIGHT OF LESS THAN 40 FEET SHALL BE ALLOWED.
6. THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, PLANT MATERIALS, BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
7. NO CLEARING OF EXISTING VEGETATION IS PERMITTED WITHIN THE LANDSCAPE EDGE FOR WHICH CREDIT IS BEING TAKEN; HOWEVER, LANDSCAPE MAINTENANCE IS AUTHORIZED.
8. SHOULD ANY TREE DESIGNATED FOR PRESERVATION, FOR WHICH CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE LANDSCAPE MANUAL.
9. PERIMETER LANDSCAPING SHALL BE PROVIDED AS SHOWN ON THE LANDSCAPE PLAN OF THE FINAL CONSTRUCTION DRAWINGS FOR THIS FINAL PLAN IN ACCORDANCE WITH SECTION 16.124 OF THE LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF $10,350 FOR 20 SHADE TREES AND 29 EVERGREEN TREES SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT.
10. THE DEPARTMENT OF RECREATION AND PARKS (410-627-9762) MUST APPROVE STAKEOUT LOCATIONS OF PARKLAND PATH AND PLANTINGS IN THE FIELD BEFORE CONSTRUCTION AND INSTALLATION. DPR SHALL BE NOTIFIED 7 DAYS PRIOR TO THE INSTALLATION OF THE PLANTS WITHIN OPEN SPACE LOT 7 WITH THE DATE AND TIME OF PLANTING.

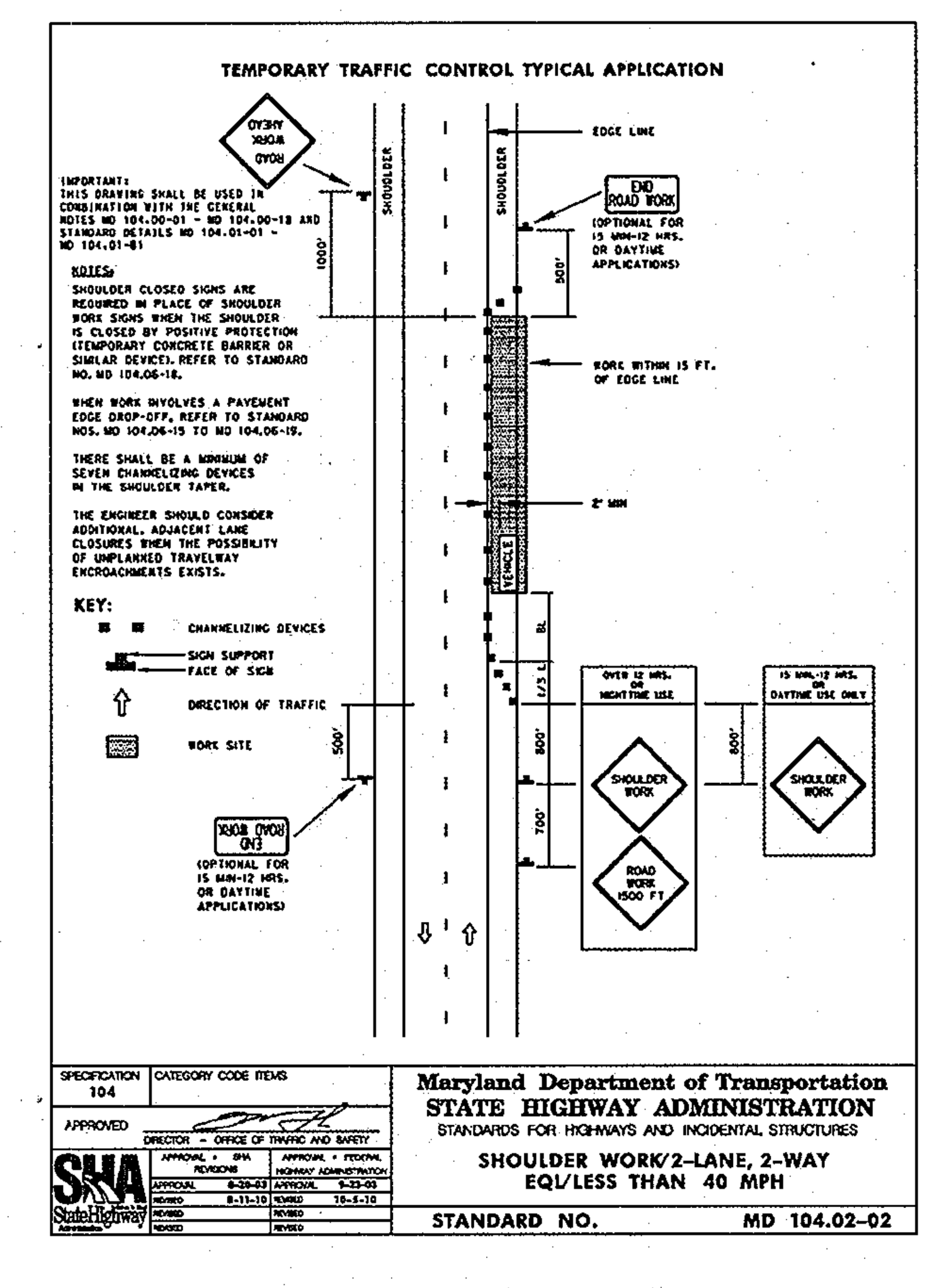
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

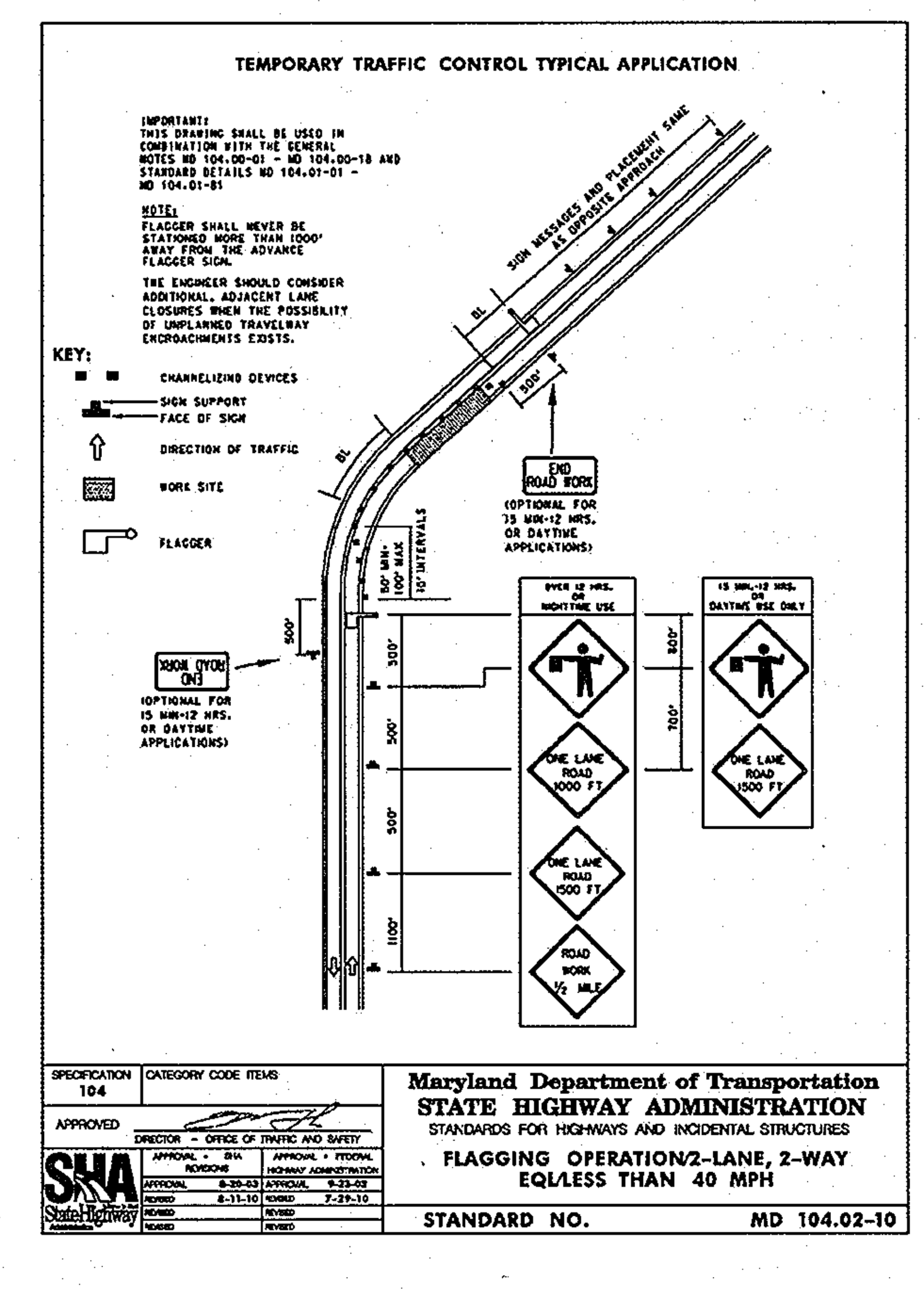
[signature] 10-24-13
CHIEF, BUREAU OF HIGHWAYS — DATE:

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 11-13-13
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE:

[signature] 10-31-13
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE:





NO.	DATE	REVISION

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
75 THOMAS JOHNSON DRIVE ▲ SUITE E ▲ FREDERICK, MARYLAND 21702
301-710-5686
WWW.BEI-CIVILENGINEERING.COM

9-23-13
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 28376, Expiration Date: 1/1/2015.

OWNER/DEVELOPER:
CONERSTONE HOLDINGS LLC
9695 NORFOLK AVENUE
LAUREL, MARYLAND 20723
410-792-2565

PARKSIDE ESTATES

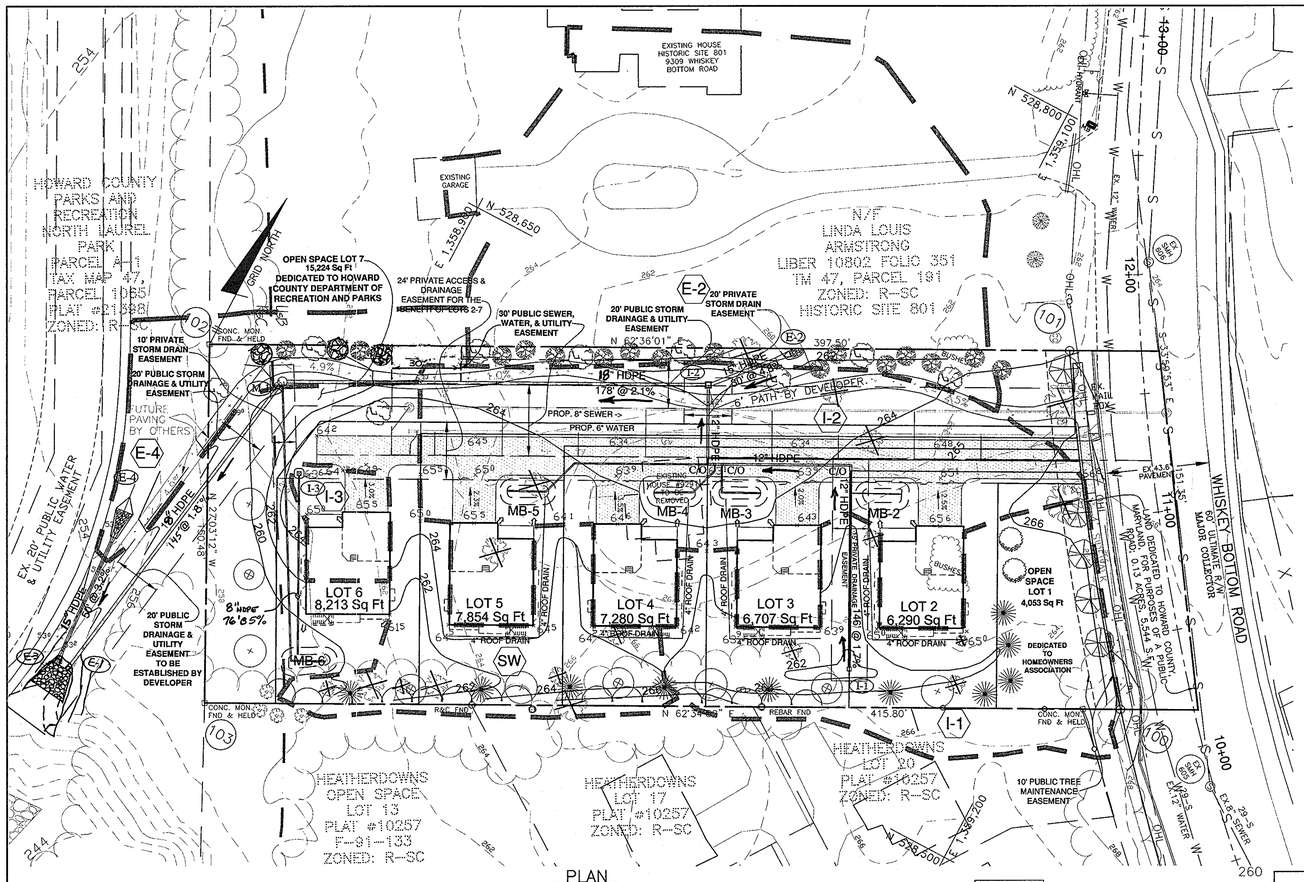
LOTS 2-6 & OPEN SPACE LOTS 1 & 7

TAX MAP: 50 GRID: 4 PARCEL: 438
ZONED: R-SC
ELECTION DISTRICT NO. 6 – HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT, MAINTENANCE OF TRAFFIC, LANDSCAPE PLAN AND DETAILS

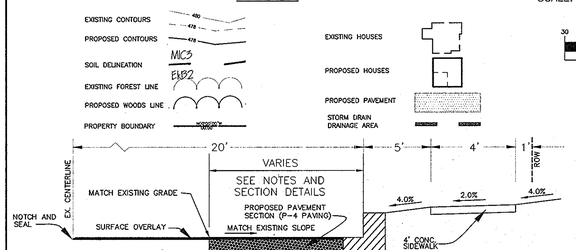
DATE:	JANUARY 2013 / SEPTEMBER 2013	BEI PROJECT NO.	2384-C
DESIGN: AAM / DRAWN: AAM	SCALE: AS SHOWN	SHEET	2 OF 4

F-13-065



PLAN
SCALE: 1" = 30'

LEGEND



STA. 0+00 TO 1+29.76

HALF SECTION DETAIL FOR WHISKEY BOTTOM ROAD WIDENING

NOT TO SCALE

NOTES:
1. WHEN EXISTING PAVEMENT WIDTH IS 20' OR GREATER FROM CENTERLINE, SAW CUT PAVEMENT AND CONSTRUCT CURB AND GUTTER AGAINST FACE OF CUT 20' FROM CENTERLINE.
2. WHEN EXISTING TRAVEL LANE IS LESS THAN 20' CONTRACTOR SHALL REMOVE A MINIMUM OF 1' FULL DEPTH AND 4' WIDTH OF THE EXISTING ROADWAY AND PROVIDE A MINIMUM OF 4' WIDENING FROM FACE OF GUTTER PAN.
3. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT DEPTH OF 1½" (MINIMUM).
4. THE RESURFACING SHALL BE PLACED TO THE CENTERLINE OF THE ROADWAY.
5. RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.
6. MATCH SLOPE OF GUTTER PAN TO STREET CROSS SECTION AS REQUIRED.

SOILS LEGEND

MAP SYMBOL	SOIL GROUP	SOIL TYPE
RsC	C	RUSSETT FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES
UsB	D	URBAN LAND–SASSAFRAS–BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES

TAKEN FROM HOWARD COUNTY SOILS SURVEY, ISSUED MAY 2008, MAP NO. 28

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

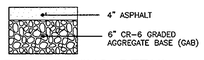
CHIEF, BUREAU OF HIGHWAYS — DATE: 10-24-13

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 11-13-13

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 10.21.13

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.



PATH PAVING DETAIL

NOTE: THE DEVELOPER SHALL CONSTRUCT THE PATHWAY ON OPEN SPACE LOT 7. IT SHALL BE ADA COMPLIANT WITH A MAXIMUM FORWARD SLOPE OF 4.9% AND 1.0% CROSS SLOPE.

STORM DRAIN DRAINAGE AREA DATA

INLET NO.	ZONING	AREA (AC)	'C' FACTOR	% IMPERVIOUS
I-1	R-SC	0.30	0.36	0
I-2	R-SC	0.52	0.56	52
I-3	R-SC	0.04	0.68	71
E-2	R-SC	0.63	0.36	7
E-4	R-SC	0.15	0.36	15
SW	R-SC	0.16	0.36	0

PIPE SCHEDULE

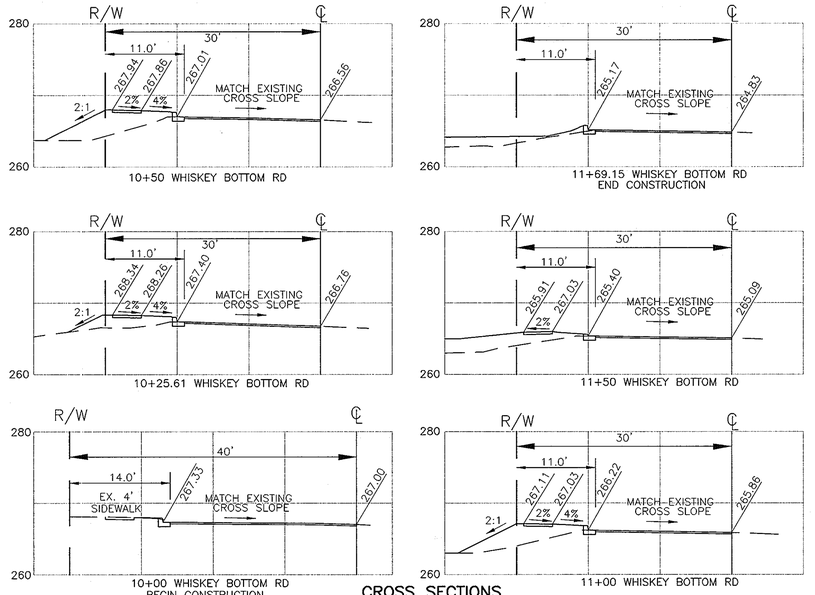
SIZE	LENGTH	TYPE & CLASS	OWNER
8"	76 LF	HDPE	PRIVATE
12"	178 LF	HDPE	PRIVATE
15"	80 LF	HDPE	PUBLIC
18"	323 LF	HDPE	PUBLIC

STORM DRAIN STRUCTURE SCHEDULE

NO	LOCATION	INV. IN	INV. OUT	TOP ELEV.	HO. CO. STD.	OWNER
I-1	N 528,551.35 E 1,359,127.86	–	259.2	261.0	CB–18"*	PRIVATE
I-2	N 528,629.24 E 1,359,019.93	258.2 / 257.7	257.2	261.0	D–4.14	PUBLIC
I-3	N 528,516.46 E 1,358,885.91	–	261.8	263.6	CB–12"*	PRIVATE
M–1	N 528,547.24 E 1,358,861.74	253.7 / 253.8	253.6	260.1	G–5.12	PUBLIC
E–1	N 528,383.26 E 1,358,836.12	–	251.0	–	HDPE**	PUBLIC
E–2	N 528,656.65 E 1,359,044.07	–	259.9	–	HDPE**	PUBLIC
E–3	N 528,398.20 E 1,358,833.33	–	251.0	–	HDPE**	PUBLIC
E–4	N 528,460.40 E 1,358,829.39	–	253.0	–	HDPE**	PUBLIC

*HANCOR 18" SQUARE CATCH BASIN WITH RISER AND GRATE, OR APPROVED EQUAL. ADJUST INVERT OUT TO MATCH SELECTED STRUCTURES.
**HANCOR HI–Q FLARED END SECTION OR EQUAL.

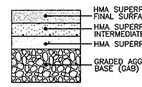
1) STRUCTURE LOCATION FOR MANHOLES IS AT THE CENTER OF THE MANHOLE.
2) STRUCTURE LOCATION FOR INLETS IS AT THE CENTER TOP.
3) STRUCTURE LOCATION FOR END SECTIONS IS AT THE MIDPOINT OF THE END OF END SECTION.



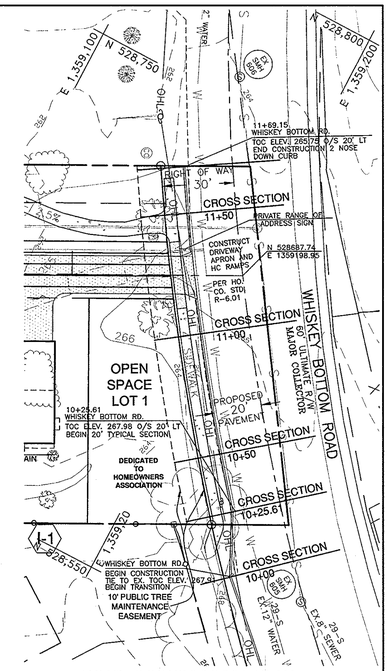
CROSS SECTIONS WHISKEY BOTTOM ROAD

SCALE: 1"=10'

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥7	3 TO <5	5 TO <7	≥7
		PAVEMENT MATERIAL (INCHES)	MIN HMA WITH GAB			HMA WITH CONSTANT GAB		
P–4	MINOR COLLECTORS: NON–RESIDENTIAL MAJOR COLLECTORS	HMA SUPERPAVE FINAL SURFACE 12.5 MM PG 64–22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE INTERMEDIATE SURFACE 12.5 MM PG 64–22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE BASE 19.0 MM PG 64–22, LEVEL 2 (LOW ESAL)	4.0	4.0	3.0	6.0	5.0	3.0
		GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0	6.0	6.0



P–4 PAVING DETAIL



ROAD IMPROVEMENT PLAN

SCALE: 1" = 30'

CONSTRUCTION SPECIFICATIONS

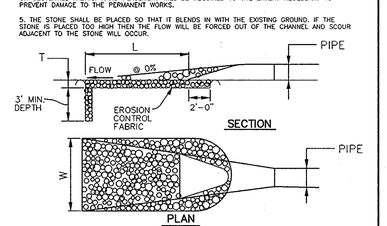
1. THE SUBGRADE FOR THE FILTER, RIP–RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.

2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP–RAP OR FILTER.

3. GEOTEXTILE CLASS C28 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE, EITHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.

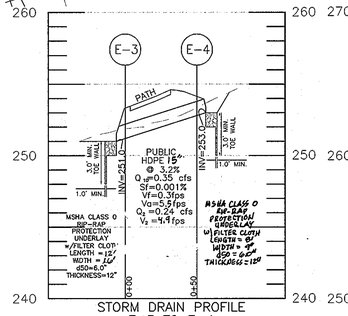
4. STONE FOR THE RIP–RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR HC RIP–RAP OR GABION OUTLETS SHALL BE DISTRIBUTED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP–RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE 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.



STRUCTURE	D–50	LENGTH (L)	WIDTH (W)	THICKNESS (T)	SHA CLASS
E-1 E-3	6.0"	12'	16'	12"	0
E–2	6.0"	6'	7'	12"	0
E–4	6.0"	8'	9'	12"	0

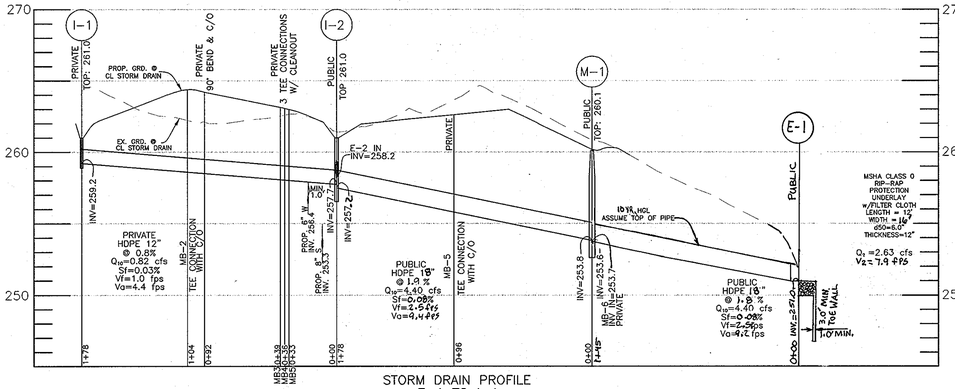
OUTLET PROTECTION DETAIL
NOT TO SCALE



STORM DRAIN PROFILE E–3 TO E–4
SCALE: 1" = 5' VERTICAL, 1" = 50' HORIZONTAL

STORM DRAIN PROFILE E–2 TO I–2
SCALE: 1" = 5' VERTICAL, 1" = 50' HORIZONTAL

STORM DRAIN PROFILE MBR–6 TO I–3
SCALE: 1" = 5' VERTICAL, 1" = 50' HORIZONTAL



STORM DRAIN PROFILE E–1 TO I–1
SCALE: 1" = 5' VERTICAL, 1" = 50' HORIZONTAL

NO.	DATE	REVISION

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ▲ ELLICOTT CITY, MARYLAND 21043 (P) 410–465–6105 (F) 410–465–6644
75 THOMAS JOHNSON DRIVE ▲ SUITE E ▲ FREDERICK, MARYLAND 21702 301–710–5686
WWW.BEI–CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 22676, Expiration Date: 1/1/2015.

STATE OF MARYLAND — BLAKE A. MILLER — REG. NO. 22676 — PROFESSIONAL ENGINEER — 9-23-13

OWNER/DEVELOPER:
CORNERSTONE HOLDINGS, LLC
9695 NORFOLK AVENUE
LAUREL, MARYLAND 20723
410–792–2565

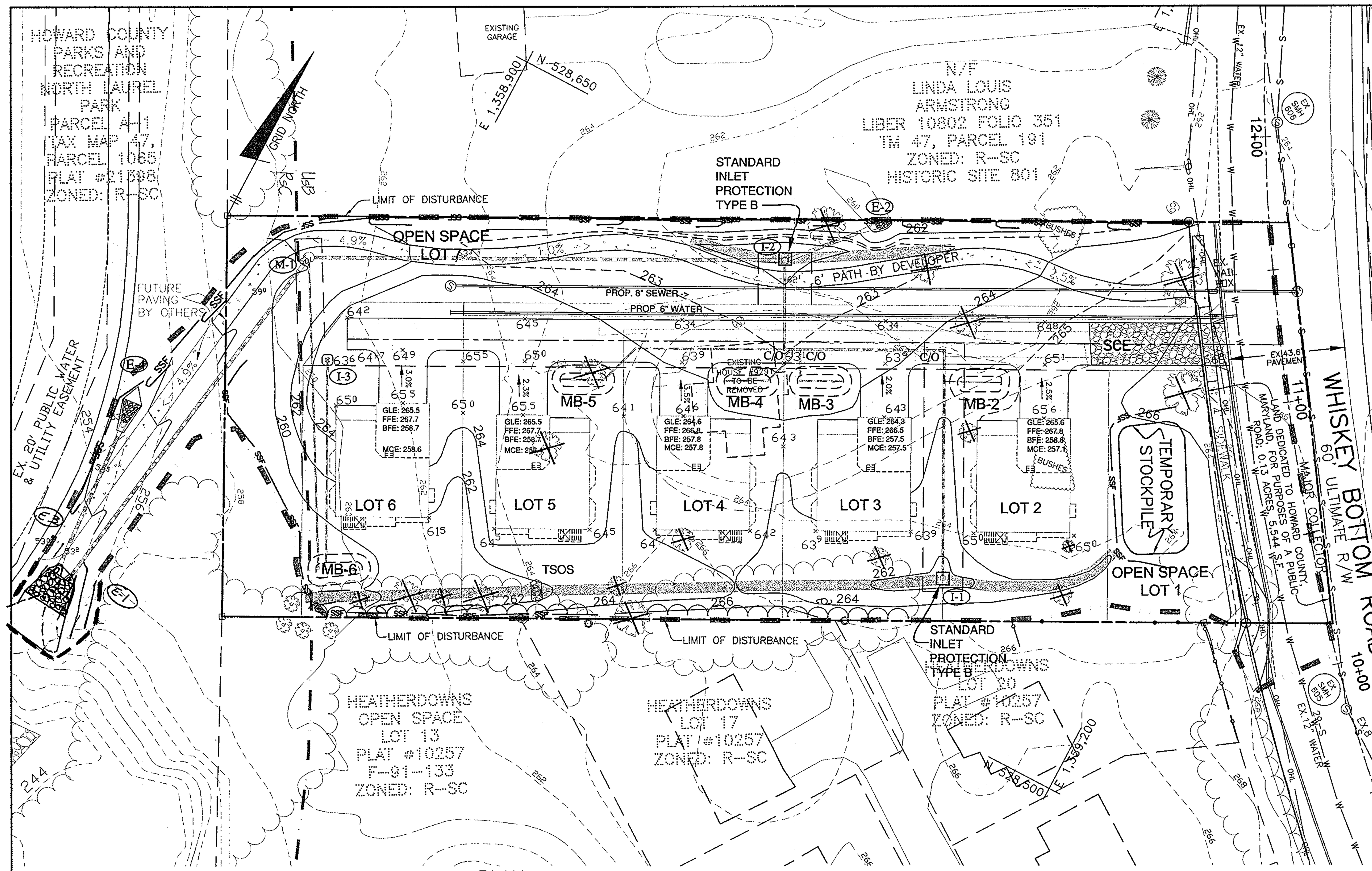
PARKSIDE ESTATES
LOTS 2–6 & OPEN SPACE LOTS 1 & 7

TAX MAP: 50 GRID: 4 PARCEL: 438
ZONED: R–SC
ELECTION DISTRICT NO. 6 – HOWARD COUNTY, MARYLAND

STORM DRAIN DRAINAGE AREA MAP AND PROFILES AND WHISKEY BOTTOM ROAD CROSS SECTIONS

DESIGN: AAM	DRAWN: AAM	DATE: JANUARY 2013 / SEPTEMBER 2013	BEI PROJECT NO. 2384–C
		SCALE: AS SHOWN	SHEET 3 OF 4

F-13-065



LEGEND

EXISTING CONTOURS	480 / 478	PROPOSED HOUSES	
PROPOSED CONTOURS	478	PROPOSED PAVEMENT	
SOIL DELINEATION	MIC3 / EkB2	SUPER SILT FENCE	SSF
EXISTING FOREST LINE		STABILIZED CONSTRUCTION ENTRANCE	SCE
PROPOSED WOODS LINE		TEMPORARY EROSION CONTROL MATTING	
PROPERTY BOUNDARY		STANDARD INLET PROTECTION	
EXISTING TREES		TEMPORARY STONE OUTLET STRUCTURE	
EXISTING TREES TO BE REMOVED			
EXISTING HOUSES			

PLAN

SCALE: 1" = 30'

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT AND REQUEST A PRECONSTRUCTION MEETING WITH THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR (INSPECTOR) 48 HOURS BEFORE ANY CONSTRUCTION ACTIVITIES. (DAY 1)

2. INSTALL ALL SEDIMENT CONTROL PRACTICES. A DOUBLE ROW OF SUPER SILT FENCE SHALL BE INSTALLED ALONG THE WESTERN LIMIT OF DISTURBANCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR. (DAY 2-4)

3. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, BRING SITE TO GRADE AND STABILIZE IN ACCORDANCE WITH TEMPORARY SEEDBED NOTES AND CONSTRUCT DRAINAGE SYSTEM. UTILIZE DUST CONTROL METHODS. INSTALL INLET PROTECTION AS STORM DRAIN CONSTRUCTION COMMENCES. USE TYPE B STANDARD INLET PROTECTION FOR i-2. (DAY 5-20)

4. INSTALL UTILITIES, FINAL GRADE AND PAVE DRIVEWAY. INSTALL PERMANENT STABILIZATION AND LANDSCAPING AS AREAS ARE BROUGHT TO FINAL GRADES. (DAY 21-30)

5. WHEN CONTRIBUTING AREAS TO MICRO-BIORETENTIONS FACILITIES ARE STABILIZED, INSTALL PLANTING SOIL, UNDERDRAINS AND EROSION CONTROL MATTING AND PERMANENT SEEDING. INSTALL ANY REMAINING LANDSCAPING. (DAY 31-36)

6. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES, AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDBED NOTES. (DAY 37-40)

NO CHANGES TO THE SEQUENCE OF CONSTRUCTION ARE ALLOWED WITHOUT PRIOR APPROVAL FROM THE HOWARD SOIL CONSERVATION DISTRICT.

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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] 9-23-13
ENGINEER DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

[signature] 2/26/13
DEVELOPER DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

[signature] 9/26/13
HOWARD SCD DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature] 10-24-13
CHIEF, BUREAU OF HIGHWAYS DATE:

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 11-13-13
CHIEF, DIVISION OF LAND DEVELOPMENT DATE:

[signature] 10-31-13
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE:

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 (410-313-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC.B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
5. 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.
6. SITE ANALYSIS:

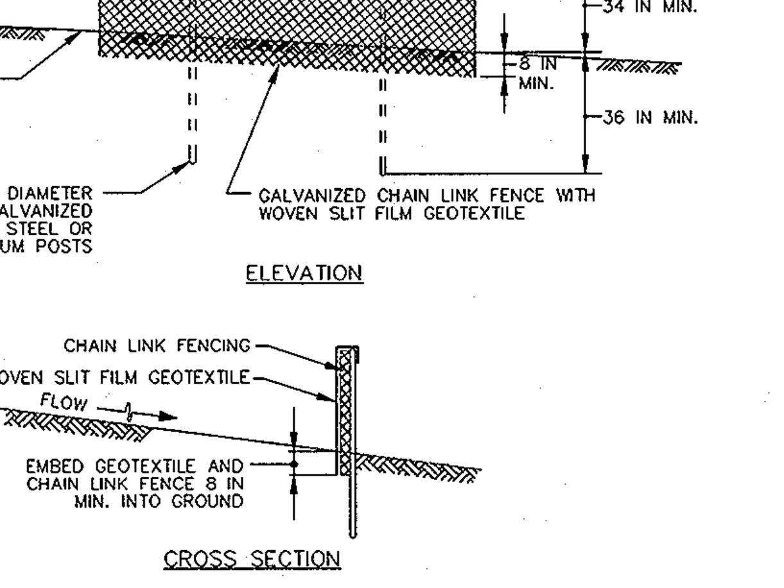
TOTAL AREA OF SITE	1.4	ACRES
AREA DISTURBED	1.43	ACRES
AREA TO BE ROOFED OR PAVED	0.42	ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.93	ACRES
TOTAL CUT	1639	CU. YDS.*
TOTAL FILL	2248	CU. YDS.*
OFFSITE WASTE/BORROW AREA LOCATION	N/A	

** CUT/FILL QUANTITIES ARE FOR SEDIMENT CONTROL PURPOSES ONLY. CONTRACTOR SHALL PERFORM THEIR OWN EARTHWORK CALCULATIONS FOR SITE BALANCING.

7. ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
9. 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.
10. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
11. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
12. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BE STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



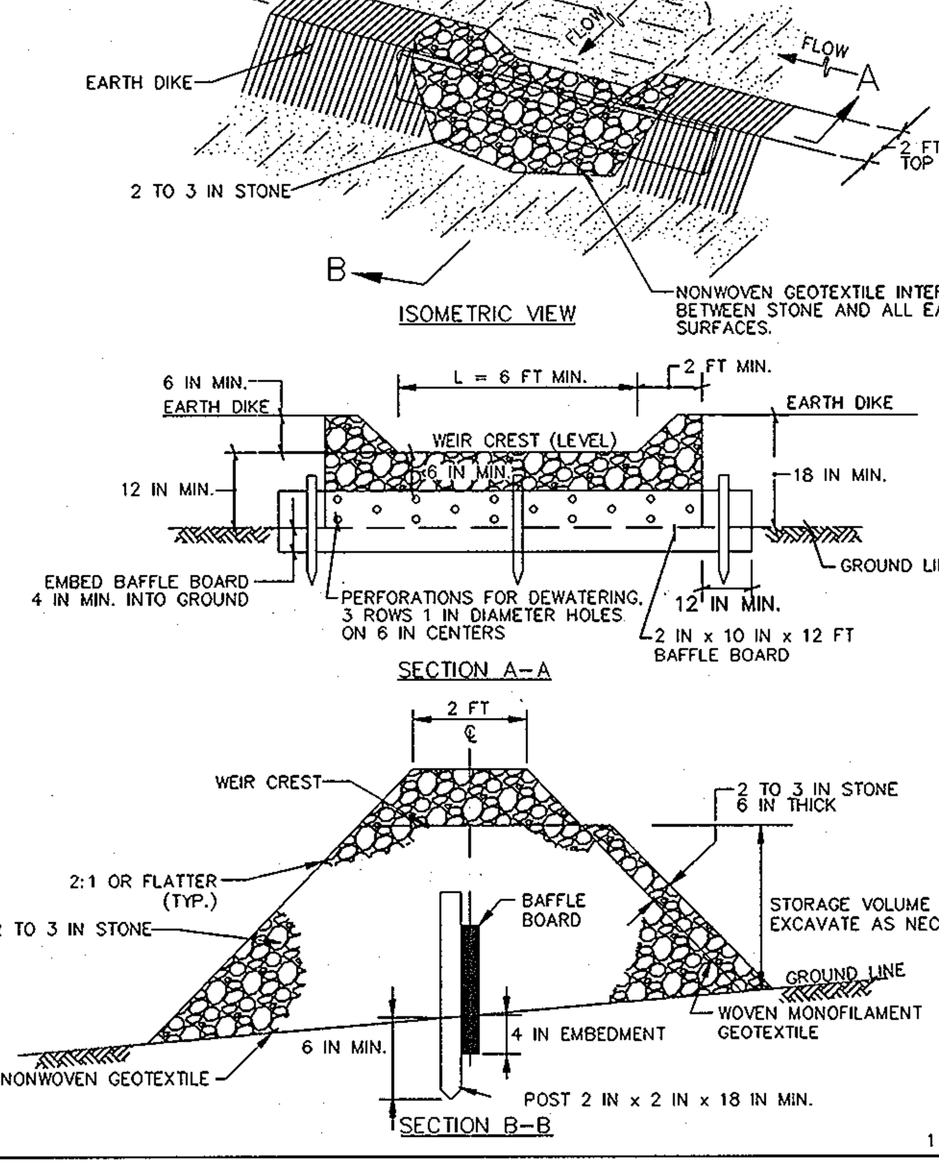
CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL: TSOS



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL: TSOS

CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE NONWOVEN GEOTEXTILE ON INTERFACE BETWEEN GROUND AND STONE.
3. PERFORATE BAFFLE BOARD WITH 3 ROWS OF 1 INCH DIAMETER HOLES 6 INCHES ON CENTER, EMBED A MINIMUM OF 4 INCHES INTO GROUND, AND EXTEND BAFFEL BOARD MINIMUM OF 12 INCHES INTO EARTH DIKE.
4. USE CLEAN 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE WOVEN MONOFILAMENT GEOTEXTILE ON UPSTREAM FACE AND COVER WITH A MINIMUM OF 6 INCHES OF ADDITIONAL STONE.
5. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
6. SET WEIR CREST OF STONE 6 INCHES LOWER THAN THE TOP OF EARTH DIKE. USE MINIMUM LENGTH OF 6 FEET FOR WEIR CREST.
7. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 6 INCHES OF WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO DRAIN. MAINTAIN LINE, GRADE, AND CROSS SECTION.
8. UPON REMOVAL OF STONE OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

A. Seeding
1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
d. Sod or seed must not 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.
2. Application
a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P205 (phosphorous), 200 pounds per acre; K20 (potassium), 200 pounds per acre.
ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
iii. Mix seed and fertilizer on site and seed immediately and without interruption.
iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching
1. Mulch Materials (in order of preference)
a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
2. Application
a. Apply mulch to all seeded areas immediately after seeding.
b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
3. Anchoring
a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water. iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

Definition – A mound or pile of soil protected by appropriately designed erosion and sediment control measures.
Purpose – To provide a designated location for the temporary storage of soil that controls the potential for erosion,
sedimentation, and changes to drainage patterns.
Conditions Where Practice Applies – Stockpile areas are utilized when it is necessary to salvage and store soil for later use.
Criteria
1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance
The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1
slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

SOILS LEGEND

MAP SYMBOL	SOIL GROUP	SOIL TYPE
RsC	C	RUSSETT FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES
UsB	D	URBAN LAND-SASSAFRAS-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES
TAKEN FROM HOWARD COUNTY SOILS SURVEY, ISSUED MAY 2008, MAP NO. 28		

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

A. Soil Preparation
1. Temporary Stabilization
a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
b. Apply fertilizer and lime as prescribed on the plans.
c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
2. Permanent Stabilization
a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
i. Soil pH between 6.0 and 7.0.
ii. Soluble salts less than 500 parts per million (ppm).
iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
iv. Soil contains 1.5 percent minimum organic matter by weight.
v. Soil contains sufficient pore space to permit adequate root penetration.
b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling
1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is 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.
2. Topsoil salvaged from an existing site may be used provided 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-NRCS.
3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
c. The original soil to be vegetated contains material toxic to plant growth.
d. The soil is so acidic that treatment with limestone is not feasible.
4. Areas having slopes steeper than 2:1 require special consideration and design.
5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
6. Topsoil Application
a. Erosion and sediment control practices must be maintained when applying topsoil.
b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to 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 must be corrected in order to prevent the formation of depressions or water pockets.
c. Topsoil must not be placed if 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.

C. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate[1] lb/ac	Seeding Rate[1] lb/1000 ft²	Seeding Depth[2] (inches)	Recommended Seeding Dates by Plant Hardiness Zone[3] 5b and 6a	6b	7a and 7b
Cool-Season Grasses						
Annual Ryegrass (Lolium perenne ssp. multiflorum)	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Barley (Hordeum vulgare)	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Oats (Avena sativa)	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Wheat (Triticum aestivum)	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Cereal Rye (Secale cereale)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15
Warm-Season Grasses						
Foxtail Millet (Setaria italica)	30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14
Pearl Millet (Pennisetum glaucum)	20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14

NOTES:
1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses.

2/ For sandy soils, plant seeds at twice the depth listed above.
3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1,
B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

H-5 STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

Definition: Controlling the suspension of dust particles from construction activities.
Purpose: To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including health and traffic hazards.
Conditions Where Practice Applies: Areas subject to dust blowing and movement where on and off-site damage is likely without treatment.
Specifications:
1. Mulches: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3 Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.
2. Vegetative Cover: See Section B-4-4 Temporary Stabilization.
3. Tillage: Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.
4. Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be irrigated to the point that runoff occurs.
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.
6. Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

Definition To stabilize disturbed soils with permanent vegetation.
Purpose To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
Conditions Where Practice Applies Exposed soils where ground cover is needed for 6 months or more.
Criteria
A. Seed Mixtures
1. General Use
a Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
b Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guild, Section 342 – Critical Area Planting.
c For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
d For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
2. Turfgrass Mixtures
a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
i. Kentucky Bluegrass: Full sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 ½ to 3 pounds per 1000 square feet.

Notes:
- Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"
- Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

c. Ideal Times of Seeding for Turf Grass Mixtures
Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)
Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)
Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 ½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is not especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

B. Sod: to provide quick cover on disturbed areas (2:1 grade or flatter).
1. General Specifications
a. Class of turfgrass must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.
2. Sod Installation
a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.
3. Sod Maintenance
a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
b. After the first week, sod watering is required as necessary to maintain adequate moisture content.
c. Do not mow until the sod is firmly rooted. No more than 1/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

Definition To stabilize disturbed soils with vegetation for up to 6 months.
Purpose To use fast growing vegetation that provides cover on disturbed soils.
Conditions Where Practice Applies Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.
Criteria
1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

THIS PLAN IS FOR SEDIMENT CONTROL PURPOSES ONLY

NO.	DATE	REVISION

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
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301-710-5686
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Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No: 22390, Expiration Date: 6/30/2015.

[seal: STATE OF MARYLAND, ALICE A. MILLER, No. 22390, PROFESSIONAL ENGINEER] 9-23-13

OWNER/DEVELOPER:
CORNERSTONE HOLDINGS, LLC
9695 NORFOLK AVENUE
LAUREL, MARYLAND 20723
410-792-2565

PARKSIDE ESTATES

LOTS 2-6 & OPEN SPACE LOTS 1 & 7

TAX MAP: 50 GRID: 4 PARCEL: 438
ZONED: R-SC
ELECTION DISTRICT NO. 6 – HOWARD COUNTY, MARYLAND

SEDIMENT CONTROL PLAN, NOTES AND DETAILS

DATE:	JANUARY 2013 / SEPTEMBER 2013	BEI PROJECT NO.	2384-C
DESIGN: AAM	DRAWN: AAM	SCALE: AS SHOWN	SHEET 4 OF 4

F-13-065