ROAD CONSTRUCTION PLANS

GREENBERRY

LOTS 1 THRU 25, NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F' AND 'G', AND BUILDABLE PRESERVATION PARCEL 'E'

FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

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GRADING SHOWN ON THESE PLANS DID NOT INCLUDE THE RESIDENTIAL LOTS; THEREFORE, THE STORMWATER DESIGN FOR THE LOTS IS CONCEPTUAL AND FINAL DESIGN WILL BE SHOWN WITH THE INDIVIDUAL LOT BUILDING PERMIT. DECLARATION OF COVENANTS WILL BE CORRECTED AS NEEDED AND MATCH THE ASSOCIATED PLOT PLAN.

OVERALL ROAD MAP
SCALE: 1"=600'

VICINITY MAP
SCALE : 1" = 2000'
ADC MAP 24 GRID F6

DEVELOPER

GREENBERRY, INC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

OWNER

ROBERT B. WILLIAMS
JOANNA K. BENEDICT
BARBARA B. CUSACK
WILLIAM I. SLADE, JR.
C/O MILDENBERG, BOENDER AND ASSOC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

ENGINEER'S CERTIFICATE

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] 10/7/14
SIGNATURE OF ENGINEER — DATE
JEFFREY SLOMAN, PE
PRINTED NAME OF ENGINEER

DEVELOPERS CERTIFICATE

I 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. HOWARD SOIL CONSERVATION DISTRICT IS AUTHORIZED TO CONDUCT PERIODIC ON-SITE INSPECTION.

[signature] 10/8/14
SIGNATURE OF DEVELOPER — DATE
R. JACOB HIKMAT, PRESIDENT
PRINTED NAME OF DEVELOPER

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

[signature] 10/16/14
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
[signature] 10-27-2014
CHIEF BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[signature] J.P. 11-10-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
[signature] 11-20-14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

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. 40091, EXP DATE 2/13/15.

[signature] 10/7/14
JEFFREY SLOMAN, P.E. — DATE

STATE OF MARYLAND · JEFFREY L. SLOMAN · No. 40091 · PROFESSIONAL ENGINEER

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONST.DWG

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS, 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 AT LEASE 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. TRAFFIC CONTROL DEVICES
   A. THE R1-1 ("STOP") SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
   B. THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
   C. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MDMUTCD).
   D. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
5. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006) SECTION 5.5.A. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY STREET TREE.
6. TOPOGRAPHY WITHIN 200' OF SITE BOUNDARY SHOWN HEREON IS BASED ON AERIAL SURVEY FLOWN BY WINGS TOPOGRAPHY INC. DATED ON OR ABOUT MARCH 2007. OTHER TOPOGRAPHY SHOWN IS BASED ON HOWARD COUNTY GIS.
7. COORDINATES BASED ON NAD '83 (HORIZONTAL) AND NAVD '88 (VERTICAL) MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS
   STA. No. 28EA N 572,158.9652 E 1,319,400.6816 EL. 485.012
   STA. No. 28EB N 569,357.3657 E 1,322,113.5747 EL. 536.733
8. WATER IS PRIVATE.
9. SEWER IS PRIVATE.
10. STORMWATER MANAGEMENT IS PROVIDED BY THIRTEEN (13) M-6 MICRO-BIORETENTION FACILITIES [NINE (9) FOR PUBLIC ROADWAYS, WHICH WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED; AND FOUR (4) FOR LOTS WHICH WILL BE PRIVATELY OWNED AND MAINTAINED], N-1 ROOFTOP DISCONNECTION, AND N-2 NON-ROOFTOP DISCONNECTION. A-2 PERVIOUS CONCRETE, AND M-5 MODIFIED DRYWELLS. PERVIOUS CONCRETE AND DRY WELLS WILL BE PRIVATELY OWNED AND MAINTAINED. COUNTY WILL ONLY MAINTAIN INLET STRUCTURES WITHIN EACH MICRO-BIORETENTION AREA AND THE HOA SHALL MAINTAIN STREET TREES, PERFORARED UNDERDRAINS, FEEDERS, PLATINGS, SWALES, AND DRIVEWAY CULVERTS WITHIN THE EASEMENT.
11. EXISTING UTILITIES SHOWN HEREON ARE BASED ON AERIAL SURVEY PREPARED BY WINGS INC. TOPOGRAPHY DATED MARCH 2007 AND VERIFIED IN THE FIELD BY MILDENBERG, BOENDER AND ASSOCIATES IN NOVEMBER, 2012.
12. THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY MILDENBERG, BOENDER AND ASSOCIATES, INC. DATED OCTOBER, 2012 AND UPDATED NOVEMBER, 2013. STUDY WAS APPROVED UNDER SP-13-010 ON JANUARY 2, 2014.
13. FOREST STAND AND WETLANDS DELINEATION PREPARED BY ECO-SCIENCE, INC. DATED OCTOBER, 2012 AND APPROVED UNDER SP-13-010 ON JANUARY 2, 2014. THE SITE CONTAINS AREAS OF WETLANDS, STREAMS, AND THE 100-YEAR FLOODPLAIN. NO STEEP SLOPES (SLOPES OF 25% OR GREATER FOR MORE THAN 10 VERTICAL FEET) EXIST ONSITE. NO DISTURBANCE TO THE WETLANDS, WETLAND BUFFER, STREAM, STREAM BUFFER, OR 100-YEAR FLOODPLAIN IS PROPOSED.
14. PER SECTION 4.2.A. OF VOLUME III OF THE HOWARD COUNTY DESIGN MANUAL, AN APFO ROAD TEST IS NOT REQUIRED FOR THIS PROJECT SINCE THE SITE IS LOCATED MORE THAN TWO MILES FROM A MINOR COLLECTOR-MINOR COLLECTOR INTERSECTION.
15. PROJECT BACKGROUND:
    TAX MAP : 28 , GRID : 9, PARCEL: 48
    ELECTION DISTRICT : FIFTH
    ZONING: RR-DEO
    DEED REFERENCE : 5891 / 307
    PREVIOUS PROJECT NUMBERS: ECP-13-026, SP-13-010
    BA-05-046C - REQUEST FOR AGE RESTRICTED HOUSING - DENIED 4/20/06.
    HISTORIC SITE: HO #563
16. SITE DATA TABULATION

GROSS AREA OF PROPERTY TRACT:	133.64 Ac ±
MINIMUM LOT SIZE PROPOSED:	40,000 SQ.FT.
NUMBER OF BUILDABLE LOTS PROPOSED:	25
NUMBER OF BUILDABLE PRESERVATION PARCELS PROPOSED:	1 (E)
TOTAL BUILDABLE LOTS / PARCELS PROPOSED:	26
NUMBER OF NON-BUILDABLE PRESERVATION PARCELS PROPOSED:	3 (A, B & H)
NUMBER OF NON-BUILDABLE BULK PARCELS PROPOSED:	2 (C, D, F, & G)
AREA OF PROPOSED BUILDABLE LOTS:	26.63 AC.±
AREA OF PRESERVATION PARCELS (BUILDABLE AND NON-BUILDABLE):	83.32 AC.± (A, B, E & H)
AREA OF BULK PARCELS (NON-BUILDABLE)	19.29 AC.± (C, D, F & G)
AREA TO BE DEDICATED FOR USE AS A PUBLIC ROAD:	0.71 AC.±
AREA OF PUBLIC ROADWAY:	3.69 AC.±

    DENSITY TABULATION (PROVIDED FOR LOTS, R/W, AND PRESERVATION PARCELS)
    26.49 Ac + 80.68 Ac + 0.72 Ac + 2.80 Ac = 110.69 Ac
    110.69 Ac / 4.25 DWELLING UNITS PER ACRE = 26 DWELLING UNITS PROVIDED

    DENSITY TABULATION (FOR NON-BUILDABLE BULK PARCEL C)
    22.95 Ac / 4.25 DWELLING UNITS / Ac = 5.2 (5 FUTURE POTENTIAL BUILDABLE LOTS)

    THE MAXIMUM DENSITY OF ONE DWELLING UNIT PER 4.25 GROSS ACRES REFERS TO PRINCIPAL DWELLING UNITS AND NOT TO ACCESSORY USES SUCH AS FARM TENANT HOUSES, CARETAKER DWELLINGS OR ACCESSORY APARTMENTS PER SECTION 105.F.1e OF THE ZONING REGULATIONS.

    BULK PARCELS C & D MAY BE RE-SUBDIVIDED FOR A FUTURE SECTION OF CLUSTERED LOTS IN ACCORDANCE WITH THE PROVISIONS OF SECTION 104.F.1.g OF THE ZONING REGULATIONS.
17. NOISE STUDY WAS PREPARED BY MILDENBERG, BOENDER AND ASSOC., INC. DATED FEBRUARY, 2013 AND APPROVED UNDER SP-13-010 ON JANUARY 2, 2014..
18. FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT FOR THIS SUBDIVISION WILL BE FULFILLED BY ON-SITE FOREST CONSERVATION (0.90 ACRES OF RETENTION AND 5.79 ACRES AFFORESTATION) FINANCIAL SURETY IN THE AMOUNT OF $126,106.20 WILL BE PROVIDED WITH THE DEVELOPERS AGREEMENT. BULK PARCELS C & D HAVE BEEN EXCLUDED FROM THE FOREST CONSERVATION OBLIGATION CALCULATION IN ACCORDANCE WITH "OPTION A OF APPENDIX L - GUIDELINES FOR RURAL CLUSTER SUBDIVISIONS" AS OUTLINED IN THE FOREST CONSERVATION MANUAL. THE FOREST CONSERVATION OBLIGATION FOR BULK PARCELS C & D MUST BE ADDRESSED AT THE TIME OF RESUBDIVISION OF THESE PARCELS.
19. THIS SUBDIVISION IS IN COMPLIANCE WITH SECTION 16.124 OF HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED PERIMETER LANDSCAPING AND TRASH PAD SCREENING WILL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR 42 SHADE TREES AND 52 EVERGREEN TREES IN THE AMOUNT OF $20,400.00.
20. LOTS 21 THRU 25 WILL BE SERVED BY A PRIVATE USE-IN-COMMON DRIVEWAY & UTILITY EASEMENT.
21. THIS SITE CONTAINS HISTORIC STRUCTURE #HO-563 ("THE WILLIAMS HOUSE"). NO CEMETERIES OR GRAVE SITES EXIST ON SITE. SITE IS NOT ADJACENT TO A DESIGNATED SCENIC ROAD. A PRE-SUBMISSION ADVISORY MEETING WITH THE HISTORIC DISTRICT COMMISSION WAS HELD FOR THIS PROJECT ON FEBRUARY 7, 2013. THE COMMISSION HAD NO OBJECTIONS TO THE PLAN.
22. THE SUBJECT PROPERTY IS ZONED RR AND IS CONSIDERED TO BE "GRANDFATHERED TO THE 2/2/04 COMPREHENSIVE ZONING PLAN AND THE "COMP LITE" ZONING AMENDMENTS, EFFECTIVE 7/28/06. THE GRANDFATHERING OF THIS MAJOR SUBDIVISION PLAN IS IN ACCORDANCE WITH SECTION 100.E.3.B OF THE NEW ZONING REGULATIONS (EFFECTIVE 10/6/13) SINCE THE INITIAL PLAN SUBMISSION OF THE PRELIMINARY EQUIVALENT SKETCH PLAN (SP-13-010) WAS GRANTED A "TECHNICALLY COMPLETE" STATUS ON SEPTEMBER 19, 2013 AND PRIOR TO THE ENACTMENT DATE OF THE NEW REGULATIONS. THIS SUBDIVISION IS NOT REQUIRED TO PROVIDE 10% MODERATE INCOME HOUSING UNITS (MIHU).
23. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
24. BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT NOVEMBER 2012 BY MILDENBERG, BOENDER AND ASSOC.
25. PER SECTION 16.121(a) OF THE HOWARD COUNTY SUBDIVISION AND LAND USE REGULATIONS, OPEN SPACE IS NOT REQUIRED FOR THIS PROJECT SINCE IT IS A RURAL RESIDENTIAL CLUSTER SUBDIVISION.
26. A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY FOR EACH FLAG-LOT DRIVEWAY AND PRIVATE ROAD NAME SIGN FOR "ALTOGETHER WAY" SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPER'S / OWNER'S EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
27. BA-05-046C DENIED 4/20/2006 TO ALLOW AGE-RESTRICTED HOUSING.
28. A PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON DECEMBER 5, 2012.
29. THIS PROJECT IS GRANDFATHERED TO STATE OF MARYLAND SENATE BILL SB-236 AS THE SOIL PERCOLATION TEST APPLICATION FOR THE PROPOSED SUBDIVISION WAS SUBMITTED PRIOR TO JULY 1, 2012.
30. THIS DEVELOPMENT PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 75-2003. DEVELOPMENT OR CONSTRUCTION ON LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE BUILDING / GRADING PERMIT.
31. THE DESIGN OF THIS CLUSTER SUBDIVISION REFLECTS THE INTENDED PRINCIPAL USE OF THE PRESERVED AREAS; PRESERVATION PARCEL 'A' (A VISUAL AND LEGAL BUFFER TO THE EXISTING COLUMBIA GAS MAIN); PRESERVATION PARCEL 'B' (RETENTION OF EXISTING FOREST AND A VISUAL AND LEGAL BUFFER TO THE EXISTING BGE EASEMENT), BULK PARCEL 'C' (POTENTIAL SUBDIVISION) AND PRESERVATION OF PARCEL 'D' (FARMING OPERATIONS). THE PRESERVATION AREAS, AS DESIGNED, WILL FUNCTION FOR THEIR INTENDED USE, AND THE CLUSTER LOT ARRANGEMENT WILL MINIMIZE ADVERSE IMPACTS TO PRESERVATION AREAS INCLUDING UNIQUE AND SENSITIVE ENVIRONMENTAL CONDITIONS AND ADJACENT FARM OPERATIONS.
32. THIS MAJOR SUBDIVISION PLAN IS LOCATED IN THE DESIGNATED TIER III GROWTH AREA OF HOWARD COUNTY PER THE PLAN HOWARD 2030 TIER MAP AND IT WOULD BE SUBJECT TO THE STATE'S BILL SB-236; HOWEVER, IT IS CONSIDERED TO BE GRANDFATHERED BECAUSE THE PROPERTY OWNER HAD APPLIED FOR A SOIL PERCOLATION TEST APPLICATION AND HAD SUBMITTED A PERCOLATION TEST PLAN TO THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO JULY 1, 2012.
33. SOIL DELINEATION IS BASED ON HOWARD COUNTY GIS FILES.
34. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING IS TO BE POSTED FOR 42 SHADE AND 52 EVERGREEN TREES IN THE AMOUNT OF $20,400.00 AS PART OF THE DPW DEVELOPERS AGREEMENT.
35. FOREST CONSERVATION EASEMENT AREA MUST BE DEVOID OF TRASH, DEBRIS, STRUCTURES, FENCING, ETC. IT IS DEVELOPERS RESPONSIBILITY TO KEEP FCE AREA CLEAN OF DEBRIS AND ENCROACHEMENT FOR 2 YEAR MAINTENENCE PERIOD.
36. DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
    A) WIDTH - 12 FEET (16 FEET MIN. SERVING MORE THAN ONE RESIDENT).
    B) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1.5" MIN).
    C) GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE AND MIN. OF 45 FOOT TURNING RADIUS.
    D) STRUCTURES (CULVERT/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
    E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD PLAIN WITH NO MORE THAN 1 FOOT OF DEPTH OVER DRIVEWAY SURFACE.
    F) STRUCTURE CLEARANCES - MINIMUM 12 INCHES
    G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
37. NO GRADING, REMOVAL OF VEGETATIVE COVER OF TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN LIMITS OF WETLANDS, STREAMS OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS, EXCEPT AS DETERMINED TO BE NECESSARY DISTURBANCE.
38. FOR FLAG OR PIPE STEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPE STEM AND THE ROAD RIGHT OF WAY LINE AND NOT ONTO THE FLAG OR PIPE STEM LOT DRIVEWAY.
39. HOWARD COUNTY HISTORIC SITE HO-563 I("THE WILLIAMS HOUSE") IS LOCATED ON BUILDABLE PRESERVATION PARCEL 'E'.

STREET LIGHT SCHEDULE

SYMBOL	DESCRIPTION	STREET	LOCATION
☼	LED COLONIAL FIXTURE APPROVED BY BGE AND HOWARD COUNTY EQUIVALENT TO 100 WATT HPS ON A 14' BLACK FIBERGLASS POLE	NORTHERN BELL WAY	STA 4+52.0 OFFSET: 29.0' L
☼	LED COLONIAL FIXTURE APPROVED BY BGE AND HOWARD COUNTY EQUIVALENT TO 150 WATT HPS ON A 14' BLACK FIBERGLASS POLE	BEE FRANCES WAY BEE FRANCES WAY BEE FRANCES WAY LINEAR PROFILE #1 BEE FRANCES WAY LINEAR PROFILE #2	STA 0+10.7 OFFSET: 47.5' R STA 1+27.1 OFFSET: 20.6' R STA 0+70.1 OFFSET: 6.2' L STA 0+59.1 OFFSET: 6.6' R

See Sheet 17 for the [on-lot] locations of Dry Wells (M-5) Bio-retention Facilities (M-6) and pervious concrete (A-2).

STORMWATER MANAGEMENT PRACTICES

LOT #	ADDRESS	GREEN ROOF A-1 (Y/N)	PERMEABLE PAVEMENTS A-2 (Y/N)	REINFORCED TURF A-3 (Y/N)	DISCONNECTION OF ROOFTOP RUNOFF N-1 (NUMBER)	DISCONNECTION OF NON-ROOFTOP RUNOFF N-2 (Y/N)	SHEETFLOW TO CONSERVATION AREAS N-3 (Y/N)	RAINWATER HARVESTING M-1 (NUMBER)	SUBMERGED GRAVEL WETLANDS M-2 (NUMBER)	LANDSCAPE INFILTRATION M-3 (NUMBER)	INFILTRATION BERMS M-4 (NUMBER)	DRY WELLS M-5 (NUMBER)	MICRO-BIORETENTION M-6 (NUMBER)	RAIN GARDENS M-7 (NUMBER)	SWALES M-8 (NUMBER)	ENHANCED FILTERS M-9 (NUMBER)
1	5004 BEE FRANCES WAY	N	N	N	0	Y	N	0	0	0	0	3	0	0	0	0
2	5008 BEE FRANCES WAY	N	N	N	0	Y	N	0	0	0	0	4	0	0	0	0
3	5012 BEE FRANCES WAY	N	Y	N	4	Y	N	0	0	0	0	0	0	0	0	0
4	5016 BEE FRANCES WAY	N	Y	N	4	Y	N	0	0	0	0	0	0	0	0	0
5	5020 BEE FRANCES WAY	N	Y	N	0	Y	N	0	0	0	0	4	0	0	0	0
6	11904 NORTHERN BELL WAY	N	Y	N	0	Y	N	0	0	0	0	3	0	0	0	0
7	5025 BEE FRANCES WAY	N	Y	N	0	N	N	0	0	0	0	4	0	0	0	0
8	12007 CATHERINE CLOSE ROAD	N	Y	N	0	N	N	0	0	0	0	0	1	0	0	0
9	12011 CATHERINE CLOSE ROAD	N	Y	N	0	N	N	0	0	0	0	0	0	0	0	0
10	12014 CATHERINE CLOSE ROAD	N	Y	N	0	N	N	0	0	0	0	3	0	0	0	0
11	12010 CATHERINE CLOSE ROAD	N	Y	N	0	Y	N	0	0	0	0	3	0	0	0	0
12	12006 CATHERINE CLOSE ROAD	N	Y	N	0	Y	N	0	0	0	0	4	0	0	0	0
13	12002 CATHERINE CLOSE ROAD	N	Y	N	0	Y	N	0	0	0	0	4	0	0	0	0
14	11901 NORTHERN BELL WAY	N	Y	N	2	Y	N	0	0	0	0	0	0	0	0	0
15	11905 NORTHERN BELL WAY	N	Y	N	0	N	N	0	0	0	0	4	0	0	0	0
16	11909 NORTHERN BELL WAY	N	Y	N	0	Y	N	0	0	0	0	4	0	0	0	0
17	11913 NORTHERN BELL WAY	N	Y	N	2	N	N	0	0	0	0	0	0	0	0	0
18	11917 NORTHERN BELL WAY	N	Y	N	0	Y	N	0	0	0	0	4	0	0	0	0
19	11921 NORTHERN BELL WAY	N	Y	N	0	Y	N	0	0	0	0	4	0	0	0	0
20	11914 NORTHERN BELL WAY	N	Y	N	0	Y	N	0	0	0	0	3	0	0	0	0
21	5007 ALTOGETHER WAY	N	Y	N	0	Y	N	0	0	0	0	0	1	0	0	0
22	5011 ALTOGETHER WAY	N	Y	N	0	Y	N	0	0	0	0	4	0	0	0	0
23	5015 ALTOGETHER WAY	N	Y	N	0	Y	N	0	0	0	0	4	0	0	0	0
24	5023 ALTOGETHER WAY	N	Y	N	0	Y	N	0	0	0	0	0	1	0	0	0
25	5027 ALTOGETHER WAY	N	Y	N	0	Y	N	0	0	0	0	0	1	0	0	0
	GREENBERRY LANE R/W	N	N	N	0	N	N	0	0	0	0	0	2	0	0	0
	BEE FRANCES WAY R/W	N	N	N	0	N	N	0	0	0	0	0	3	0	0	0
	CATHERINE CLOSE R/W	N	N	N	0	N	N	0	0	0	0	0	2	0	0	0
	NORTHERN BELL R/W	N	N	N	0	N	N	0	0	0	0	0	2	0	0	0
	ALTHOGETHER WAY (PRIVATE)	N	N	N	0	N	N	0	0	0	0	0	0	0	0	0

project	date	illustration	engineering	scale	approval
12-022	OCT 2014	JLS	JLS	1"=50'	MMM

no.	description	date
1	REVISED SHEET INDEX & TOTAL SHEET NUMBER	JULY 2015
2	ADD NOTE REGARDING SWM	SEPT 2016

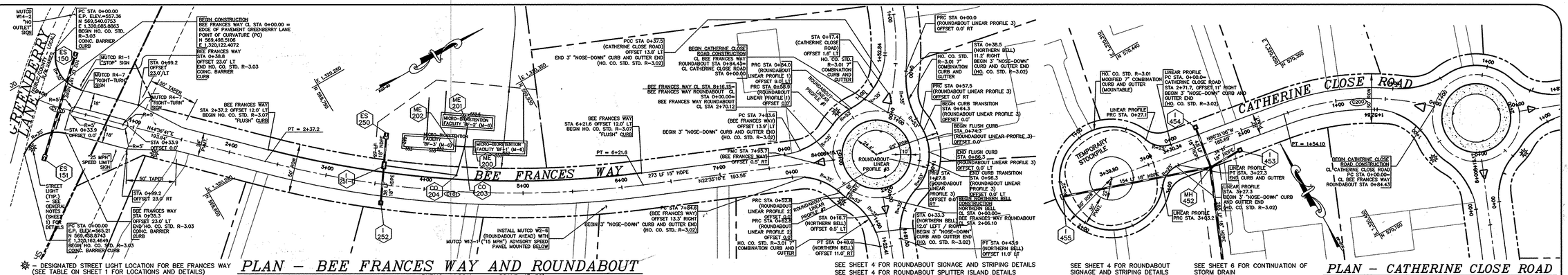
revisions

GREENBERRY LOTS 1 THRU 25
AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F' AND 'G', AND BUILDABLE PRES. PARCEL 'E'
TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

COVER SHEET

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.

F-14-095



– DESIGNATED STREET LIGHT LOCATION FOR BEE FRANCES WAY (SEE TABLE ON SHEET 1 FOR LOCATIONS AND DETAILS)

SEE SHEET 13 FOR STORM STRUCTURE TABLE

PLAN – BEE FRANCES WAY AND ROUNDABOUT

PUBLIC – LOCAL
DESIGN SPEED = 25 MPH
50' R/W
SCALE: 1"=50'

SEE SHEET 4 FOR ROUNDABOUT SIGNAGE AND STRIPING DETAILS
SEE SHEET 4 FOR ROUNDABOUT SPLITTER ISLAND DETAILS

SEE SHEET 4 FOR ROUNDABOUT SIGNAGE AND STRIPING DETAILS

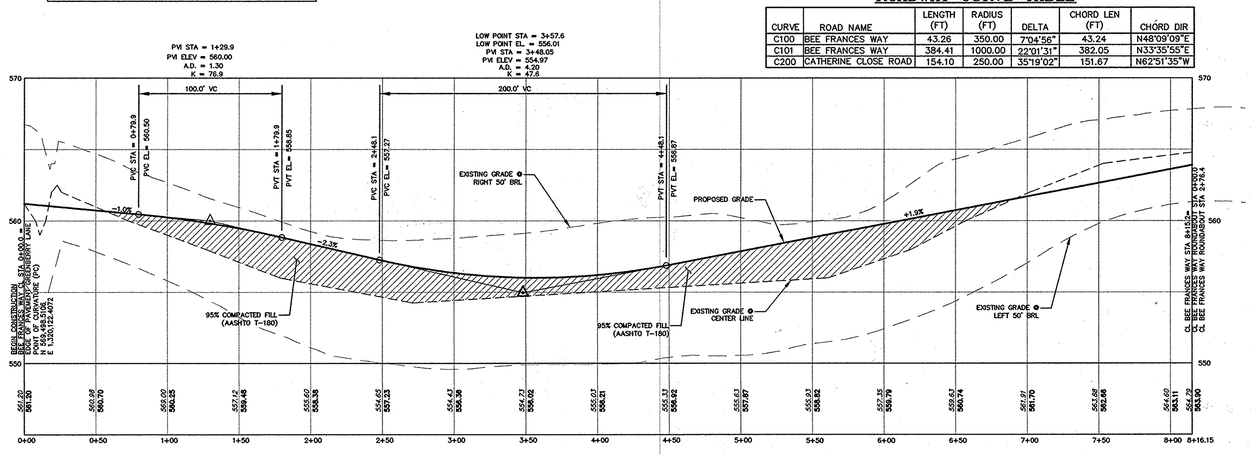
SEE SHEET 6 FOR CONTINUATION OF STORM DRAIN

PLAN – CATHERINE CLOSE ROAD

PUBLIC – LOCAL
DESIGN SPEED = 25 MPH
50' R/W
SCALE: 1"=50'

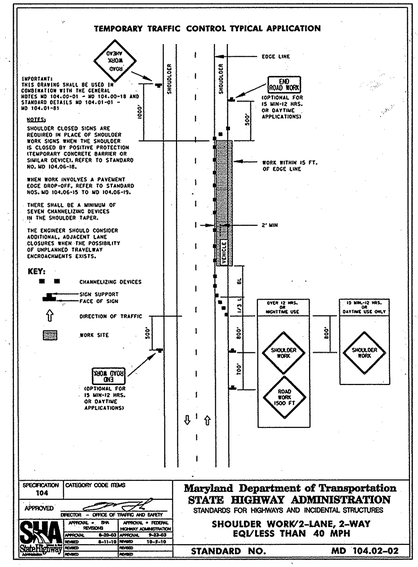
ROADWAY CURVE TABLE

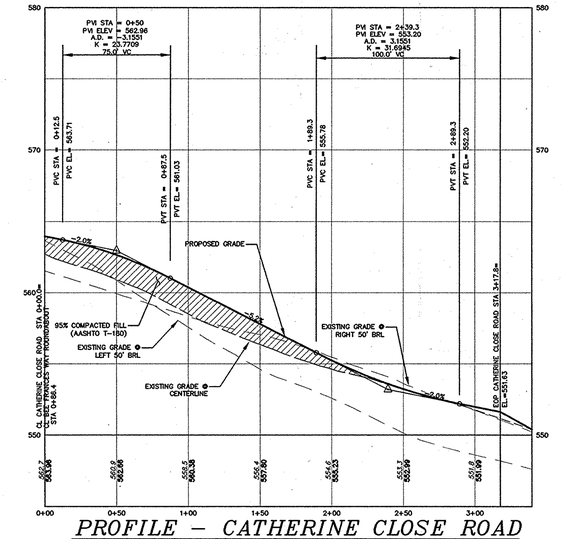
CURVE	ROAD NAME	LENGTH (FT)	RADIUS (FT)	DELTA	CHORD LEN (FT)	CHORD DIR
C100	BEE FRANCES WAY	43.26	350.00	7°04'56"	43.24	N48°09'09"E
C101	BEE FRANCES WAY	384.41	1000.00	22°01'31"	382.05	N33°35'55"E
C200	CATHERINE CLOSE ROAD	154.10	250.00	35°19'02"	151.67	N62°51'35"W



PROFILE – CENTERLINE BEE FRANCES WAY

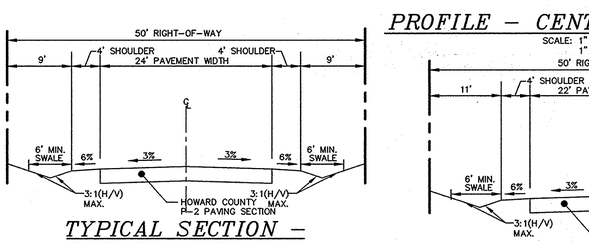
SCALE: 1" = 50' HOR
1" = 5' VER





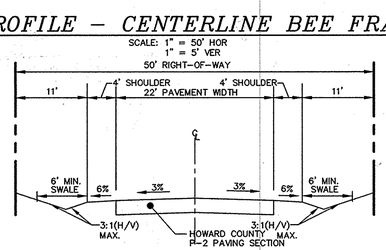
PROFILE – CATHERINE CLOSE ROAD

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



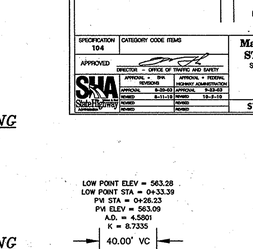
TYPICAL SECTION – BEE FRANCES WAY

STA 0+93.85 TO STA 8+16.15
NOT TO SCALE



TYPICAL SECTION – CATHERINE CLOSE ROAD

STA 0+00.00 TO STA 3+04.80
NOT TO SCALE

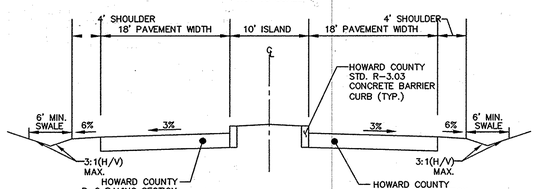


HOWARD COUNTY TYPE "P-2" PAVING SECTION (OPTION A)

N.T.S.

HOWARD COUNTY TYPE "P-2" PAVING SECTION (OPTION B)

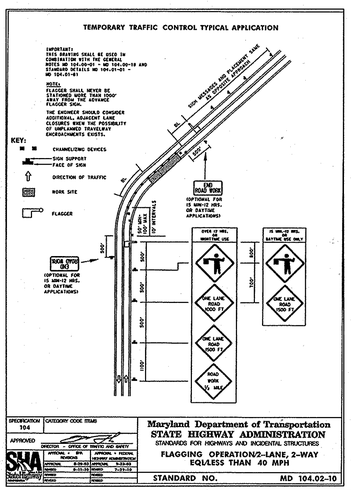
N.T.S.

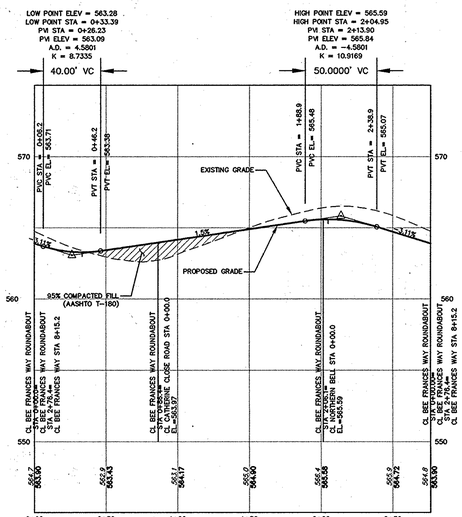


TYPICAL SECTION – BEE FRANCES WAY

STA 0+00.00 TO STA 0+93.85
NOT TO SCALE

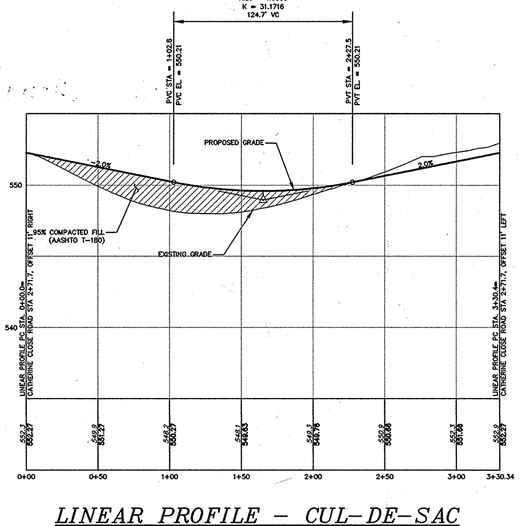
SEE SHEET 3 FOR LEFT AND RIGHT FILLET BEE FRANCES WAY PROFILES





PROFILE – CENTERLINE ROUNDABOUT BEE FRANCES WAY

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



LINEAR PROFILE – CUL-DE-SAC CATHERINE CLOSE ROAD

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

DEVELOPER

GREENBERRY, INC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

OWNER

ROBERT B. WILLIAMS
JOANNA K. BENEDICT
BARBARA B. CUSACK
WILLIAM I. SLADE, JR.
C/O MILDENBERG, BOENDER AND ASSOC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-17-14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-20-14

STATE OF MARYLAND
JEFFREY L. SLOMAN
No. 40091
PROFESSIONAL ENGINEER

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. 40091, EXP DATE 2/13/15.

JEFFREY SLOMAN, P.E. — DATE 10/7/14

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONST.DWG

project 12-022 | date OCT 2014
illustration JLS | engineering JLS
scale 1"=50' | approval MMM

no.	revisions	description	date
1	REVISED TOTAL SHEET NUMBER		JULY 2015

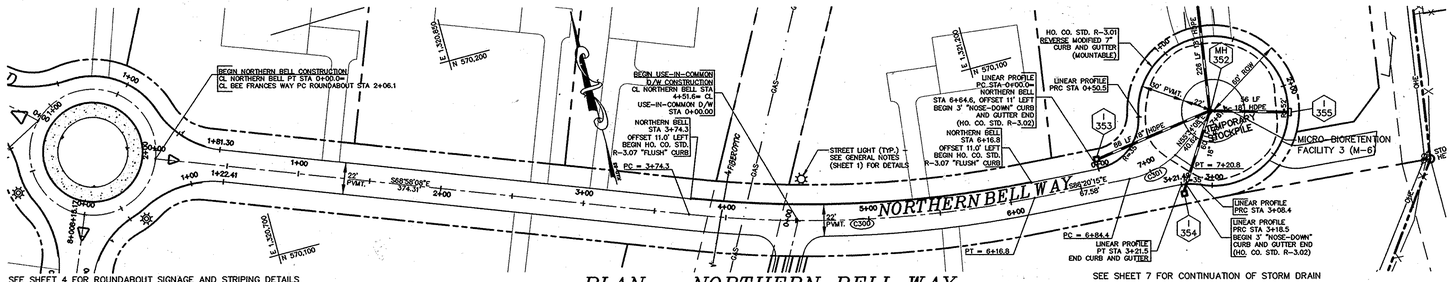
GREENBERRY, LOTS 1 THRU 25
AND NON-BUILDABLE PRESERVATION PARCELS 'A','B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F', AND 'G', AND BUILDABLE PARCEL 'E'
TAX MAP 28, PARCEL 48
HOWARD COUNTY, MARYLAND
FIFTH ELECTION DISTRICT

ROAD PLANS, PROFILES AND TYPICAL SECTIONS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.

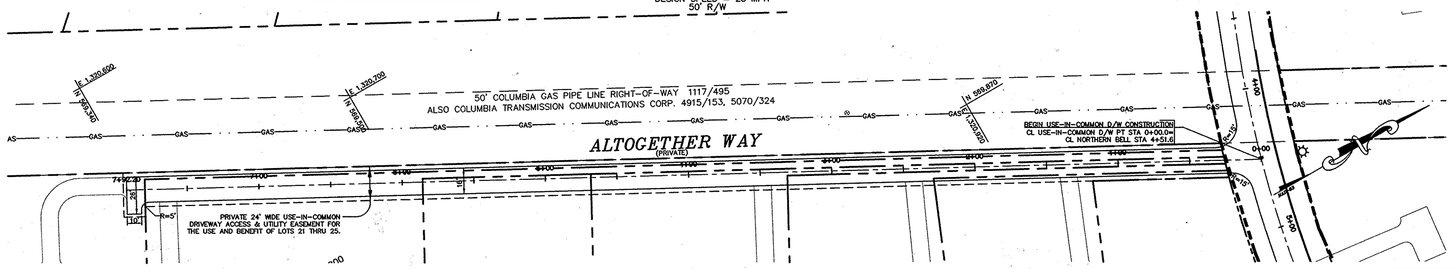
2 OF 21

F-14-095



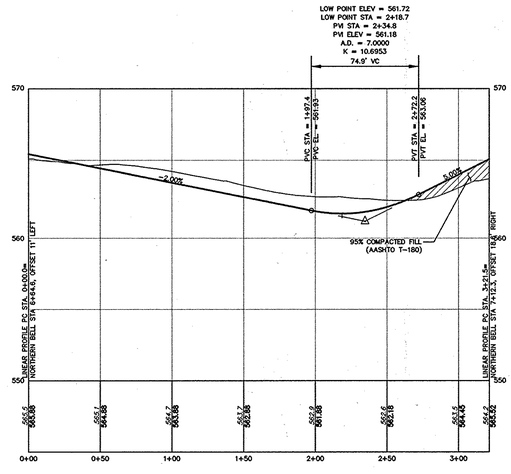
PLAN – NORTHERN BELL WAY

PUBLIC – LOCAL
DESIGN SPEED = 25 MPH
50' R/W
SCALE: 1"=50'



PLAN – ALTOGETHER WAY

SCALE: 1" = 50'

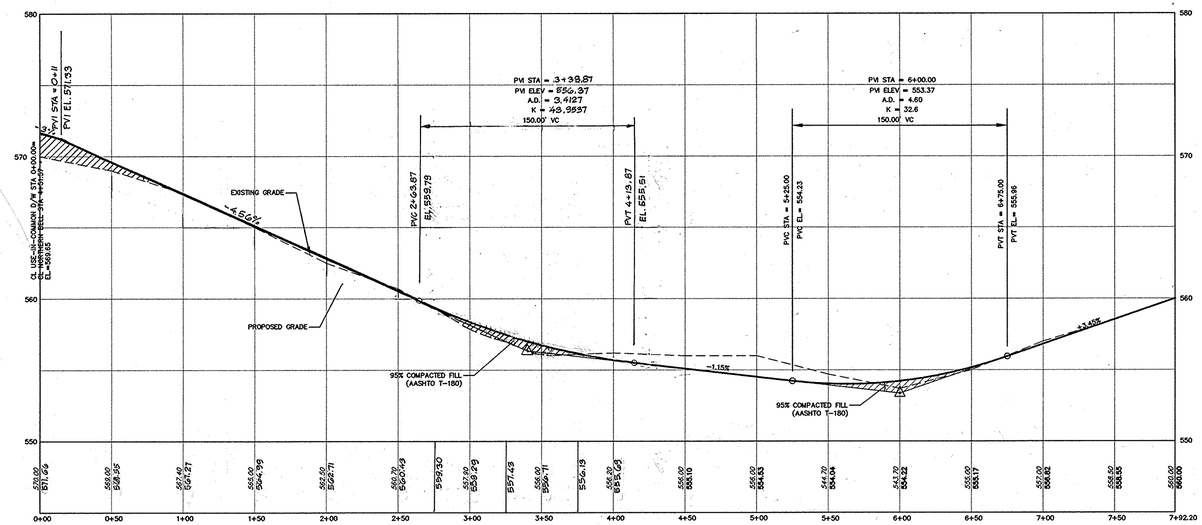


LINEAR PROFILE – CUL-DE-SAC NORTHERN BELL

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

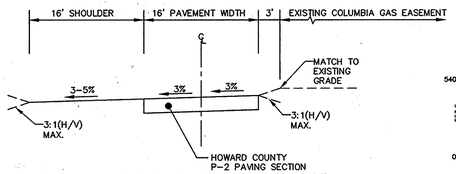
ROADWAY CURVE TABLE

CURVE	ROAD NAME	LENGTH (FT)	RADIUS (FT)	DELTA	CHORD LEN (FT)	CHORD DIR
C300	NORTHERN BELL	242.51	800.00	17°22'07"	241.58	S77°39'11"E
C301	NORTHERN BELL	36.43	65.00	32°06'30"	35.95	N77°36'30"E



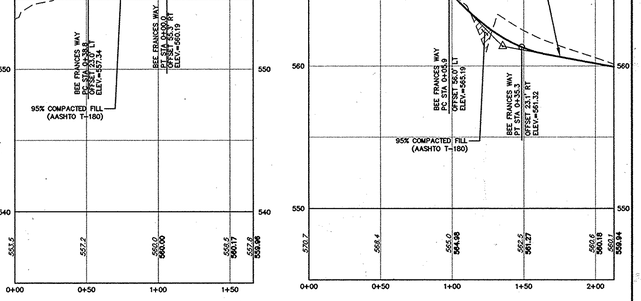
PROFILE – CENTERLINE ALTOGETHER WAY

SCALE: 1" = 50'



TYPICAL SECTION – USE-IN-COMMON DRIVEWAY

STA 0+00.00 TO STA 7+23.56
NOT TO SCALE

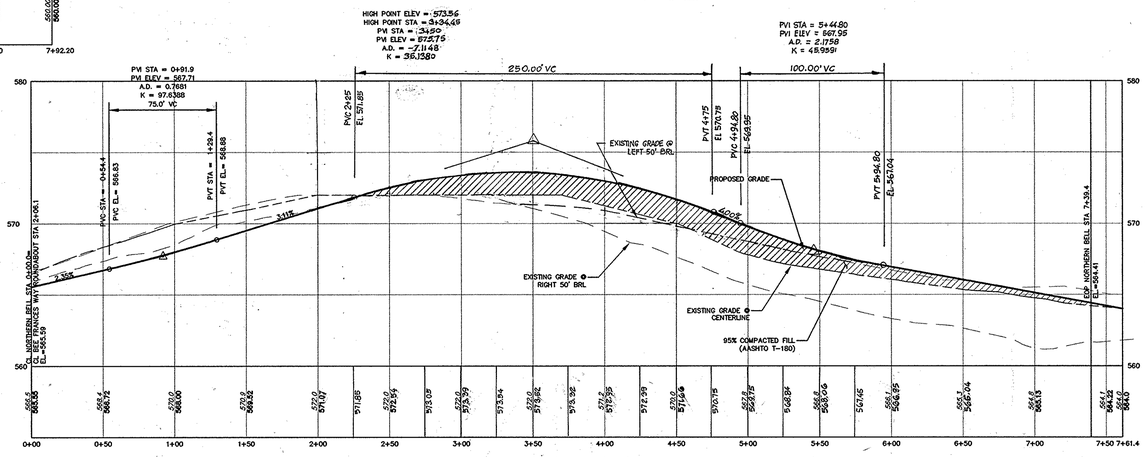


LEFT FILLET BEE FRANCES WAY

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

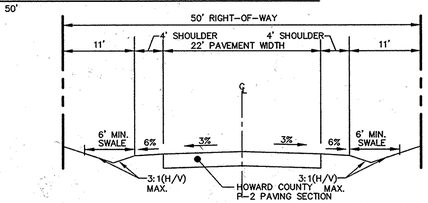
RIGHT FILLET BEE FRANCES WAY

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



PROFILE – CENTERLINE NORTHERN BELL

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



TYPICAL SECTION – NORTHERN BELL

STA 0+00.00 TO STA 7+23.56
NOT TO SCALE

OWNER

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JOANNA K. BENEDICT
BARBARA B. CUSACK
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APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-17-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-20-14

STATE OF MARYLAND · JEFFREY L. SLOMAN · No. 40091 · PROFESSIONAL ENGINEER

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JEFFREY SLOMAN, P.E. — DATE 10/7/14

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONST.DWG

project 12-022 | date OCT 2014
illustration JLS | engineering JLS | approval MMM
scale 1"=50'

no.	description	date
1.	ADD FIBEROPTIC LINE AT COLUMBIA GAS ROW REVISED NORTHERN BELL WAY PROFILE REVISED ALTOGETHER WAY PROFILE	JULY 2015

GREENBERRY, LOTS 1 THRU 25

AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F' AND 'G', AND BUILDABLE PARCEL 'E'
TAX MAP 28, PARCEL 48
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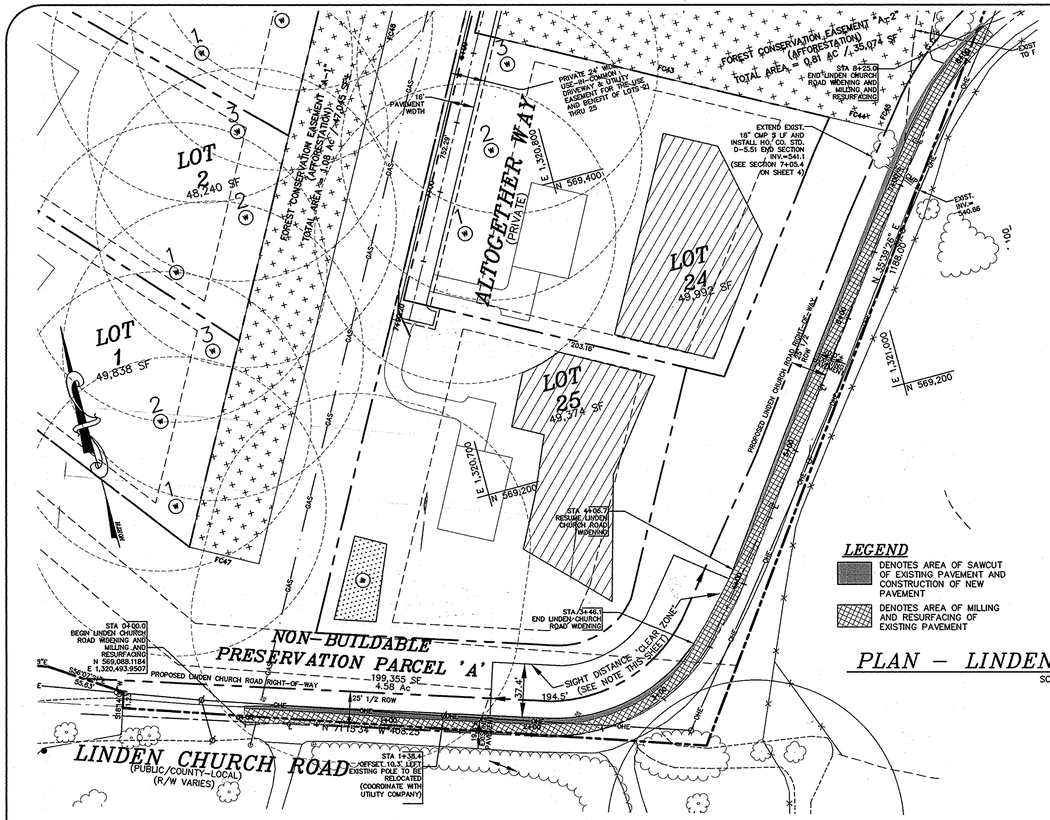


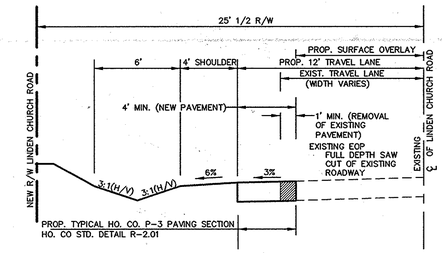
LEGEND

DENOTES AREA OF SAWCUT OF EXISTING PAVEMENT AND CONSTRUCTION OF NEW PAVEMENT

DENOTES AREA OF MILLING AND RESURFACING OF EXISTING PAVEMENT

PLAN – LINDEN CHURCH ROAD WIDENING

SCALE: 1" = 50'



LINDEN CHURCH ROAD IMPROVEMENTS DETAIL

NOT TO SCALE

1. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE, CONTRACTOR SHALL REMOVE A MINIMUM OF 1' FULL DEPTH OF THE EXISTING ROADWAY. I
2. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT A DEPTH OF 1.5" (MINIMUM).
3. THE RESURFACING SHALL BE PLACED TO THE CENTERLINE OF THE ROADWAY.
4. RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.
5. REFER TO HO. CO. DESIGN MANUAL VOLUME IV, STANDARD DETAIL R-1.08 FOR ADDITIONAL DETAILS

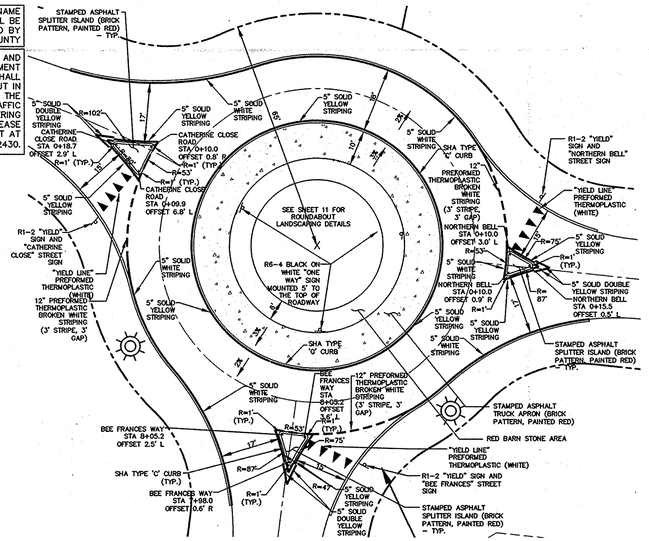
CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PAVEMENT MARKINGS REMOVED DURING CONSTRUCTION.

THE SIGHT DISTANCE 'CLEAR ZONE' IS AN AREA ADJACENT TO LINDEN CHURCH ROAD THAT IS TO BE CLEAR OF PROPOSED LANDSCAPING OR OTHER PROPOSED OBSTRUCTIONS. ITS INTRODUCTION INTO THE PLANS WAS REQUESTED BY NEARBY RESIDENTS ON LINDEN CHURCH ROAD DURING THE PRE-SUBMISSION COMMUNITY MEETING. ITS DIMENSIONS ARE BASED APPROXIMATELY ON CHAPTER 3 OF AASHTO'S POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS (2004).

SEE SHEET 13 FOR STORM STRUCTURE TABLE

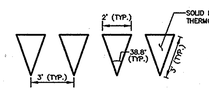
ALL STREET NAME SIGNS SHALL BE FABRICATED BY HOWARD COUNTY

ALL SIGNS AND PAVEMENT MARKINGS SHALL BE LAID OUT IN THE FIELD BY THE TRAFFIC ENGINEERING DIVISION. PLEASE CONTACT AT (410)313-2430.



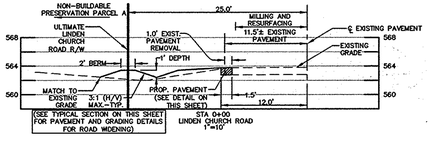
SIGNING AND PAVEMENT MARKING DETAIL – BEE FRANCES WAY ROUNDABOUT

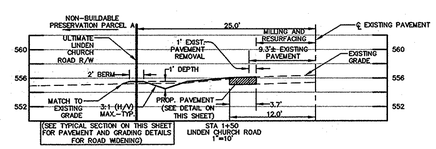
SCALE: 1" = 20'

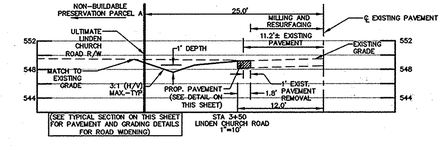


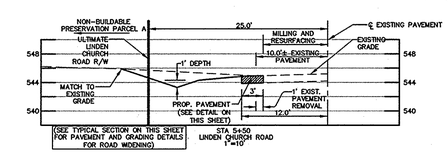
YEILD LINE DETAILS

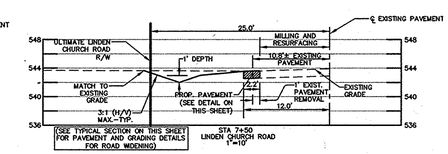
NOT TO SCALE

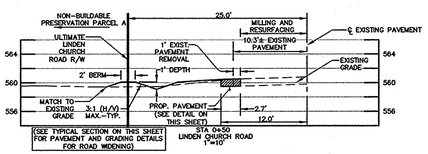


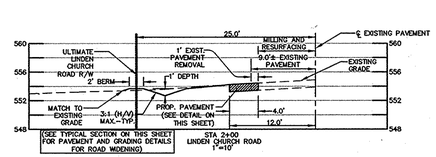


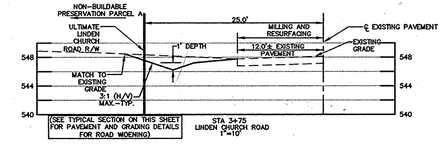


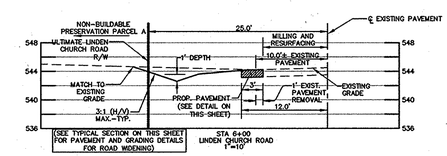


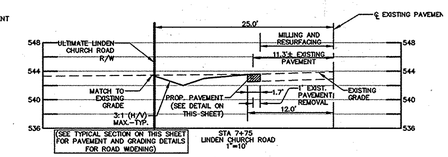


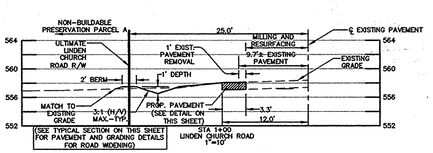


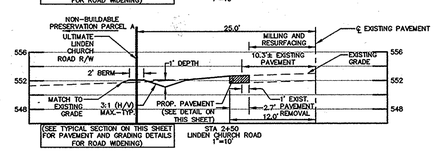


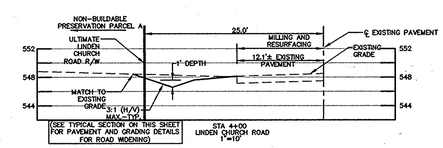


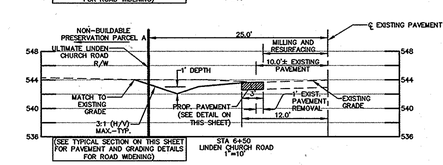


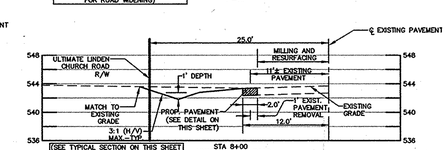


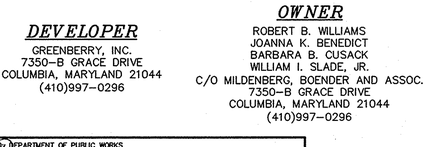


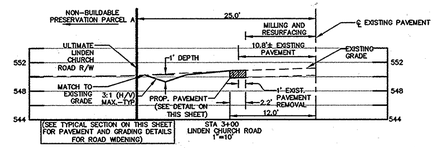


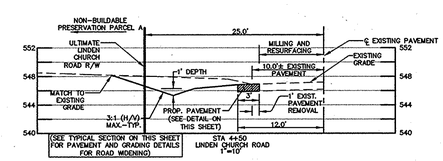


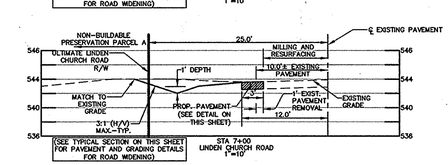


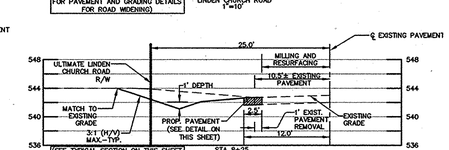


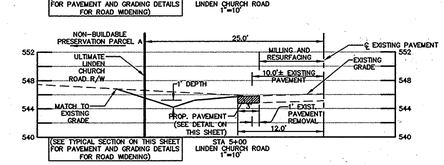


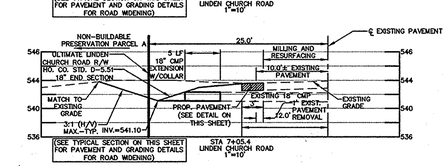












OWNER

ROBERT B. WILLIAMS
JOANNA K. BENEDICT
BARBARA B. CUSACK
WILLIAM I. SLADE, JR.
C/O MILDENBERG, BOENDER AND ASSOC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

DEVELOPER

GREENBERRY, INC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.17.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-20-14

STATE OF MARYLAND JEFFREY L. SLOMAN No. 40091 PROFESSIONAL ENGINEER

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. 40091, EXP DATE 2/13/15.

JEFFREY SLOMAN, P.E. — DATE 10/7/14

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONST.DWG

project	date
12-022	OCT 2014
illustration	engineering
JLS	JLS
scale	approval
1"=50'	MMM

no.	description	date
1	REVISED TOTAL SHEET NUMBER	JULY 2015
	revisions	

GREENBERRY, LOTS 1 THRU 25

AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'C', AND BUILDABLE PRES. PARCEL 'A'

TAX MAP 28, PARCEL 48

HOWARD COUNTY, MARYLAND

FIFTH ELECTION DISTRICT

ROAD PLANS, PROFILES AND TYPICAL SECTIONS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.

F-14-095

MATCHLINE SHEET 6

MATCHLINE SHEET 7

SECOND TEMPORARY STOCKPILE AREA SSF TO BE INSTALLED PRIOR TO UTILIZING THIS AREA

SHEET 6 SHEET 7 SHEET 5

GRADING PLAN KEY MAP

SCALE: 1"=600'

LEGEND

- GAS — UNDERGROUND GAS LINE
- OHE — OVERHEAD ELECTRIC WIRE AND POLE
- 100 — EXISTING CONTOURS
- 100 — PROPOSED CONTOURS
- ×574.8 — EXISTING SPOT GRADE
- 58@90 — PROPOSED SPOT GRADE
- SOIL TYPE DIVISION
- LOD — LIMIT OF DISTURBANCE (LOD)
- SSF — SUPER SILT FENCE
- CHECK DAM (FOR EROSION CONTROL) [SEE DIMENSIONS BELOW]
- CMD-24 / A-2 — CLEAR DIVERSION PIPE (W/ PIPE DIA.)
- EARTH DIKE
- SIP — STANDARD INLET PROTECTION (TYPE B)
- CIP — CURB INLET PROTECTION
- EXISTING COLUMBIA GAS PIPELINE RIGHT-OF-WAY L 1117 / F 495, L 4915 / F 153, L 5080 / F 324 L 140 / F 353
- EXISTING PERMANENT BGE EASEMENT (L 12341 F 57)
- 31,521 SF (0.72 Ac) TO BE DEDICATED TO HOWARD COUNTY FOR THE USE OF PUBLIC RIGHT-OF-WAY
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- EXISTING COLUMBIA GAS PIPE LINE RIGHT-OF-WAY L 1117 / F 495 L 1159 / F 277
- EXISTING 50' COLUMBIA GAS PIPE LINE RIGHT-OF-WAY L 1117 / F 495 L 4915 / 153 L 5070 / F 324
- EXIST. 20' INGRESS EGRESS EASEMENT L 5676 F 351 SERVING TAX MAP 28, PARCEL 414, OUTPARCEL 2 TO BE ABANDONED BY THIS PLAT
- FOREST CONSERVATION EASEMENT (RETENTION)
- FOREST CONSERVATION EASEMENT (AFFORESTATION)

NON-BUILDABLE PRESERVATION PARCEL 'B' 16.80 Ac± FOREST CONSERVATION EASEMENT 'B-1' (AFFORESTATION) 1.92 Ac±

NON-BUILDABLE PRESERVATION PARCEL 'A' 199,955 SF

GREENBERRY LANE (PUBLIC COUNTY LOCAL) (R/W VARIES)

BEE FRANCES WAY (PUBLIC COUNTY LOCAL 50' R/W)

LINDEN CHURCH ROAD (PUBLIC COUNTY LOCAL) (R/W VARIES)

BROADWATER LANE

ALTOGETHER WAY (PRIVATE)

LOT 1 49,838 SF

LOT 2 48,240 SF

LOT 3 46,259 SF

LOT 4 48,793 SF

LOT 21 41,967 SF

LOT 22 44,701 SF

LOT 23 49,929 SF

LOT 24 49,992 SF

LOT 25 49,374 SF

ES 150

ES 151

SOD IS TO BE INSTALLED FOR THE GRADING NEEDED FOR ES-151

SMA FEE SIMPLE SHA PLAT 58791 1.2362 AC.±

THE CMD PIPE WHICH IS SHOWN WITHIN FCE A-2 IS A CLEAN WATER DIVERSION PIPE THAT WILL ONLY BE USED FOR SEDIMENT CONTROL DURING THE BUILDING OF THE ROADWAYS. THE PIPE WILL BE REMOVED BEFORE THE FCE AFFORESTATION AREA IS PLANTED.

FOREST CONSERVATION EASEMENT (AFFORESTATION) TOTAL AREA = 0.81 AC ± 35,074 SF

PRIVATE 24' WIDE USE-IN-COMMON DRIVEWAY & UTILITY EASEMENT FOR THE USE AND BENEFIT OF LOTS 21 THRU 25

EXISTING DRIVEWAY TO BE REMOVED

EXISTING 30' PRESCRIPTIVE EASEMENT ESTABLISHED BY HOWARD COUNTY COUNCIL BILL OCTOBER 11, 1961.

31,521 SF (0.72 Ac) TO BE DEDICATED TO HOWARD COUNTY FOR THE USE OF PUBLIC RIGHT-OF-WAY

31,521 SF (0.72 Ac) TO BE DEDICATED TO HOWARD COUNTY FOR THE USE OF PUBLIC RIGHT-OF-WAY

SIGHT DISTANCE 'CLEAR ZONE' (SEE NOTE 3 THIS SHEET)

STEVE GILLIECE KATHLEEN GILLIECE TAX MAP 28 PARCEL 189 L 01184 / F 00746 ZONED: RR-DEO

THE SIGHT DISTANCE 'CLEAR ZONE' IS AN AREA ADJACENT TO LINDEN CHURCH ROAD THAT IS TO BE CLEAR OF PROPOSED LANDSCAPING OR OTHER PROPOSED OBSTRUCTIONS. ITS INTRODUCTION INTO THE PLANS WAS REQUESTED BY NEARBY RESIDENTS ON LINDEN CHURCH ROAD DURING THE PRE-SUBMISSION COMMUNITY MEETING. ITS DIMENSIONS ARE BASED APPROXIMATELY ON CHAPTER 3 OF AASHTO'S POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS (2004).

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET) 1 inch = 50 ft.

SEE SHEET 16 FOR SEDIMENT TRAP DETAILS

TYPE 'B' TO BE USED FOR ALL STANDARD INLET PROTECTION

SEE SHEET 4 FOR LINDEN CHURCH ROAD WIDENING DETAILS

SEE SHEET 17 FOR STABILIZATION TECHNIQUES ON ROADSIDE DITCHES.

SEDIMENT CONTROL PLAN MAY NOT BE USED FOR INDIVIDUAL LOT GRADING OR TO OBTAIN BUILDING PERMITS FOR THE PROPOSED HOUSES.

ALL SEDIMENT CONTROLS INTERRUPTED BY THE INSTALLATION OF UTILITIES, STORM DRAINS, ETC. ARE TO BE REPAIRED IMMEDIATELY.

ENGINEER'S CERTIFICATE

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 OF ENGINEER — DATE 10/7/14

JEFFREY SLOMAN, PE
PRINTED NAME OF ENGINEER

DEVELOPERS CERTIFICATE

I 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. HOWARD SOIL CONSERVATION DISTRICT IS AUTHORIZED TO CONDUCT PERIODIC ON-SITE INSPECTION.

SIGNATURE OF DEVELOPER — DATE 10/8/14

R. JACOB HILKMAT, PRESIDENT
PRINTED NAME OF DEVELOPER

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 10/16/14

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-17-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-20-14

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JEFFREY SLOMAN, P.E. — DATE 10/7/14

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COLUMBIA, MARYLAND 21044
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SOILS DESCRIPTION

SYMBOL	HYDROLOGICAL GROUP	DESCRIPTION
GoA	B	GLENELG LOAM, 0 TO 3% SLOPE
GoB	B	GLENELG LOAM, 3 TO 8% SLOPE
GoC	B	GLENELG LOAM, 8 TO 15% SLOPE
GmB	C	GLENVILLE SILT LOAM, 3 TO 8% SLOPE

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project 12-022 | date OCT 2014
illustration JLS | engineering JLS
scale 1"=50' | approval MMM

no.	revisions	date
1	REVISED TEMPORARY STOCKPILE AREA REVISED TOTAL SHEET NUMBER	JULY 2015

GREENBERRY, LOTS 1 THRU 25
AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'B-1', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F' AND 'G', AND BUILDABLE PRES. PARCEL 'E'
TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
GRADING, EROSION AND SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
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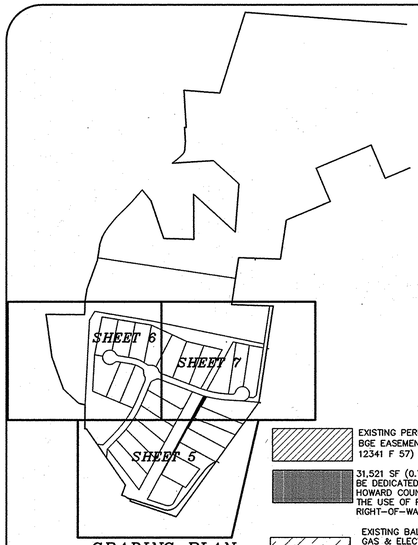
F-14-095



GRADING PLAN KEY MAP

LEGEND SCALE: 1"=600'

- GAS — UNDERGROUND GAS LINE
- ⌀ ONE — OVERHEAD ELECTRIC WIRE AND POLE
- EXISTING CONTOURS
- 100 — PROPOSED CONTOURS
- ×574.8 — EXISTING SPOT GRADE
- 58x90 — PROPOSED SPOT GRADE
- SOIL TYPE DIVISION
- LOD — LIMIT OF DISTURBANCE (LOD)
- SSF — SUPER SILT FENCE
- CHECK DAM (FOR EROSION CONTROL) [SEE DIMENSIONS – SHEET 5]
- CLEAR DIVERSION PIPE (W/ PIPE DIA.)
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- SIP — STANDARD INLET PROTECTION (TYPE B)
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- EXIST. 20' INGRESS EGRESS EASEMENT L 5676 F 351 SERVING TAX MAP 28, PARCEL 414, OUTPARCEL 2 TO BE ABANDONED BY THIS PLAT
- FOREST CONSERVATION EASEMENT (RETENTION)
- FOREST CONSERVATION EASEMENT (AFFORESTATION)

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SIGNATURE OF ENGINEER — DATE 10/7/14

JEFFREY SLOMAN, PE
PRINTED NAME OF ENGINEER

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R. JACOB WILKMAT, PRESIDENT
PRINTED NAME OF DEVELOPER

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 10/10/14

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-17-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-20-14

STATE OF MARYLAND · JEFFREY L. SLOMAN · No. 40091 · PROFESSIONAL ENGINEER

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JEFFREY SLOMAN, P.E. — DATE 10/7/14

GRAPHIC SCALE
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(IN FEET)
1 inch = 50 ft.

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TYPE 'B' TO BE USED FOR ALL STANDARD INLET PROTECTION

SEE SHEET 18 FOR STABILIZATION TECHNIQUES ON ROADSIDE DITCHES.

SEE SHEET 16 FOR SEDIMENT TRAP DETAILS

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SOILS DESCRIPTION

SYMBOL	HYDROLOGICAL GROUP	DESCRIPTION
GgA	B	GLENELG LOAM, 0 TO 3% SLOPE
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GgC	B	GLENELG LOAM, 8 TO 15% SLOPE
GmB	C	GLENVILLE SILT LOAM, 3 TO 8% SLOPE

MATCHLINE SHEET 5

MATCHLINE SHEET 7

MARYLAND ROUTE 32
(PUBLIC / STATE MAJOR ARTERIAL)
SHA PLAT NO'S 27495, 27488, 23596, 23597, 23598, 23599, 29515, 29384, 24041

GREENBERRY LANE
(PUBLIC – TO BE DESIGNATED) (LOCAL – 50' R/W)

CATHERINE CLOSE ROAD
(PUBLIC/LOCAL 50' R/W TO BE DEDICATED)

BRIE FRANCES WAY
(PUBLIC/LOCAL 50' R/W TO BE DEDICATED)

NON–BUILDABLE BULK PARCEL 'C' 19.51 Ac

NON–BUILDABLE BULK PARCEL 'G' 3.34AC.

NON–BUILDABLE PRESERVATION PARCEL 'H' 14,463 S.F. / 0.33AC

NON–BUILDABLE PRESERVATION PARCEL 'B' 8.30± Ac

FOREST CONSERVATION EASEMENT "B–3" (AFFORESTATION) TOTAL AREA+= 1.92 Ac / 83,818 SF

FOREST CONSERVATION EASEMENT "B–2" (RETENTION) 0.90 Ac / 39,153 SF

FOREST CONSERVATION EASEMENT "B–1" (AFFORESTATION) 1.97 Ac

LOT 10 41,178 SF
LOT 11 42,227 SF
LOT 12 41,864 SF
LOT 13 45,736 SF
LOT 9 42,975 SF
LOT 8 40,614 SF
LOT 7 40,100 SF

TEMPORARY STOCKPILE

SECOND TEMPORARY STOCKPILE AREA SSF TO BE INSTALLED PRIOR TO UTILIZING THIS AREA

4" BGE GAS LINE

4" PERFORATED UNDERDRAIN INV. 529.84

4" PERFORATED OVERFLOW INV. 529.84

PUBLIC VARIABLE WIDTH DRAINAGE & UTILITY EASEMENT

FOR CHECK DAM DETAIL SEE SHEET 16

N 89°37'59" W 379.78'

N 0°13'02" W 384.08'

E 1,319,900 N 570,600

E 1,320,100 N 569,856

N 42°17'35" W 174.48'

S 24°30'30" W 84.44'

EDGE OF PAVEMENT 3%
3:1 3:1 2.0' 1.0' 4.0' GRASS SHOULDER

GRASS SWALE TYP. SECTION (GREENBERRY LA. STA. 4+50 TO STA. 7+00) NTS

RIPRAP APRON (SEE PROFILES, SHEET 13)

TEMPORARY RIPRAP APRON (SEE SEQUENCE OF CONSTRUCTION, SHT–12) LENGTH=6', WIDTH=10' (6'x6', DEPTH=12"

STREET LIGHT (TYP.) – SEE GENERAL NOTES (SHEET 1) FOR DETAILS

SEDIMENT TRAP #1 (SEE SHEET 16)

SEDIMENT TRAP #2 (SEE SHEET 16)

SEDIMENT TRAP #3 (SEE SHEET 16)

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONST.DWG

project 12-022 | date OCT 2014
illustration JLS | engineering JLS
scale 1"=50' | approval MMM

no.	description	date
1.	REVISED TEMPORARY STOCKPILE AREA	JULY 2015
2.	REMOVED STORMDRAIN FROM I-663 TO BS-650 ADDED STORMDRAIN FROM I-663 TO BS-650 ADDED PROFILES FOR I-663 TO BS-650 REVISED TOTAL SHEET NUMBER	JULY 2016

GREENBERRY, LOTS 1 THRU 25
AND NON–BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'H', NON–BUILDABLE BULK PARCELS 'C', 'G', 'F' AND 'G', AND BUILDABLE PARC. PARCEL 'F'
TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT
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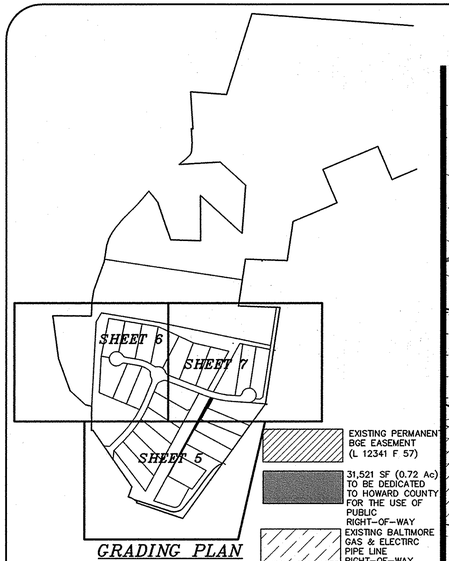

GRADING PLAN KEY MAP

LEGEND

SCALE: 1"=600'

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- D-24 — CLEAR DIVERSION PIPE (W/ PIPE DIA.)
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- FOREST CONSERVATION EASEMENT (RETENTION)
- FOREST CONSERVATION EASEMENT (AFFORESTATION)

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R. JACOB HIKMAT / PRESIDENT
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HOWARD SOIL CONSERVATION DISTRICT — DATE 10/16/14

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-19-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-20-14

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JEFFREY SLOMAN, P.E. — DATE 10/7/14

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONSTR.DWG

MATCHLINE SHEET 6

MATCHLINE SHEET 5

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

SOILS DESCRIPTION

SYMBOL	HYDROLOGICAL GROUP	DESCRIPTION
GgA	B	GLENELG LOAM, 0 TO 3% SLOPE
GgB	B	GLENELG LOAM, 3 TO 8% SLOPE
GgC	B	GLENELG LOAM, 8 TO 15% SLOPE
GmB	C	GLENVILLE SILT LOAM, 3 TO 8% SLOPE

THIS PLAN MAY NOT BE USED FOR INDIVIDUAL LOT GRADING OR TO OBTAIN BUILDING PERMITS FOR THE PROPOSED HOUSES.

SEE SHEET 18 FOR STABILIZATION TECHNIQUES ON ROADSIDE DITCHES.

SEDIMENT CONTROL PLAN MAY NOT BE USED FOR INDIVIDUAL LOT GRADING OR TO OBTAIN BUILDING PERMITS FOR THE PROPOSED HOUSES.

TYPE 'B' TO BE USED FOR ALL STANDARD INLET PROTECTION

project	date
12-022	OCT 2014
illustration	engineering
JLS	JLS
scale	approval
1"=50'	MMM

no.	description	date
1.	REVISED PROPOSED CONTOURS FOR NORTHERN BELL WAY & AUTOMOTHERM WAY, REVISED TOTAL SHEET NUMBER.	2015 MAY

GREENBERRY, LOTS 1 THRU 25

AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'E', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F' AND 'G', AND BUILDABLE PARCEL 'H'
TAX MAP 28, PARCEL 48
HOWARD COUNTY, MARYLAND
FIFTH ELECTION DISTRICT

GRADING, EROSION AND SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.

MATCHLINE SHEET 9

MATCHLINE SHEET 10

GREENBERRY, LOTS 1 THRU 25
AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F' AND 'G', AND BUILDABLE PRES. PARCEL 'E'
FIFTH ELECTION DISTRICT — TAX MAP 28, PARCEL 48 — HOWARD COUNTY, MARYLAND

LANDSCAPE AND FOREST CONSERVATION PLAN

project	date
12-022	OCT 2014
illustration	engineering
JLS	JLS
scale	approval
1"=50'	MMM

no.	description	date
1	REVISED TOTAL SHEET NUMBER	JULY 2015

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.

8 OF 21

F-14-095

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONST.DWG

DEVELOPERS / BUILDERS CERTIFICATE

I / WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE IN ACCORDANCE 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 CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE OF DEVELOPER — DATE 10/8/14

R. JACOB WILKNAT, PRESIDENT
PRINTED NAME OF DEVELOPER

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.17.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-20-14

STATE OF MARYLAND — JEFFREY L. SLOMAN — No. 40091 — PROFESSIONAL ENGINEER

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. 40091, EXP DATE 2/13/15.

JEFFREY SLOMAN, P.E. — DATE 10/7/14

DEVELOPER

GREENBERRY, INC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

OWNER

ROBERT B. WILLIAMS
JOANNA K. BENEDICT
BARBARA B. CUSACK
WILLIAM I. SLADE, JR.
C/O MILDENBERG, BOENDER AND ASSOC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
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GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

SEE SHEET 11 FOR FOREST CONSERVATION EASEMENT LINE AND CURVE TABLES

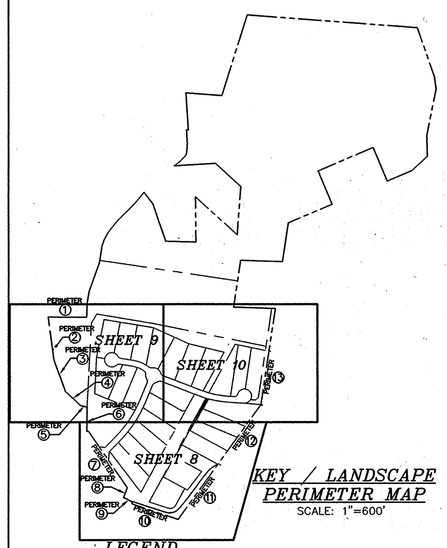
LEGEND

(SEE SHEET 11 FOR LANDSCAPE SYMBOL LEGEND AND FOREST CONSERVATION DETAILS)

- FOREST CONSERVATION EASEMENT SIGN (SEE SHEET 11)
- OHE — OVERHEAD ELECTRIC WIRE AND POLE
- GAS — UNDERGROUND GAS LINE
- EXISTING COLUMBIA GAS PIPELINE RIGHT-OF-WAY L 1117 / F 495, L 4915 / F 153, L 5080 / F 324 L 140 / F 353
- EXISTING PERMANENT BGE EASEMENT (L 12341 F 57)
- 31,521 SF (0.72 Ac) TO BE DEDICATED TO HOWARD COUNTY FOR THE USE OF PUBLIC RIGHT-OF-WAY
- EXISTING BALTIMORE GAS & ELECTRC PIPE LINE RIGHT-OF-WAY L 287 / F 47 L 554 / F 49
- EXISTING 50' COLUMBIA GAS PIPE LINE RIGHT-OF-WAY L 1117 / F 495 L 4915 / 153 L 5070 / F 324
- EXISTING COLUMBIA GAS PIPE LINE RIGHT-OF-WAY L 1117 / F 495 L 1159 / F 277
- EXIST. 20' INGRESS EGRESS EASEMENT L 5676 F 351 SERVING TAX MAP 28, PARCEL 414, OUTPARCEL 2
- FOREST CONSERVATION EASEMENT (RETENTION)
- FOREST CONSERVATION EASEMENT (AFFORESTATION)

KEY / LANDSCAPE PERIMETER MAP
SCALE: 1"=600'

DNR QUALIFIED PROFESSIONAL



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- EXIST. 20' INGRESS EGRESS EASEMENT L 5676 F 351 SERVING TAX MAP 28, PARCEL 414, OUTPARCEL 2

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SIGNATURE OF DEVELOPER — DATE 10/8/14

PRINTED NAME OF DEVELOPER: R. JACOB HIKMAT / PRESIDENT

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.17.14

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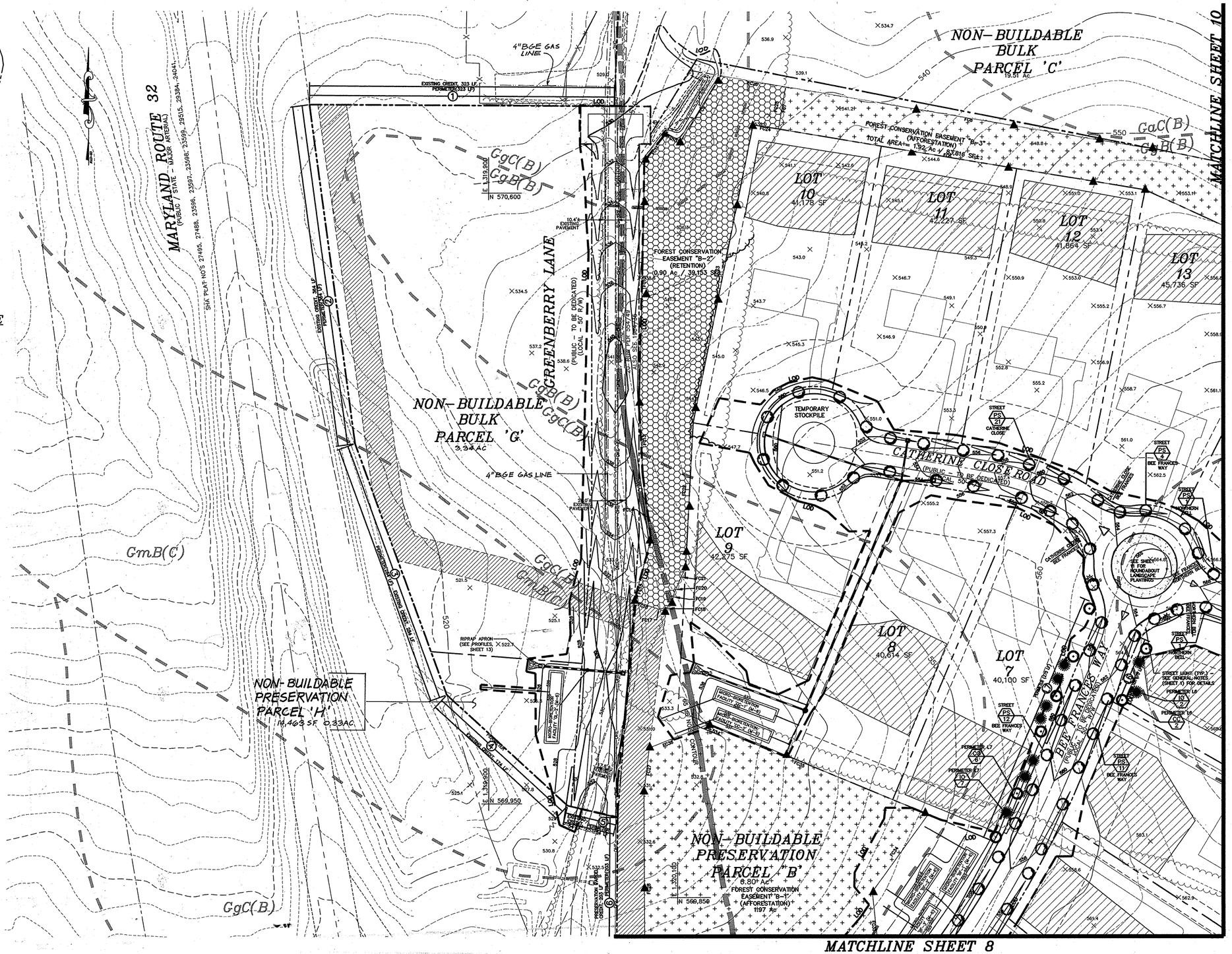
JEFFREY SLOMAN, P.E. — DATE 10/7/14

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONSTLDWG



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET) 1 inch = 50 ft.

SEE SHEET 11 FOR FOREST CONSERVATION EASEMENT LINE AND CURVE TABLES

DNR QUALIFIED PROFESSIONAL

project	12-022	date	OCT 2014
illustration	JLS	engineering	JLS
scale	1"=50'	approval	MMM

no.	description	date
1.	REVISED "TOTAL SHEET" NUMBER	JULY 2015
2.	REMOVED STORMDRAIN FROM I-663 TO E5-060 REVISED INGRO-BIO #E1; ADD BASS SWALE DETAIL; REVISED INGRO-BIO #E2; ADD DIRECT LABEL @ #4	JULY 2016

LOTS 1 THRU 25
GREENBERRY, LOTS 1 THRU 25
AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F' AND 'G', AND BUILDABLE PARCEL 'X'
TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

LANDSCAPE AND FOREST CONSERVATION PLAN

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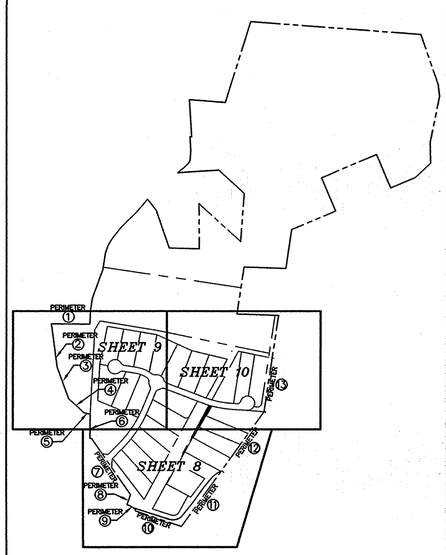

KEY / LANDSCAPE PERIMETER MAP

SCALE: 1"=600'

LEGEND

(SEE SHEET 11 FOR LANDSCAPE SYMBOL LEGEND AND FOREST CONSERVATION DETAILS)

- OHE — OVERHEAD ELECTRIC WIRE AND POLE
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- EXISTING COLUMBIA GAS PIPE LINE RIGHT-OF-WAY L 1117 / F 495 L 1159 / F 277
- EXIST. 20' INGRESS EGRESS EASEMENT L 5676 F 351 SERVING TAX MAP 28, PARCEL 414, OUTPARCEL 2

MATCHLINE SHEET 9

MATCHLINE SHEET 8

NON-BUILDABLE BULK PARCEL 'C' 19.51 Ac

NON-BUILDABLE PRESERVATION PARCEL 'B' 6.35 Ac

NON-BUILDABLE BULK PARCEL 'D' 0.71 Ac

NON-BUILDABLE BULK PARCEL 'D' 0.83 Ac

NON-BUILDABLE PRESERVATION PARCEL 'A'

FOREST CONSERVATION EASEMENT 'B-3' (AFFORESTATION) TOTAL AREA = 1.92 Ac / 83,816 SF

FOREST CONSERVATION EASEMENT 'A-3' (AFFORESTATION) TOTAL AREA = 1.93 Ac / 84,098 SF

LOT 14 48,866 SF

LOT 15 49,944 SF

LOT 16 46,499 SF

LOT 17 46,700 SF

LOT 18 45,290 SF

LOT 19 46,686 SF

LOT 20 58,862 SF

LOT 6 49,854 SF

LOT 5 49,334 SF

NORTHERN BELL (PUBLIC - TO BE DEDICATED)

NORTHERN BELL WAY (PUBLIC - TO BE DEDICATED)

PRIVATE 24' WIDE-USE-IN-COMMON DRIVEWAY & UTILITY EASEMENT FOR THE USE AND BENEFIT OF LOTS 21 THRU 25

TEMPORARY STOCKPILE

END OF EXISTING DRIVEWAY REMOVAL

EXISTING DRIVEWAY TO BE REMOVED

RIPRAP APRON (SEE PROFILES, SHEET 13)

RIPRAP APRON (SEE PROFILES, SHEET 14)

MICRO-BIORETENTION FACILITY #6 (M-6)

MICRO-BIORETENTION FACILITY #5 (M-5)

PUBLIC VARIABLE WIDTH DRAINAGE & UTILITY EASEMENT

PUBLIC 20' DRAINAGE & UTILITY EASEMENT

EXIST. 20' INGRESS EGRESS EASEMENT L 5676 F 351

N 88°03'10" W 350.00

N 00°56'50" E 818.34

MARC JORDAN
TWELVE HILLS SUBDIVISION SEC 2
LOT 20
PLAT 7530
L 03341 / F 00607
ZONED: RR-DEO

KWAN LEE
SUG LEE
TWELVE HILLS SUBDIVISION SEC 2
LOT 21
PLAT 7529
L 05620 / F 00327
ZONED: RR-DEO

JIANFEI SHI
NING SHI
TWELVE HILLS SUBDIVISION SEC 2
LOT 22
PLAT 7529
L 06942 / F 00074
ZONED: RR-DEO

BALDEV SINGH
PUSHPINDER SANDHU
TWELVE HILLS SUBDIVISION SEC 2
LOT 23
PLAT 7529
L 04312 / F 00567
ZONED: RR-DEO

E 1,320,600
N 570,700
E 1,321,200
N 570,600
E 1,321,900
N 570,300
E 1,322,600
N 570,050

MH 351.5

100'

50'

DEVELOPER

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7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
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GRAPHIC SCALE
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(IN FEET)
1 inch = 50 ft.

SEE SHEET 11 FOR FOREST CONSERVATION EASEMENT LINE AND CURVE TABLES

DNR QUALIFIED PROFESSIONAL

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONST.DWG

project	date
12-022	OCT 2014
illustration	engineering
JLS	JLS
scale	approval
1"=50'	MMM

no.	description	date
1.	REVISED TOTAL SHEET NUMBER	JULY 2015

GREENBERRY, LOTS 1 THRU 25

AND NON-BUILDABLE BULK PARCELS 'C', 'D', 'F' AND 'G', AND BUILDABLE PRES. PARCEL 'A'
TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

LANDSCAPE AND FOREST CONSERVATION PLAN

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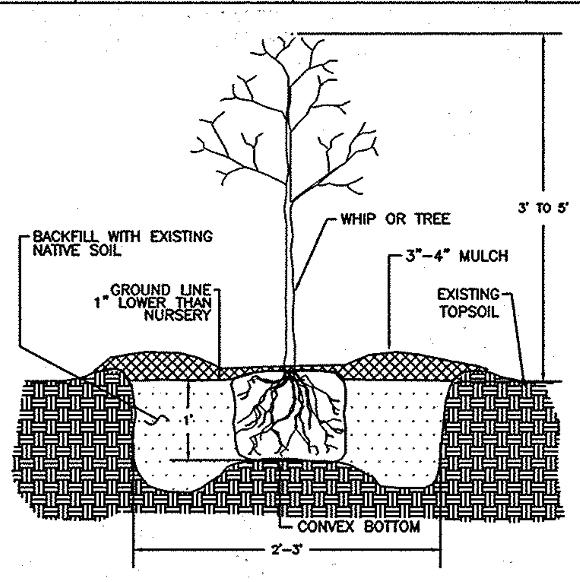
SCHEDULE A : PERIMETER LANDSCAPED EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES			ADJACENT TO ROADWAYS												TOTAL
LANDSCAPE TYPE	A (PERIMETER 1)	A (PERIMETER 12)	A (PERIMETER 13)	B (PERIMETER 2)	B (PERIMETER 3)	B (PERIMETER 4)	B (PERIMETER 5)	B (PERIMETER 6)	B (PERIMETER 7)	B (PERIMETER 8)	B (PERIMETER 9)	B (PERIMETER 10)	B (PERIMETER 11)	B (PERIMETER L6)	B (PERIMETER L7)	
LINEAR FEET OF PERIMETER	323 LF	610 LF	818 LF	364 LF	284.36 LF	174 LF	54 LF	203 LF	574 LF	91 LF	83 LF	408 LF	578 LF	75 LF	275 LF	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	YES, 323 LF	YES, 272 LF	YES, 818 LF	YES, 364 LF	YES, 284.36 LF	YES, 174 LF	YES, 54 LF	YES, 203 LF (PRESERVATION PARCEL)	YES, 199 LF (PRESERVATION PARCEL)	NO	NO	NO	YES, 128 LF (PRESERVATION PARCEL)	NO	NO	
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	6 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	8 SHADE TREES 10 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 3 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 3 EVERGREEN TREES 0 SHRUBS	9 SHADE TREES 11 EVERGREEN TREES 0 SHRUBS	9 SHADE TREES 12 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 2 EVERGREEN TREES 0 SHRUBS	6 SHADE TREES 7 EVERGREEN TREES 0 SHRUBS	44 SHADE TREES 48 EVERGREEN TREES 0 SHRUBS
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	4 SHADE TREES 4 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	8 SHADE TREES 10 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 3 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 3 EVERGREEN TREES 0 SHRUBS	9 SHADE TREES 11 EVERGREEN TREES 0 SHRUBS	9 SHADE TREES 12 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 2 EVERGREEN TREES 0 SHRUBS	6 SHADE TREES 7 EVERGREEN TREES 0 SHRUBS	42 SHADE TREES 52 EVERGREEN TREES 0 SHRUBS



TREE PLANTING DETAIL
CONTAINER GROWN

STREET TREE CALCULATIONS

STREET NAME	PERIMETER LENGTH	PLANTING REQUIREMENT	TREES REQUIRED	TREES PROVIDED
BEE FRANCES WAY	1,734 L.F.	1 TREE / 40 L.F.	44	44
CATHERINE CLOSE ROAD	833 L.F.	1 TREE / 40 L.F.	21	21
NORTHERN BELL	1,687 L.F.	1 TREE / 40 L.F.	43	43
LINDEN CHURCH ROAD WIDENING	939 L.F.	1 TREE / 40 L.F.	24	24
TOTAL			132	132

STREET TREE PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
130	◯	PRUNUS SARGENTII	SARGENT CHERRY	2 1/2" – 3" CAL.
2	⊙	CERCIS CANADENSIS	EASTERN REDBUD	2 1/2" – 3" CAL.

TOTAL
132 STREET TREES

PERIMETER TREE PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
4	⊙	FAGUS GRANDIFOLIA	AMERCIAN BEECH	2 1/2" – 3" CAL.
38	⊙	CERCIS CANADENSIS	EASTERN REDBUD	2 1/2" – 3" CAL.
52	✳	ILEX OPACA	AMERICAN HOLLY	5' – 6' HT.

TOTAL
42 SHADE TREES
52 EVERGREEN REES

SEE SHEET 14 FOR MICRO-BIORETENTION FACILITY (M-6) PLANTINGS

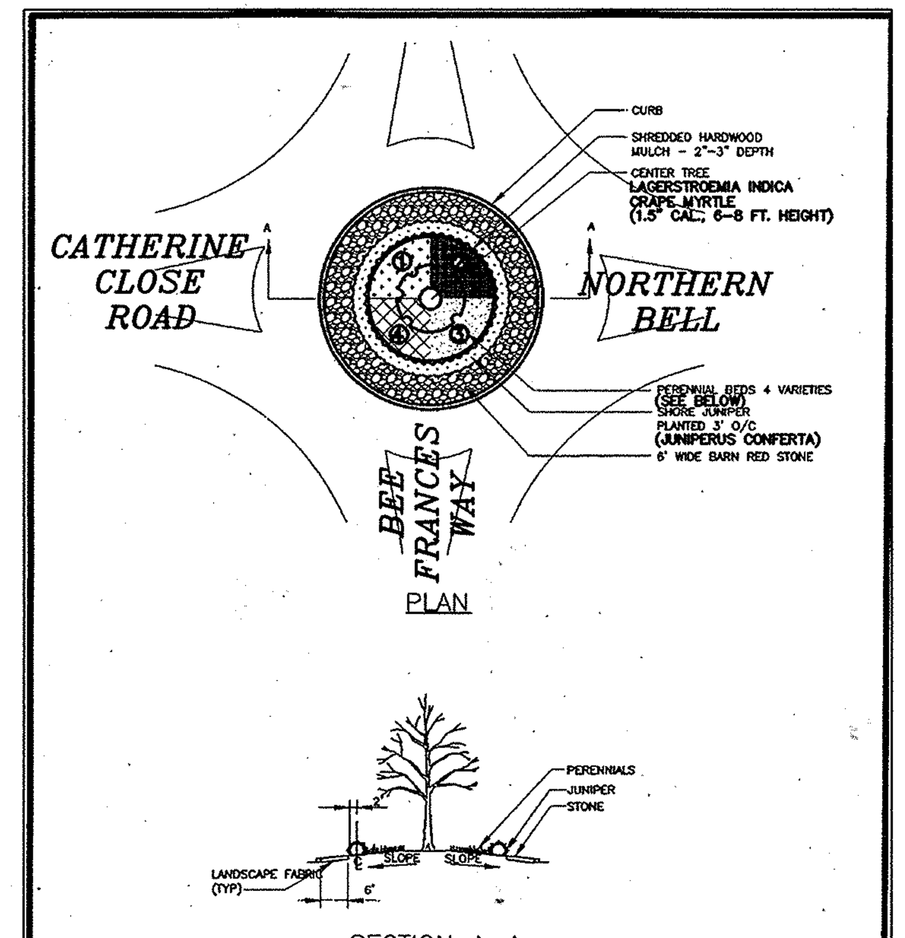
LANDSCAPE NOTES

1. NO CLEARING OF EXISTING VEGETATION IS PERMITTED WITHIN THE LANDSCAPE EDGE FOR WHICH CREDIT IS BEING TAKEN; HOWEVER, LANDSCAPE MAINTENANCE IS AUTHORIZED.
2. THE OWNER, TENANT 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 REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
3. AT THE TIME OF INSTALLMENT, 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 THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
4. SHOULD ANY TREE DESIGNATED FOR PRESERVATION, FOR WHICH CREDIT IS GIVEN, BE REMOVED OR 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.

FOREST CONSERVATION DATA

FOREST CONSERVATION WORKSHEET
NET TRACT AREA:
A. Total tract area....................= 133.64
B. Area to remain in agricultural production (Pres. Parcels A, B and E)= 80.68
C. Area of Future Development (Non-Buildable Bulk Parcels C and D)= 22.95
D. Net tract area (Area of Lots 1-25, Road right-of-way and right-of-way dedication)= 30.01
LAND USE CATEGORY:
Input the number "1" under the appropriate land use zoning, and limit to only one entry.
ARA MDR IDA HDR MPD CIA
0 1 0 0 0 0
E. Afforestation Threshold.................. 20 % x D = 6.00
F. Conservation Threshold.................. 25 % x D = 7.50
EXISTING FOREST COVER:
G. Existing forest cover (excluding floodplain)....................= 0.65
H. Area of forest above afforestation threshold....................= 0.00
I. Area of forest above conservation threshold....................= 0.00
BREAK EVEN POINT:
J. Forset retention above threshold with no mitigation....................= 0.00
K. Clearing permitted without mitigation....................= 0.00
PROPOSED FOREST CLEARING
L. Total area of forest to be cleared....................= 0.65
M. Total area of forest to be retained....................= 0.00
PLANTING REQUIREMENTS:
N. Reforestation for clearing above conservation threshold.......= 0.00
P. Reforestation for clearing below conservation threshold.......= 1.30
Q. Credit for retention above conservation threshold....................= 0.00
R. Total reforestation required....................= 1.30
S. Total afforestation required....................= 5.37
T. Total reforestation and afforestation required....................= 6.67
Total reforestation and afforestation provided....................= 6.67

1) Forest conservation for this project is in compliance with "Option A" of Appendix L "Guidelines for Rural Cluster Subdivisions" and outlined in the Forest Conservation Manual.
2) The forest conservation requirement for Non-Buildable Bulk Parcels C & D must be addressed at the time of resubdivision of this parcel.
3) Forest Conservation Easement B-2 is 0.90 Ac retention and at a 2:1 ratio, satisfies 0.45 Ac of reforestation / afforestation obligations.
4) The 6.24 reforestation / afforestation obligation is being met by providing 5.79 Ac of afforestation within Forest Conservation Easements A-1 (1.09 Ac), A-2 (0.81 Ac), B-1 (2.09 Ac) and B-3 (1.80 Ac). A credit of 0.45 Ac is provided through the retention of 0.90 acres of existing forest within Forest Conservation Easement B-2.



PERENNIAL BED PLANTING

REGION	BOTANICAL NAME	COMMON NAME
①	ECHINACEA PURPUREA	DWARF PURPLE CONEFLOWER
②	CHRYSOPIS MARIANA	MARYLAND GOLDENASTER
③	AMSONIA TABERNAEMONTANA	DWARF BLUESTAR
④	ASCELEPIAS TUBEROSA	BUTTERFLYWEED

Revised / Revised 5/7/2007 / Approved	Howard County, Maryland Department of Public Works Approved: [signature] Chief, Bureau of Engineering	Traffic Circle Generic Landscape Design Layout	Detail L-1.03

FOREST CONSERVATION EASEMENT LINE TABLE

LINE	LENGTH(FT)	BEARING
FC1	661.15	S78°26'48"E
FC2	70.49	S28°30'38"W
FC3	64.26	S28°30'38"W
FC4	304.90	N76°30'38"W
FC5	324.13	N65°19'44"W
FC6	393.24	N80°31'06"W
FC7	45.05	N09°28'54"E
FC8	393.42	S80°31'06"E
FC9	80.60	S31°29'10"W
FC10	17.62	N62°10'53"W
FC11	37.14	S37°34'08"W
FC12	256.92	S01°07'26"W
FC13	81.18	S02°22'05"E
FC14	65.71	S07°16'40"E
FC15	67.71	S15°06'34"W
FC16	21.07	S71°32'26"E
FC17	12.61	S71°33'06"E
FC18	12.77	N38°03'43"E
FC19	10.64	N15°56'35"E
FC20	5.53	N23°31'51"E
FC21	23.75	N23°31'51"E
FC22	153.42	N03°02'56"E
FC23	323.62	N11°16'04"E
FC24	27.37	S80°31'06"E
FC25	45.05	N09°28'54"E
FC26	69.87	N80°31'06"W
FC27	47.00	S06°54'34"W
FC28	202.68	S00°18'19"E
FC29	191.86	S34°41'19"E
FC30	19.74	N56°55'17"E
FC31	107.78	N49°29'40"E
FC32	36.44	N55°03'56"W
FC33	73.16	N05°51'56"W
FC34	101.45	N35°33'26"E
FC35	250.36	N67°23'15"W
FC36	68.82	S68°11'16"W
FC37	939.20	N28°30'38"E
FC38	40.58	S68°58'08"E
FC39	NOT USED	
FC40	945.83	S28°30'38"W
FC41	50.00	N61°29'22"W
FC42	117.52	S28°30'38"W
FC43	239.86	S61°29'22"E
FC44	40.43	S61°29'22"E
FC45	27.14	N38°43'00"E
FC46	330.30	N61°29'22"W
FC47	50.00	N61°29'22"W
FC48	945.83	S28°30'38"W

FOREST CONSERVATION EASEMENT CURVE TABLE

CURVE	LENGTH (FT)	RADIUS (FT)	DELTA	CHORD LEN (FT)	CHORD DIR
FCC1	106.11	1003.53	6°03'31"	106.06	N41°29'36"E
FCC2	102.43	211.71	27°43'17"	101.44	S54°58'27"W
FCC3	9.86	825.00	0°41'06"	9.86	S69°18'41"E

PLANTING SPECIFICATIONS AND NOTES

SITE PREPARATION AND SOILS

1. PROTECTION FENCING AND SILT FENCES FOR SEDIMENT AND EROSION CONTROL ARE TO BE INSTALLED AS A FIRST ORDER OF BUSINESS. SEE PLAN FOR LOCATIONS.
2. DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT. AS SHOWN ON THE DETAIL VIEW, A PLANTING FIELD OF RADIUS = 5 X DIAMETER OF THE ROOT BALL OR CONTAINER IS RECOMMENDED.
3. SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE.
4. SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
5. ALL MIXING IN 3 AND 4 SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANT STORAGE AND INSPECTION

1. FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
2. FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
3. PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
4. UNTIL PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL, AND MOISTENED ENVIRONMENT .

PLANT INSTALLATION

1. THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE STOCKPILED SOILS SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER, GENEROUSLY, TO SETTLE SOIL BACKFILLED AROUND TREES.
2. PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.
3. CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THRU LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 1/2 INCH ARE ENCOUNTERED PLEASE TRY TO DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES. THEY WERE HERE FIRST.
4. CONTAINER GROWN STOCK SHOULD BE REMOVED FROM THE CONTAINER AND ROOTS GENTLY LOOSENED FROM THE SOIL. IF THE ROOTS ENCIRCLE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED. ROOTS MAY NOT BE TRIMMED ON SITE, DUE TO THE INCREASED CHANCES OF SOIL BORNE DISEASES.
5. FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR STRING FROM ROOT BALL. THEN PEEL BACK BURLAP TO BASE OF ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
6. FOR TREES PLANTED IN THE AFFORESTATION AREA, CONTRACTOR SHALL EVENLY DISPERSE SPECIES IN GROUPS OF TWO (2) TO FOUR (4), PER SPECIES, OVER THE ENTIRE DESIGNATED AREA TO BE PLANTED WHILE MAINTAINING AN AVERAGE RANDOM SPACING OF INDIVIDUAL TREES AT PROPER SPACING INDICATED ON PLANT LIST.
7. AVOID PLANTING IN A STRAIGHT GRID PATTERN. TREES SHALL BE PLANTED ON AN AVERAGE SPACING AS INDICATED ON PLANT LISTS TO OBTAIN A MORE NATURAL APPEARANCE.
8. NEWLY PLANTED TREES MAY NEED WATERING AS MUCH AS ONCE A WEEK FOR THE ENTIRE GROWING SEASON, DUE TO THE WELL DRAINED NATIVE SOILS FOUND ON THIS SITE COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. ANY WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

FERTILIZING

1. DO NOT FERTILIZE NEWLY PLANTED TREES WITHIN THE FIRST GROWING SEASON AFTER PLANTING. DOING SO MAY CAUSE A SPURT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADD ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
2. NOTHING SHOULD BE ADDED TO THE SOIL WITHOUT TESTING IT FIRST TO DETERMINE ITS NEEDS.
3. IF AND WHEN IT IS TIME TO FERTILIZE, ORGANIC FERTILIZERS ARE PREFERRED TO SYNTHETIC FERTILIZERS. BONE MEAL OR SEAWEED BASED PRODUCTS ARE AVAILABLE COMMERCIALLY AND ARE RECOMMENDED. THEY HAVE THE ABILITY TO SUPPLY NUTRIENTS TO THE PLANT AS NEEDED WHILE MINIMIZING THE RISK OF EXCESS NUTRIENTS ENTERING THE FOREST SYSTEM AND WATER SUPPLY.

POST CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT PROGRAM

1. ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD.
2. ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
3. VOLUNTEER SEEDING OF NATIVE, LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THIS EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.
4. REMOVE THROUGH MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
5. REMOVE AND DISPOSE OF MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN ENTIRE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOTHERING PLANTING STOCK.
6. A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS MAY BE REQUIRED TO ACHIEVE THIS GOAL.

SUPERVISION

ALL FOREST CONSERVATION ACTIVITIES SHALL BY DONE UNDER THE DIRECT SUPERVISION OF SOMEONE FROM THE DESIGN TEAM OR OTHER "QUALIFIED PROFESSIONAL" AS DETERMINED BY THE REQUIREMENTS OF COMAR 08.19.06.01 AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, PUBLIC LANDS AND FORESTRY DIVISION.

STANDARD SPECIMEN TREE NON-DISTURBANCE NOTE:

"THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION, SOIL COMPACTION OR EXCAVATION, INTRODUCTION OF TOXIC CHEMICALS OR OTHER DISTURBANCES DETRIMENTAL TO THE LIVE SPECIMEN TREES OR CRITICAL ROOT ZONES FOR THESE TREES EXCEPT AS PERMITTED BY HOWARD COUNTY"

CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT PROGRAM

1. ALL FOREST RETENTION AREAS AND ISOLATED POTENTIAL SPECIMEN TREES SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED, BLAZE ORANGE PLASTIC MESH FENCING AND SIGNAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY AND AROUND ISOLATED POTENTIAL SPECIMEN TREES PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
2. SUPER SILT FENCE SHALL BE INSTALL AS SHOWN ON THE PLAN. BLAZE ORANGE PLASTIC MESH FENCING SHALL BE INSTALLED ALONG THE REFORESTATION BOUNDARY WHERE THERE IS NO SUPER SILT FENCE PROPOSED, AFTER THE PLANTING OF THE EASEMENT.
3. THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES. IT IS UNDERSTOOD THAT THE INSTALLATION OF THE FENCING IN THIS MANNER WILL CREATE AN IRREGULAR EDGE.
4. ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
5. ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THE PROTECTED AREAS.
6. INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
7. THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS.
8. REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
9. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS.
10. ROOT PRUNING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OFGRADING WITHIN AND ADJACENT TO ALL FORESTED AREAS. PLEASE REFER TO ROOT PRUNING DETAIL THIS SHEET.

PRE-CONSTRUCTION MEETING

1. AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL ATTEND. THE PURPOSE OF THIS MEETING WILL BE:
   A. TO IDENTIFY THE LOCATIONS OF THE FOREST RETENTION AREAS, SPECIMEN TREES WITHIN 50 FEET OF THE LIMIT OF DISTURBANCE, LIMITS OF CONSTRUCTION, EMPLOYEE PARKING AREAS AND EQUIPMENT STAGING AREAS;
   B. INSPECT ALL FLAGGED BOUNDARIES AND PROTECTION DEVICES;
   C. MAKE ALL NECESSARY ADJUSTMENTS;
   D. ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.

CONSTRUCTION MONITORING

1. THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB INJURY, OR STRESS CAUSED BY FLOODING OR DROUGHT CONDITIONS.
2. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.

LIMITS OF WORK

THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

AFFORESTATION PLANT LIST (FCE A-1 – 1.08 Ac)

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C. SPACING	SIZE & REMARKS
10	Acer rubrum Red Maple	VT	D-W	FAC	20'	CONT/B & B 2" CALIPER
20	Lindera benzoin Spicebush	T	M	FACW-	20'	CONT/B & B 3'-5' HEIGHT
20	Liquidambar styraciflua American Sweet Gum	I	M-W	FAC	20'	CONT/B & B 2" CALIPER
20	Liriodendron tulipifera Tuliptree	MT	D-M	FAC	20'	CONT/B & B 2" CALIPER
19	Nyssa sylvatica Black Gum	T	M-W	FAC	20'	CONT/B & B 2" CALIPER
19	Quercus alba White Oak	MT	D-M	FACU	20'	CONT/B & B 2" CALIPER

TOTAL
108 – 1" CALIPER TREES

NOTE : WHIPS OR SEEDLINGS MAY BE SUBSTITUTED FOR THE 1" CALIPER OR 3' – 5'. IF WHIPS OR SEEDLINGS ARE TO BE USED, MULTIPLY THE QUANTITIES BY 1.75 TO DETERMINE THE NUMBER OF TREES REQUIRED.

AFFORESTATION PLANT LIST (FCE A-2 – 0.81 Ac)

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C. SPACING	SIZE & REMARKS
40	Acer rubrum Red Maple	VT	D-W	FAC	15'	CONT/B & B 1" CALIPER
20	Lindera benzoin Spicebush	T	M	FACW-	15'	CONT/B & B 3'-5' HEIGHT
30	Liquidambar styraciflua American Sweet Gum	I	M-W	FAC	15'	CONT/B & B 1" CALIPER
30	Liriodendron tulipifera Tuliptree	MT	D-M	FAC	15'	CONT/B & B 1" CALIPER
20	Nyssa sylvatica Black Gum	T	M-W	FAC	15'	CONT/B & B 1" CALIPER
22	Quercus alba White Oak	MT	D-M	FACU	15'	CONT/B & B 1" CALIPER

TOTAL
162 – 1" CALIPER TREES

NOTE : WHIPS OR SEEDLINGS MAY BE SUBSTITUTED FOR THE 1" CALIPER OR 3' – 5'. IF WHIPS OR SEEDLINGS ARE TO BE USED, MULTIPLY THE QUANTITIES BY 1.75 TO DETERMINE THE NUMBER OF TREES REQUIRED.

AFFORESTATION PLANT LIST (FCE B-1 – 1.97 Ac)

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C. SPACING	SIZE & REMARKS
82	Acer rubrum Red Maple	VT	D-W	FAC	15'	CONT/B & B 1" CALIPER
46	Lindera benzoin Spicebush	T	M	FACW-	15'	CONT/B & B 3'-5' HEIGHT
61	Liquidambar styraciflua American Sweet Gum	I	M-W	FAC	15'	CONT/B & B 1" CALIPER
73	Liriodendron tulipifera Tuliptree	MT	D-M	FAC	15'	CONT/B & B 1" CALIPER
73	Nyssa sylvatica Black Gum	T	M-W	FAC	15'	CONT/B & B 1" CALIPER
59	Quercus alba White Oak	MT	D-M	FACU	15'	CONT/B & B 1" CALIPER

TOTAL
394 – 1" CALIPER TREES

NOTE : WHIPS OR SEEDLINGS MAY BE SUBSTITUTED FOR THE 1" CALIPER OR 3' – 5'. IF WHIPS OR SEEDLINGS ARE TO BE USED, MULTIPLY THE QUANTITIES BY 1.75 TO DETERMINE THE NUMBER OF TREES REQUIRED.

AFFORESTATION PLANT LIST (FCE B-2 – 0.90 Ac)

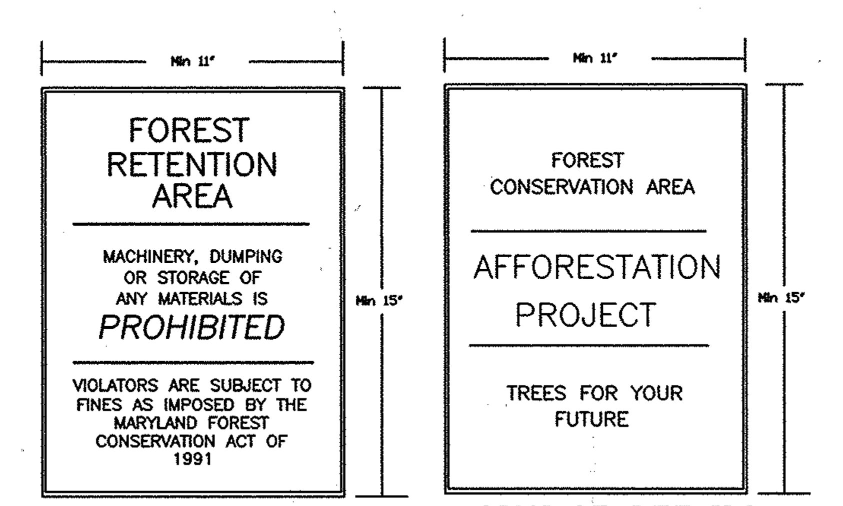
N/A – RETENTION

AFFORESTATION PLANT LIST (FCE B-3 – 1.92 Ac)

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C. SPACING	SIZE & REMARKS
75	Acer rubrum Red Maple	VT	D-W	FAC	15'	CONT/B & B 1" CALIPER
44	Lindera benzoin Spicebush	T	M	FACW-	15'	CONT/B & B 3'-5' HEIGHT
69	Liquidambar styraciflua American Sweet Gum	I	M-W	FAC	15'	CONT/B & B 1" CALIPER
64	Liriodendron tulipifera Tuliptree	MT	D-M	FAC	15'	CONT/B & B 1" CALIPER
64	Nyssa sylvatica Black Gum	T	M-W	FAC	15'	CONT/B & B 1" CALIPER
68	Quercus alba White Oak	MT	D-M	FACU	15'	CONT/B & B 1" CALIPER

TOTAL
384 – 1" CALIPER TREES

NOTE : WHIPS OR SEEDLINGS MAY BE SUBSTITUTED FOR THE 1" CALIPER OR 3' – 5'. IF WHIPS OR SEEDLINGS ARE TO BE USED, MULTIPLY THE QUANTITIES BY 1.75 TO DETERMINE THE NUMBER OF TREES REQUIRED.



SIGNAGE DETAILS
NOT TO SCALE

GENERAL FOREST CONSERVATION NOTE:

THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. 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. SHOULD DISTURBANCE OCCUR IN THE FOREST CONSERVATION EASEMENT AREAS DURING, OR AFTER CONSTRUCTION, CIVIL PENALTIES OR MITIGATION MAY BE IMPOSED,.

GENERAL FOREST CONSERVATION NOTE:

THE FOREST CONSERVATION REFORESTATION EASEMENT PLANTINGS ARE NOT TO BE CONSIDERED LANDSCAPING AS IT IS USUALLY PRACTICED. THE AFFORESTATION PLANTINGS ARE TO CREATE NEW FOREST COMMUNITIES THAT WILL REPLACE TO SOME DEGREE THE FOREST RESOURCES THAT HAVE BEEN LOST DURING RECENT DECADES OF FARMING AND LAND DEVELOPMENT. THEIR PRIMARY PURPOSE IS ENVIRONMENTAL AND NOT AESTHETIC. THESE REFORESTATION STANDS WILL REQUIRE SPECIAL MANAGEMENT AND INITIALLY MAY NOT LOOK ATTRACTIVE.

ADVISORY NOTE:

DURING PERIODS OF PLANT GROWTH, THE FOREST EASEMENT WILL SEEM UNSIGHTLY AND MAY BE PRONE TO MOWING / DUMPING ENCROACHMENTS BY THE ADJACENT RESIDENTS. FOR THIS REASON, IT IS ENCOURAGED TO PLACE PHYSICAL BARRIERS (i.e. FENCING) ALONG THE EDGES OF THESE FOREST CONSERVATION EASEMENT PLANTING AREAS.

ADVISORY NOTE:

VERIFY WITH COLUMBIA PIPELINE THAT PLANTING FOREST IS ACCEPTABLE ALONG THE EDGES OF THEIR EXISTING EASEMENT BOUNDARY AND THAT THEIR CLEARING AND MAINTENANCE WILL BE LIMITED TO THE AREA WITHIN THEIR EASEMENT AND / OR RIGHT-OF-WAY.

DEVELOPER

GREENBERRY, INC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

OWNER

ROBERT B. WILLIAMS
JOANNA K. BENEDICT
BARBARA B. CUSACK
WILLIAM I. SLADE, JR.
C/O MILDENBERG, BOENDER AND ASSOC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

DEVELOPERS / BUILDERS CERTIFICATE

I / WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE IN ACCORDANCE 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 CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

[signature] 10/8/14
SIGNATURE OF DEVELOPER — DATE

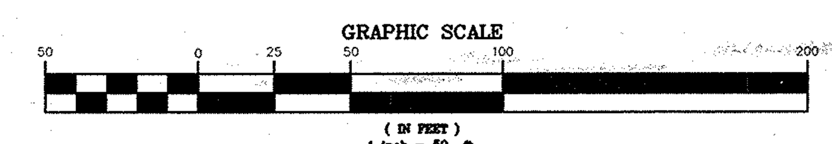
R. JACOB HIKMAT, PRESIDENT
PRINTED NAME OF DEVELOPER

APPROVED: DEPARTMENT OF PUBLIC WORKS
[signature] 10-27-2014
CHIEF BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[signature] 11.17.14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
[signature] 11-20-14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

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. 40091, EXP DATE 2/13/15.

[signature] 10/7/14
JEFFREY SLOMAN, P.E. — DATE



[signature]
DNR QUALIFIED PROFESSIONAL

H: \12-022\DWG\FINAL\022-NOV 2013 ROAD CONST.DWG

project	date
12-022	OCT 2014
illustration	engineering
JLS	JLS
scale	approval
1"=50'	MMM

no.	description	date
1.	REVISED TOTAL SHEET NUMBER	JULY 2015

revisions

GREENBERRY, LOTS 1 THRU 25
AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F', AND 'G', AND BUILDABLE PRES. PARCEL 'E'
TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

LANDSCAPE AND FOREST CONSERVATION NOTES AND DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.

DEVELOPER

GREENBERRY, INC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

OWNER

ROBERT B. WILLIAMS
JOANNA K. BENEDICT
BARBARA B. CUSACK
WILLIAM I. SLADE, JR.
C/O MILDENBERG, BOENDER AND ASSOC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
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APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.17.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-20-14

STATE OF MARYLAND
JEFFREY L. SLOMAN
No. 40091
PROFESSIONAL ENGINEER

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. 40091, EXP DATE 2/13/15.

JEFFREY SLOMAN, P.E. — DATE 10/7/14

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONST.DWG

project	date
12-022	OCT 2014
illustration	engineering
JLS	JLS
scale	approval
1"=100'	MMM

no.	revisions	description	date
1.	REVISED TOTAL SHEET NUMBER		JULY 2015

GREENBERRY, LOTS 1 THRU 25

AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'C', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F', AND 'G', AND BUILDABLE PRES. PARCEL 'E'

TAX MAP 28, PARCEL 48

FIFTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

STORM DRAIN DRAINAGE AREA MAP

MILDENBERG, BOENDER & ASSOC., INC.
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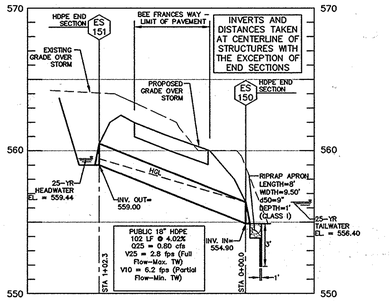
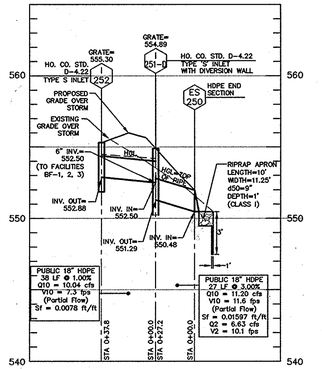
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.

F-14-095



CULVERT PROFILE – STRUCTURES ES-151 TO ES-150

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



PROFILE – STRUCTURES I-251 TO ES-250

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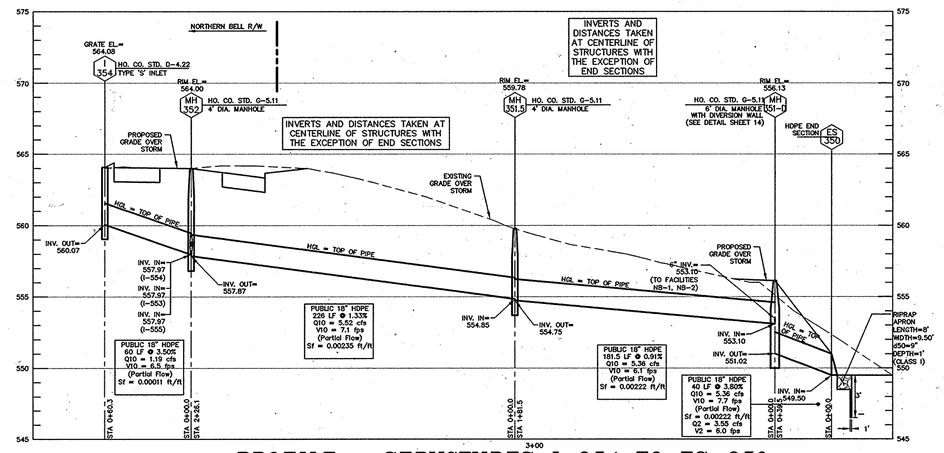

PROFILE – STRUCTURES I-354 TO ES-350

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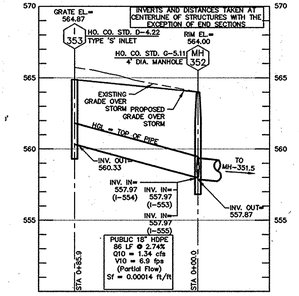

PROFILE – STRUCTURES I-353 TO MH-352

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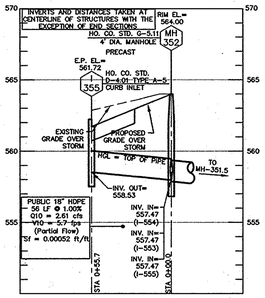

PROFILE – STRUCTURES I-355 TO MH-352

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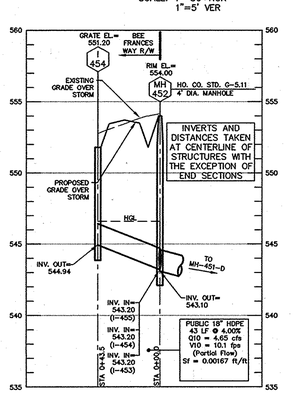

PROFILE – STRUCTURES I-454 TO MH-452

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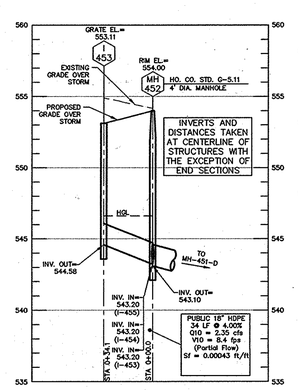

PROFILE – STRUCTURE I-453 TO MH-452

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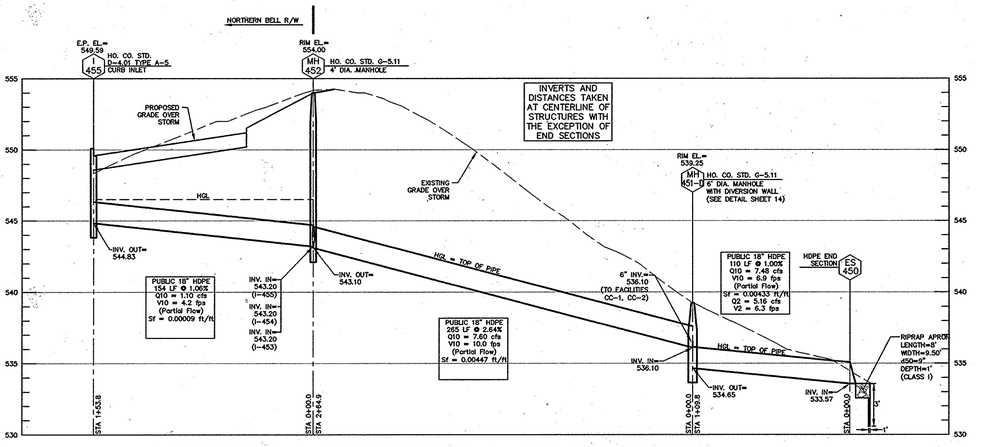

PROFILE – STRUCTURES I-455 TO ES-450

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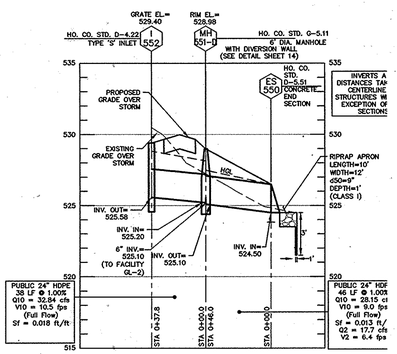
1"=5' VER



PROFILE – STRUCTURES I-552 TO ES-550

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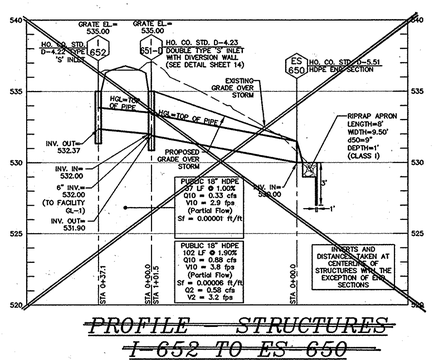
1"=5' VER



~~PROFILE – STRUCTURES I-652 TO ES-650~~

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

STRUCTURE SCHEDULE

LOCATIONS AND COORDINATES TAKEN AT CENTER OF STRUCTURE FOR MANHOLES AND INLETS AND AT END OF STRUCTURE FOR MITERED ENDS AND END SECTIONS

STRUCTURE	TYPE	LOCATION / COORDINATES	TOP/RIM/ GRATE EL.	INV. IN	INV. OUT
ES 150	HDPE END SECTION	N 569,555.4135 E 1,320,099.8325	N/A	554.90	N/A
ES 151	HDPE END SECTION	N 569,472.2724 E 1,320,178.2485	N/A	N/A	559.00
ME 200	PIPE END MITERED TO SLOPE	N 569,856.0411 E 1,320,364.1614	N/A	552.00	N/A
ME 201	PIPE END MITERED TO SLOPE	N 569,859.2608 E 1,320,362.7156	N/A	552.00	N/A
ME 202	PIPE END MITERED TO SLOPE	N 569,837.7579 E 1,320,372.4322	N/A	552.00	N/A
CO 203	~~CLEANOUT~~ NYOPLAST 15" DIA. DRAIN BASIN W/SOLID TOP	N 569,846.8364 E 1,320,378.5232	553.00	552.15	~~553.05~~ 552.05 (ALL PIPES)
CO 204	CLEANOUT	BEE FRANCES WAY STA 44+31.7 OFFSET 18.5' LEFT	556.00	552.25	552.25
ES 250	HDPE END SECTION	N 569,782.2057 E 1,320,332.1450 (BEGINNING OF END SECTION)	N/A	550.48	N/A
I 251-D	HO. CO. STD. D-4.23 DOUBLE TYPE 'S' INLET WITH DIVERSION WALL	BEE FRANCES WAY STA 34+56.5 OFFSET 18.5' LEFT	554.89	552.50	552.50 (6") 551.29
I 252	HO. CO. STD. D-4.22 TYPE S INLET	BEE FRANCES WAY STA 3+58.3 OFFSET 18.5' RIGHT	555.30	N/A	552.88
ME 300	PIPE END MITERED TO SLOPE	N 570,443.1165 E 1,321,435.8598	N/A	553.00	N/A
ME 301	PIPE END MITERED TO SLOPE	N 570,451.6545 E 1,321,394.7364	N/A	553.00	N/A
ES 350	HDPE END SECTION	N 570,464.3091 E 1,321,419.2487 (BEGINNING OF END SECTION)	N/A	549.50	N/A
MH 351-D	HO. CO STD. G-5.11 6' DIA. MANHOLE WITH DIVERSION WALL	N 570,435.4346 E 1,321,414.3641	556.13	553.10	553.10 (6") 551.02
MH 351.5	HO. CO STD. G-5.11 4' DIA. MANHOLE	N 570,251.8026 E 1,321,387.3425	559.78	554.85	554.75
MH 352	HO. CO STD. G-5.11 4' DIA. MANHOLE	NORTHERN BELL STA 7+59.9 OFFSET 1.8' LEFT	564.00	557.97 (I-553) 557.97 (I-554) 557.97 (I-555)	557.87
I 353	HO. CO. STD. D-4.22 TYPE 'S' INLET	NORTHERN BELL STA 6+44.5 OFFSET 18.0' LEFT	564.87	N/A	560.33
I 354	HO. CO STD. D-4.22 TYPE 'S' INLET	NORTHERN BELL STA 7+10.7 OFFSET 24.9' RIGHT	564.08	N/A	560.07
I 355	HO. CO STD. D-4.01 TYPE A-5 CURB INLET	NORTHERN BELL LINEAR PROFILE STA 2+18.5 OFFSET 0.0'	561.72	N/A	558.53
ME 400	PIPE END MITERED TO SLOPE	N 570,021.6914 E 1,320,197.2870	N/A	536.00	N/A
CO 401	CLEANOUT	N 570,013.3294 E 1,320,217.3630	537.80	536.03	536.03
ME 402	PIPE END MITERED TO SLOPE	N 570,043.9387 E 1,320,202.5895	N/A	536.00	N/A
CO 403	CLEANOUT	N 570,033.6654 E 1,320,227.2542	538.20	536.07	536.07 (6"-CO 401) 536.07 (6")
ES 450	HDPE END SECTION	N 570,097.7879 E 1,320,131.5879 (BEGINNING OF END SECTION)	N/A	533.57	N/A
MH 451-D	HO. CO STD. G-5.11 6' DIA. MANHOLE WITH DIVERSION WALL	N 570,049.1688 E 1,320,234.7948	539.25	536.10	536.10 (6") 534.65
MH 452	HO. CO STD. G-5.11 4' DIA. MANHOLE	N 570,293.5855 E 1,320,336.8447	554.00	543.20 (I-453) 543.20 (I-454) 543.20 (I-455)	543.10
I 453	HO. CO. STD. D-4.22 TYPE 'S' INLET	CATHERINE CLOSE ROAD STA 2+08.4 OFFSET 18.5' LEFT	553.11	N/A	544.58
I 454	HO. CO. STD. D-4.22 TYPE 'S' INLET	CATHERINE CLOSE ROAD STA 2+42.4 OFFSET 18.5' RIGHT	551.80	N/A	544.94
I 455	HO. CO. STD. D-4.01 TYPE A-5 CURB INLET	CATHERINE CLOSE LINEAR PROFILE STA 1+65.2 OFFSET 0.0'	549.59	N/A	544.83
ME 500	PIPE END MITERED TO SLOPE	N 570,054.6254 E 1,319,975.1136	N/A	525.00	N/A
ES 550	HDPE END SECTION	N 570,095.4511 E 1,319,958.6496 (BEGINNING OF END SECTION)	N/A	524.50	N/A
MH 551-D	HO. CO STD. G-5.11 6' DIA. MANHOLE WITH DIVERSION WALL	N 570,092.3169 E 1,320,004.5251	528.98	525.20	525.10 (6") 525.10
I 552	HO. CO. STD. D-4.22 TYPE 'S' INLET	N 570,088.9783 E 1,320,042.0959	529.40	N/A	526.48
ME 600	PIPE END MITERED TO SLOPE	N 570,668.9218 E 1,320,090.9974	N/A	531.75	N/A
CO 601	CLEANOUT	GREENBERRY LANE EXTENSION STA 6+94.0 OFFSET 23.0' RIGHT	532.80	531.80	531.80
CO 602	CLEANOUT	GREENBERRY LANE EXTENSION STA 6+45.9 OFFSET 23.0' RIGHT	536.10	531.88	531.88
ES 650	HDPE END SECTION	GREENBERRY LANE EXTENSION STA 6+96.7 OFFSET 19.4' RIGHT	N/A	530.00	N/A
I 651-D	HO. CO. STD. D-4.23 DOUBLE TYPE 'S' INLET WITH DIVERSION WALL	GREENBERRY LANE EXTENSION STA 5+96.7 OFFSET 18.6' RIGHT	535.00	~~532.00~~ 531.90	532.00(6") 531.90
I 652	HO. CO. STD. D-4.22 TYPE 'S' INLET	GREENBERRY LANE EXTENSION STA 5+96.7 OFFSET 18.6' LEFT	535.00	N/A	~~532.37~~

PIPE SCHEDULE*

SIZE	LENGTH	TYPE / CLASS
4"	402 LF	HDPE (MICRO-BIORETENTION OUTLET)
6"	484 LF	HDPE (NON-PERFORATED)
18"	1,508 LF	HDPE
24"	84 LF	HDPE

* DOES NOT INCLUDE 5 LF 18" CMP EXTENSION UNDER LINDEN CHURCH ROAD

DEVELOPER

GREENBERRY, INC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

OWNER

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CHIEF BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.17.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-20-14

STATE OF MARYLAND — JEFFREY L. SLOMAN — No. 40091 — PROFESSIONAL ENGINEER

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. 40091, EXP DATE 2/13/15.

JEFFREY SLOMAN, P.E. — DATE 10/7/14

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project 12-022 | date OCT 2014
illustration JLS | engineering JLS
scale 1"=50' | approval MMM

no.	revisions	description	date
1.	REVISED TOTAL SHEET NUMBER		JULY 2015
2.	REMOVED PROFILE FROM I-652 TO ES-650		JULY 2016

GREENBERRY, LOTS 1 THRU 25

AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F' AND 'G', AND BUILDABLE PRES. PARCEL 'E'
TAX MAP 28, PARCEL 48
HOWARD COUNTY, MARYLAND
FIFTH ELECTION DISTRICT

STORM DRAIN PROFILES

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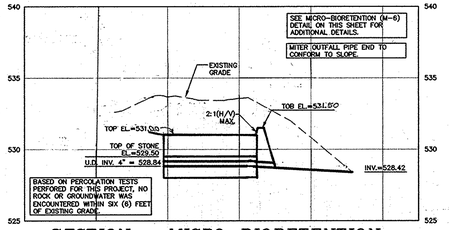
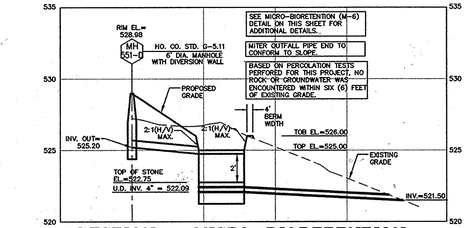
F-14-095



SECTION – MICRO-BIORETENTION FACILITY GL-1

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



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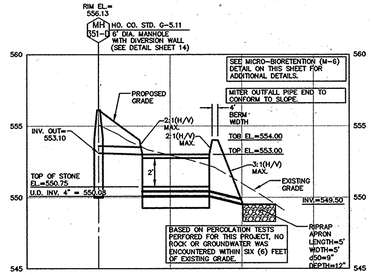

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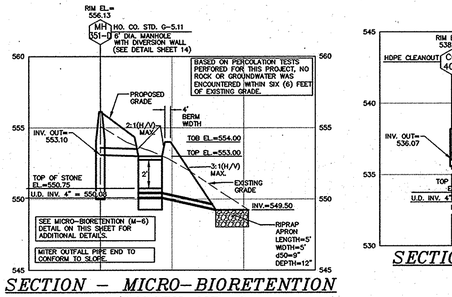

SECTION – MICRO-BIORETENTION FACILITY NB-2

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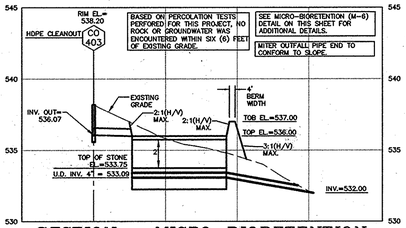

SECTION – MICRO-BIORETENTION FACILITY CC-1

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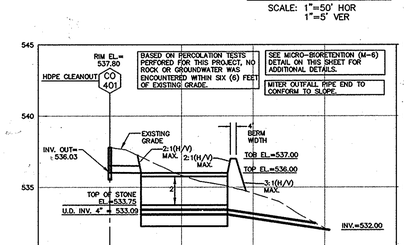

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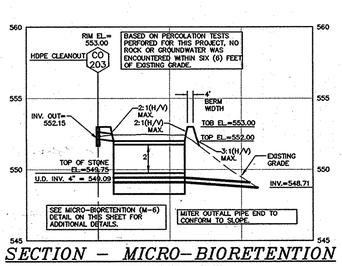

SECTION – MICRO-BIORETENTION FACILITY BF-1

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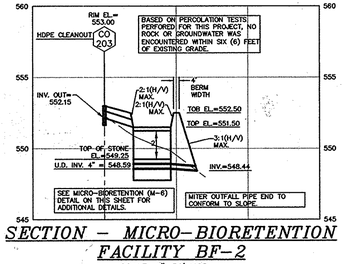

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SCALE: 1"=50' HOR
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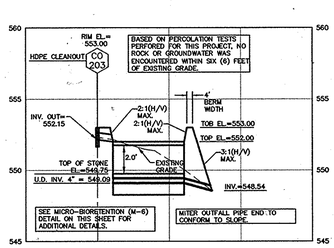
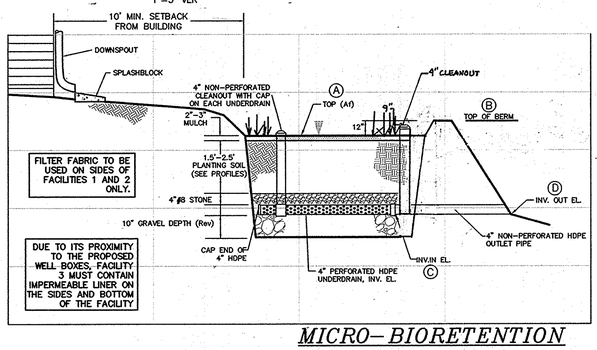


SECTION – MICRO-BIORETENTION FACILITY BF-3

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



MICRO-BIORETENTION (M-6) DETAIL

NOT TO SCALE

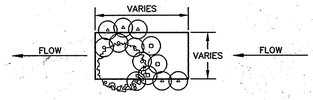
MICRO-BIORETENTION SCHEDULE

FACILITY	TOP EL. (A)	TOP OF BERM(B)	INV. IN (C)	INV. OUT (D)	AREA AT TOP EL. (Af)
GL-1	531.00	531.50	528.84	528.42	651 SF
GL-2	525.00	526.00	522.09	521.50	882 SF
NB-1	553.00	554.00	550.08	549.50	699 SF
NB-2	553.00	554.00	550.08	549.50	670 SF
CC-1	536.00	537.00	533.09	532.00	726 SF
CC-2	536.00	537.00	533.09	532.00	660 SF
BF-1	552.00	553.00	549.09	548.71	550 SF
BF-2	551.50	552.50	548.59	548.44	550 SF
BF-3	552.00	553.00	549.09	548.54	550 SF

PLANT LIST

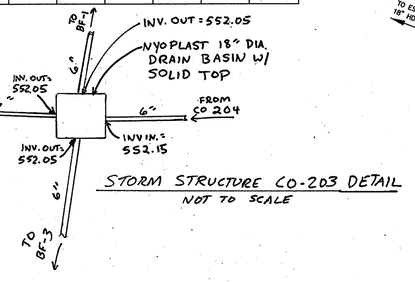
SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	PLANTING RATIO	FAC. GL-1 Af=651 SF QUANTITY	FAC. GL-2 Af=882 SF QUANTITY	FAC. NB-1 Af=699 SF QUANTITY	FAC. NB-2 Af=670 SF QUANTITY	FAC. CC-1 Af=726 SF QUANTITY	FAC. CC-2 Af=660 SF QUANTITY	FAC. BF-1 Af=550 SF QUANTITY	FAC. BF-2 Af=550 SF QUANTITY	FAC. BF-3 Af=550 SF QUANTITY
	ILEX GLABRA	INK BERRY	2' - 3' HT.	1 / 60 SF	11	15	12	11	12	11	9	9	9
	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	1 GAL. CONTAINER	1 / 20 SF	33	44	35	34	36	33	28	28	28
	ONOCLEA SENSIBILIS	SENSITIVE FERN	1 GAL. CONTAINER	1 / 30 SF	22	29	23	22	24	22	18	18	18
	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	1 GAL. CONTAINER	1 / 40 SF	16	22	17	17	18	17	14	14	14

TOTAL: 646 PERENNIALS, 99 SHRUBS



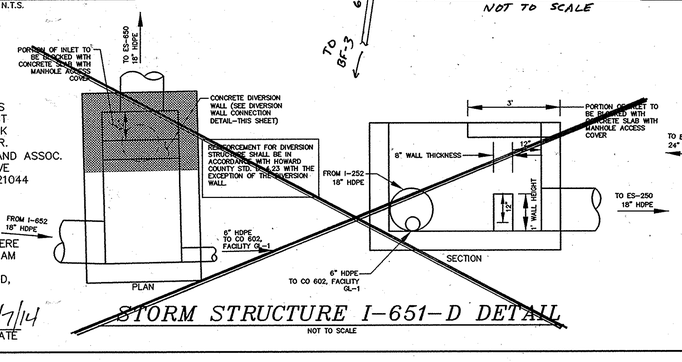
MICRO-BIORETENTION PLANTING DETAIL

N.T.S.



STORM STRUCTURE CO-203 DETAIL

NOT TO SCALE



STORM STRUCTURE I-651-D DETAIL

NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)

A. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE OWNER SHALL ENSURE THE AREAS RECEIVING RUNOFF ARE PROTECTED FROM FUTURE COMPACTION OF DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

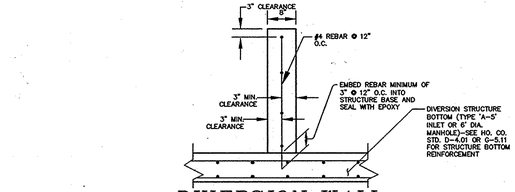
OPERATION AND MAINTENANCE SCHEDULE FOR GRASS SWALE (M-8) AND MICRO-BIORETENTION (M-6)

A. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. 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. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.

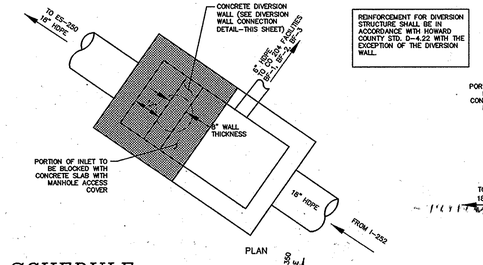
C. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.

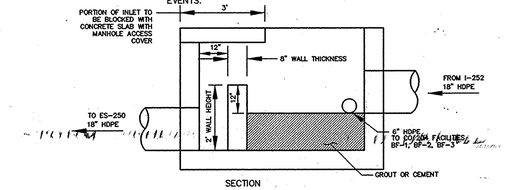
SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



DIVERSION WALL CONNECTION DETAIL (TYP.)

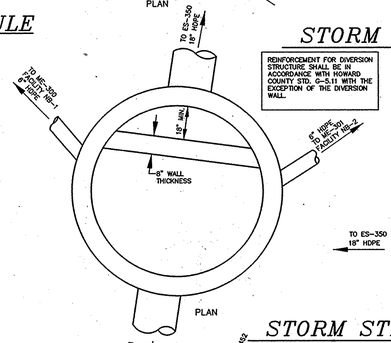
NOT TO SCALE

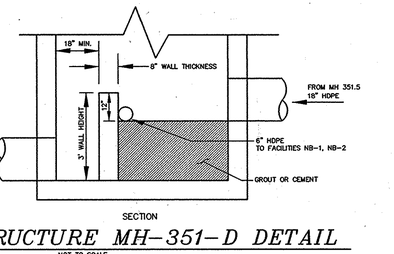




STORM STRUCTURE I-251-D DETAIL

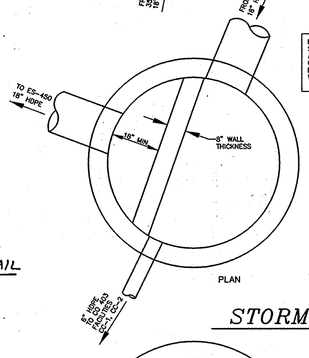
NOT TO SCALE

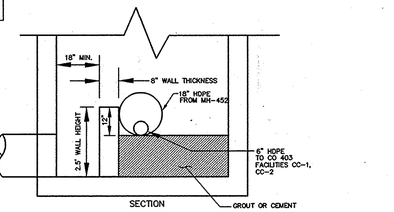




STORM STRUCTURE MH-351-D DETAIL

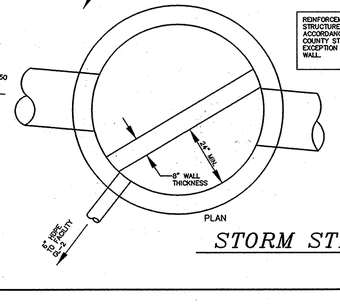
NOT TO SCALE

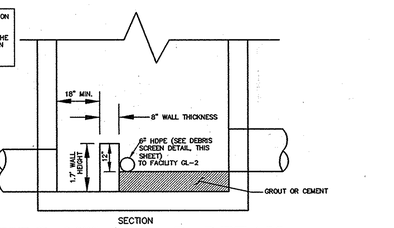




STORM STRUCTURE MH-451-D DETAIL

NOT TO SCALE





STORM STRUCTURE MH-551-D DETAIL

NOT TO SCALE

DEVELOPER

GREENBERRY, INC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

OWNER

ROBERT B. WILLIAMS
JOANNA K. BENEDICT
BARBARA B. CUSACK
WILLIAM I. SLADE, JR.
C/O MILDENBERG, BOENDER AND ASSOC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.17.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-20-14

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. 40091, EXP DATE 2/13/15.

JEFFREY SLOMAN, P.E. — DATE 10/7/14

STATE OF MARYLAND — JEFFREY L. SLOMAN — No. 40091 — PROFESSIONAL ENGINEER

project 12-022 | date OCT 2014
illustration JLS | engineering JLS
scale 1"=50' | approval MMM

no.	description	date
3.	REMOVED SCEM STRUCTURE I-451	JULY 2016
2.	REVISED G4-1 DETAIL AND MICRO-BIO. SCHEDULE	MARCH 16
1.	REVISED TOTAL SHEET COUNT	JULY 2015

GREENBERRY, LOTS 1 THRU 25
AND NON-BUILDABLE BULK PARCELS 'C', 'D', 'F', AND 'G', AND BUILDABLE PRES. PARCEL 'E'
TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
STORMWATER MANAGEMENT AND SITE DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.

14 OF 21

F-14-095

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONST.DWG

TEMPORARY SEEDING FOR SITE STABILIZATION

PLANT SPECIES	SEEDING RATE		SEEDING DEPTH (INCHES)	RECOMMENDED SEEDING DATED BY PLANT HARDINESS ZONE		
	LB/AC	LB/1000SF		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	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
OATS (AVENA SATIVA)	72	1.7	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
WHEAT (TRITICUM AESTIVUM)	120	2.8	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
CEREAL RYE (SECALE ITALICA)	112	2.8	0.5	MAR 15 TO MAY 31; AUG 1 TO OCT 31	MAR 1 TO MAY 15; AUG 1 TO OCT 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

(B-4-5) STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOIL WITH PERMANENT VEGETATION.
PURPOSE
TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER OF DISTURBED
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 SPIECES OF MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED IN THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY.
B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DINES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD GUIDE, SECTION 342-CRITICAL AREA PLANTING.
C. FOR SITES HAVING DISTURBAD AREA OVER 5 ACRES, USE AND SHOW RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FROM FERTILIZED (40-0-01) AT 3 1/2 POUNDS PER 1000 S.F. (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 DESIRE 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 OF MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLOCATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY.
I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASRERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS SEEDING RETA: 1.5 TO 2.0 POUNDS PER 1000 S.F. 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/PERENIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY ABD WHEN TURF WILL RECEIVE MEDIUM TO INTENSUVE MANAGEMENT. CERTIFIED PERENIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDINGRATE: 2 POUNDS MIXTURE PER 1000 S.F. SHOOSE A MINIMUM OF THREE KENTUCKYBLUEGRASS CULTIVARS EITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL MIXTURE: FOR USE IN DROUGHT AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 65 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 PERCENT PER 1000 S.F. 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 TIRF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCANT AND CERTIFIES FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATES 1 1/2 TO 3 POUNDS PER 1000 S.F.
C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURE
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 ZONE: 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 STONE AND DEBRIS OVER 1.5 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASS WILL POSE NO DIFFICULTY.
E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH 0.5 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASON, OR ON ADVERSE SITES.

DEVELOPER

GREENBERRY, INC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

OWNER

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7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

ENGINEER'S CERTIFICATE

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] 10/7/14
SIGNATURE OF ENGINEER — DATE
JEFFREY SLOMAN, PE
PRINTED NAME OF ENGINEER

DEVELOPERS CERTIFICATE

I 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. HOWARD SOIL CONSERVATION DISTRICT IS AUTHORIZED TO CONDUCT PERIODIC ON-SITE INSPECTION.

[signature] 10/8/14
SIGNATURE OF DEVELOPER — DATE
R. JACOB HIKMAT, PRESIDENT
PRINTED NAME OF DEVELOPER

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

[signature] 10/16/14
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
[signature] 10-27-2014
CHIEF BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[signature] 11.17.14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
[signature] 11-20-14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

STATE OF MARYLAND — JEFFREY L. SLOMAN — No. 40091 — PROFESSIONAL ENGINEER

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. 40091, EXP. DATE 2/13/15.

[signature] 10/7/14
JEFFREY SLOMAN, P.E. — DATE

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 MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, 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 (SDC.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: 133.64 ACRES
AREA DISTURBED: 8.96 ACRES (INCL. R/W)
AREA TO BE ROOFED OR PAVED: 2.23 ACRES (INCL. R/W)
AREA TO BE VEGITATIVELY STABILIZED: 6.73 ACRES (INCL. R/W)
TOTAL CUT: 2,800 CU. YDS.
TOTAL FILL: 3,800 CU. YDS.
OFFSITEWASTE/BORROW AREA LOCATION: TBD
THESE QUANTITIES ARE FOR PERMIT PURPOSES ONLY. CONTRACTOR IS REQUIRED TO PROVIDE HIS OWN QUANTITIES MEASUREMENTS.
7) ANY SEDIMENT CONTROL PRACTICE WHICH 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 WORKING DAY, 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 PROCESSING 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 BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITIES, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

PERMANENT SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): 6b SEED MIXTURE (FROM TABLE B.3): 8					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P_2O_5	K_2O	
1	TALL FESCUE	100	MARCH 1-MAY 15 AUG 15-OCT 15	1/4"-1/2"	45 LBS. PER ACRE (1 LB./1000 SF)	90 LBS. PER ACRE (2 LB./1000 SF)	90 LBS. PER ACRE (2 LB./1000 SF)	2 TONS / ACRE (90 LBS / 1000 SF)

MIXTURES 1, 4-7, 9, AND 10 FROM TABLE B.3 OF THE 2011 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MAY BE USED.

(B-4-4) STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOIL WITH VEGETATION FOR UP TO 6 MONTHS.
PURPOSE
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURB SOIL.
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 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 FORTELIZER 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.1b, AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

(B-4-8) STANDARDS AND SPECIFICATION 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
7. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
8. THE FOOTPRINT OF 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.
1. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
2. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
3. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVISE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
4.
5. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
6. STOCKPILE MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-I INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
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 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 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.

SEQUENCE OF CONSTRUCTION #1

FOR BEE FRANCES WAY, CATHERINE CLOSE ROAD, NORTHERN BELL, AND ALTOGETHER WAY CONSTRUCTION

1. OBTAIN GRADING PERMIT (1 DAY).
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AT LOCATION SHOWN (1 DAY).
3. PERFORM CLEARING AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF PERIMETER CONTROLS (5 DAYS).
4. INSTALL PERIMETER CONTROLS: SUPER SILT FENCES, CLEAN WATER DIVERSION DIKES AND PIPES (7 DAYS).
5. CONSTRUCT SEDIMENT CONTROL TRAPS (5 DAYS).
6. CLEAR AND GRUB SITE (2 DAYS).
7. BRING SITE TO GRADE INDICATED (30 DAYS).
8. CONSTRUCT STORM DRAINAGE SYSTEM (5 DAYS).
9. INSTALL CHECK DAMS AND INLET PROTECTIONS (5 DAYS).
10. CONSTRUCT NEW CURBING AND BASE MATERIALS OF NEW ROADWAYS IN THE FOLLOWING ORDER: 1). BEE FRANCES WAY, 2). NORTHERN BEELL WAY, 3). CATHERINE CLOSE ROAD (14 DAYS). THE RUNOFF SHOULD BE DIRECTED TO THE SEDIMENT TRAPS UNTIL THE ROADS ARE PAVED.
11. PAVE ROADWAYS (5 DAYS).
12. SEED AND MULCH ALL REMAINING DISTURBED AREAS (3 DAYS).
13. CONSTRUCT STORMWATER MANAGEMENT FACILITIES (7 DAYS).
14. UPON THE APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL FEATURES (2 DAYS).
15. STABILIZE THE AREAS THAT HAVE BEEN DISTURBED BY REMOVAL OF SEDIMENT CONTROL FEATURES (2 DAYS).

SEQUENCE OF CONSTRUCTION #2

FOR GREENBERRY LANE EXTENSION CONSTRUCTION

1. OBTAIN GRADING PERMIT (1 DAY).
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AT LOCATION SHOWN (1 DAY).
3. PERFORM CLEARING AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF PERIMETER CONTROLS (2 DAYS).
4. INSTALL PERIMETER CONTROLS. SUPER SILT FENCES (2 DAYS).
5. CLEAR AND GRUB SITE (2 DAYS).
6. BRING SITE TO GRADE INDICATED (10 DAYS).
7. CONSTRUCT STORM DRAIN SYSTEM (5 DAYS).
8. INSTALL CHECK DAMS AND INLET PROTECTIONS (5 DAYS).
9. CONSTRUCT BASE MATERIAL OF NEW ROADWAY (7 DAYS).
10. PAVE ROADWAY (2 DAYS).
11. SEED AND MULCH ALL REMAINING DISTURBED AREAS (2 DAYS).
12. CONSTRUCT STORMWATER MANAGEMENT FACILITIES (5 DAYS).
13. UPON THE APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL FEATURES (2 DAYS).
14. STABILIZE THE AREAS THAT HAVE BEEN DISTURBED BY REMOVAL OF SEDIMENT CONTROL FEATURES (2 DAYS).

SEQUENCE OF CONSTRUCTION #3

FOR LINDEN CHURCH ROAD WIDENING

1. REQUEST PRE-CONSTRUCTION MEETING IF NECESSARY AND OBTAIN GRADING PERMIT UNLESS CONSTRUCTED CONCURRENTLY, IMMEDIATELY BEFORE, OR IMMEDIATELY AFTER SEQUENCE OF CONSTRUCTION #1. (1 DAY).
2. CONSTRUCT AREA TO GRADES INDICATED (1 DAY).
3. STABILIZE BASE MATERIALS OF NEW ROADWAYS (3 DAYS).
4. SEED AND MULCH ALL REMAINING DISTURBED AREAS. (1 DAY).
5. PAVE ROADWAYS (1 DAY).

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

DEFINITION
THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.
PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.
CONDITIONS WHERE PRACTICE APPLIES
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.
CRITERIA
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 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.

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

DEFINITION
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.
PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.
CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.
CRITERIA
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; P_2O_5(PHOSPHOROUS), 200 POUNDS PER ACRE; K_2O (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.

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
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DETAIL C-6 CLEAR WATER DIVERSION PIPE

STANDARD SYMBOL: CWD - 12
DESIGNATION CWD-12 REFERS TO 12 INCH CLEAR WATER DIVERSION.

CONSTRUCTION SPECIFICATIONS
1. FLEXIBLE PIPE IS PREFERRED. HOWEVER, CORRUGATED METAL PIPE OR EQUIVALENT PVC PIPE CAN BE USED. MAKE ALL JOINTS WATERTIGHT.
2. FOR SANDBAGS USE MATERIALS THAT ARE RESISTANT TO ULTRA-VIOLENT RADIATION, TEARING, AND PUNCTURE AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL.
3. USE 10 MIL OR THICKER, UV RESISTANT, IMPERMEABLE SHEETING OR OTHER APPROVED MATERIAL THAT IS IMPERMEABLE AND RESISTANT TO PUNTURING AND TEARING.
4. PLACE IMPERMEABLE SHEETING SUCH THAT UPGRADE PORTION OVERLAPS DOWNGRADE PORTION BY A MINIMUM OF 18 INCHES.
5. SET HEIGHT OF SANDBAG DIKE AT TWICE THE PIPE DIAMETER. MAINTAIN HEIGHT ALONG LENGTH OF SANDBAG DIKE. PLACE DOUBLE ROW OF SANDBAGS.
6. AT A MINIMUM, SECURELY ANCHOR DIVERSION PIPE AT EACH DOWNGRADE JOINT.
7. SET OUTLET END OF DIVERSION PIPE LOWER THAN INLET END.
8. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
9. DEWATER WORK AREA USING AN APPROVED EROSION AND SEDIMENT CONTROL PRACTICE AS SPECIFIED ON APPROVED PLAN.
10. KEEP POINT OF DISCHARGE FREE OF EROSION. MAINTAIN WATER TIGHT CONNECTIONS AND POSITIVE DRAINAGE. REPLACE SANDBAGS AND IMPERMEABLE SHEETING IF TORN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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DETAIL C-1 EARTH DIKE

STANDARD SYMBOL: A-1
PLACE DESIGNATION (e.g. A-1) ON FLOW CHANNEL SIDE OF DIKE.

CONTINUOUS GRADE 0.5% MIN. TO 10% MAX. SLOPE

DIKE TYPE

	A	B
a - DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b - DIKE WIDTH	24 IN MIN.	36 IN MIN.
c - FLOW WIDTH	4 FT MIN.	6 FT MIN.
d - FLOW DEPTH	12 IN MIN.	24 IN MIN.

FLOW CHANNEL STABILIZATION
A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS
1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

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

project	date
12-022	OCT 2014
illustration	engineering
JLS	JLS
scale	approval
1"=50'	MMM

no.	description	date
1.	REVISED SEQUENCE OF CONSTRUCTION AND AREA OF DISTURBANCE. REVISED TOTAL SHEET NUMBER.	JULY 2015

revisions

GREENBERRY, LOTS 1 THRU 25

AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F' AND 'G', AND BUILDABLE PRES. PARCEL 'E'
FIFTH ELECTION DISTRICT — TAX MAP 28, PARCEL 48 — HOWARD COUNTY, MARYLAND

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.

F-14-095

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONST.DWG

STONE/RIPRAP OUTLET SEDIMENT TRAP II (TRAP #1)

PROPOSED DRAINAGE AREA	0.81 Ac
EXISTING DRAINAGE AREA	N/A
WET STORAGE REQUIRED	1458 CF
WET STORAGE PROVIDED	1496 CF
DRY STORAGE REQUIRED	1458 CF
DRY STORAGE PROVIDED	1463 CF
EXISTING GROUND ELEVATION AT OUTLET	548.25
TRAP BOTTOM ELEVATION	546.00
TRAP BOTTOM DIMENSIONS	36'x15'
WEIR CREST (DRY STORAGE ELEVATION)	549.00
OUTLET (WET STORAGE) ELEVATION	548.25
CLEANOUT ELEVATION	547.12
EMBANKMENT HEIGHT ELEV.	550.00
SIDE SLOPE	2:1 (H/V)
WEIR LENGTH	2'
DRY STORAGE ZONE (ELEV.)	548.25 – 549.00
WET STORAGE ZONE (ELEV.)	546.00 – 548.25

STONE/RIPRAP OUTLET SEDIMENT TRAP II (TRAP #2)

PROPOSED DRAINAGE AREA	1.36Ac
EXISTING DRAINAGE AREA	N/A
WET STORAGE REQUIRED	2488 CF
WET STORAGE PROVIDED	2777 CF
DRY STORAGE REQUIRED	2488 CF
DRY STORAGE PROVIDED	2575 CF
EXISTING GROUND ELEVATION AT OUTLET	548.25
TRAP BOTTOM ELEVATION	546.00
TRAP BOTTOM DIMENSIONS	53'x20'
WEIR CREST (DRY STORAGE ELEVATION)	549.00
OUTLET (WET STORAGE) ELEVATION	548.25
CLEANOUT ELEVATION	547.12
EMBANKMENT HEIGHT ELEV.	550.00
SIDE SLOPE	2:1 (H/v)
WEIR LENGTH	2'
DRY STORAGE ZONE (ELEV.)	548.25 – 549.00
WET STORAGE ZONE (ELEV.)	546.00 – 546.25

STONE/RIPRAP OUTLET SEDIMENT TRAP II (TRAP #3)

PROPOSED DRAINAGE AREA	0.48 Ac
EXISTING DRAINAGE AREA	N/A
WET STORAGE REQUIRED	864 CF
WET STORAGE PROVIDED	978 CF
DRY STORAGE REQUIRED	864 CF
DRY STORAGE PROVIDED	873 CF
EXISTING GROUND ELEVATION AT OUTLET	544.40
TRAP BOTTOM ELEVATION	542.00
TRAP BOTTOM DIMENSIONS	30'x10'
WEIR CREST (DRY STORAGE ELEVATION)	545.00
OUTLET (WET STORAGE) ELEVATION	544.50
CLEANOUT ELEVATION	543.25
EMBANKMENT HEIGHT ELEV.	546.00
SIDE SLOPE	2:1 (H/v)
WEIR LENGTH	2'
DRY STORAGE ZONE (ELEV.)	542.00 – 543.25
WET STORAGE ZONE (ELEV.)	543.25 – 545.00

DETAIL – SEDIMENT TRAPS 1 AND 2
SCALE: 1"=30'

STONE/RIPRAP OUTLET SEDIMENT TRAP II (TRAP #4)

PROPOSED DRAINAGE AREA	0.43 Ac
EXISTING DRAINAGE AREA	N/A
WET STORAGE REQUIRED	1530 CF
WET STORAGE PROVIDED	1619 CF
DRY STORAGE REQUIRED	1530 CF
DRY STORAGE PROVIDED	1638 CF
EXISTING GROUND ELEVATION AT OUTLET	559.20
TRAP BOTTOM ELEVATION	557.00
TRAP BOTTOM DIMENSIONS	34'x18'
WEIR CREST (DRY STORAGE ELEVATION)	560.00
OUTLET (WET STORAGE) ELEVATION	559.20
CLEANOUT ELEVATION	558.10
EMBANKMENT HEIGHT ELEV.	561.00
SIDE SLOPE	2:1 (H/v)
WEIR LENGTH	2'
DRY STORAGE ZONE (ELEV.)	559.20 – 560.00
WET STORAGE ZONE (ELEV.)	557.00 – 560.00

EROSION AND SEDIMENT CONTROL CHECK DAM DIMENSIONS
NOT TO SCALE

DETAIL – SEDIMENT TRAP 4
SCALE: 1"=30'

DETAIL – SEDIMENT TRAP 3
SCALE: 1"=30'

OWNER

ROBERT B. WILLIAMS
JOANNA K. BENEDICT
BARBARA B. CUSACK
WILLIAM I. SLADE, JR.
C/O MILDENBERG, BOENDER AND ASSOC.
7350–B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997–0296

DEVELOPER

GREENBERRY, INC.
7350–B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997–0296

ENGINEER'S CERTIFICATE

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 OF ENGINEER — DATE 10/7/14

JEFFREY SLOMAN, PE
PRINTED NAME OF ENGINEER

DEVELOPERS CERTIFICATE

I 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. HOWARD SOIL CONSERVATION DISTRICT IS AUTHORIZED TO CONDUCT PERIODIC ON–SITE INSPECTION.

SIGNATURE OF DEVELOPER — DATE 10/8/14

R. JACOB HIKMAT, PRESIDENT
PRINTED NAME OF DEVELOPER

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

John R Robertson
HOWARD SOIL CONSERVATION DISTRICT — DATE 10/16/14

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.17.14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11.20.14

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. 40091, EXP DATE 2/13/15.

JEFFREY SLOMAN, P.E. — DATE 10/7/14

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DETAIL G-2-4 BAFFLE BOARDS
STANDARD SYMBOL: BB

BAFFLES ARE REQUIRED TO PROVIDE A FLOW LENGTH BETWEEN INFLOW POINT AND OUTLET EQUAL TO TWICE THE EFFECTIVE TRAP/BASIN WIDTH.

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DETAIL D-2 STONE CHECK DAM
STANDARD SYMBOL: CD

CONSTRUCTION SPECIFICATIONS

1. PREPARE SWALES IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS DESCRIBED IN SECTION C–2, STANDARDS AND SPECIFICATIONS FOR TEMPORARY SWALE, OR AS SPECIFIED ON PLAN.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, UNDER THE BOTTOM AND SIDES OF THE DAM PRIOR TO PLACEMENT OF STONE. CONSTRUCT THE CHECK DAM WITH WASHED 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) WITH SIDE SLOPES OF 2:1 OR FLATTER AND A MINIMUM TOP WIDTH OF 12 INCHES. PLACE THE STONE SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL AND CHANNEL BANKS. FORM THE WEIR SO THAT TOP OF THE OUTLET CREST IS APPROXIMATELY 6 INCHES LOWER THAN THE OUTER EDGES. LINE THE UPSTREAM FACE OF THE DAM WITH A 1 FOOT THICK LAYER OF WASHED AGGREGATE (¾ TO 1½ INCH).
3. SET THE HEIGHT FOR THE WEIR CREST EQUAL TO ONE–HALF THE DEPTH OF THE CHANNEL OR DITCH. TO AVOID SCOUR THE MAXIMUM HEIGHT OF THE WEIR CREST MUST NOT EXCEED 2.0 FEET.
4. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE–HALF OF THE HEIGHT OF THE WEIR CREST. MAINTAIN LINE, GRADE, AND CROSS SECTION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II
STANDARD SYMBOL: ST–II

1 OF 3

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II
STANDARD SYMBOL: ST–II

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
2. CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
3. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
4. CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE WEIR CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
5. MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
6. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, OVER THE BOTTOM AND SIDES OF OUTLET AND APRON PRIOR TO PLACEMENT OF RIPRAP. OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP. EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
7. USE CLEAN 4 TO 7 INCH RIPRAP TO CONSTRUCT THE WEIR. USE CLASS I RIPRAP FOR THE APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE.
8. PLACE 1 FOOT OF CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE ON THE UPSTREAM FACE OF THE WEIR.
9. CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
10. STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
11. REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B–4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION.
12. WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
13. UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

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MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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DETAIL D-3-1 RIPRAP INFLOW PROTECTION
STANDARD SYMBOL: RRP

CONSTRUCTION SPECIFICATIONS

1. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
2. CONSTRUCT INFLOW CHANNEL WITH CLASS I RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x D_{50}) AND A 1 FOOT DEEP FLOW CHANNEL. INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
3. INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
4. BLEND RIPRAP INTO EXISTING GROUND.
5. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

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DETAIL E-9-1 STANDARD INLET PROTECTION
STANDARD SYMBOL: SIP

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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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.

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MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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DETAIL E-9-3 CURB INLET PROTECTION
STANDARD SYMBOL: CIP

CONSTRUCTION SPECIFICATIONS

1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ½ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
6. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
7. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
8. FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
9. AT NON–SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
10. 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.

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revisions

GREENBERRY, LOTS 1 THRU 25
AND NON-BUILDABLE PRESERVATION PARCELS 'A' 'B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F' AND 'G', AND BUILDABLE PRES. PARCEL 'E'
TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

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F–14–095

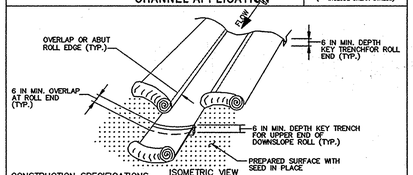
ROADSIDE SWALE STABILIZATION TECHNIQUES

MD 2011 STANDARDS AND SPECIFICATIONS FOR EROSION CONTROL

ROAD	STATION	DOWNSTREAM INLET	10-YEAR STORM VELOCITY	STABILIZATION TECHNIQUE	STANDARD DETAIL
BEE FRANCES WAY	0+00.0 TO 8+15.2 LEFT	I-251-D	4.6 FPS	TEMPORARY SOIL STABILIZATION MATTING OVER SEED AND MULCH	B-4-6
BEE FRANCES WAY	0+00.0 TO 2+80.0 RIGHT	I-252	6.0 FPS	TEMPORARY SOIL STABILIZATION MATTING OVER SEED AND MULCH	B-4-6
BEE FRANCES WAY	3+58.5 TO 8+15.2 RIGHT				
NORTHERN BELL WAY	0+00.0 TO 3+58.5 RIGHT				
NORTHERN BELL WAY	2+81.0 TO 7+20.0 LEFT	I-353	4.0 FPS	SOLID SODDING	N/A
NORTHERN BELL WAY	2+81.0 TO 7+20.0 RIGHT	I-354	3.5 FPS	SOLID SODDING	N/A
NORTHERN BELL WAY	0+00.0 TO 2+81.0 LEFT	I-454	7.0 CFS	TEMPORARY SOIL STABILIZATION MATTING OVER SEED AND MULCH	B-4-6
CATHERINE CLOSE ROAD	0+00.0 TO 3+00.0 RIGHT				
CATHERINE CLOSE ROAD	0+00.0 TO 3+00.0 LEFT	I-453	5.7 FPS	TEMPORARY SOIL STABILIZATION MATTING OVER SEED AND MULCH	B-4-6
GREENBERRY LANE	0+00.0 TO 4+51.4 RIGHT	I-552	5.9 FPS	TEMPORARY SOIL STABILIZATION MATTING OVER SEED AND MULCH	B-4-6
GREENBERRY LANE	0+00.0 TO 4+51.4 LEFT	FACILITY GL-2	5.9 FPS	TEMPORARY SOIL STABILIZATION MATTING OVER SEED AND MULCH	B-4-6
GREENBERRY LANE	4+51.4 TO 7+51.7 RIGHT	I-651-D	4.9 FPS	TEMPORARY SOIL STABILIZATION MATTING OVER SEED AND MULCH	B-4-6
GREENBERRY LANE	4+51.4 TO 7+51.7 LEFT	I-652	4.3 FPS	TEMPORARY SOIL STABILIZATION MATTING OVER SEED AND MULCH	B-4-6

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

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



ISOMETRIC VIEW

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 "I" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 15 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "I" 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

ENGINEER'S CERTIFICATE

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 OF ENGINEER — DATE 10/7/14

JEFFREY SLOMAN, PE
PRINTED NAME OF ENGINEER

DEVELOPERS CERTIFICATE

I 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. HOWARD SOIL CONSERVATION DISTRICT IS AUTHORIZED TO CONDUCT PERIODIC ON-SITE INSPECTION.

SIGNATURE OF DEVELOPER — DATE 10/8/14

R. JACOB HIKMAT, PRESIDENT
PRINTED NAME OF DEVELOPER

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 10/16/14

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.17.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-20-14

DEVELOPER

GREENBERRY, INC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

OWNER

ROBERT B. WILLIAMS
JOANNA K. BENEDICT
BARBARA B. CUSACK
WILLIAM I. SLADE, JR.
C/O MILDENBERG, BOENDER AND ASSOC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

STATE OF MARYLAND — JEFFREY L. SLOMAN — No. 40091 — PROFESSIONAL ENGINEER

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. 40091, EXP DATE 2/13/15.

JEFFREY SLOMAN, P.E. — DATE 10/7/14

NON-BUILDABLE BULK PARCEL 'C'
NON-BUILDABLE PRESERVATION PARCEL 'B'
NON-BUILDABLE PRESERVATION PARCEL 'A'
AREA = 0.48 Ac (TRAP #3)
AREA = 0.85 Ac (TRAP #4)
AREA = 0.6 Ac (TRAP #5)
AREA = 1.86 Ac (TRAP #1)
AREA = 3.2 Ac (TRAP #2)
AREA A-2 4.84 Ac EARTH DIKE
LOT 1 40,038 SF
LOT 2 40,240 SF
LOT 3 40,000 SF
LOT 4 41,793 SF
LOT 5 40,000 SF
LOT 6 40,034 SF
LOT 7 40,000 SF
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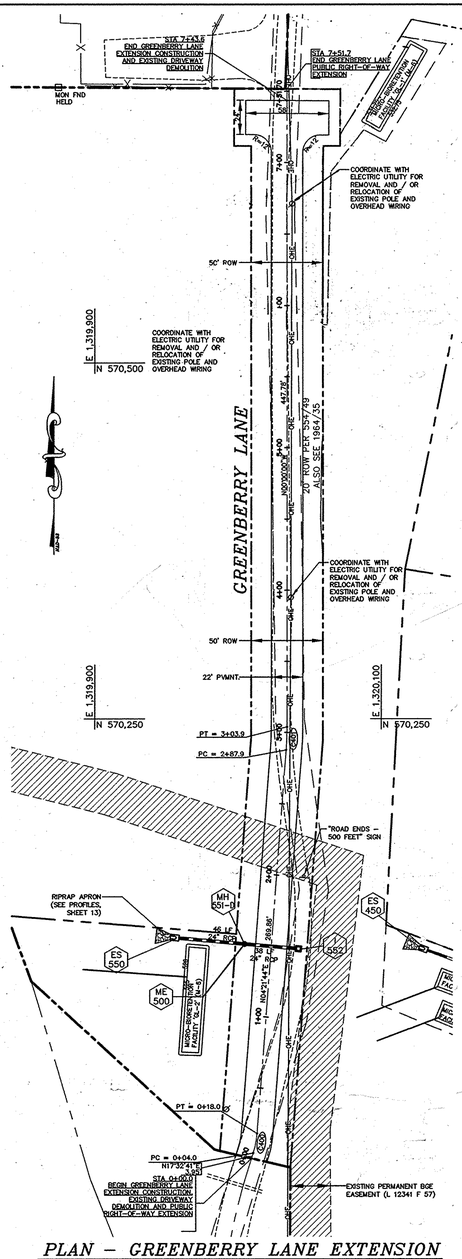
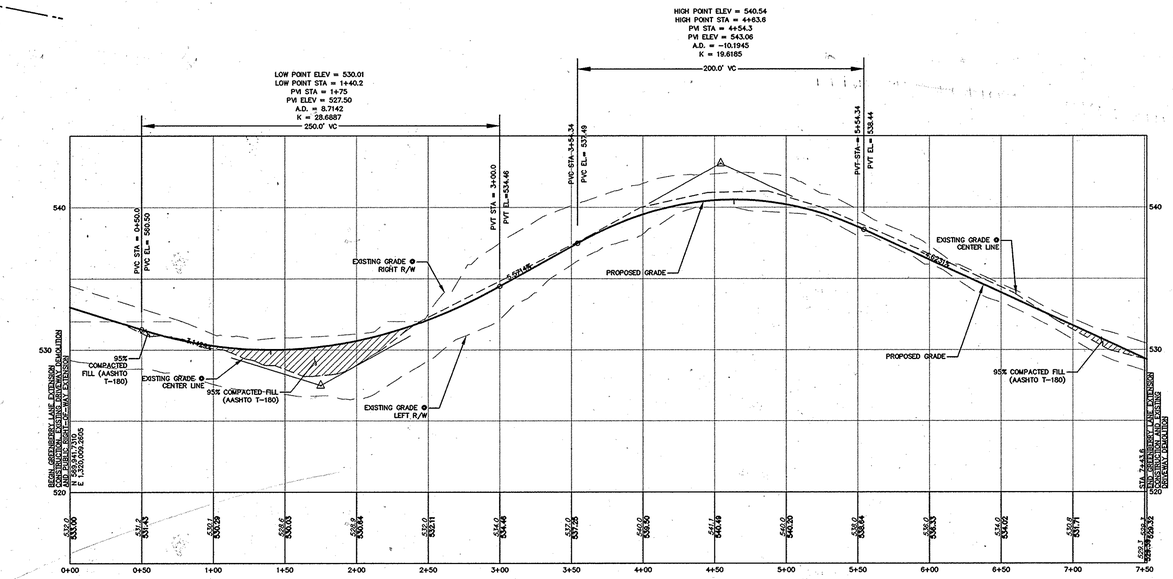


PLAN – GREENBERRY LANE EXTENSION

PUBLIC – LOCAL
DESIGN SPEED = 25 MPH
SCALE: 1"=50'

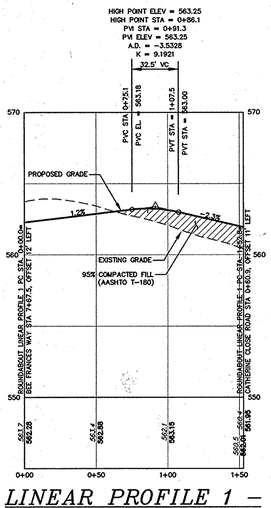


PROFILE – GREENBERRY LANE EXTENSION

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

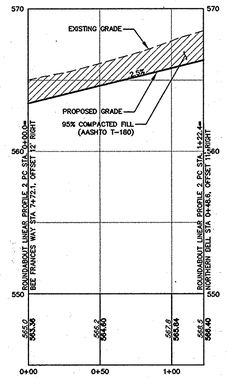
ROADWAY CURVE TABLE

CURVE	ROAD NAME	LENGTH (FT)	RADIUS (FT)	DELTA	CHORD LEN (FT)	CHORD DIR
C400	GREENBERRY LANE EXTENSION	14.03	61.00	13°10'57"	14.00	N10°57'13"E
C401	GREENBERRY LANE EXTENSION	16.06	211.00	4°21'44"	16.05	N02°10'52"E



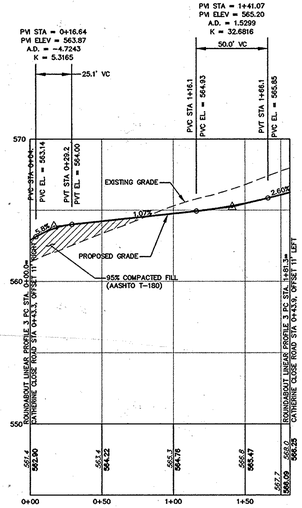
LINEAR PROFILE 1 – BEE FRANCES WAY ROUNDABOUT

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



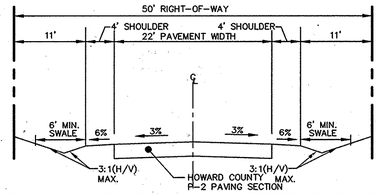
LINEAR PROFILE 2 – BEE FRANCES WAY ROUNDABOUT

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



LINEAR PROFILE 3 – BEE FRANCES WAY ROUNDABOUT

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



TYPICAL SECTION – GREENBERRY LANE

STA 0+00.00 TO STA 7+23.56
NOT TO SCALE

DEVELOPER

GREENBERRY, INC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

OWNER

ROBERT B. WILLIAMS
JOANNA K. BENEDICT
BARBARA B. CUSACK
WILLIAM I. SLADE, JR.
C/O MILDENBERG, BOENDER AND ASSOC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-27-2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.17.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-20-14

STATE OF MARYLAND · JEFFREY L. SLOMAN · No. 40091 · PROFESSIONAL ENGINEER

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. 40091, EXP DATE 2/13/15.

JEFFREY SLOMAN, P.E. — DATE 10/7/14

H:\12-022\DWG\FINAL\022-NOV 2013 ROAD CONSTDWG

project	date
12-022	OCT 2014
illustration	engineering
JLS	JLS
scale	approval
1"=50'	MMM

no.	description	date
1.	REVISED TOTAL SHEET NUMBER	JULY 2015
2.	REMOVED STORM DRAIN FROM 1+62 TO 2+56.0	JULY 2016

GREENBERRY, LOTS 1 THRU 25

AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F', AND 'G', AND BUILDABLE PRES. PARCEL 'E'
FIFTH ELECTION DISTRICT — TAX MAP 28, PARCEL 48 — HOWARD COUNTY, MARYLAND

ROAD PLANS, PROFILES AND TYPICAL SECTIONS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.

F-14-095

GRADING SHOWN ON THESE PLANS DID NOT INCLUDE THE RESIDENTIAL LOTS; THEREFORE, THE STORMWATER DESIGN FOR THE LOTS IS CONCEPTUAL AND FINAL DESIGN WILL BE SHOWN WITH THE INDIVIDUAL LOT BUILDING PERMIT. DECLARATION OF COVENANTS WILL BE CORRECTED AS NEEDED AND MATCH THE ASSOCIATED PLOT PLAN.

THIS PLAN IS FOR LOT OVERALL GRADING PURPOSES ONLY.

LIMIT OF DISTURBANCE TO BE PLACED DIRECTLY BEYOND PROPOSED CONTROLS.

PRIVATE SEPTIC EASEMENT AREAS NOT TO BE DISTURBED BEYOND SEPTIC SYSTEM INSTALLATION

NO MORE THAN 20 ACRES CAN BE DISTURBED AT THE SAME TIME

LEGEND:

(stippled)	IMPERVIOUS AREA TREATED BY NON-ROOFTOP DISCONNECTION (N-2)
(vertical hatch)	TREATMENT AREA OF NON-ROOFTOP DISCONNECTION (N-2)
(crosshatch)	IMPERVIOUS AREA TREATED BY ROOFTOP DISCONNECTIONS (N-1) AND DRYWELLS (M-5)
75'@5% MAX →	ROOFTOP DISCONNECTIONS (N-1)
M-5	DRYWELL (M-5)
— — —	ROOF LEADER
LOD	LIMIT OF DISTURBANCE
—SF—	SILT FENCE
—SSF—	SUPER SILT FENCE
—TPF—	TREE PROTECTION FENCE
SCE	STABILIZED CONSTRUCTION ENTRANCE

OWNER

ROBERT B. WILLIAMS
C/O MILDENBERG, BOENDER AND ASSOC.
7350-B GRACE DRIVE
COLUMBIA, MARYLAND 21044
(410)997-0296

DEVELOPER

NV HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND 21046
(410)379-5956

ENGINEER'S CERTIFICATE

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 OF ENGINEER — DATE 6/22/15

R. JACOB HIKMAT, P.E.
PRINTED NAME OF ENGINEER

DEVELOPERS CERTIFICATE

I 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. HOWARD SOIL CONSERVATION DISTRICT IS AUTHORIZED TO CONDUCT PERIODIC ON-SITE INSPECTION.

SIGNATURE OF DEVELOPER — DATE 6/22/15

TAYLOR FARIS
PRINTED NAME OF DEVELOPER

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 6/23/15

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION JP — DATE 8/3/15

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/4/15

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. 17942, EXP. DATE 09/03/16.

R. JACOB HIKMAT, P.E. 6/22/15

p:\2004\15-005\dwg\plan

project	date
15-005	JUNE 2015
illustration	engineering
MMM	MMM
scale	approval
1"=50'	RJH

no.	description	date
1.	ADD THIS GP. PLAN TO THE SET. REV. SHEET NUMBER	JULY 2015
2.	ADD NOTE REGARDING SWM	SEPT 2015
	revisions	

GREENBERRY, LOTS 1 THRU 25

AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F', AND 'G', AND BUILDABLE PRES. PARCEL 'E'

FIFTH ELECTION DISTRICT — TAX MAP 28, PARCEL 48 — HOWARD COUNTY, MARYLAND

GRADING AND SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.

(GP-15-081)

F-14-095

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

LEGEND:

- IMPERVIOUS AREA TREATED BY NON-ROOFTOP DISCONNECTION (N-2)
- TREATMENT AREA OF NON-ROOFTOP DISCONNECTION (N-2)
- IMPERVIOUS AREA TREATED BY ROOFTOP DISCONNECTIONS (N-1) AND DRYWELLS (M-5)
- 75'@5% MAX → ROOFTOP DISCONNECTIONS (N-1)
- DRYWELL (M-5)
- ROOF LEADER
- LOD — LIMIT OF DISTURBANCE
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE

GRADING SHOWN ON THESE PLANS DID NOT INCLUDE THE RESIDENTIAL LOTS; THEREFORE, THE STORMWATER DESIGN FOR THE LOTS IS CONCEPTUAL AND FINAL DESIGN WILL BE SHOWN WITH THE INDIVIDUAL LOT BUILDING PERMIT. DECLARATION OF COVENANTS WILL BE CORRECTED AS NEEDED AND MARK THE ASSOCIATED PLOT PLAN.

ENGINEER'S CERTIFICATE

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 OF ENGINEER — DATE 6/22/15

R. JACOB HIKMAT, PE
PRINTED NAME OF ENGINEER

DEVELOPERS CERTIFICATE

I 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. HOWARD SOIL CONSERVATION DISTRICT IS AUTHORIZED TO CONDUCT PERIODIC ON-SITE INSPECTION.

SIGNATURE OF DEVELOPER — DATE 6/22/15

TAYLOR FARIS
PRINTED NAME OF DEVELOPER

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 6/23/15

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION JP — DATE 7/3/15

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/14/15

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. 17942 EXP. DATE 09/03/16.

R. JACOB HIKMAT, P.E. 6/22/15

OWNER

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project	dote	JUNE 2015
15-005	engineering	
illustration	MMM	
scale	approval	RJH
1"=50'		

NO.	description	dote
1.	ADD NOTE & CLARIFICATION	JULY 2015
2.	ADD THIS SP. PLAN TO THE SET, REVISED SHEET NO.	

GREENBERRY, LOTS 1, THRU 25
AND NON-BUILDABLE BULK PARCELS 'C', 'D', 'E' AND 'F', AND BUILDABLE PRES. PARCEL 'A'
TAX MAP 28, PARCEL 48
HOWARD COUNTY, MARYLAND
FIFTH ELECTION DISTRICT
GRADING AND SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Grace Drive, Columbia, Maryland 21044
(410) 997-0296 Balt. (410) 997-0298 Fax.

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

DEFINITION

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

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 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.

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ENGINEER'S CERTIFICATE

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.

[illegible signature] 6/22/15
SIGNATURE OF ENGINEER — DATE

R. JACOB HIKMAT, PE
PRINTED NAME OF ENGINEER

DEVELOPERS CERTIFICATE

I 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. HOWARD SOIL CONSERVATION DISTRICT IS AUTHORIZED TO CONDUCT PERIODIC ON-SITE INSPECTION.

[illegible signature] 6/22/15
SIGNATURE OF DEVELOPER — DATE

TAYLOR FARIS
PRINTED NAME OF DEVELOPER

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[illegible signature] 6/23/15
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[illegible signature] 8/3/15
CHIEF, DEVELOPMENT ENGINEERING DIVISION JP — DATE

[illegible signature] 8/4/15
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

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

DEFINITION

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE

TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES

TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA

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; P_2O_5(PHOSPHOROUS), 200 POUNDS PER ACRE; K_2O (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.

STANDARD SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID) PRIOR TO THE START OF ANY CONSTRUCTION, (313-1855).
2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, 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 (SDC.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: 26.63 ACRES
AREA DISTURBED: 26.63 ACRES
AREA TO BE ROOFED OR PAVED: 3.35 ACRES
AREA TO BE VEGITATIVELY STABILIZED: 23.26 ACRES
TOTAL CUT: 20,200 CU. YDS.
TOTAL FILL: 20,200 CU. YDS.
OFFSITEWASTE/BORROW AREA LOCATION: N/A
THESE QUANTITIES ARE FOR PERMIT PURPOSES ONLY. CONTRACTOR IS REQUIRED TO PROVIDE HIS OWN QUANTITIES MEASUREMENTS.
7) ANY SEDIMENT CONTROL PRACTICE WHICH 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 WORKING DAY, 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 PROCESSING 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 BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITIES, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

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. 17942, EXP DATE 09/03/16.

[illegible signature] 6/22/15
R. JACOB HIKMAT, P.E.

(B-4-5) STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOIL WITH PERMANENT VEGETATION.

PURPOSE

TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER OF DISTURBED

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 SPIECES OF MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED IN THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY.
B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DINES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD GUIDE, SECTION 342-CRITICAL AREA PLANTING.
C. FOR SITES HAVING DISTURBAD AREA OVER 5 ACRES, USE AND SHOW RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FROM FERTILIZED (40-0-01) AT 3 1/2 POUNDS PER 1000 S.F. (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 DESIRE 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 OF MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLOCATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY.
I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASRERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS SEEDING RETA: 1.5 TO 2.0 POUNDS PER 1000 S.F. 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/PERENIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY ABD WHEN TURF WILL RECEIVE MEDIUM TO INTENSUVE MANAGEMENT. CERTIFIED PERENIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDINGRATE: 2 POUNDS MIXTURE PER 1000 S.F. SHOOSE A MINIMUM OF THREE KENTUCKYBLUEGRASS CULTIVARS EITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL MIXTURE: FOR USE IN DROUGHT AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 65 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 PERCENT PER 1000 S.F. 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 TIRF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCANT AND CERTIFIES FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATES 1 1/2 TO 3 POUNDS PER 1000 S.F.
C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURE
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 ZONE: 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 STONE AND DEBRIS OVER 1.5 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASS WILL POSE NO DIFFICULTY.
E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH 0.5 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASON, OR ON ADVERSE SITES.

(B-4-8) STANDARDS AND SPECIFICATION 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

7. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
8. THE FOOTPRINT OF 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.
1. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
2. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
3. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVISE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
4.
5. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
6. STOCKPILE 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.
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 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 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.

TEMPORARY SEEDING FOR SITE STABILIZATION

PLANT SPECIES	SEEDING RATE LB/AC	SEEDING RATE LB/1000SF	SEEDING DEPTH (INCHES)	RECOMMENDED SEEDING DATED BY PLANT HARDINESS ZONE: 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	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
OATS (AVENA SATIVA)	72	1.7	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
WHEAT (TRITICUM AESTIVUM)	120	2.8	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
CEREAL RYE (SECALE ITALICA)	112	2.8	0.5	MAR 15 TO MAY 31; AUG 1 TO OCT 31	MAR 1 TO MAY 15; AUG 1 TO OCT 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

PERMANENT SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): 6b
SEED MIXTURE (FROM TABLE B.3): 8

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20): N	P_2O_5	K_2O	LIME RATE
1	TALL FESCUE	100	MARCH 1-MAY 15 AUG 15-OCT 15	1/4"-1/2"	45 LBS. PER ACRE (1 LB./1000 SF)	90 LBS. PER ACRE (2 LB./1000 SF)	90 LBS. PER ACRE (2 LB./1000 SF)	2 TONS / ACRE (90 LBS / 1000 SF)

MIXTURES 1, 4-7, 9, AND 10 FROM TABLE B.3 OF THE 2011 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MAY BE USED.

(B-4-4) STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOIL WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURB SOIL.

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 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 FORTELIZER 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.1b, AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

SEQUENCE OF CONSTRUCTION:

1. OBTAIN GRADING PERMIT (1 DAY).
2. PERFORM CLEARING AND GRUBBING AS NECESSARY FOR THE INSTALLATION PERIMETER CONTROLS (5 DAYS).
3. INSTALL AT LEAST ONE (1) STABILIZED CONSTRUCTION ENTRANCE (SCE) FOR LOTS 1-6, ONE (1) FOR LOTS 7-16, ONE (1) FOR LOTS 17-19, ONE (1) FOR LOTS 20-23, AND ONE (1) FOR LOTS 20-23 (5 DAYS).
5. CONSTRUCT PERIMETER CONTROLS: SILT FENCES (SF) AND SUPER SILT FENCES (SSF) AS SHOWN ON THE PLAN (10 DAYS).
6. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE FOR THE HOUSE TO BE BUILT (ONE DAY).
7. GRADE LOTS PER PLAN. NO MORE THAN 10 LOTS MAY BE GRADED AT THE SAME TIME. STABILIZE AT LEASE 50% OF THE DISTURBED AREA PRIOR TO COMMENCING ANY GRADING ACTIVITIES ON ADDITIONAL LOTS.
8. CONSTRUCT HOUSES, SEPTIC SYSTEM, SWM FACILITIES AND CONNECT TO THE UTILITIES (18 MONTHS).
9. STABILIZE REMAINING DISTURBED AREAS.
10. IN CASES WHERE A "DOWNHILL" LOT HAS BEEN COMPLETED, INSTALL SILT FENCE ALONG THE PROPERTY LINE WITH THE "UPHILL" LOT PRIOR TO COMMENCING ANY GRADING ACTIVITIES ON "UPHILL" PROPERTY.
11. UPON THE DIRECTION OF THE ENGINEER AND WITH THE APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE EROSION CONTROL MEASURES FROM THE INDIVIDUAL LOTS AND ADJUST REMAINING SEDIMENT CONTROL MEASURES ACCORDINGLY.
12. STABILIZE THE AREAS THAT HAVE BEEN DISTURBED BY REMOVAL OF SEDIMENT CONTROL.

NOTE: THIS SOC IS FOR LOT GRADING ONLY AS APPROVED UNDER GP-15-081.

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.

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DETAIL E-1 SILT FENCE — STANDARD SYMBOL: —SF—

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DETAIL E-1 SILT FENCE — STANDARD SYMBOL: —SF—

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE 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 SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

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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.

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project	date	illustration	engineering	scale	approval
05-005	JUNE 2015	MMM	MMM	1"=50'	RJH

no.	description	date
1.	ADD SOC NOTE. ADD THS DRAWING TO THE SET. REVISE SHEET NUMBER	JULY 2015

revisions

GREENBERRY, LOTS 1 THRU 25

AND NON-BUILDABLE PRESERVATION PARCELS 'A', 'B' AND 'H', NON-BUILDABLE BULK PARCELS 'C', 'D', 'F' AND 'G', AND BUILDABLE PRES. PARCEL 'E'

FIFTH ELECTION DISTRICT TAX MAP 28, PARCEL 48 HOWARD COUNTY, MARYLAND

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

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