FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLAN

FOX WOOD MANOR

LOTS 1 - 37, OPEN SPACE LOTS 38 THRU 43

ZONING: R-SC (RESIDENTIAL: SINGLE CLUSTER) DISTRICT

TAX MAP No. 50 GRID No. 1 PARCEL Nos. 405, 429, 468

SHEET INDEX

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4	ROAD PLAN, PROFILES AND DETAILS
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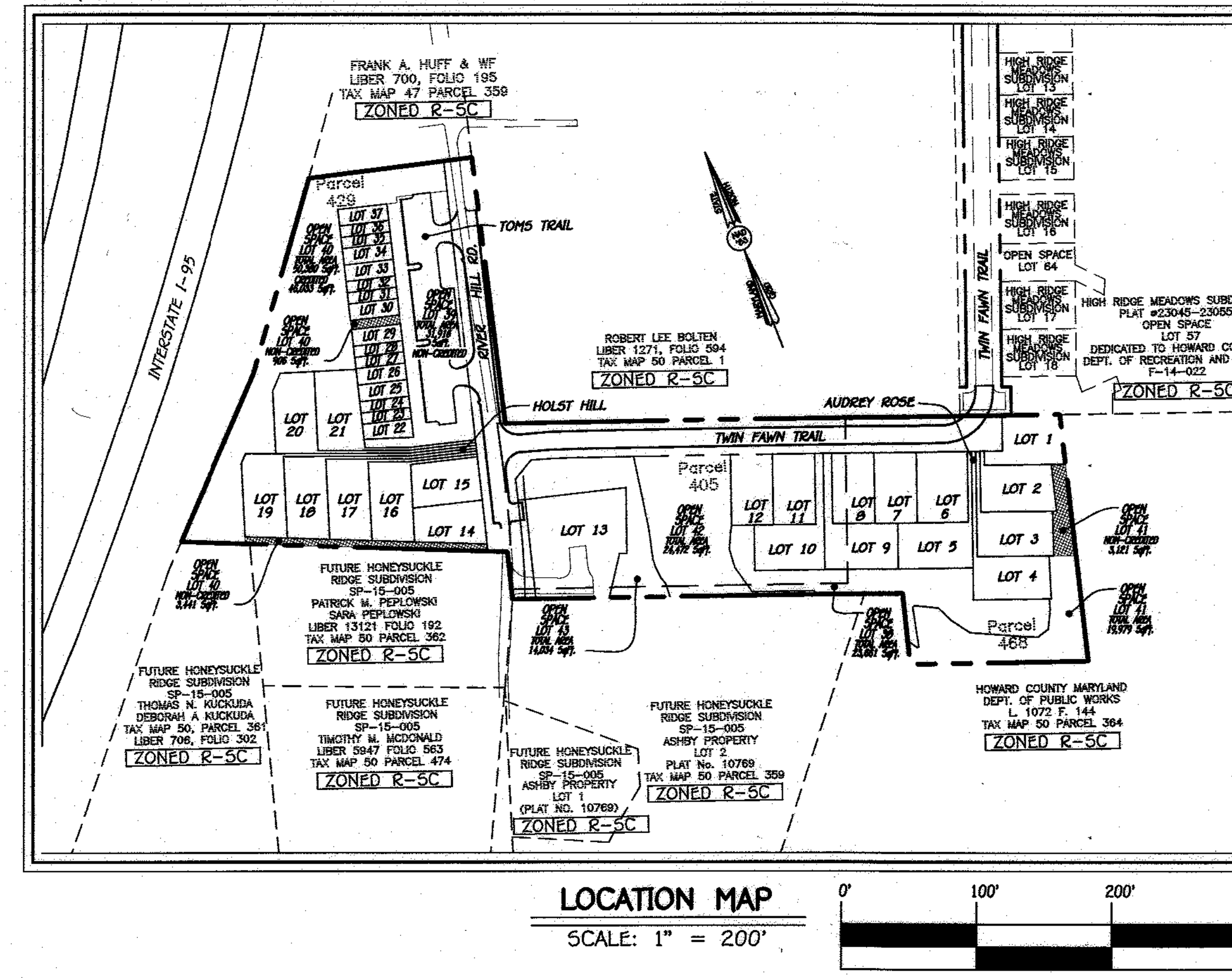
23	SOIL BORINGS AND STORMWATER MANAGEMENT NOTES & DETAILS
24	ROAD GEOMETRY AND SIGNAGE PLAN AND DETAILS

GENERAL NOTES (CONTINUED)

47. THE DEPARTMENT OF PLANNING AND ZONING HAS APPROVED DISTURBANCE OF THE STREAM, STREAM BUFFER, WETLAND AND WETLAND BUFFERS FOR TWIN FAWN TRAIL AS AN ESSENTIAL DISTURBANCE PER SECTION 16.116 (c)(1)(i) AND SECTION 16.116 (c)(1)(iii) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
48. THIS PLAN IS IN COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE 10/06/13 COMPREHENSIVE ZONING PLAN. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.
49. APPROVAL OF A SITE DEVELOPMENT PLAN IS REQUIRED FOR THE DEVELOPMENT OF ALL RESIDENTIAL LOTS WITHIN THIS SUBDIVISION PRIOR TO ISSUANCE OF ANY GRADING OR BUILDING PERMITS FOR NEW HOUSE CONSTRUCTION IN ACCORDANCE WITH SECTION 16.155 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
50. OPEN SPACE TABULATION:
    A. OPEN SPACE REQUIRED = 2.347 ACRES
       (9.387 ACRES X 25%)
    B. TOTAL OPEN SPACE PROVIDED = 3.785 ACRES
       (LOT 38 + LOT 39 + LOT 40)
       (1.863 AC. + 0.733 AC. + 1.189 AC.)
       1). TOTAL CREDITED OPEN SPACE = 3.581 ACRES
       2). TOTAL NON-CREDITED OPEN SPACE = 0.204 ACRES
51. RECREATIONAL OPEN SPACE TABULATION:
    A. RECREATIONAL OPEN SPACE REQUIRED = 12,700 SQ. FT.
       1). SINGLE FAMILY DETACHED (21 UNITS X 300 SQ. FT./UNIT) = 6,300 SQ. FT.
       2). SINGLE FAMILY ATTACHED (16 UNITS X 400 SQ. FT./UNIT) = 6,400 SQ. FT.
    B. RECREATIONAL OPEN SPACE PROVIDED = 16,802 SQ. FT.
       1). TOTAL CREDITED OPEN SPACE = 13,320 SQ. FT.
       2). TOTAL NON-CREDITED OPEN SPACE = 3,482 SQ. FT.
52. TOTAL NUMBER OF "MODERATE INCOME HOUSING UNITS" (M.I.H.U.) REQUIRED FOR THIS SUBDIVISION PER THE R-SC ZONING DISTRICT IS 10% OF THE TOTAL NUMBER OF UNITS CALCULATED AS FOLLOWS:
    A. TOTAL NUMBER OF PROPOSED RESIDENTIAL UNITS = 37 UNITS
    (1) TOTAL NUMBER OF SFD UNITS PROPOSED = 21 UNITS
    (2) NUMBER OF EXISTING RESIDENTIAL SFD = 3 UNITS
    (3) NUMBER OF UNITS SUBJECT TO M.I.H.U. = 18 UNITS
        (21 UNITS - 3 UNITS)
    (4) TOTAL NUMBER OF SFA UNITS PROPOSED = 16 UNITS
    (5) TOTAL NUMBER OF M.I.H.U. REQUIRED = 2.6 M.I.H.U.
        (18 SFD X 10%) + (16 SFA X 0.5 M.I.H.U. X 10%)
        1.8 M.I.H.U. + 0.8 M.I.H.U.
53. A MODERATE INCOME HOUSING UNIT (M.I.H.U.) AGREEMENT AND COVENANTS WILL BE RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, MARYLAND SIMULTANEOUSLY WITH THE RECORDATION OF THE SUBDIVISION PLAT, F-15-053.
54. OPEN SPACE LOTS 38, 39 AND 40 AND 43 ARE OWNED AND MAINTAINED BY THE FOX WOOD MANOR HOMEOWNERS ASSOCIATION, INC. OPEN SPACE LOTS 41 AND 42 ARE OWNED AND MAINTAINED BY HOWARD COUNTY, MARYLAND.
55. THE WETLAND REPORT FOR THIS PROJECT WAS PREPARED BY ECO-TONE INC., DATED MARCH 4, 2014 AND APPROVED ON 07/31/2014. NO WETLAND IMPACTS ARE PROPOSED THAT REQUIRE 401 OR 404 PERMITTING.
56. THE EXISTING STRUCTURE ON PARCEL 405 WILL REMAIN. EXISTING STRUCTURES ON PARCELS 429 AND 468 WILL BE REMOVED PRIOR TO RECORDATION OF THE SUBDIVISION PLAT. F-16-053. NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLING ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATION REQUIREMENTS.
57. OPEN SPACE LOT 38 ON THIS PLAN SUBJECT TO WP-15-145 WHICH THE DIVISION OF LAND DEVELOPMENT WAIVE ON JUNE 22, 2015 APPROVED A REQUEST TO WAIVE SECTION16.121(e)(1) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH STATES, "IF A PUBLIC ROAD IS BEING CREATED OR AN EXISTING PUBLIC ROAD IS AVAILABLE THAT PERMITS AND IS VIABLE FOR DIRECT ACCESS, OPEN SPACE LOTS OR AREAS SHALL HAVE A MINIMUM OF 40 FEET OF FRONTAGE ON A PUBLIC ROAD FOR ACCESS BY PEDESTRIANS AND MAINTENANCE VEHICLES. OPEN SPACE FRONTAGE MAY BE REDUCED TO A MINIMUM OF 20 FEET IF THE ADJACENT SIDE YARD SETBACK FOR ONE OR BOTH ABUTTING LOTS IN COMBINATION IS INCREASED BY THE TOTAL AMOUNT OF OPEN SPACE FRONTAGE REDUCTION, BUT ONLY IF THE ABUTTING LOTS ARE A PART OF THE PROPOSED DEVELOPMENT. FOR ANY ADDITIONAL ACCESS POINTS PROVIDED, FRONTAGE MAY BE REDUCED TO 20 FEET.
    APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
    1. DEPARTMENT OF PLANNING AND ZONING APPROVES THE REQUESTED REDUCTION OF THE REQUIRED 40' PUBLIC ROAD FRONTAGE FOR H.O.A. OPEN SPACE LOT 38 TO BE REDUCED IN WIDTH TO BE NO LESS THAN 4.81' AND TO BE LOCATED ALONG AUDREY ROSE.
    2. LOTS 2-5 AND OPEN SPACE LOT 38 SHALL HAVE SUFFICIENT FRONTAGE COLLECTIVELY ALONG AUDREY ROSE TO MEET THE DRIVEWAY EASEMENT REQUIREMENTS IN THE DESIGN MANUAL (MINIMUM 24').
    3. THE PIPESTEMS FOR LOTS 2-5 AND OPEN SPACE LOT 38 ARE TO BE LOCATED SOLEY WITHIN THE USE-IN-COMMON DRIVEWAY AND STORM WATER MANAGEMENT ACCESS EASEMENT AREA OF THE LOTS' PIPESTEM OR FLAG STRIP WHICH PROVIDES SHARED ACCESS FOR LOTS 1-6 AND OPEN SPACE LOT 38. THIS LOT DESIGN IS TO BE IN COMPLIANCE WITH THE POLICY INTERPRETATION FOR SECTION 16.120.(b).(4).(iv) OF THE SUBDIVISION REGULATIONS DATED MAY 5 2014 - "STORM WATER MANAGEMENT ACCESS EASEMENTS LOCATED WITHIN RESIDENTIAL LOTS".



LOCATION MAP

SCALE: 1" = 200'

0' 100' 200' 400'

SCALE: 1" = 200'

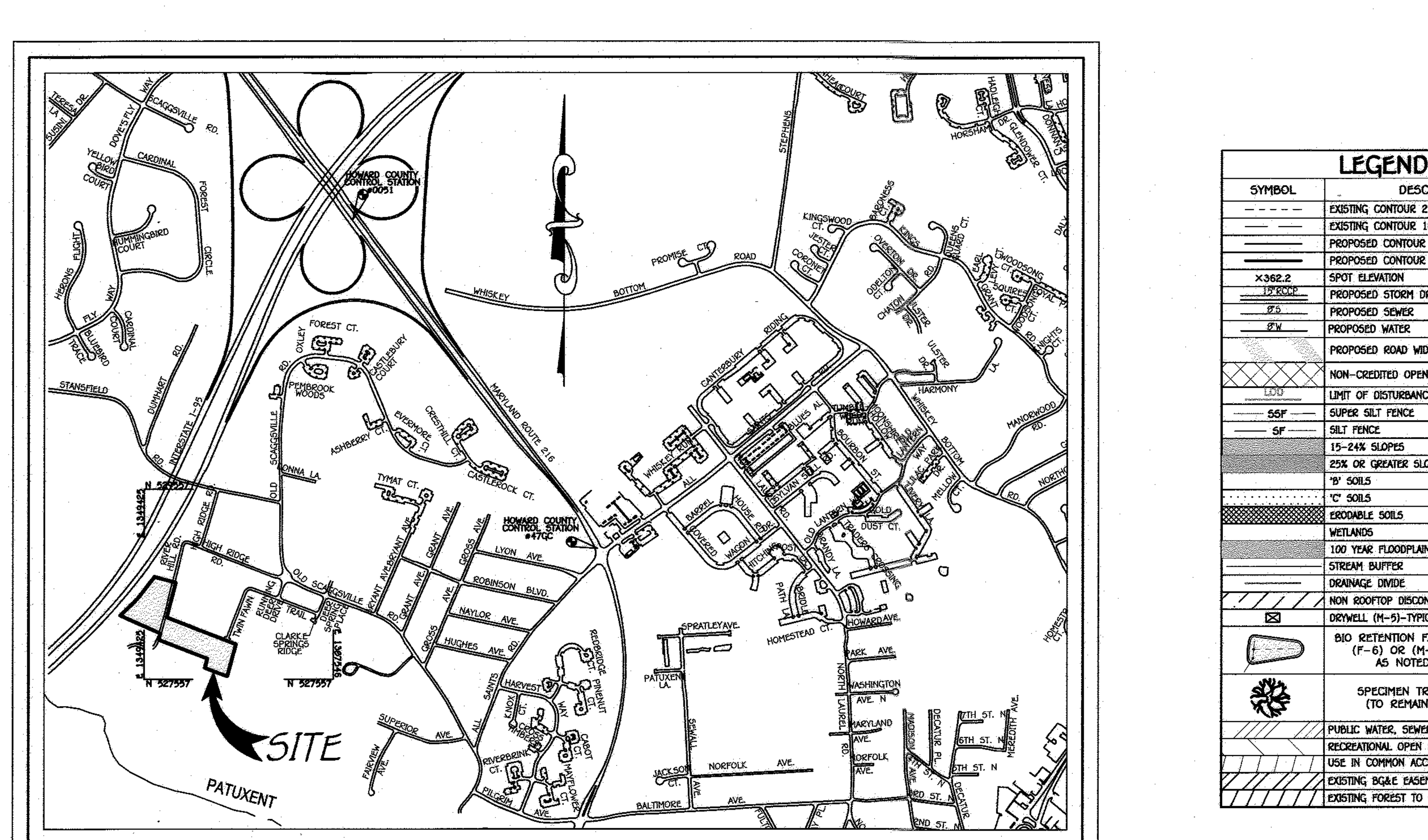
SITE ANALYSIS DATA CHART

A. TOTAL AREA OF THIS SUBMISSION =9.387 AC.±.
B. LIMIT OF DISTURBED AREA = 8.19 Ac.±
C. PRESENT ZONING DESIGNATION = R-SC PER 10/6/13 COMPREHENSIVE ZONING PLAN
D. PROPOSED USE: SINGLE FAMILY DETACHED AND SINGLE FAMILY ATTACHED HOUSING
E. TOTAL NUMBER OF UNITS PROPOSED: 37 UNITS
F. OPEN SPACE TABULATION SEE TABULATION SUMMARY THIS SHEET. (SEE GENERAL NOT 50.)
G. RECREATIONAL OPEN SPACE SEE TABULATION SUMMARY THIS SHEET. (SEE GENERAL NOTE 51.)
H. BUILDING COVERAGE OF SITE: 0.96 AC± OR 10%
I. PREVIOUS HOWARD COUNTY FILES: SDP-05-067, ECP-13-074, SP-14-003 AND CONTRACT #24-4849-D.
J. TOTAL AREA OF FLOODPLAIN LOCATED ON SITE 0.0 AC.
K. TOTAL AREA OF SLOPES IN EXCESS OF 25% = 0.0 AC±
L. NET TRACT AREA = 9.386 AC.
   (TOTAL SITE AREA - FLOODPLAIN - STEEP SLOPES AREA)
   (9.387 Ac - (0.0 Ac + 0.0 Ac)) = 9.387 AC±
M. TOTAL AREA OF WETLANDS (INCLUDING BUFFER) LOCATED ON SITE = 0.39 AC.±
N. TOTAL FOREST 2.5 Ac.±
O. TOTAL GREEN OPEN AREA = 4.42 Ac.±
P. TOTAL IMPERVIOUS AREA = 2.47 Ac.±
Q. AREA OF ERODIBLE SOILS = 0.00 Ac.±
R. TOTAL NUMBER OF PARKING SPACES REQUIRED = 90 SPACES
   a. SINGLE FAMILY DETACHED PARKING = 42 SPACES
      (21 SFD X 2 SPACES/UNITS)
   b. TOWNHOUSE PARKING REQUIRED = 32 SPACES
      (16 SFA X 2 SPACES/UNITS)
   c. OVERFLOW PARKING REQUIRED = 19 SPACES
      (0.5 SPACES X 16 SFA = 8)
      (0.5 SPACES X 21 SFD = 11)
S. TOTAL NUMBER OF PARKING SPACES PROVIDED = 126 SPACES
   a. SINGLE FAMILY DETACHED PARKING = 84 SPACES
      (TWO CAR GARAGE AND TWO SPACES ON DRIVEWAY)
   b. SINGLE FAMILY ATTACHED PARKING AREAS = 42 SPACES

TABULATION SUMMARY

A. TOTAL SITE: TAX MAP 50, PARCELS 405,429,468
B. TOTAL SITE AREA: (2.576 Ac. + 4.202 Ac. + 2.608 Ac) = 9.387 Ac
C. OPEN SPACE:
   (1) REQUIRED OPEN SPACE = 9.387 Ac. x 25% = 2.347 Ac.
   (2) TOTAL OPEN SPACE PROVIDED = 3.785 Ac.
   (3) TOTAL CREDITED OPEN SPACE PROVIDED = 3.581 Ac.
   (4) TOTAL NON-CREDITED OPEN SPACE PROVIDED = 0.204 Ac.
D. RECREATIONAL AREA
   (1) REQUIRED REC AREA = 12,700 Sq.Ft.
       300 Sq.Ft. / SFD x 21 SFD = 6,300 Sq.Ft.
       400 Sq.Ft. / SFD x 16 SFA = 6,400 Sq.Ft.
   (2) PROVIDED REC AREA = 16,802 Sq.Ft.
       (a) CREDITED RECREATIONAL OPEN SPACE = 13,320 SQ.FT
       (b) NON-CREDITED RECREATIONAL OPEN SPACE = 3,482 SQ.FT.
E. DENSITY: 9.386 Ac x 4 UNITS/NET ACRE = 37.544 = 37 UNITS

* FINAL DESIGN OF STORMWATER MANAGEMENT FACILITIES TO BE PROVIDED AT S.D.P. STAGE OF PROJECT.



HOWARD COUNTY
GEODETIC SURVEY CONTROL NO. 47GC
N 528939.7281
E 1354223.5536
ELEVATION: 226.272'

HOWARD COUNTY
GEODETIC SURVEY CONTROL NO. 0051
N 532404.1563
E 1351627.3343
ELEVATION: 349.698'

REFER TO HOWARD CO. ADC MAP 5169 GRID B-2

VICINITY MAP

SCALE: 1" = 1200'

SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
X362.2	SPOT ELEVATION
15"RCCP	PROPOSED STORM DRAIN PIPE
8"S	PROPOSED SEWER
8"W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON-CREDITED OPEN SPACE
LOD	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
SF	SILT FENCE
	15-24% SLOPES
	25% OR GREATER SLOPES
	'B' SOILS
	'C' SOILS
	ERODABLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
	DRYWELL (M-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO REMAIN)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT
	EXISTING FOREST TO BE REMOVED

STORMWATER MANAGEMENT PRACTICES

LOT NO.	AREA ID	DRAINAGE AREA	% IMPERVIOUS	ESDv REQUIRED CuFt.	ESDv PROVIDED CuFt.	DISCONNECTION OF ROOFTOP RUNOFF N-1 (Y/N)	DISCONNECTION OF NON-ROOFTOP RUNOFF N-2 (Y/N)	DRY WELLS M-5 (Y/N)	MICRO BIO-RETENTION M-6 (Y/N)	BIO-RETENTION F-6 (Y/N)	PERMEABLE PAVING A-2 (Y/N)
38	F-C(1)	40,367	35%	1,996 (STORAGE)	2,061 (STORAGE)					Y	
38	M-C(2)	21,609	47%	1,148 (STORAGE)	1,412 (STORAGE)				Y		
42	FC(3)	59,363	38%	2,599 (STORAGE)	2,769 (STORAGE)					Y	
42	FC(4)	49,470	24%	1,477 (STORAGE)	1,554 (STORAGE)					Y	
39	MC(5)	6,879	56%	426 (STORAGE)	749 (STORAGE)				Y		
39	MC(6)	4,195	54%	252 (STORAGE)	436 (STORAGE)				Y		
39	MC(7)	19,734	25%	616 (STORAGE)	675 (STORAGE)				Y		
*40	FC(8)	30,499	21%	835 (STORAGE)	1,060 (STORAGE)					Y	
*40	MC(9)	24,519	45%	1,245 (STORAGE)	1,280 (STORAGE)				Y		
*40	MC(10)	17,780	38%	788 (STORAGE)	806 (STORAGE)				Y		
*41	FC(11)	45,736	32%	1,737 (STORAGE)	1,779 (STORAGE)					Y	
*39	A-2(1)	5,586	100%	914	914						Y
*39	A-2(2)	6,689	100%	1,125	1,125						Y
*39	A-2(3)	4,487	100%	1,157	1,157						Y
*39	A-2(4)	5,400	100%	494	494						Y
*14	M-5(1)	1,637	100%	117	240			Y			
*15	M-5(2)	1,637	100%	117	240			Y			
*7	M-5(3)	1,637	100%	117	240			Y			
*8	M-5(4)	1,637	100%	117	240			Y			

STREET SIGN CHART

STREET NAME	STATION	OFFSET	POSTED SIGN	SIGN CODE
TWIN FAWN TRAIL	12+28.77	14.18' R	CURVE WARNING	W1-1R
	12+28.77	14.18' R	ADVISORY SPEED SIGN	W13-1
	14+04	25' L	STOP	R1-1
	15+10	14' R	SPEED LIMIT 25 MPH	R2-1
	16+00	15' L	CURVE WARNING	W1-1L
	16+00	15' L	ADVISORY SPEED SIGN	W13-1
	19+45	14' L	SPEED LIMIT 25 MPH	R2-1
	20+45.5	14' R	STOP	R1-1
RIVER HILL ROAD	0+13	15' R	STOP	R1-1
	-0+75	14' L	SPEED LIMIT 25 MPH	R2-1
	-0+85	25' R	STOP	R1-1
	-1+72	14' R	ROAD NARROWS SIGN	W5-1
	-2+00	14' L	SPEED LIMIT 25 MPH	R2-1
	-2+87	25' L	STOP	R1-1
	-4+09	2' L	COMBINATION WARNING/ REGULATORY SIGN*	W8-1

*WARNING SIGN: "BUMP" (30" X 30") (BK/Y) REGULATORY SIGN BELOW: "END COUNTY MAINTENANCE" (30" X 24" (BK/W)

This Subdivision Will Create 37 New Lots Which Will Be Subject To Providing M.I.H.U. On-Site Or A Fee-In-Lieu Calculated And Paid At The Time Of Building Permit Issuance. Lot No. 13 Contains An Existing House And Is Not Subject To M.I.H.U. Provisions.

MINIMUM LOT SIZE TABULATION

Lot No.	Gross Area	Pipestem Area	Minimum Lot Size
2	7,113 Sq. Ft.±	222 Sq. Ft.±	6,891 Sq. Ft.±
3	7,426 Sq. Ft.±	597 Sq. Ft.±	6,829 Sq. Ft.±
4	7,624 Sq. Ft.±	957 Sq. Ft.±	6,667 Sq. Ft.±
5	7,488 Sq. Ft.±	647 Sq. Ft.±	6,841 Sq. Ft.±
9	7,910 Sq. Ft.±	1,200 Sq. Ft.±	6,710 Sq. Ft.±
10	7,630 Sq. Ft.±	1,200 Sq. Ft.±	6,430 Sq. Ft.±
16	6,383 Sq. Ft.±	383 Sq. Ft.±	6,000 Sq. Ft.±
17	6,739 Sq. Ft.±	620 Sq. Ft.±	6,119 Sq. Ft.±
18	7,243 Sq. Ft.±	859 Sq. Ft.±	6,384 Sq. Ft.±
19	7,851 Sq. Ft.±	1,098 Sq. Ft.±	6,753 Sq. Ft.±
20	7,615 Sq. Ft.±	900 Sq. Ft.±	6,715 Sq. Ft.±
21	7,857 Sq. Ft.±	630 Sq. Ft.±	7,227 Sq. Ft.±

STREET LIGHT CHART

STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
TWIN FAWN TRAIL	14+30	20' L	COLONIAL POST-TOP FIXTURE (LED-100) MOUNTED ON A 14' BLACK FIBERGLASS POLE
	16+03	15' L	
	18+25	15' L	
	20+52	15' L	
RIVER HILL ROAD	-3+35	16' R	
	-1+40	15' R	
	1+30	15' R	

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — DATE 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — DATE 12-21-15

Chief, Development Engineering Division — DATE 12-11-15

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

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISE STORMWATER MANAGEMENT PRACTICES CHART & ADD NOTE	12/21/16

OWNERS

KENNETH ECKER
LISA MARCELLINO - ECKER
9120 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

MICHAEL R MARCELLINO
9131 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

BONNY A MARCELLINO
THOMAS M MARCELLINO
9141 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

DEVELOPER

LAND DESIGN & DEVELOPMENT
5300 DORSEY HALL DRIVE
SUITE 102
ELLICOTT CITY, MARYLAND 21042
(443)-367-0422

STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANK JOHN MANALANSAN II — DATE 11/5/15

GENERAL NOTES

1. THE SUBJECT PROPERTY IS ZONED R-SC PER 10/6/13 COMPREHENSIVE ZONING PLAN.
2. THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE 2004 ZONING REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL NO. 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS OR PARCELS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF A BUILDING OR GRADING PERMIT APPLICATION.
3. AREA TABULATION:
   a. GROSS AREA OF TRACT = 9.386 AC.±
   b. AREA OF FLOODPLAIN = 0.00 AC.±
   c. AREA OF 25% OR GREATER SLOPES (credited) = 0.00 AC.±
      Non-credited steep slopes per Section 16.116(b)(1)(i) = 4,565 SqFt.
   d. NET AREA OF TRACT = 9.386 AC.±
   e. TOTAL AREA OF PROPOSED ROAD R/W = 1.417 AC.±
      RIVER HILL ROAD = 0.600 Ac±
      TWIN FAWN TRAIL = 0.817 Ac±
   f. AREA OF PROPOSED BUILDABLE LOTS = 3.452 AC.±
4. MODERATE INCOME HOUSING UNITS REQUIRED = 3.7 MIHU
   (37 UNITS x 10% = 3.7 MIHU)
5. PUBLIC WATER AND SEWER SHALL BE UTILIZED WITHIN THIS DEVELOPMENT.
6. EXISTING UTILITIES ARE BASED ON CONTR. NO. 44-3169 AND CONTR. NO. 20-3253.
7. SOILS INFORMATION TAKEN FROM NRCS WEB SOIL SURVEY.
8. BOUNDARY OUTLINE BASED ON FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. DATED NOVEMBER, 2012.
9. TOPOGRAPHY CONTOURS ARE BASED ON A FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS AND CARTER, INC. DATED NOVEMBER, 2012.
10. THERE IS AN EXISTING NOISE WALL ALONG INTERSTATE 95 RIGHT-OF-WAY, THE 67 DBA MITIGATED NOISE LINE AS PROJECTED BY MARYLAND STATE HIGHWAY ADMINISTRATION DOES NOT IMPACT THIS PROPERTY.
11. STORMWATER MANAGEMENT WILL BE IN ACCORDANCE WITH THE MDE STORM DRAIN DESIGN MANUAL, VOLUMES I & II, REVISED 2009. USE OF M-6 MICRO BIO-RETENTION, F-6 BIO-RETENTION, AND N-2 DISCONNECTION OF ARE PROPOSED FOR THIS PROJECT.
12. THE TRAFFIC STUDY DATED DECEMBER 18, 2013 FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP AND APPROVED ON AUGUST 18, 2014.
13. THE NATURAL RESOURCE INVENTORY / FOREST STAND DELINEATION PLAN FOR THIS PROJECT WAS PREPARED BY ECO-TONE INC., FEBRUARY 20, 2014 AND APPROVED ON 7/31/14
14. THE WETLAND REPORT FOR THIS PROJECT WAS PREPARED BY ECO-TONE INC., DATED MARCH 4, 2014 AND APPROVED ON 7/31/14
15. THE GEO-TECHNICAL INFORMATION, RELATING TO THE LOCATION OF ROCK OR GROUND WATER BENEATH THE PROPOSED SWM DEVICES HAS BEEN PROVIDED FOR THIS PROJECT BY FISHER, COLLINS AND CARTER INC., DECEMBER 23, 2013 AND APPROVED ON 7/31/14
16. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD R/W LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY. THE FOX WOOD MANOR HOMEOWNERS ASSOCIATION, INC. (THE "HOA") DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS, WHICH SHALL BE RECORDED SIMULTANEOUSLY WITH THE RECORDATION OF FOX WOOD MANOR RECORD PLAT, CONTAINS AN ATTACHMENT ENTITLED, "DAMAGE WAIVER FOR REFUSE OR RECYCLING COLLECTION IN PRIVATE AREAS OR ON PRIVATE ROADWAYS" (THE "WAIVER"). THE WAIVER INCORPORATES THE COUNTY REQUIREMENT THAT, IN CONSIDERATION OF THE COUNTY PROVIDING TRASH COLLECTION AND/OR RECYCLING SERVICES, THE HOA, ITS MEMBERS, AND EACH OWNER OF ANY PART OF THE PROPERTY (I) WAIVES AND RELEASES ALL CLAIMS AGAINST THE COUNTY FOR DAMAGE OR ANY TYPE IN OPEN SPACE LOT 39 CAUSED BY VEHICLES IN CONNECTION WITH SUCH TRASH AND/OR RECYCLING COLLECTION; AND (II) INDEMNIFIES AND HOLDS HARMLESS THE COUNTY IN SUCH REGARD.
17. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON HOWARD COUNTY GEODETIC CONTROL STATIONS: STATIONS NO. 47GC AND NO. 0051:
    HOWARD COUNTY MONUMENT NO. 47GC N 528,939.7281 FT E 1,354223.5536 FT ELEV. 226.272
    HOWARD COUNTY MONUMENT NO. 0051 N 532,404.1563 FT E 1,351,627.3343 FT ELEV. 349.698
18. THE FOREST CONSERVATION EASEMENTS SHOWN ON THIS PLAN HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE 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 ARE ALLOWED.
19. THE FOREST CONSERVATION REQUIREMENTS FOR THIS SUBMISSION WILL BE FULFILLED BY ON-SITE RETENTION OF 0.45 ACRES, ON SITE PLANTINGS OF 0.47 ACRES AND OFF-SITE PLANTING OF 2.55 ACRES OF OBLIGATION WILL BE PROVIDED BY OFFSITE REFORESTATION ON THE ROSEBAR PROPERTY, PRESERVATION PARCEL 'A', SDP-97-115, AND F-99-109, TAX MAP 50, GRID 1, PARCELS 405, 429 AND 468. FOREST SURETY FOR ON-SITE PLANTING IS $10,237.00 (0.47 AC. x 43,560 SqFt. PER ACRE x $0.50 SqFT.) FOREST SURETY IS NOT REQUIRED FOR ON-SITE RETENTION AND OFF-SITE PLANTING WITH THE DEVELOPERS AGREEMENT FOR F-15-053.
20. NO CEMETERIES ARE LOCATED ON THIS PROPERTY NO HISTORIC STRUCTURES EXIST ON-SITE.
21. SITE IS NOT ADJACENT TO A SCENIC ROAD.
22. THERE ARE NO CREDITED STEEP SLOPES OF 25% OR GREATER ON-SITE. THIS SITE DOES CONTAIN 4,565 SqFt. OF NON-CREDITED STEEP SLOPES PER SECTION 16.116(b)(1)(i) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
23. NO FLOODPLAIN EXIST ON THIS PROJECT.
24. THE EXISTING STRUCTURE ON PARCEL 405 WILL REMAIN. EXISTING STRUCTURES ON PARCELS 429 AND 468 WILL BE REMOVED. All EXISTING BUILDINGS, WHICH ARE TO BE REMOVED SHALL BE REMOVED PRIOR TO FINAL PLAT SIGNATURE. NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLING IS TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATION REQUIREMENTS.
25. ALL LOT/PARCEL AREAS ARE MORE OR LESS.
26. DISTANCES SHOWN ARE BASED ON SURFACE MEASUREMENT AND NOT REDUCED TO NAD '83 GRID.
27. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
    A) WIDTH - 12 FEET (16 FEET) SERVING MORE THAN ONE RESIDENCE);
    B) SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING. (1 - 1/2" MINIMUM);
    C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS;
    D) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25-LOADING);
    E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER SURFACE;
    F) STRUCTURE CLEARANCES - MINIMUM 12 FEET;
    G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
28. ARTICLES OF INCORPORATION FOR THE FOX WOOD MANOR HOMEOWNERS ASSOCIATION, INC. WILL BE FILED WITH THE STATE PRIOR TO RECORDATION OF THE SUBDIVISION PLAT, F-15-053.
29. THE USE-IN-COMMON DRIVEWAY EASEMENT AND MAINTENANCE AGREEMENT FOR LOTS 1 THRU 6 AND OPEN SPACE LOT 38, 9 AND 10 AND 16 THRU 21 SHALL BE RECORDED SIMULTANEOUSLY WITH THE FINAL RECORD PLAT.
30. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
31. A PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON OCTOBER 3, 2012.
32. THE SWM FACILITIES LOCATED ON H.O.A. OPEN SPACE LOTS 38, 39 AND 40 WILL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
33. A LANDSCAPE SURETY IN THE AMOUNT OF $13,590 FOR PERIMETER LANDSCAPE REQUIREMENTS 20 SHADE TREES 48 EVERGREEN TREES AND 13 SHRUBS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL IS TO BE POSTED WITH THE FINAL PLAN DEVELOPER'S AGREEMENT FOR THIS SUBDIVISION.
34. SURETY FOR INSTALLATION OF STREET TREES HAS BEEN POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS PROJECT.
35. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT AND WILL BE SERVED BY PUBLIC WATER AND SEWER CONTRACT NO. 24-4849-D
36. AN ADDRESS RANGE SIGN SHALL BE PROVIDED FOR LOTS 1 THRU 6, LOTS 9 AND 10, AT THE INTERSECTION OF TWIN FAWN TRAIL, BOTH ENTRANCES FOR TOM'S TRAIL, AS WELL AS 16 THRU 21 AT THE INTERSECTION OF RIVER HILL ROAD. THE PRIVATE RANGE OF ADDRESS SIGNS SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430 FOR DETAILS AND COST ESTIMATE.
37. SHOULD DISTURBANCE OCCUR IN THE FOREST CONSERVATION EASEMENT AREAS DURING OR AFTER CONSTRUCTION, CIVIL PENALTIES OR MITIGATION MAY BE IMPOSED.
38. THE ON-SITE FOREST CONSERVATION AFFORESTATION 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.
39. THE CONSTRUCTION SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINNER/CONSTRUCTION INSPECTION DIVISION AT (410)313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
40. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
41. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM SPACE OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
42. ALL WELLS AND SEPTIC SYSTEM COMPONENTS MUST BE PROPERLY ABANDONED AND NOTIFICATION OF SUCH SUBMITTED TO THE HEALTH DEPARTMENT PRIOR TO HEALTH SIGNATURE OF THE RECORD PLAT.
43. ONLY PASSIVE RECREATION IS ALLOWED WITHIN THE PORTION RESERVED AS RECREATION AREA THAT FALLS WITHIN THE 20' STRUCTURE AND USE SETBACK.
44. NOISE HAS BEEN ADDRESSED FOR STATE HIGHWAY I-95 BY EXISTING NOISE WALL MEETING THE STATE REQUIREMENT.
45. 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 THE TRAFFIC CONTROL DEVICES.
    c) ALL TRAFFIC CONTROL DEVICES AND LOCATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MdMUTCD).
    d) ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORMED ("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.
46. THIS PLAN IS SUBJECT TO A WAIVER TO DESIGN MANUAL VOLUME III, SECTION 2.3.A.3.f ALLOWING THE USE OF A PRIVATE OFFSET TEE TURN-AROUND WITH 24' W2 WIDTH PAVING PROVIDED IN ACCORDANCE WITH DETAIL R-9.02 AND SECTION 2.3.A.1.a ALLOWING THE USE OF A 60' HORIZONTAL CURVE AT STATION 14+00 OF TWIN FAWN TRAIL.THIS PLAN IS ALSO SUBJECT TO A WAIVER TO DESIGN MANUAL VOLUME III, TABLE 2.06 TO ALLOW A VERTICAL SAG CURVE TO BE DESIGNED WITH A "K" VALUE OF 26.96 INSTEAD OF THE REQUIRED "K" VAULE OF 37 FOR A ROAD WITH 30 M.P.H. DESIGN SPEED. THIS WAIVER HAS BEEN APPROVED SUBJECT TO THE FOLLOWING CONDITIONS:
    1. PROVIDE A "CURVE WARNING" SIGN IN BOTH DIRECTIONS OF TWIN FAWN TRAIL APPROACHING THE CURVE. THE SIGN SHOULD HAVE A SUPPLEMENTAL PLAQUE "25 MPH" UNDERNEATH.
    2. RELOCATE THE PROPOSED INLET 5-5 APPROXIMATELY 10 FEET WEST. RAISE INLET SO THAT THE BACK OF THE CURB IS NOT EXPOSED.

TITLE SHEET
FOX WOOD MANOR
LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 1 OF 24

F-15-053

MARYLAND INTERSTATE I-95
SHA PLATS NO. 37417
(Vehicular Ingress and Egress is Restricted Along the Entire Right Of Way Line)

EXISTING NOISE WALL (SHA 67 dBA LINE)

E 1349262 N 528408

E 1349425 N 528982

MARYLAND GRID NORTH

THOMAS N. KUCKUDA
DEBORAH A KUCKUDA
TAX MAP 50, PARCEL 36
LIBER 706, FOLIO 302
ZONED R-SC

N69°01'57"W 80.04'

N45°28'54"E 258.31'

N37°51'07"E 287.31'

S75°10'52"E 233.20'

FOREST NOT CLEARED BUT NOT IN RETENTION EASEMENT 9,484 Sq.Ft.

EXISTING FOREST TO BE REMOVED 66,785 Sq.Ft.

Slopes 15%-24.99% On Site 7,302 Sq.Ft.

20' R/W SET FORTH IN LIBER 243, FOLIO 487. SEE ALSO THE 15' R/W REFERENCED IN L. 269 F.212

PATRICK M. PEPLOWSKI
SARA PEPLOWSKI
LIBER 13121 FOLIO 192
TAX MAP 50 PARCEL 362
ZONED R-SC

FRANK A. HUFF & WF
LIBER 700, FOLIO 195
TAX MAP 47 PARCEL 359
ZONED R-SC

EXISTING PARCEL 429

EX. SHED TO BE REMOVED
EX. 8" LELAND CYPRESS
EX. 10" CALLERY PEAR
EX. 4" DIA. FORSYTHIA
EX. 6" SWEETGUM
EX. 12" WEEPING WILLOW
EX. GRAVEL DRIVEWAY
EX. MACADAM PAVING TO BE REMOVED
EX. 15" BLACK CHERRY
EX. 18" BLACK CHERRY
EX. TREELINE
EX. 24" BLACK CHERRY
EX. 12" BLACK CHERRY
EX. 15" RED MAPLE
EX. 7" DOGWOOD
EX. 18" VIRGINIA PINE
EX. SHRUB
EX. 6' CHAINLINK FENCE ENCLOSURE (DOGS AND CHICKENS) TO BE REMOVED
EX. 5' CHAINLINE FENCE AROUND POOL TO BE REMOVED
EX. 8" FLOWERING CHERRY
EX. 3-4' CRAPE MYRTLES
EX. VINYL GARAGE TO BE REMOVED
9120 RIVER HILL ROAD EX. HOUSE TO BE REMOVED
EX. WIREMESH FENCE WITH METAL POSTS TO BE REMOVED
EX. 8" DOUBLE HOLLY
EX. 18" TULIP POPLAR
EX. 18" RED MAPLE
EX. 24" DOUBLE WHITE PINE
EX. 12" JAPANESE MAPLE
EX. 24" NORWAY SPRUCE
EX. 30" WHITE PINE
EX. 24" WHITE PINE
EX. 12" DOGWOOD
EX. 3' CRAPE MYRTLES
EX. GRAVEL DRIVEWAY TO BE REMOVED
EX. OVERHEAD POWER LINES TO BE REMOVED
EX. GRAVEL DRIVEWAY TO BE REMOVED
EXISTING DWELLING
EXISTING DWELLING
N 528688
E 1349687
EX. FIRE HYDRANT
EX. FIRE HYDRANT
EX. 8" CONT. NO. 44-3169
EX. 8" CONT. NO. 20-3275
EX. 8" CONT. NO. 44-3169
EX. 8" CONT. NO. 20-3275
EX. 30' R/W LIBER 228, FOLIO 107
EX. 30' ROADWAY GRANT OF EASEMENT FOR INGRESS, EGRESS AND UTILITY INSTALLATION LIBER 232, FOLIO 404
PORTION OF WATER AND UTILITY EASEMENT (DEED 2610, FOLIO 228 (PARCEL 429) DEED 2998, FOLIO 17 (ROADWAY)
PORTION OF WATER AND UTILITY EASEMENT (DEED 2610, FOLIO 228 (PARCEL 429) DEED 2998, FOLIO 17 (ROADWAY)
RIVER HILL ROAD
PRIVATE ROAD
S14°45'07"W 376.99'
MATCH LINE SEE SHEET 3

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
X362.2	SPOT ELEVATION
12"SDDF	PROPOSED STORM DRAIN PIPE
F/S	PROPOSED SEWER
W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON-CREDITED OPEN SPACE
LOD	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
SF	SILT FENCE
	15-24% SLOPES
	25% OR GREATER SLOPES
	'B' SOILS
	'C' SOILS
	ERODABLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
	DRYWELL (M-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO REMAIN)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT
	EXISTING FOREST TO BE REMOVED
	DENOTES EXISTING TREES TO BE REMOVED

0' 30' 60' 120'
SCALE: 1" = 30'

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — DATE 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development — DATE 12-21-15
Chief, Development Engineering Division — DATE 12-11-15

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

REVISIONS		
NO.	DESCRIPTION	DATE

OWNERS

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LAUREL, MARYLAND 20723-1781
(443)-367-0422

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(443)-367-0422

STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

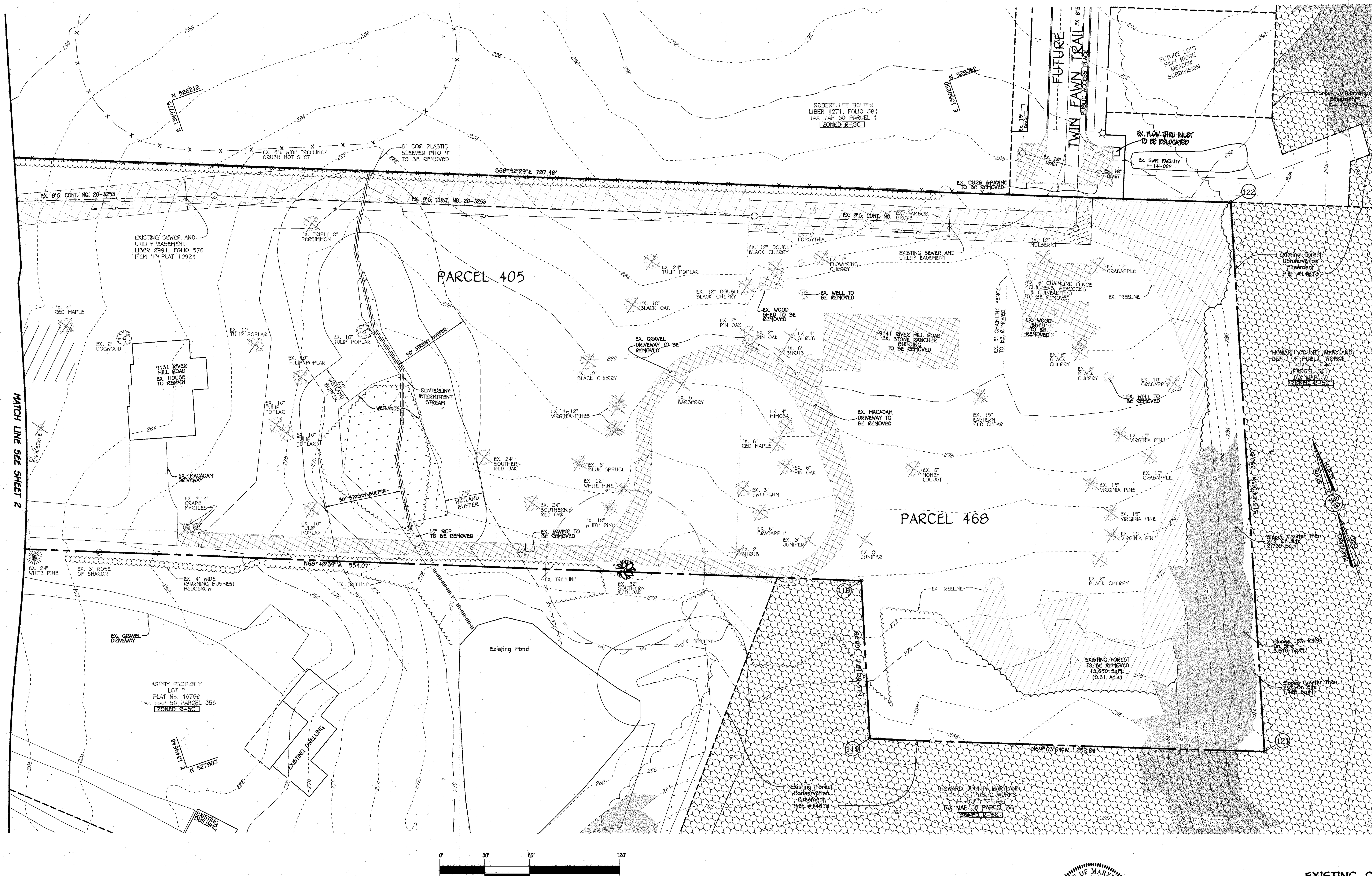
PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANK JOHN MANALANSAN II — DATE 11/5/15

EXISTING CONDITIONS AND DEMOLITION PLAN
FOX WOOD MANOR

LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4049-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 460
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 2 OF 24 F-15-053



LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×362.2	SPOT ELEVATION
15"RCCP	PROPOSED STORM DRAIN PIPE
8"S	PROPOSED SEWER
8"W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON-CREDITED OPEN SPACE
LOD	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
SF	SILT FENCE
	15-24% SLOPES
	25% OR GREATER SLOPES
	'B' SOILS
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	ERODABLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
	DRYWELL (M-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO REMAIN)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT
	EXISTING FOREST TO BE REMOVED
	DENOTES EXISTING TREES TO BE REMOVED

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — 12/8/2015 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 12-30-15 DATE

Chief, Development Engineering Division — 12-11-15 DATE

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

NO.	DESCRIPTION	DATE
1	SHOW EXISTING INLET TO BE RELOCATED	12/21/16

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FRANK JOHN MANALANSAN II — 11/5/15 DATE

EXISTING CONDITIONS AND DEMOLITION PLAN
FOX WOOD MANOR

LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015

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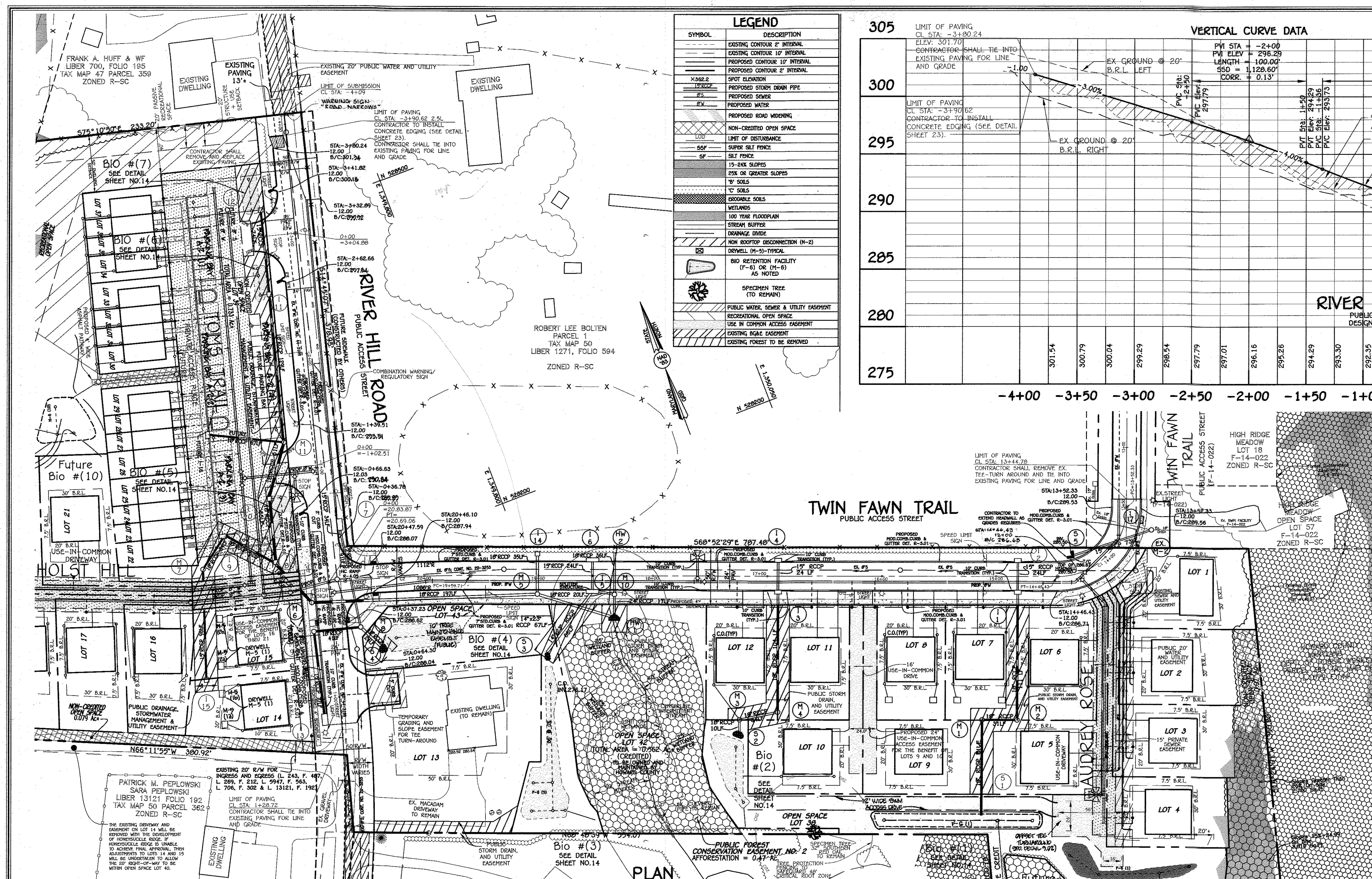

LEGEND

SYMBOL	DESCRIPTION
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×362.2	SPOT ELEVATION
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	DRYWELL (M-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
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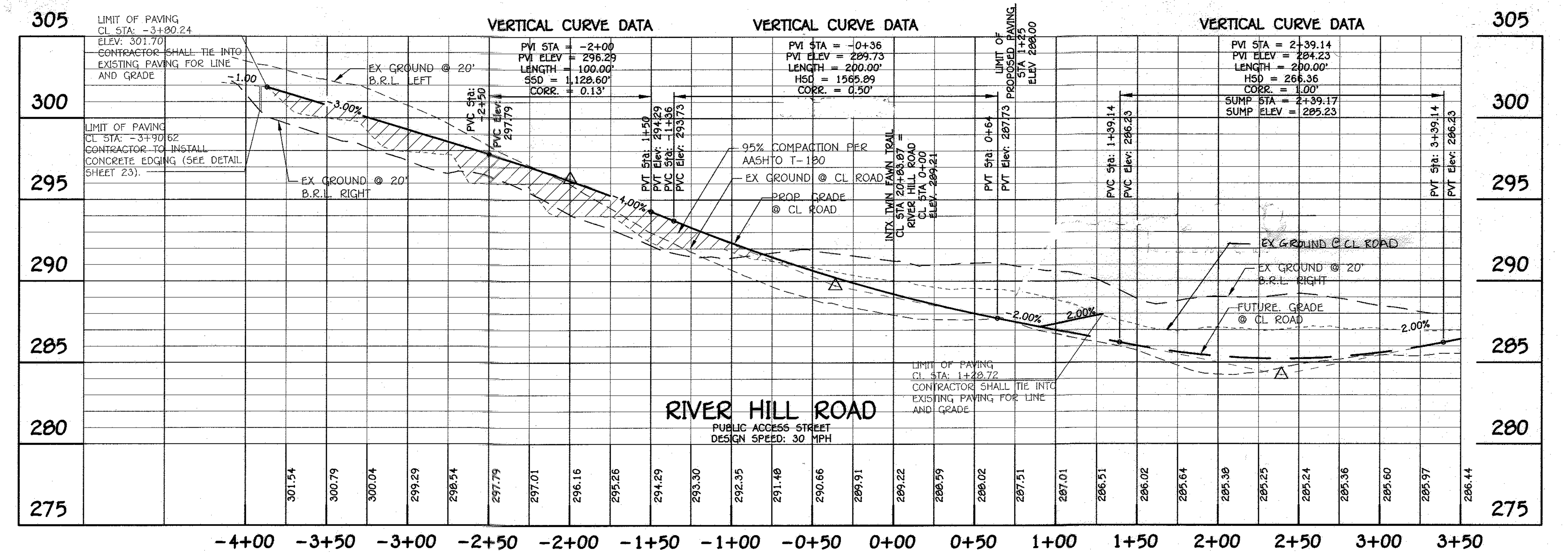
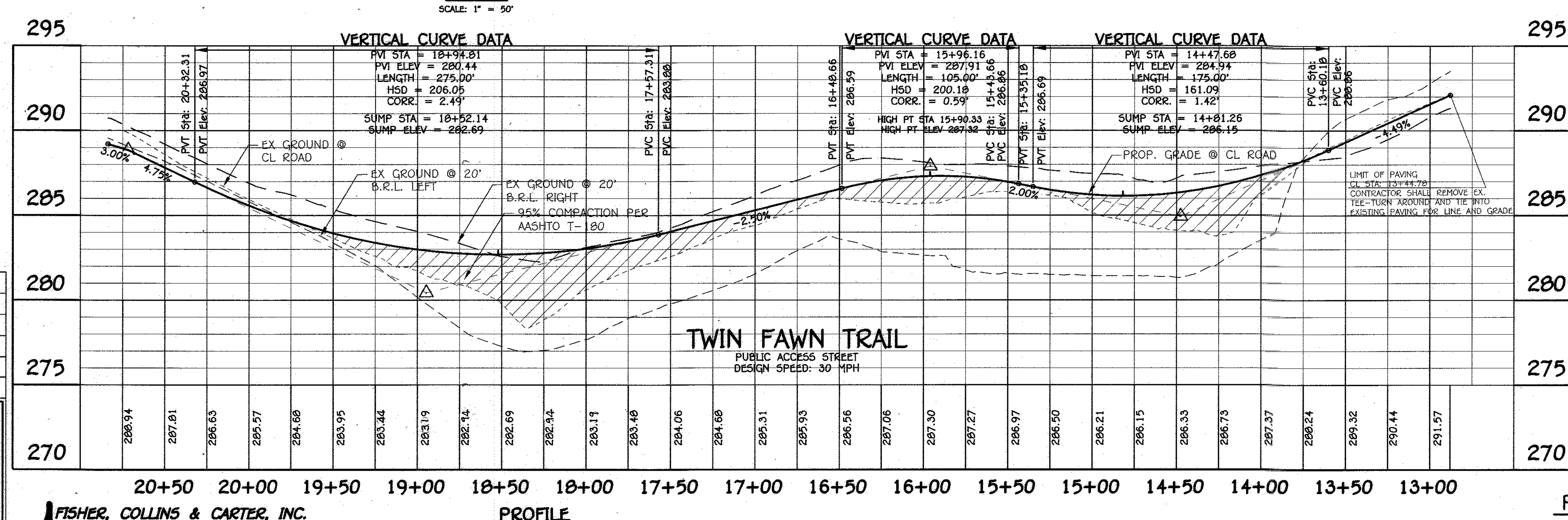
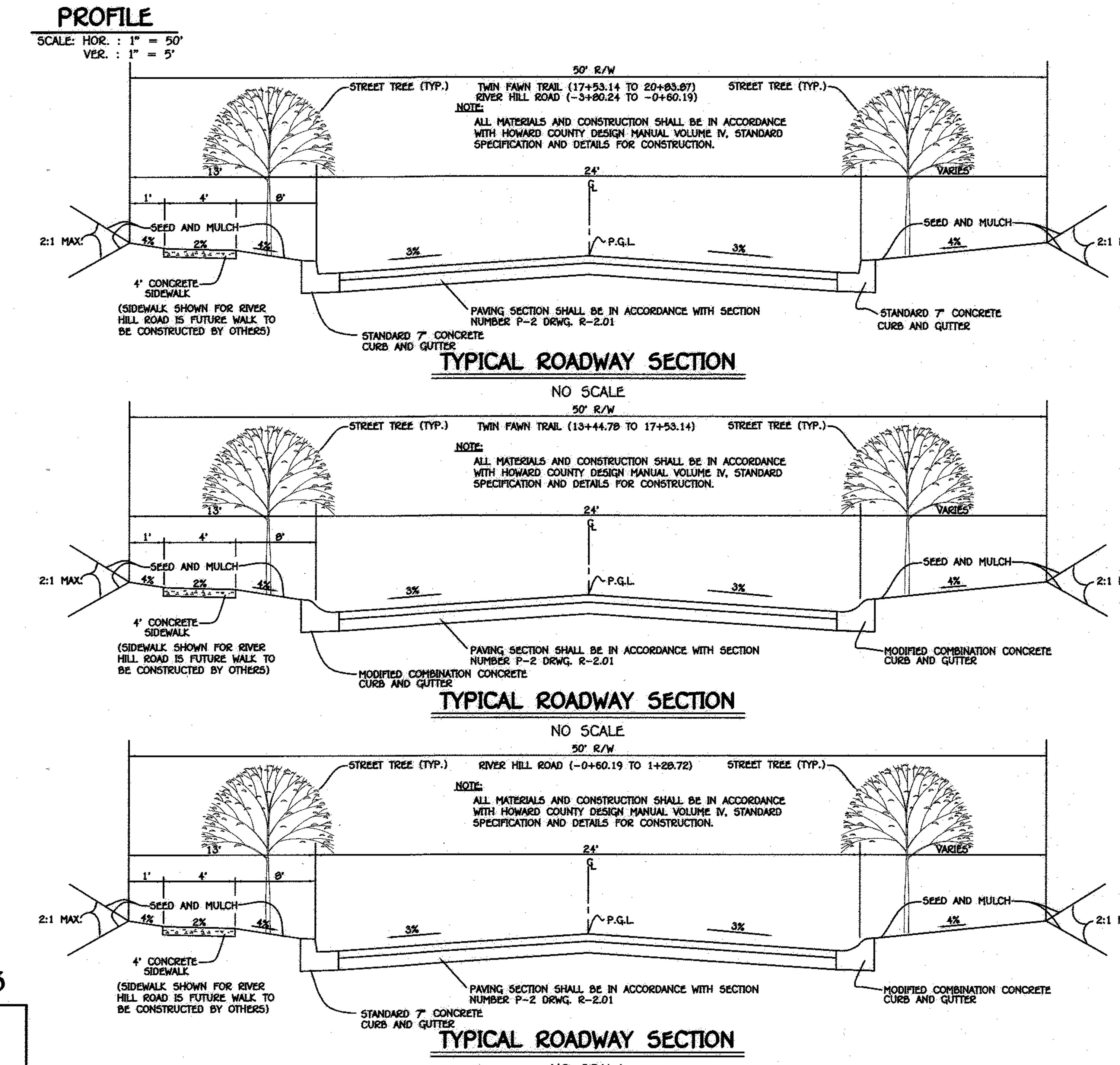
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT
	EXISTING FOREST TO BE REMOVED







SCALE: 1" = 50'

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS	PAVING SECTION
TWIN FAWN TRAIL	PUBLIC ACCESS STREET	30 M.P.H.	R-SC	13+44.78 TO 17+53.14	P-2
TWIN FAWN TRAIL	PUBLIC ACCESS STREET	30 M.P.H.	R-SC	17+53.14 TO 20+83.87	P-2
RIVER HILL ROAD	PUBLIC ACCESS STREET	30 M.P.H.	R-SC	-3+80.24 TO -0+60.19	P-2
RIVER HILL ROAD	PUBLIC ACCESS STREET	30 M.P.H.	R-SC	-0+60.19 TO 1+28.72	P-2

NOTES:
1) FOR BIORETENTION FACILITY DETAILS- SEE SHEET NO.14
2) FOR ROAD GEOMETRY AND SIGNAGE PLAN AND DETAILS - SEE SHEET NO.23

REVISIONS

NO.	DESCRIPTION	DATE
1	ADD INLET I-17, REVISE CURB ELEVATIONS & REVISE SWM FACILITY NO. 1	12/21/16

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — 12/8/2015 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development — 12-21-15 DATE
Chief, Development Engineering Division — 12-11-15 DATE

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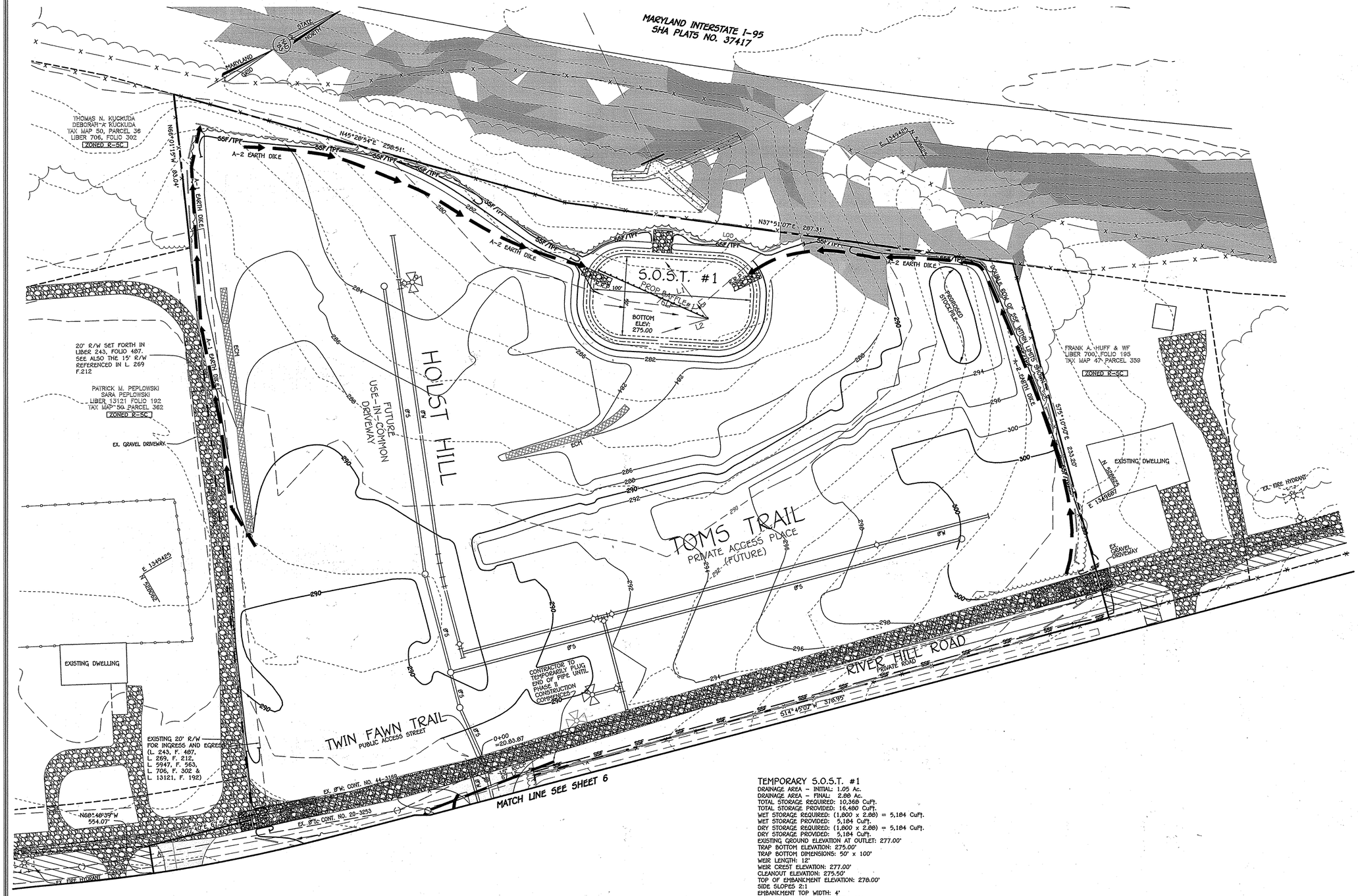
FRANK JOHN MANALANSAN II — 11/5/15 DATE

ROAD PLAN, PROFILES AND DETAILS
FOX WOOD MANOR

LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 4 OF 24

F-15-053



ENGINEER'S CERTIFICATE

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

Frank John Manalansan II — 11/5/15
Signature Of Engineer — Date

DEVELOPER'S CERTIFICATE

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

11/5/15
Signature Of Developer — Date

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

12/1/15
District Howard Soil Conservation Dist. — Date

REVISIONS

NO.	DESCRIPTION	DATE

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
X 362.2	SPOT ELEVATION
12"RCP	PROPOSED STORM DRAIN PIPE
#S	PROPOSED SEWER
#W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON-DISTURBED OPEN SPACE
LOD	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
SF	SILT FENCE
	15-24% SLOPES
	25% OR GREATER SLOPES
	'B' SOILS
	'C' SOILS
	ERODABLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (N-6) AS NOTED
	SPECIMEN TREE (TO REMAIN)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT
	EXISTING FOREST TO BE REMOVED

SEDIMENT CONTROL LEGEND

—SSF—SSF—SSF—	SUPER-SILT FENCE
—SF—SF—SF—	SILT FENCE
—SSF/TPF—SSF/TPF—	SILT FENCE AND TREE PROTECTION FENCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
TYPE A-2	EARTH DIKE
—LOD—	LIMIT OF DISTURBANCE
	REVERSE Q FILTERING DEVICE

NOTE: SEE SHEETS 9+10 FOR SEDIMENT CONTROL DETAILS.

NOTE: EARTH DIKES INTERRUPTED BY THE INSTALLATION OF STORM DRAINS, ETC... SHALL BE REPAIRED IMMEDIATELY.

0' 30' 60' 120'

SCALE: 1" = 30'

TEMPORARY S.O.S.T. #1

DRAINAGE AREA - INITIAL: 1.05 Ac.
DRAINAGE AREA - FINAL: 2.88 Ac.
TOTAL STORAGE REQUIRED: 10,368 CuFt.
TOTAL STORAGE PROVIDED: 16,480 CuFt.
WET STORAGE REQUIRED: (1,800 x 2.88) = 5,184 CuFt.
WET STORAGE PROVIDED: 5,184 CuFt.
DRY STORAGE REQUIRED: (1,800 x 2.88) = 5,184 CuFt.
DRY STORAGE PROVIDED: 5,184 CuFt.
EXISTING GROUND ELEVATION AT OUTLET: 277.00'
TRAP BOTTOM ELEVATION: 275.00'
TRAP BOTTOM DIMENSIONS: 50' x 100'
WEIR LENGTH: 12'
WEIR CREST ELEVATION: 277.00'
CLEANOUT ELEVATION: 275.50'
TOP OF EMBANKMENT ELEVATION: 278.00'
SIDE SLOPES 2:1
EMBANKMENT TOP WIDTH: 4'
OUTLET PROTECTION - LENGTH: 13'
OUTLET PROTECTION - DEPTH: 19"
1-YR. Q = 5.6 C.F.S.
1-YR. ELEV. = 277.00

BAFFLE DESIGN #1

TRAP BOTTOM DIMENSIONS: 50' X 100'
MINIMUM FLOW LENGTH INFORMATION

REQUIRED FLOW LENGTH TO OUTFLOW: 34'X 2 =68'
BAFFLE LENGTH = 76 LF
FLOW LENGTH PROVIDED = L1 + L3 = 66'+45' = 111'
FLOW LENGTH PROVIDED = L2 + L3 = 30'+45' = 75'

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — 12/8/2015 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 12-21-15 DATE

Chief, Development Engineering Division — 12-11-15 DATE

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

REVISIONS

NO.	DESCRIPTION	DATE

OWNERS

KENNETH ECKER
LISA MARCELLINO - ECKER
9120 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

MICHAEL R MARCELLINO
9131 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

BONNY A MARCELLINO
THOMAS M MARCELLINO
9141 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

DEVELOPER

LAND DESIGN & DEVELOPMENT
SUITE 102
ELLICOTT CITY, MARYLAND 21042
(443)-367-0422

STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

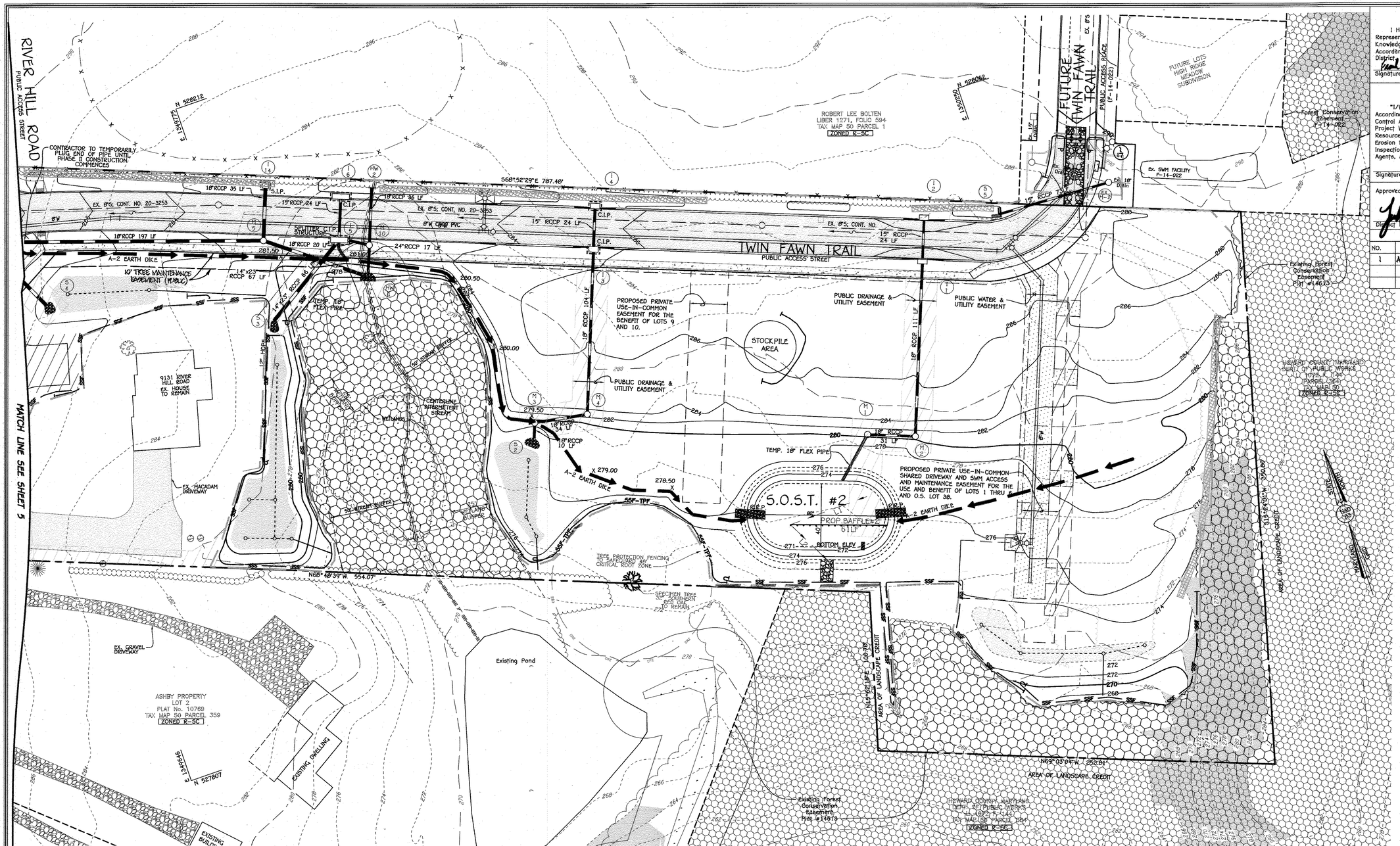
PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

Frank John Manalansan II — 11/5/15
FRANK JOHN MANALANSAN II — DATE

PHASE I
GRADING AND SEDIMENT AND EROSION CONTROL PLAN
FOX WOOD MANOR

LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 460
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 5 OF 24 F-15-053



ENGINEER'S CERTIFICATE

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Signature Of Engineer — 11/5/15 Date

DEVELOPER'S CERTIFICATE

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

Signature Of Developer — 11/5/15 Date

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

District Howard Soil Conservation Dist. — 12/1/15 Date

REVISIONS

NO.	DESCRIPTION	DATE
1	ADD 1-17 INLET AND TREE MAINTENANCE EASEMENT	12/21/16

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
X362.2	SPOT ELEVATION
18"RCCP	PROPOSED STORM DRAIN PIPE
#S	PROPOSED SEWER
#W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON-CREDITED OPEN SPACE
LOD	LIMIT OF DISTURBANCE
55F	SUPER SILT FENCE
SF	SILT FENCE
	15-24% SLOPES
	25% OR GREATER SLOPES
	'B' SOILS
	'C' SOILS
	ERODABLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
	DRYWELL (M-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO REMAIN)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING, BG&E EASEMENT
	EXISTING FOREST TO BE REMOVED

SEDIMENT CONTROL LEGEND

—55F—55F—55F—	SUPER-SILT FENCE
—SF—SF—SF—	SILT FENCE
—SSF/TPF—SSF/TPF—	SILT FENCE AND TREE PROTECTION FENCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
TYPE A-2	EARTH DIKE
LOD	LIMIT OF DISTURBANCE
	REVERSE Q FILTERING DEVICE

NOTE: SEE SHEETS 9-10 FOR SEDIMENT CONTROL DETAILS.

NOTE: EARTH DIKES INTERRUPTED BY THE INSTALLATION OF STORM DRAINS, ETC... SHALL BE REPAIRED IMMEDIATELY.

0' 30' 60' 120'

SCALE: 1" = 30'

TEMPORARY S.O.S.T. #2

DRAINAGE AREA - INITIAL: 3.71 Ac.
DRAINAGE AREA - FINAL: 2.46 Ac.
TOTAL STORAGE REQUIRED: 13,356 CuFt.
TOTAL STORAGE PROVIDED: 19,875 CuFt.
WET STORAGE REQUIRED: (1,800 x 3.71) = 6,678 CuFt.
WET STORAGE PROVIDED: 3,248 CuFt.
DRY STORAGE REQUIRED: (1,800 x 3.71) = 6,678 CuFt.
DRY STORAGE PROVIDED: 6,678 CuFt.
EXISTING GROUND ELEVATION AT OUTLET: 275.00'
TRAP BOTTOM ELEVATION: 272.50'
TRAP BOTTOM DIMENSIONS: 40' x 82'
WEIR LENGTH: 20'
WEIR CREST ELEVATION: 275.00'
CLEANOUT ELEVATION: 272.19'
TOP OF EMBANKMENT ELEVATION: 276.30'
SIDE SLOPES 2:1
EMBANKMENT TOP WIDTH: 4'
OUTLET PROTECTION - LENGTH: 15'
OUTLET PROTECTION - DEPTH: 19"
1 YR. Q = 0.23 CFS
1 YR ELEV. = 275.30

BAFFLE DESIGN #2

TRAP BOTTOM DIMENSIONS: 34' X 76'
MINIMUM FLOW LENGTH INFORMATION

REQUIRED FLOW LENGTH TO OUTFLOW: 34'X 2 = 68'
BAFFLE LENGTH = 61 LF
FLOW LENGTH PROVIDED = L1 + L3 = 52'+32' = 84'

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — 12/8/2015 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 12-11-15 DATE

Chief, Development Engineering Division — 12-11-15 DATE

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

OWNERS

KENNETH ECKER
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9120 RIVER HILL RD
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DEVELOPER

LAND DESIGN & DEVELOPMENT
5300 DORSEY HALL DRIVE
SUITE 102
ELLICOTT CITY, MARYLAND 21042
(443)-367-0422

STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

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FRANK JOHN MANALANSAN II — 11/5/15 DATE

PHASE I
GRADING AND SEDIMENT AND EROSION CONTROL PLAN
FOX WOOD MANOR

LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 6 OF 24 F-15-053

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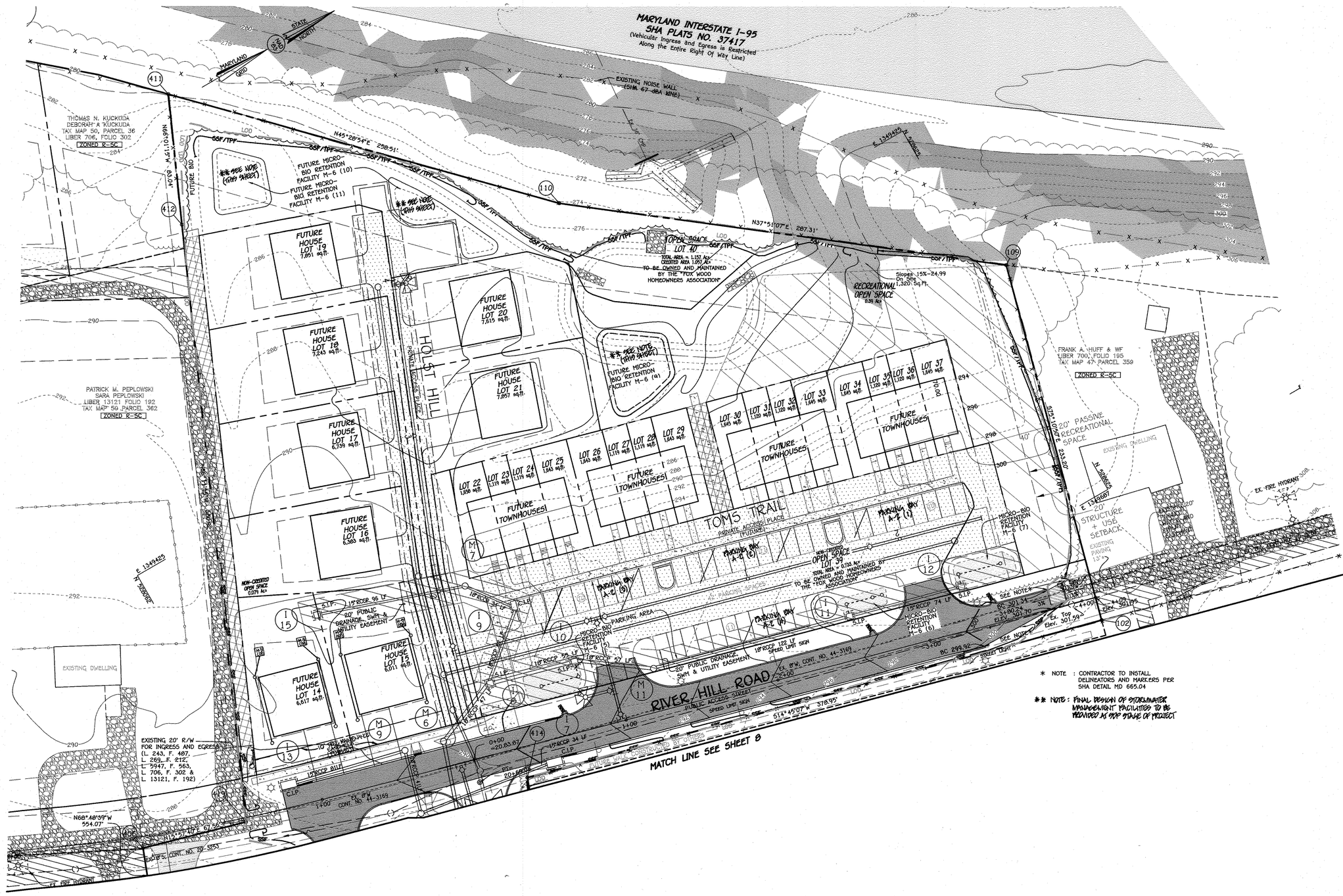

ENGINEER'S CERTIFICATE

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Signature Of Engineer — 11/5/15 Date

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Signature Of Developer — 11/5/15 Date

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

District Howard Soil Conservation Dist. — 12/1/15 Date

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISE SWM FACILITY & ADD TREE MAINTENANCE EASEMENT	12/21/16

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×362.2	SPOT ELEVATION
12"RCP	PROPOSED STORM DRAIN PIPE
#"S	PROPOSED SEWER
#"W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON-CREDITED OPEN SPACE
LOD	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
SF	SILT FENCE
	15-24% SLOPES
	25% OR GREATER SLOPES
	'B' SOILS
	'C' SOILS
	ERODABLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
	DRYWELL (M-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO REMAIN)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING WSSC EASEMENT
	EXISTING FOREST TO BE REMOVED

SEDIMENT CONTROL LEGEND

—SSF—SSF—SSF—	SUPER-SILT FENCE
— SF — SF — SF —	SILT FENCE
—SSF/TPF—SSF/TPF—	SILT FENCE AND TREE PROTECTION FENCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
TYPE A-2	EARTH DIKE
LOD	LIMIT OF DISTURBANCE
	REVERSE Q FILTERING DEVICE

NOTE: SEE SHEETS 9+10 FOR SEDIMENT CONTROL DETAILS.

NOTE: EARTH DIKES INTERRUPTED BY THE INSTALLATION OF STORM DRAINS, ETC... SHALL BE REPAIRED IMMEDIATELY.

* NOTE : CONTRACTOR TO INSTALL DELINEATORS AND MARKERS PER SHA DETAIL MD 665.04

** NOTE: FINAL DESIGN OF STORMWATER MANAGEMENT FACILITIES TO BE PROVIDED AS PART OF THE FINAL DESIGN OF PROJECT

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — 12/8/2015 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 12-21-15 DATE

Chief, Development Engineering Division — 12-11-15 DATE

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

0' 30' 60' 120'
SCALE: 1" = 30'

OWNERS

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DEVELOPER

LAND DESIGN & DEVELOPMENT
5300 DORSEY HALL DRIVE
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STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

FRANK JOHN MANALANSAN II — 11/6/15 DATE

PHASE II
GRADING AND SEDIMENT CONTROL PLAN
FOX WOOD MANOR
LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 7 OF 24 F-15-053

ENGINEER'S CERTIFICATE

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

Signature Of Engineer — Date: 11/5/15

DEVELOPER'S CERTIFICATE

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Signature Of Developer — Date: 11/5/15

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

District Howard Soil Conservation Dist. — Date: 12/11/15

REVISIONS		
NO.	DESCRIPTION	DATE
1	REV. SWM BIOCELL NO.1, ADD SEE MAINTENANCE EASEMENT & INLET 17	12/2/15

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×362.2	SPOT ELEVATION
18"RCCP	PROPOSED STORM DRAIN PIPE
#S	PROPOSED SEWER
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	NON-CREDITED OPEN SPACE
LOD	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
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	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
DI	DRYWELL (N-5)-TYPICAL
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	SPECIMEN TREE (TO REMAIN)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
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	USE IN COMMON ACCESS EASEMENT
	EXISTING EGAE EASEMENT
	EXISTING FOREST TO BE REMOVED

SEDIMENT CONTROL LEGEND

- SSF SSF SSF — SUPER-SILT FENCE
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- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
- TYPE A-2 — EARTH DIKE
- LOD — LIMIT OF DISTURBANCE
- REVERSE Q FILTERING DEVICE

NOTE: SEE SHEETS 9+10 FOR SEDIMENT CONTROL DETAILS.

NOTE: EARTH DIKES INTERRUPTED BY THE INSTALLATION OF STORM DRAINS, ETC... SHALL BE REPAIRED IMMEDIATELY.

** NOTE: FINAL DESIGN OF STORMWATER MANAGEMENT FACILITIES TO BE PROVIDED AT SDP STAGE OF PROJECT

MATCH LINE SEE SHEET 7

TWIN FAWN TRAIL
PUBLIC ACCESS STREET
S68°52'29"E 787.48'
A-2 EARTHDIKE

ROBERT LEE BOLTEN
LIBER 1271, FOLIO 594
TAX MAP 50 PARCEL 1
ZONED R-SC

DEER SPRINGS
LOT 18
F-14-022
ZONED R-SC

DEER SPRINGS
OPEN SPACE
LOT 57
F-14-022
ZONED R-SC

EXISTING SEWER AND UTILITY EASEMENT

PUBLIC WATER & UTILITY EASEMENT

AUDREY ROSE
PUBLIC ACCESS PLACE

OPEN SPACE LOT 43
14.034± 0.322 Ac± (CREDITED)
(OWNED AND MAINTAINED BY THE "FOX WOOD HOMEOWNERS ASSOCIATION INC"

BIO RETENTION FACILITY F-6 (4)

TEMPORARY GRADING AND SLOPE EASEMENT FOR TEE TURN-AROUND
LOT 13
6,000 sq.ft.

EXISTING DWELLING (TO REMAIN)

OPEN SPACE LOT 42
24,472 sq. ft. Or 0.562 Ac±
(OWNED AND MAINTAINED BY HOWARD COUNTY MARYLAND)

BIO RETENTION FACILITY F-6 (3)

MICRO POND RETENTION FACILITY M-6 (2)

OPEN SPACE LOT 38
23,661 Sq. Ft. Or 0.543 Ac± (CREDITED)
(OWNED AND MAINTAINED BY THE "FOX WOOD HOMEOWNERS ASSOCIATION INC.

TREE PROTECTION FENCING TO BE PLACED AT CRITICAL ROOT ZONE

PUBLIC FOREST CONSERVATION EASEMENT NO. 2
AFFORESTATION = 0.47 Ac.

ASHBY PROPERTY
LOT 2
PLAT No. 10769
TAX MAP 50 PARCEL 359
ZONED R-SC

EXISTING DWELLING

EXISTING BUILDING

FUTURE HOUSE LOT 12 6,250 sq.ft.
FUTURE HOUSE LOT 11 6,250 sq.ft.
FUTURE HOUSE LOT 8 6,000 sq.ft. STOCKPILE AREA
FUTURE HOUSE LOT 7 6,301 sq.ft.
SIDE LOAD UNIT FUTURE HOUSE LOT 6 6,995 sq.ft.
FUTURE HOUSE LOT 10 7,830 sq.ft.
LOT 9 7,909 sq.ft.
FUTURE HOUSE LOT 5 7,107 sq.ft.
FUTURE HOUSE LOT 2 7,113 sq.ft.
FUTURE HOUSE LOT 3 7,423 sq.ft.
FUTURE HOUSE LOT 4 7,623 sq.ft.
FUTURE HOUSE LOT 1 7607 sq.ft.

C.O.(TYP)

** SEE NOTE (THIS SHEET)

NON-CREDITED OPEN SPACE 0.07 Ac±

PROPOSED PRIVATE USE-IN-COMMON SHARED DRIVEWAY AND SWM ACCESS AND MAINTENANCE EASEMENT FOR THE USE AND BENEFIT OF LOTS 1 THRU 6 AND O.S. LOT 38.

AREA OF LANDSCAPE CREDIT

Slopes Greater Than 25% On Site 2,780 Sq.Ft.

Slopes 15%-24.99 On Site 3,810 Sq.Ft.

Slopes Greater Than 25% On Site 1,485 Sq.Ft.

OPEN SPACE LOT 41
TOTAL AREA = 0.459 Ac±
CREDITED AREA = 0.387 Ac±
TO BE OWNED AND MAINTAINED BY HOWARD COUNTY MARYLAND

PUBLIC FOREST CONSERVATION EASEMENT NO. 1
RETENTION 0.37 Ac. Ac±

N69°03'04"W 252.81'

HOWARD COUNTY MARYLAND
DEPT. OF PUBLIC WORKS
L. 1072 F. 144
TAX MAP 50 PARCEL 364
ZONED R-SC

HOWARD COUNTY MARYLAND
DEPT. OF PUBLIC WORKS
L. 1072 F. 144
PARCEL 364
TAX MAP 50
ZONED R-SC

E 1349775
N 528600

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — DATE: 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — DATE: 12-24-15

Chief, Development Engineering Division — DATE: 12-11-15

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

0' 30' 60' 120'
SCALE: 1" = 30'

STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANK JOHN MANALANSAN II — DATE: 11/5/15

OWNERS

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DEVELOPER

LAND DESIGN & DEVELOPMENT
5300 DORSEY HALL DRIVE
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PHASE II
GRADING AND SEDIMENT CONTROL PLAN
FOX WOOD MANOR
LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 8 OF 24 F-15-053

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

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION
   A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
   B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
   C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
2. PERMANENT STABILIZATION
   A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
      I. SOIL PH BETWEEN 6.0 AND 7.0.
      II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
      III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
      IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
      V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
   B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
   C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
   D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
   E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
   A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
   B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
   C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
   D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
   A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 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 & 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.

DUST CONTROL

DEFINITION

CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

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

SPECIFICATIONS

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

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

TEMPORARY SEEDING NOTES (B-4-4)

DEFINITION

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

PURPOSE

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): 6B SEED MIXTURE (FROM TABLE B.1):				FERTILIZER RATE (10-20-20)	LIME RATE
SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS		
BARLEY	96	3/1 - 5/15, 8/15 - 10/15	1"	436 LB/AC (10 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)
OATS	72		1"		
RYE	112		1"		

PERMANENT SEEDING NOTES (B-4-5)

A. SEED MIXTURES

1. GENERAL USE
   A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
   B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
   C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY. D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
2. TURFGRASS MIXTURES
   A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
   B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
      I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
      II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
      III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
      IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

      NOTE:
      SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE
   C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A) CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B) SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)
   D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
   E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 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 SEASONS, OR ON ADVERSE SITES.

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	
8	TALL FESCUE	100	MAR. 1-MAY 15 AUG. 15-OCT. 15	1/4-1/2 IN.	45 LBS. PER ACRE (1.0 LB/1000 SF)	90 LB/AC (2 LB/1000 SF)	90 LB/AC (2 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS
   A. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
   B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS TO 3/4 INCH, PLUS OR MINUS 1/4 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
   C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
   D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OF WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
   E. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
2. SOD INSTALLATION
   A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
   B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
   C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
   D. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING, AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
3. SOD MAINTENANCE
   A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
   B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
   C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A.) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1).

B.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

HOWARD SOIL CONSERVATION DISTRICT

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

TOTAL AREA OF SITE	2.22 ACRES
AREA DISTURBED	2.51 ACRES
AREA TO BE ROOFED OR PAVED	1.33 ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.18 ACRES
TOTAL CUT	900 CU.YDS.
TOTAL FILL	2,374 CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A

7) ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8) ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
9) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
10) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
11) ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
12) A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 ACRE 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 PROCEEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING & 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 REQUIREMENT 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 WEEDCONTROL 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 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 (PHOSPHORUS), 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 UNIFORM FIBROUS PHYSICAL STATE.
      I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOT 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 BY 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 TO 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 OF5THE 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 4-15 FEET WIDE AND 300 TO 3,000 FEET LONG.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

Definition

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies

Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria

1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance

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

SEQUENCE OF CONSTRUCTION - PHASE I

1. OBTAIN A GRADING PERMIT. (2 WEEKS)
2. NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 AT LEAST 24 HOURS BEFORE STARTING WORK.
3. REQUEST A PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT AUTHORITY.
4. CLEAR AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF PERIMETER CONTROLS. (2 DAYS)
5. INSTALL THE STABILIZED CONSTRUCTION ENTRANCES AND PERIMETER CONTROLS SHOWN ON SHEETS 5 AND 6. (1 WEEK)
6. REMOVE EXISTING PAVING AND ITEMS SHOWN SHEETS 2 AND 3 NOTED TO BE DEMOLISHED. (2 WEEKS)
7. COMPLETE REMAINING CLEARING AND GRUBBING WITHIN INSTALLED PERIMETER CONTROLS AND INSTALL SEDIMENT TRAPS WITH ASSOCIATED INTERNAL EARTH DIKES. (1 WEEK)
8. START GRADING SITE TO PROPOSED ELEVATIONS AS DEFINED ON SHEETS 5 AND 6. DO NOT BLOCK ACCESS TO EXISTING RIVER HILL ROAD. (1 MONTH)
9. START INSTALLATION WATER AND SEWER LINES. INSTALL STORM DRAIN SYSTEMS FROM I-2 TO I-1 TO M-1. CONSTRUCT TEMPORARY FLEXIBLE 18" PIPE FROM M-1 TO SEDIMENT TRAP. CONSTRUCT I-6 TO I-5 AND 18" TEMPORARY FLEXIBLE PIPE TO CONVEY FLOW TO TRAP VIA EARTH DIKE. CONSTRUCT BYPASS PIPE FROM HW-2 TO M-10 TO HW-1. CONSTRUCT S-5 TO EX. M-2. (2 MONTHS)
10. BEGIN CONSTRUCTION OF CURB & GUTTER AND INSTALL ROAD BASE COURSE FOR TWIN FAWN TRAIL. (2 WEEKS)
11. STABILIZE ALL DISTURBANCE WITH TEMPORARY SEEDING. (1 WEEK)
12. OBTAIN APPROVAL FROM SEDIMENT CONTROL INSPECTOR BEFORE PROCEEDING. (2 DAYS)

SEQUENCE OF CONSTRUCTION - PHASE II

13. BEGIN INSTALLATION OF REMAINING STORM DRAIN SYSTEM FROM I-4 TO I-3 TO M-4 TO M-3 TO S-2. INSTALL I-5 TO S-3 AND REMOVE THE TEMPORARY 18" FLEXIBLE PIPE. INSTALL PIPE FROM I-5 TO M-10 WITH FLOW SPLITTER DEVICE IN I-5. INSTALL STORM DRAIN FROM I-13 TO I-12 TO I-11 TO I-10 TO I-8. CONNECT STORM DRAIN FROM I-9 TO M-7 TO I-8, CONSTRUCT I-8 TO M-6 TO M-5. CONSTRUCT I-14 TO M-5 TO OUTFALL LOCATED AT THE EXISTING HW-1. CONSTRUCT I-14 TO M-9 TO M-8. CONSTRUCT I-7 TO M-8 TO S-4.
14. AFTER TWIN FAWN TRAIL IS CAPABLE OF PROVIDING ADEQUATE ACCESS, COMMENCE INSTALLATION CURB AND GUTTER, INSTALL BASE COURSE FOR RIVER HILL ROAD, AS DETAILED ON SHEET 7.
14. STABILIZE ALL DISTURBED AREAS WITH TEMPORARY SEEDING. (3 DAYS).
15. ONCE STABILIZED, OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO REMOVE ALL EARTH DIKES AND SEDIMENT TRAPS. STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEEDING. (1 WEEK)
16. INSTALL FINISHED SURFACE COURSE, SIDEWALKS AND STREET TREES. (2 WEEKS)
17. COMMENCE INSTALLATION OF SWM FACILITIES. (2 WEEKS)
18. OBTAIN APPROVAL OF APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO REMOVAL OF SEDIMENT CONTROLS. (3 DAYS)
19. REMOVAL OF CONTROLS AND STABILIZATION OF AREAS THAT ARE DISTURBED BY REMOVAL OF SEDIMENT CONTROLS.

NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE AFTER EACH RAINFALL AND ON A DAILY BASIS. REMOVE SEDIMENT FROM THE POND/BASIN ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON.

WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED. ALL SEDIMENT MUST BE PLACED UPSTREAM OF THE APPROVED TRAPPING DEVICE.

TABLE B.1 TEMPORARY SEEDING FOR SITE STABILIZATION

PLANT SPECS	SEEDING RATE 1/		SEEDING DEPTH 2/ (INCHES)	RECOMMENDED SEEDING DATES BY PLANT HARDINESS ZONE 3/		
	LB./AC.	LB./1000 FT.²		5b AND 6a	6b	7a AND 7b
COOL-SEASON GRASSES						
ANNUAL RYEGRASS (LOLIUM PERENNE SSP. MUTIFLORUM)	40	1.0	0.5	MAR. 15 TO MAY 31; AUG. 1 TO SEPT. 30	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	FEB. 15 TO APR. 30; AUG. 15 TO NOV. 30
BARLEY (HORDEUM VULGARE)	96	2.2	1.0	MAR. 15 TO MAY 31; AUG. 1 TO SEPT. 30	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	FEB. 15 TO APR. 30; AUG. 15 TO NOV. 30
OATS (AVENA SATIVA)	72	1.7	1.0	MAR. 15 TO MAY 31; AUG. 1 TO SEPT. 30	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	FEB. 15 TO APR. 30; AUG. 15 TO NOV. 30
WHEAT (TRITICUM AESTIVUM)	120	2.8	1.0	MAR. 15 TO MAY 31; AUG. 1 TO SEPT. 30	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	FEB. 15 TO APR. 30; AUG. 15 TO NOV. 30
CEREAL RYE (SECALE CEREALE)	112	2.8	1.0	MAR. 15 TO MAY 31; AUG. 31 TO OCT. 31	MAR. 1 TO MAY 15; AUG. 1 TO NOV. 15	FEB. 15 TO APR. 30; AUG. 15 TO DEC. 15
WARM-SEASON GRASSES						
FOXTAIL MILLET (SETARIA ITALICA)	30	0.7	0.5	JUNE 1 TO JULY 31	MAY 16 TO JULY 31	MAY 1 TO AUGUST 14
PEARL MILLET (PENNISETUM GLAUCUM)	20	0.5	0.5	JUNE 1 TO JULY 31	MAY 16 TO JULY 31	MAY 1 TO AUGUST 14

NOTES:
1. SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES.

SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE. WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXES, USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS AND WHEAT. FOR SMALLER-SEEDED GRASSES (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET). DO NOT EXCEED MORE THAN 5% (BY WEIGHT) OF THE OVERALL PERMANENT SEEDING MIX. CEREAL RYE GENERALLY SHOULD NOT BE USED AS A NURSE CROP, UNLESS PLANTING WILL OCCUR IN VERY LATE FALL BEYOND THE SEEDING DATES FOR OTHER TEMPORARY SEEDINGS. CEREAL RYE HAS ALLELOPATHIC PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS. IF IT MUST BE USED AS A NURSE CROP, SEED AT 1/3 OF THE RATE LISTED ABOVE.

OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.

ENGINEER'S CERTIFICATE

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

Signature Of Engineer — 11/5/15 Date

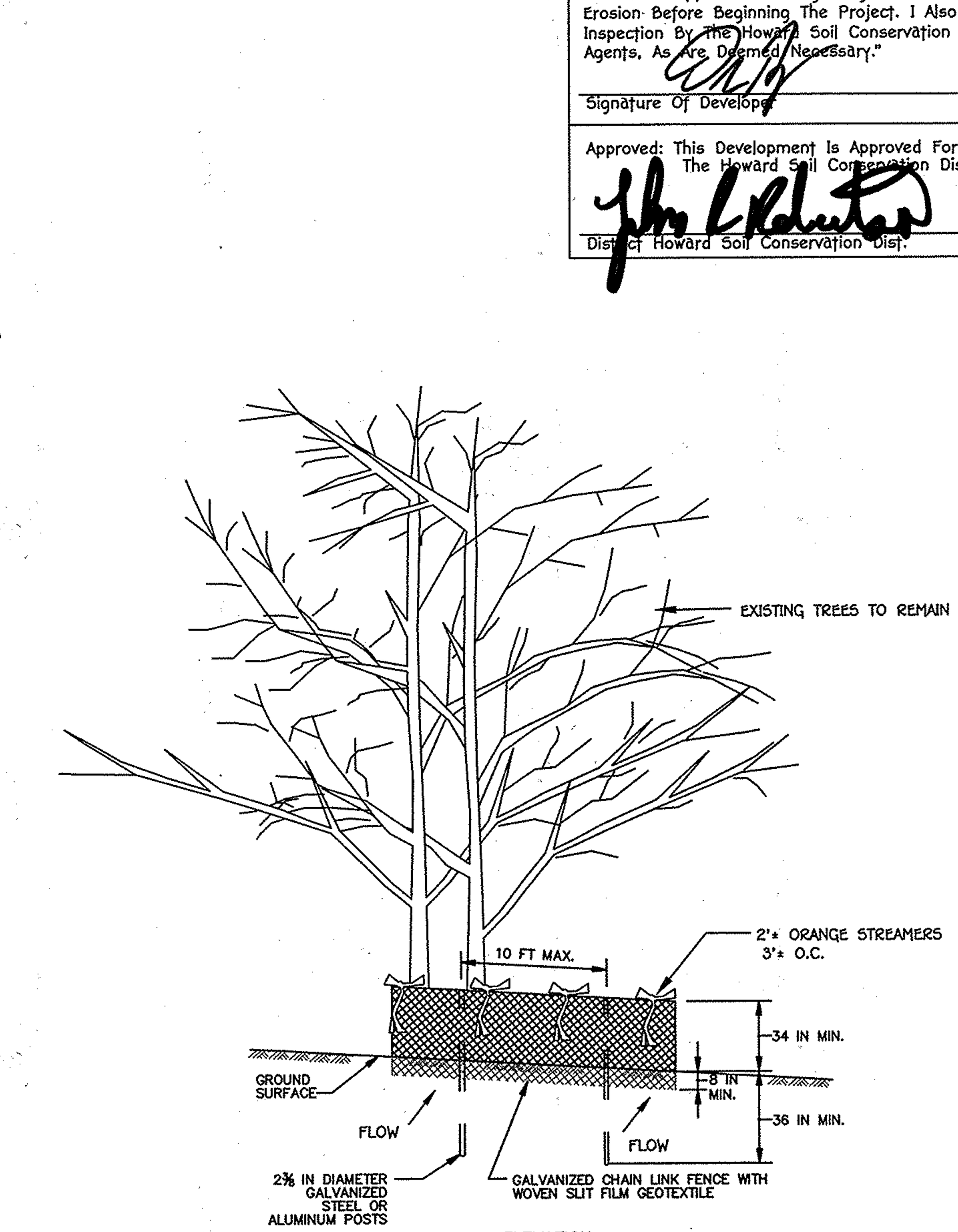
DEVELOPER'S CERTIFICATE

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

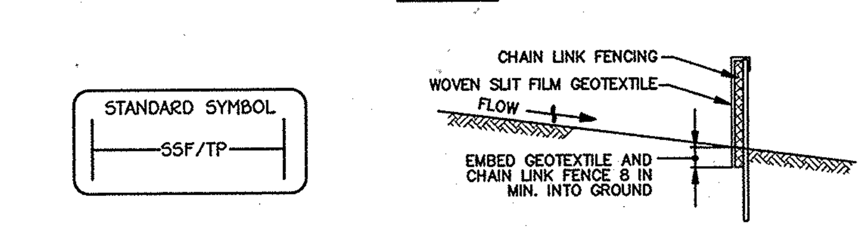
Signature Of Developer — 11/5/15 Date

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

District Howard Soil Conservation Dist. — 12/1/15 Date



ELEVATION



CROSS SECTION

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.

SUPER SILT FENCE, TREE PROTECTION FENCE

NOT TO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — 12/8/2015 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 12-21-15 DATE

Chief, Development Engineering Division — 12-11-15 DATE

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

REVISIONS

NO.	DESCRIPTION	DATE

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DEVELOPER

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ELLICOTT CITY, MARYLAND 21042
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STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

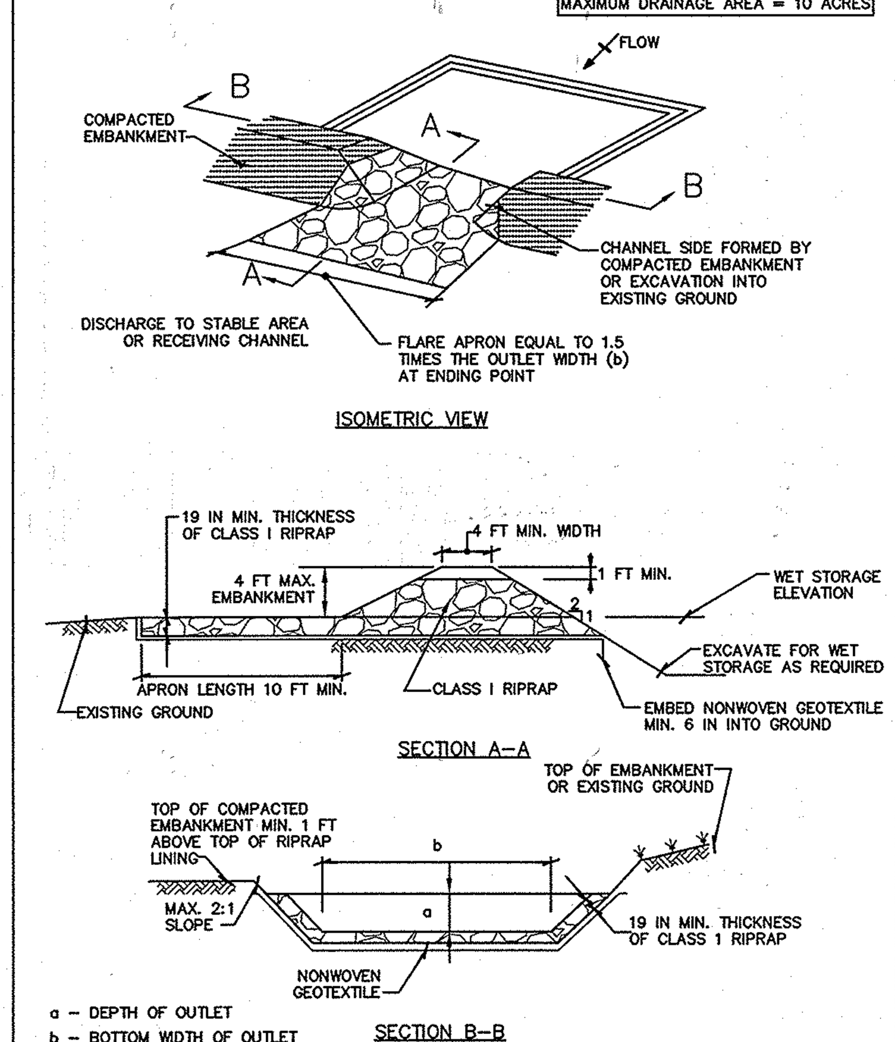
FRANK JOHN MANALANSAN II — 11/5/15 DATE

SEDIMENT & EROSION CONTROL NOTES AND DETAILS
FOX WOOD MANOR
LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015

DETAIL G-1-3 RIPRAP OUTLET SEDIMENT TRAP ST-III

STANDARD SYMBOL: ST-III

MAXIMUM DRAINAGE AREA = 10 ACRES



CONSTRUCTION SPECIFICATIONS

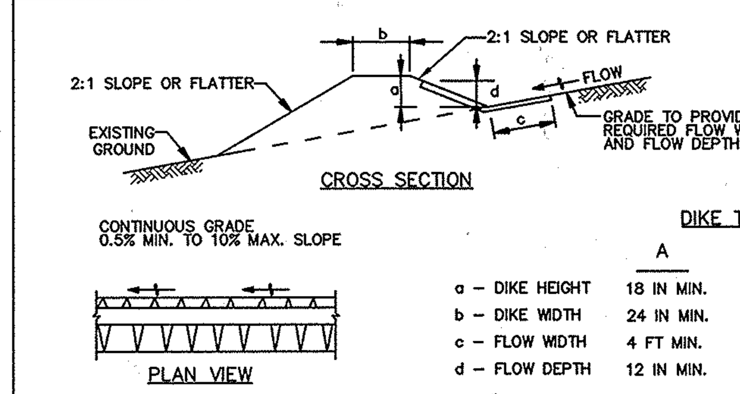
1. CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
2. CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
3. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
4. CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE TOP OF RIPRAP OUTLET. 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 CLASS 1 RIPRAP PLACED 19 INCHES IN DEPTH FOR THE OUTLET AND APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE.
8. CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
9. STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
10. REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (25% 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.
11. WHEN DEWATERING TRAP, PASS THE REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
12. UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-1 EARTH DIKE

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



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

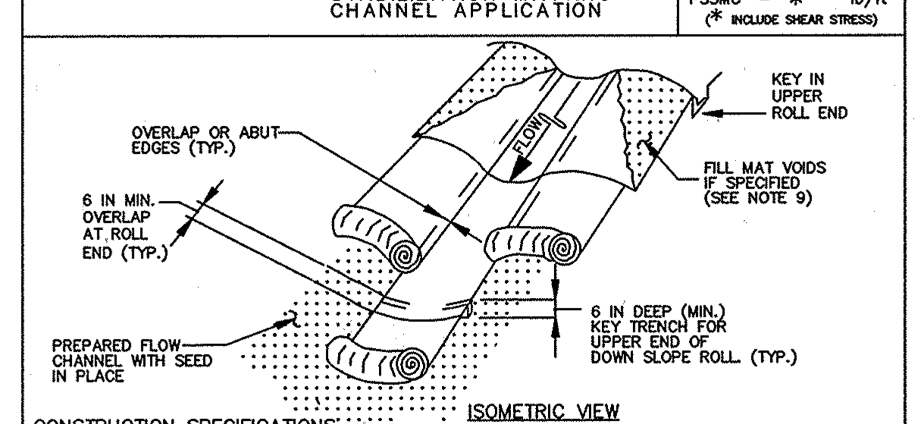
1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT 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

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

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



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. 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 OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE 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 CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
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. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

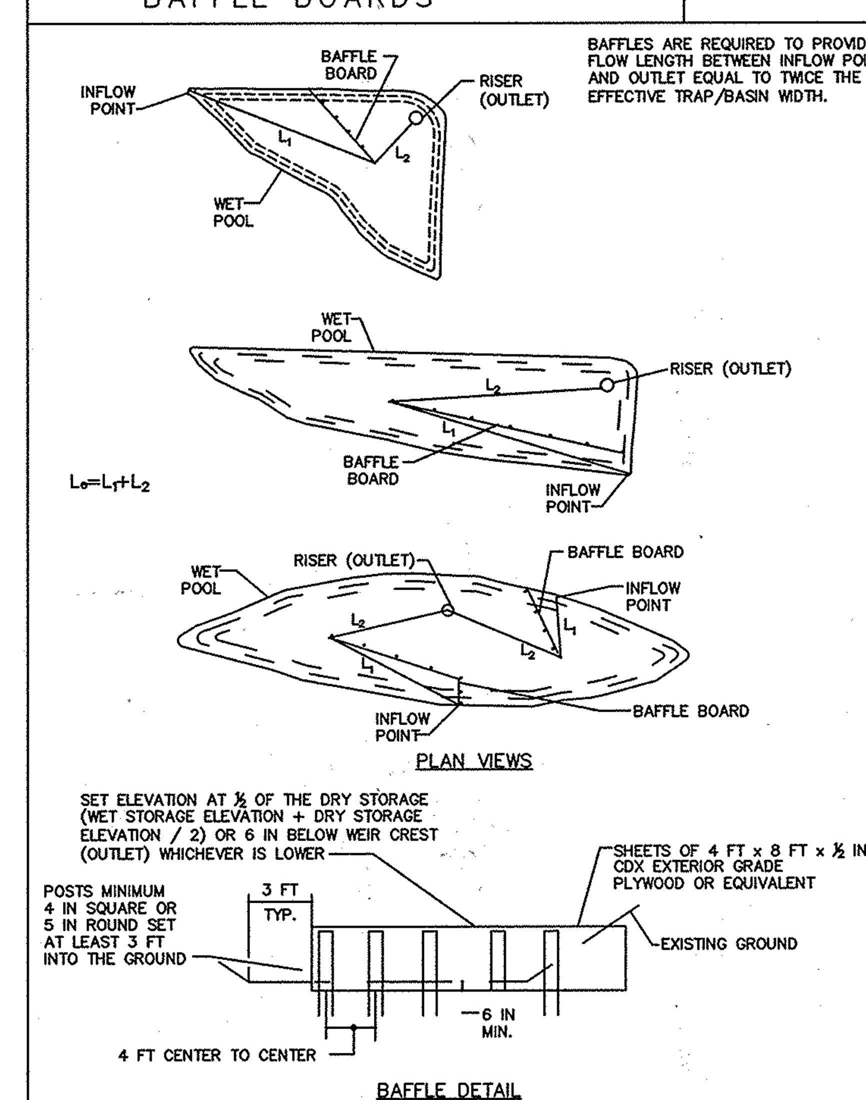
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 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.

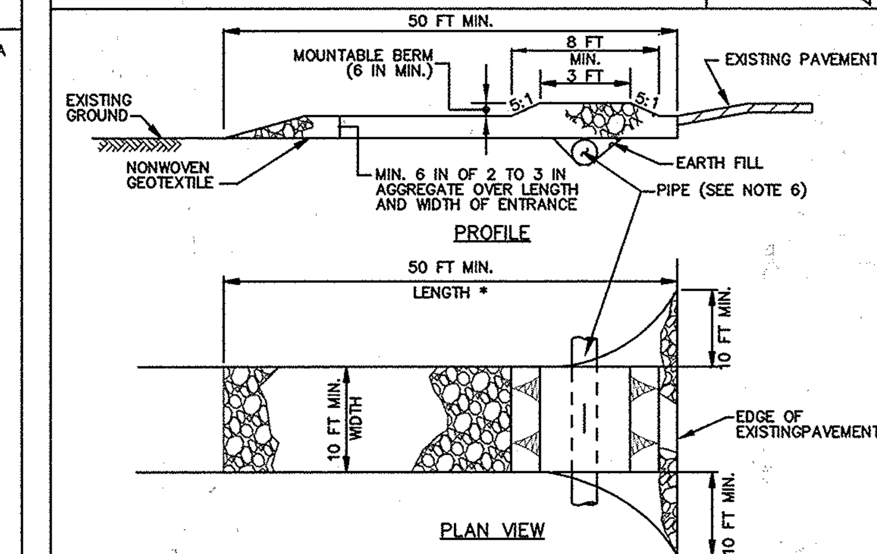


MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

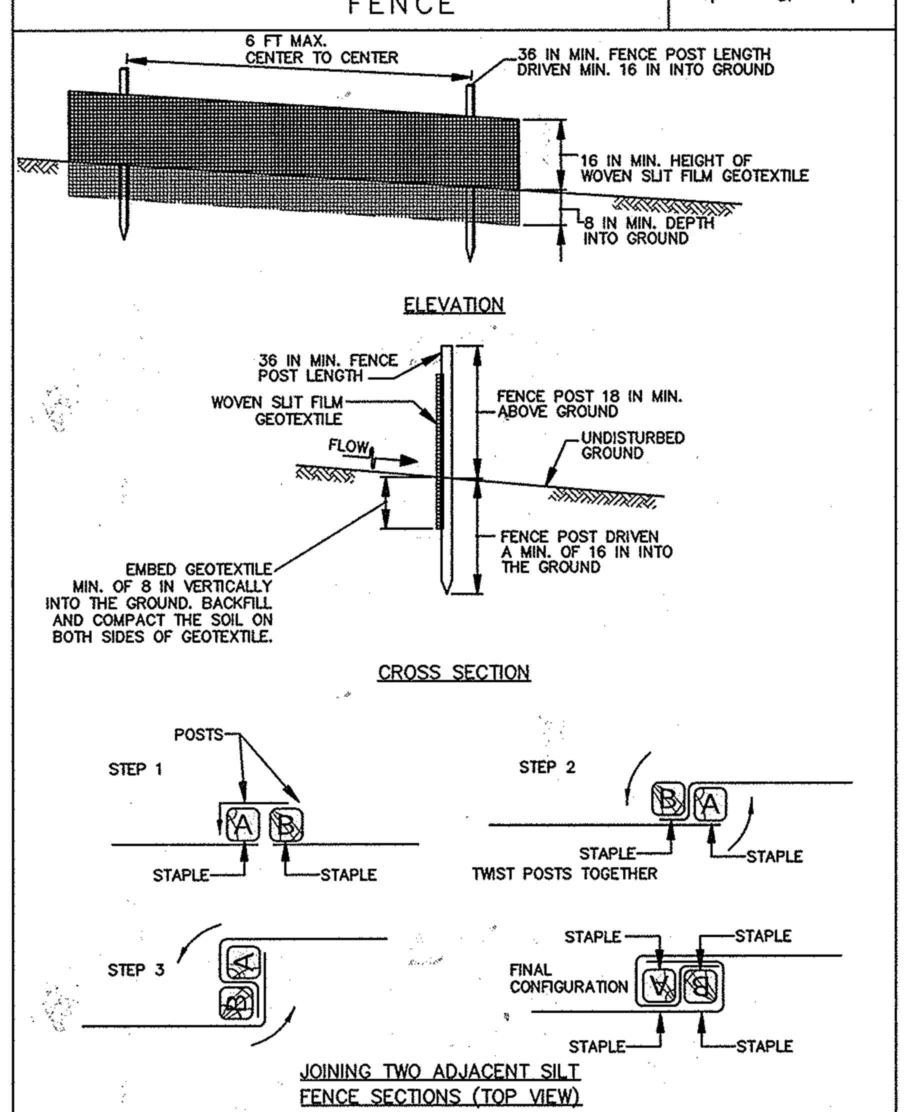
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅛ 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.

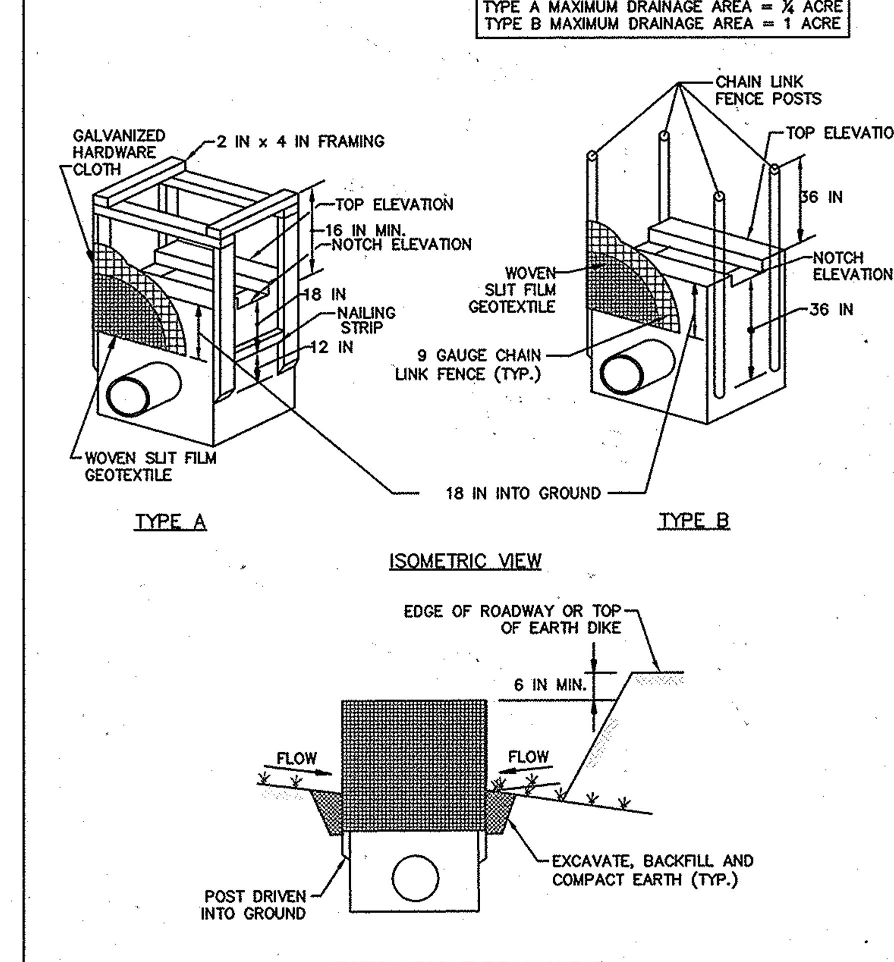
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

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



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.

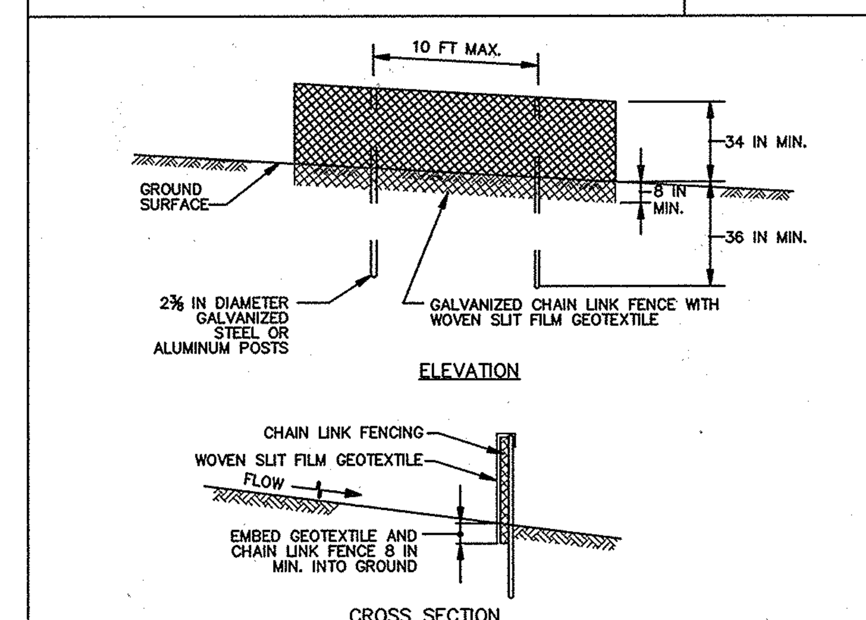
1 & 2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



CONSTRUCTION SPECIFICATIONS

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

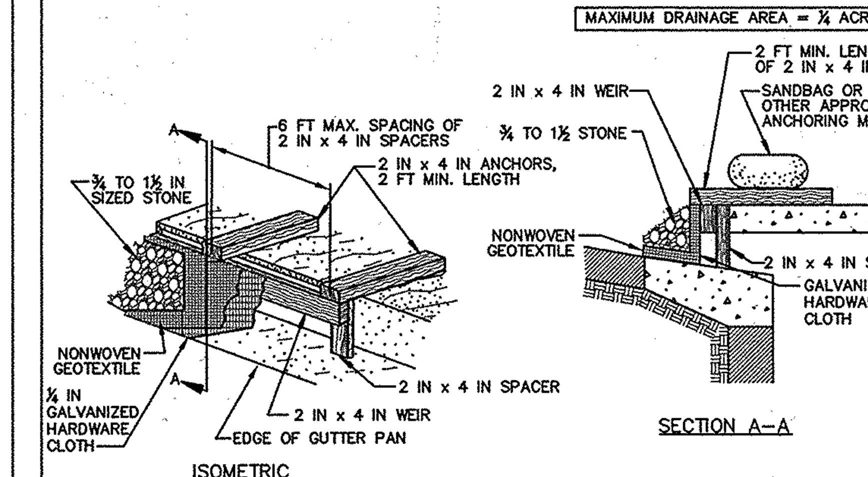
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL: CIP

MAXIMUM DRAINAGE AREA = ¼ ACRE



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 ¼ 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.

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

Signature Of Engineer — 11/5/15 Date

DEVELOPER'S CERTIFICATE

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

Signature Of Developer — 11/5/15 Date

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

District Howard Soil Conservation Dist. — 12/1/15 Date

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — 12/8/2015 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 12-21-15 DATE

Chief, Development Engineering Division — 12-11-15 DATE

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

REVISIONS

NO.	DESCRIPTION	DATE

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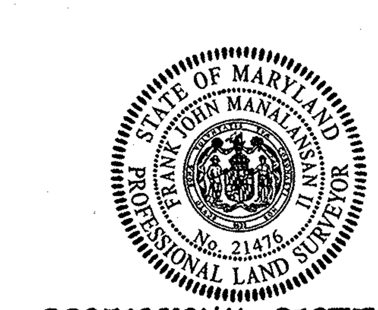

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANK JOHN MANALANSAN II — 11/5/15 DATE

SEDIMENT & EROSION CONTROL NOTES AND DETAILS
FOX WOOD MANOR
LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 10 OF 24 F-15-053

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×362.2	SPOT ELEVATION
17"RCP	PROPOSED STORM DRAIN PIPE
8"S	PROPOSED SEWER
8"W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON-CREDITED OPEN SPACE
LOD	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
SF	SILT FENCE
	15-24% SLOPES
	25% OR GREATER SLOPES
	"B" SOILS
	"C" SOILS
	ERODIBLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON-ROOFTOP DISCONNECTION (N-2)
	DRYWELL (M-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO REMAIN)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING SG&E EASEMENT
	EXISTING FOREST TO BE REMOVED

SOILS LEGEND

SOIL	NAME	CLASS	K.w
CeB	Chillum loam, 2 to 5 percent slopes	B	.37
CeC	Chillum loam, 5 to 10 percent slopes	B	.37
GgB	Glenelg loam, 3 to 8 percent slopes	B	.20
GmB	Glenville silt loam, 3 to 8 percent slopes	C	.37

SOIL TYPES TAKEN FROM MAP 28 OF THE SOIL SURVEY OF HOWARD COUNTY, MARYLAND FOUND ON THE HSCD WEBSITE.

DRAINAGE AREA DATA

STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED	% IMP.
I-1	A	0.33 AC.	0.64	R-SC	61%
I-2	B	0.10 AC.	0.47	R-SC	40%
S-5	C	1.28 AC.	0.17	R-SC	2%
I-3	D	0.11 AC.	0.58	R-SC	50%
I-4	E	0.03 AC.	0.95	R-SC	100%
HW-2	F	6.51 AC.	0.29	R-SC	4%
I-9	G	0.22 AC.	0.70	R-SC	69%
I-15	H	0.23 AC.	0.42	R-SC	34%
I-8	I	0.06 AC.	0.29	R-SC	17%
I-7	J	0.72 AC.	0.29	R-SC	12%
I-16 (FUTURE)	K	0.35 AC.	0.75	R-SC	75%
I-11	L	0.10 AC.	0.61	R-SC	58%
I-12	M	0.44 AC.	0.37	R-SC	27%
I-5	N	0.26 AC.	0.81	R-SC	82%
I-6	O	0.13 AC.	0.95	R-SC	100%
I-13	P	0.12 AC.	0.61	R-SC	58%
I-7	Q	0.71 AC.	0.33	R-SC	12%
I-14	R	1.20 AC.	0.17	R-SC	2%
I-10	S	0.16 AC.	0.57	R-SC	52%
I-17	T	0.22 AC.	0.64	R-SC	59%

0' 50' 100' 150'

SCALE: 1" = 50'

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

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — DATE 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — DATE 12-21-15

Chief, Development Engineering Division — DATE 12.11.15

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD I-17 INLET, DRAINAGE AREA & TREE MAINTENANCE EASEMENT	12/2/16

OWNERS

KENNETH ECKER
LISA MARCELLINO - ECKER
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(443)-367-0422

MICHAEL R MARCELLINO
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DEVELOPER

LAND DESIGN & DEVELOPMENT
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SUITE 102
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(443)-367-0422

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21478, EXPIRATION DATE: 7/14/17.

FRANK JOHN MANALANSAN II — DATE 11/5/15

STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21478 — PROFESSIONAL LAND SURVEYOR

STORM DRAIN DRAINAGE AREA MAP AND SOILS MAP
FOX WOOD MANOR

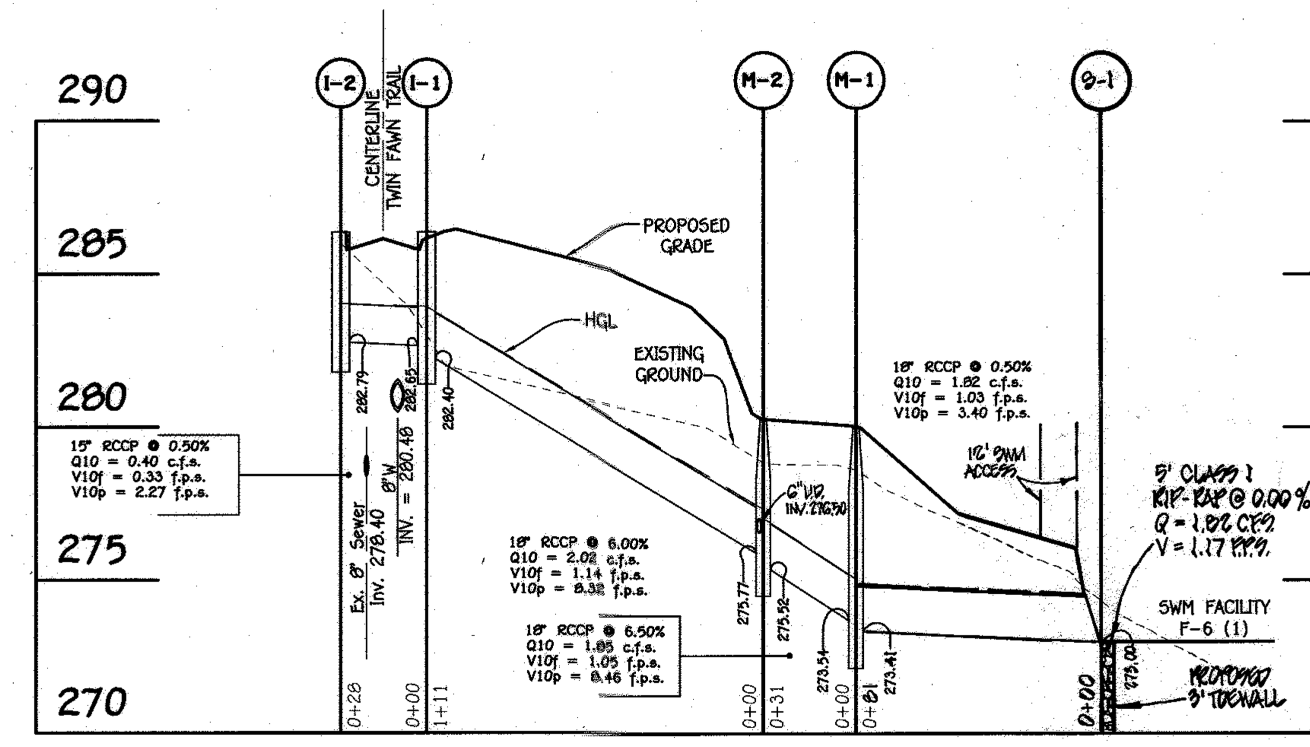
LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 11 OF 24 F-15-053

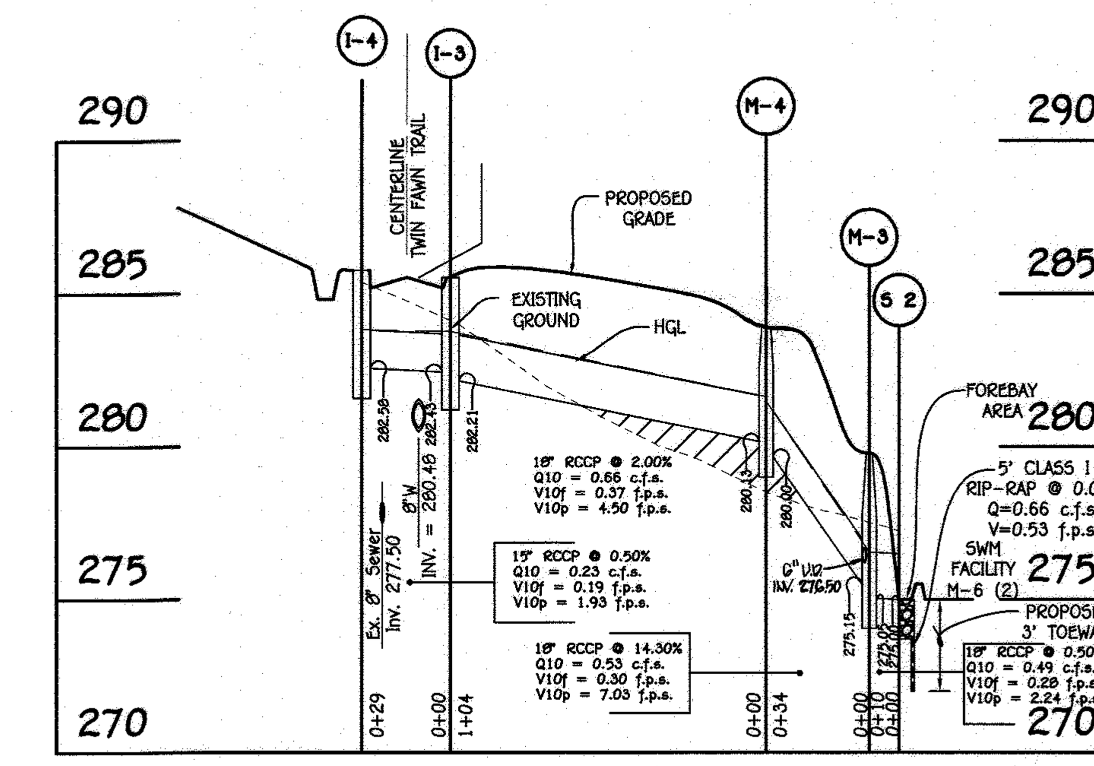
I:\2012\12036\dwg\Finals\Plan Set\12036_11 Stormdrain DAM.dwg, 11/5/2015 5:21:35 PM, 1:1

STRUCTURE SCHEDULE

STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV IN	INV OUT	COORDINATES	TYPE	REMARKS
I-1	PUBLIC	286.37	282.65 (I-2) 15"	282.40 (M-2) 18"	N 527965.84 E 1350192.85	A-5 INLET	SD-4.01
I-2	PUBLIC	286.37	-----	282.79 (I-1) 15"	N 527992.18 E 1350203.03	A-5 INLET	SD-4.01
I-3	PUBLIC	285.76	282.43 (I-4) 15"	282.21 (M-4) 18"	N 528041.36 E 1349997.40	A-5 INLET	SD-4.01
I-4	PUBLIC	285.76	-----	282.58 (I-3) 15"	N 528068.51 E 1350007.89	A-5 INLET	SD-4.01
I-5	PUBLIC	282.91	279.56 (I-6) 15"	279.66 (S-3) 23" 280.00 (M-10) 18"	N 528100.24 E 1349846.26	A-10 INLET	SD-4.03
I-6	PUBLIC	282.91	-----	279.70 (I-5) 15"	N 528126.54 E 1349856.43	A-10 INLET	SD-4.03
I-7	PUBLIC	291.71	-----	285.87 (M-8) 15"	N 528233.72 E 1349660.04	A-5 INLET	SD-4.01
I-8	PUBLIC	289.50	286.00 UD 6" 283.64 (I-9) 18" 285.72 (I-10) 18"	283.44 (M-6) 18"	N 528223.04 E 1349596.84	YARD INLET	SD-4.14
I-9	PUBLIC	289.35	285.96 UD 6" 284.10 (M-7) 18"	283.90 (I-8) 18"	N 528260.98 E 1349561.63	A-5 INLET	SD-4.01
I-10	PUBLIC	290.00	286.00 UD 6" 286.20 (M-11) 18"	286.00 (I-8) 18"	N 528276.49 E 1349611.50	D INLET	SD-4.10
I-11	PUBLIC	298.00 *	294.17 UD 6" 294.15 (I-12) 15"	293.95 (M-11) 18"	N 528442.37 E 1349674.56	D INLET	SD-4.10
I-12	PUBLIC	300.00 *	297.17 UD 6" -----	295.62 (I-11) 15"	N 528513.54 E 1349693.58	D INLET	SD-4.10
I-13	PUBLIC	288.17	-----	284.77 (M-9) 15"	N 528079.68 E 1349588.64	A-5 INLET	SD-4.01
I-14	PUBLIC	282.77	-----	279.96 (M-5) 18"	N 528148.29 E 1349813.22	D INLET	SD-4.10
I-15	PUBLIC	287.75	-----	285.00 (M-7) 15"	N 528149.21 E 1349503.80	YARD INLET	SD-4.14
I-16	PUBLIC	292.83	-----	289.25 (M-11) 18"	N 528347.56 E 1349580.64	A-5 INLET	SD-4.01
M-1	PUBLIC	280.00	273.54 (M-2) 18"	273.41 (S-1) 18"	N 527873.92 E 1350124.33	STANDARD MANHOLE	G-5.12
M-2	PUBLIC	280.31	276.50 UD 6" 275.77 (I-1) 18"	275.52 (M-1) 18"	N 527862.85 E 1350152.76	STANDARD MANHOLE	G-5.12
M-3	PUBLIC	279.76	276.50 UD 6" 275.15 (M-4) 18"	275.05 (S-2) 18"	N 527950.10 E 1349926.50	STANDARD MANHOLE	G-5.12
M-4	PUBLIC	284.00	280.13 (I-3) 18"	280.00 (M-3) 18"	N 527944.37 E 1349959.92	STANDARD MANHOLE	G-5.12
M-5	PUBLIC	283.50	277.13 (I-14) 18" 277.13 (M-6) 18"	276.93 (HW-1) 23"	N 528115.47 E 1349800.54	STANDARD MANHOLE	G-5.12
M-6	PUBLIC	288.83	283.20 (I-8) 18"	283.00 (M-5) 18"	N 528178.99 E 1349613.68	STANDARD MANHOLE	G-5.12
M-7	PUBLIC	290.50	284.52 (I-15) 15"	284.27 (I-9) 18"	N 528240.00 E 1349535.18	STANDARD MANHOLE	G-5.12
M-8	PUBLIC	289.00	283.31 (M-9) 18" 284.24 (I-7) 15"	283.11 (S-4) 18"	N 528141.95 E 1349645.74	STANDARD MANHOLE	G-5.12
M-9	PUBLIC	288.49	283.72 (I-13) 15"	283.52 (M-8) 18"	N 528151.16 E 1349605.55	STANDARD MANHOLE	G-5.12
M-10	PUBLIC	283.00	277.86 (I-5) 18" 277.41 (HW-2) 18"	276.69 (HW-1) 24"	N 528090.98 E 1349863.39	STANDARD MANHOLE	G-5.12
M-11	PUBLIC	293.50	292.00 UD 6" 288.92 (I-11) 18" 288.92 (I-16) 18"	288.72 (I-10) 18"	N 528317.73 E 1349640.59	STANDARD MANHOLE	G-5.12
S-1	PUBLIC	274.67	-----	273.00 18"	N 527810.36 E 1350099.46	END SECTION	D-5.51
S-3	PUBLIC	280.67	-----	279.00 18"	N 528065.12 E 1349790.30	END SECTION	D-5.51
S-4	PUBLIC	284.67	-----	283.00 18"	N 528122.27 E 1349656.37	END SECTION	D-5.51
S-6	PUBLIC	286.92	-----	285.50 15"	N 527979.43 E 1350248.85	END SECTION	D-5.51
S 2	PUBLIC	276.67	-----	275.00 18"	N 527940.88 E 1349922.94	END SECTION	D-5.51
HW 1	PUBLIC	280.10	-----	276.60 14"x23" 276.60 24"	N 528074.44 E 1349853.37	TYPE 'A' HEADWALL	D-5.11
HW-2	PUBLIC	282.71	-----	280.50 (HW-1) 18"	N 528124.83 E 1349876.59	TYPE 'A' HEADWALL	D-5.11
S-5	PUBLIC	287.50	-----	285.50 15"	N 527979.43 E 1350248.85	TYPE 'E' HEADWALL	MD-356.01
I-17	PUBLIC	289.17	-----	288.24	N 527987.37 E 1350317.17	COG/COS OPENING	MD-374.68

* DENOTES THROAT OPENING





SCALE HORZ. 1" = 50'
VERT. 1" = 5'

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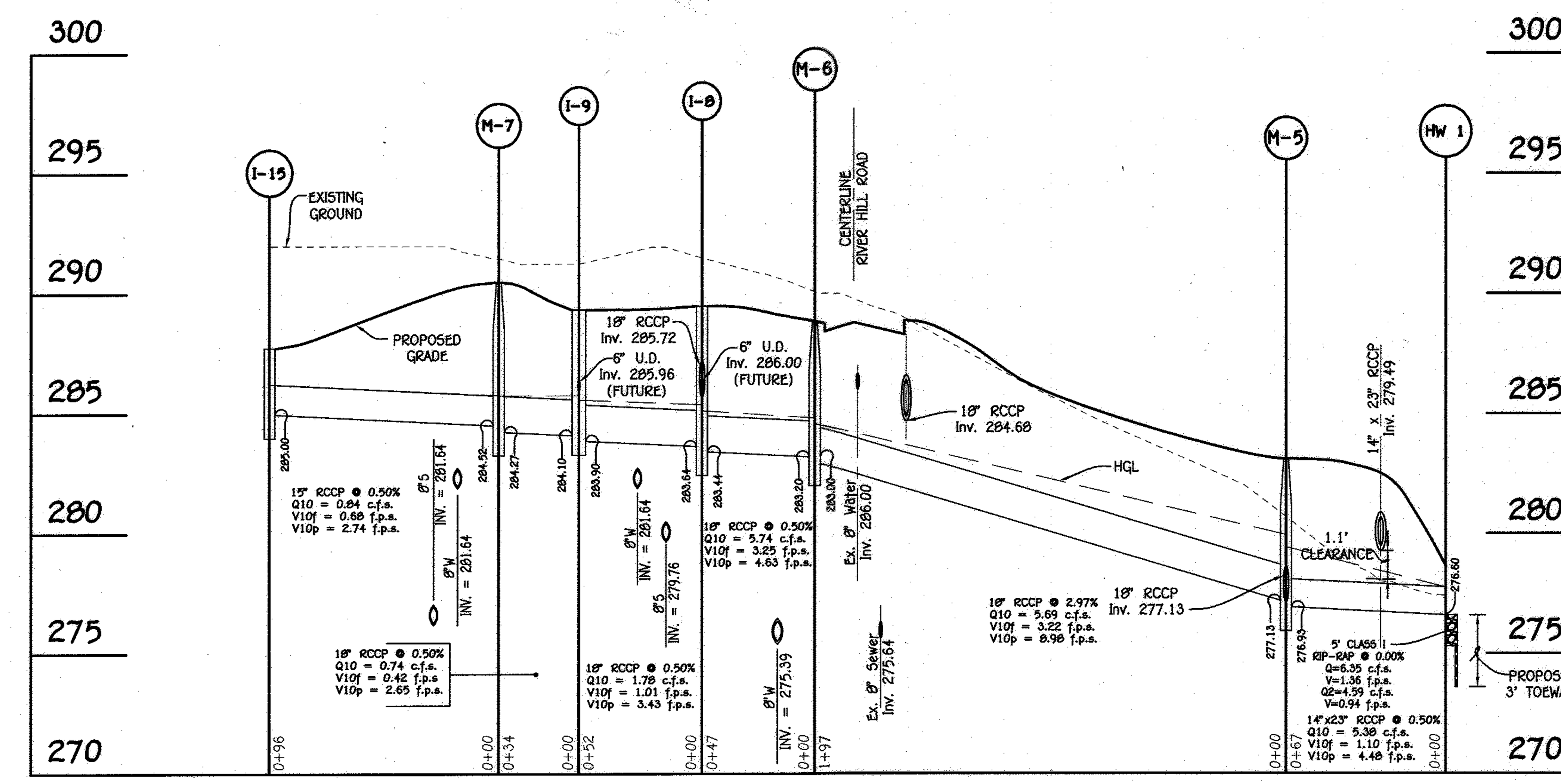

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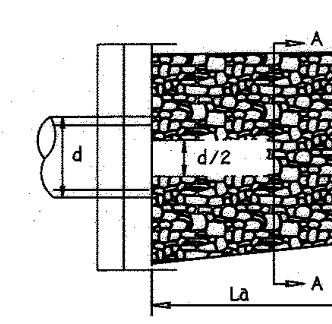
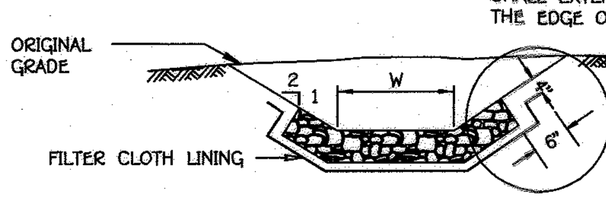


PLAN VIEW

FILTER FABRIC LINING SHALL BE EMBEDDED A MINIMUM OF 4" AND SHALL EXTEND AT LEAST 6" BEYOND THE EDGE OF THE RIP-RAP



SECTION A-A

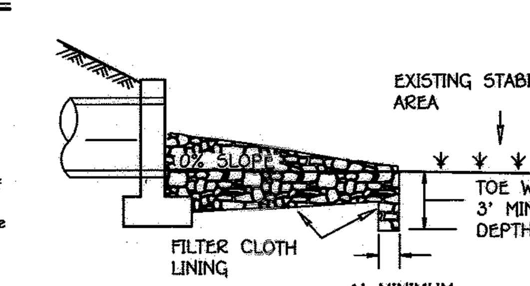
RIP-RAP CHANNEL DETAIL

NO SCALE

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

1. The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
3. Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional shall hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
4. Stone for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogenous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.



ELEVATION

PIPE SCHEDULE

SIZE	CLASS	LENGTH
24"	RCCP	18'
23"x14"	RCCP	133'
18"	RCCP	1120'
15"	RCCP	404'
6"	Schedule 40 PVC	242'
6"	Perforated Schedule 40 PVC	560'

NOTE: HDPE MAY BE SUBSTITUTED WITH RCCP, CL. IV PIPE MATERIAL.

RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA (S.F.)	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	n	V (f.p.s.)	Q (c.f.s.)	RIP-RAP SIZE D_{50}	RIP-RAP SIZE D_{MAX}	BLANKET THICKNESS	PIPE SIZE	La
S-1	1.56	4.91	0.3177	0.4656	0.005	0.0707	2.0'	0.46'	0.04	1.17	1.82	9.5"	15"	19"	18"	5'
S-2	0.92	8.70	0.1057	0.2236	0.005	0.0707	8.0'	0.11'	0.04	0.53	0.49	9.5"	15"	19"	18"	5'
S-3	1.77	6.21	0.2850	0.4331	0.005	0.0707	4.0'	0.35'	0.04	1.58	2.79	9.5"	15"	19"	14"x23"	7'
S-4	1.85	8.52	0.2171	0.3613	0.005	0.0707	7.0'	0.24'	0.04	0.94	1.75	9.5"	15"	19"	18"	7'
HW-1	7.67	11.13	0.6891	0.7801	0.005	0.0707	5.0'	0.97'	0.04	2.01	15.45	9.5"	15"	19"	24"	5'

0' 50' 100' 200'

SCALE: 1" = 50'

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — DATE 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — DATE 12-21-15

Chief, Development Engineering Division — DATE 12-11-15

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ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE STRUCTURE SCHEDULE AND STORM DRAIN PROFILES	12/21/16

OWNERS

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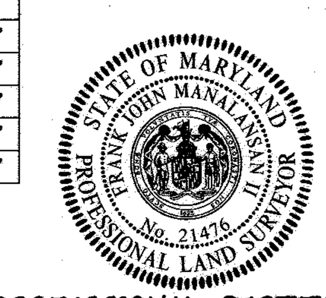

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FRANK JOHN MANALANSAN II — DATE 11/5/15

STORM DRAIN PROFILES AND DETAILS
FOX WOOD MANOR

LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015

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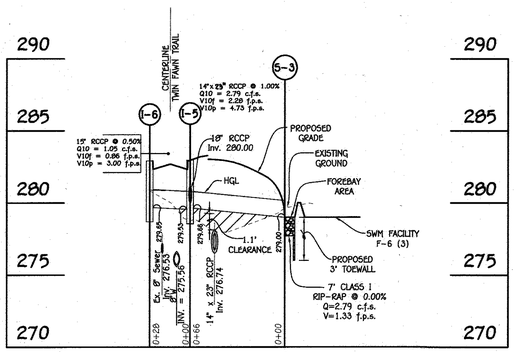
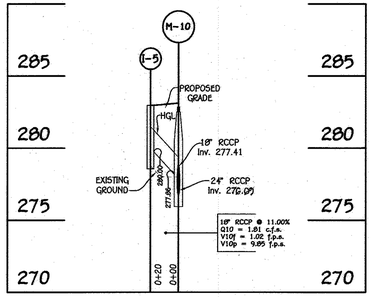


SCALE HORZ. 1" = 50'
VERT. 1" = 5'



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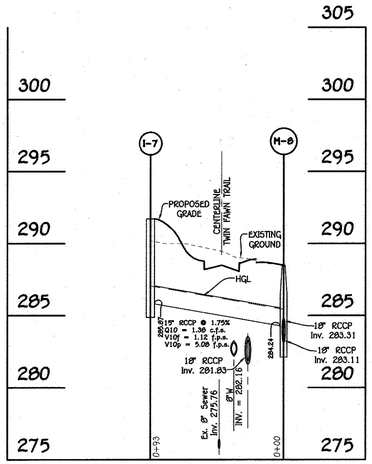

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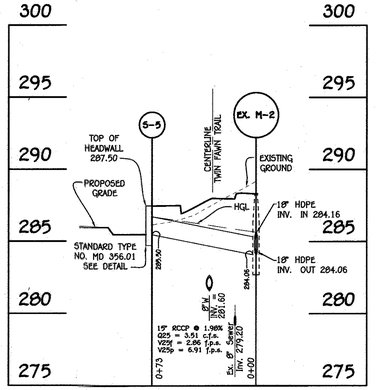

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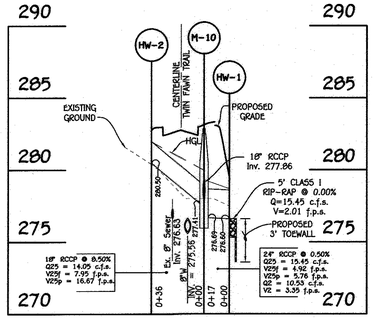

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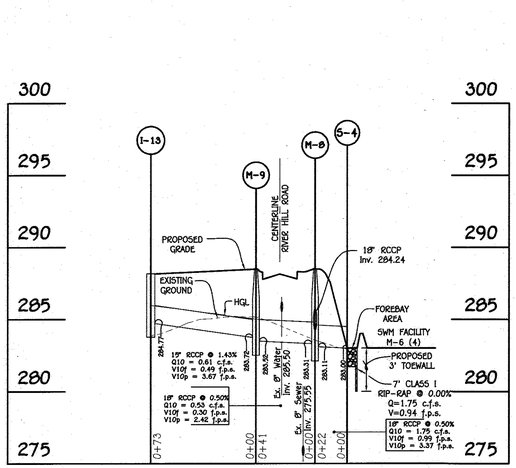

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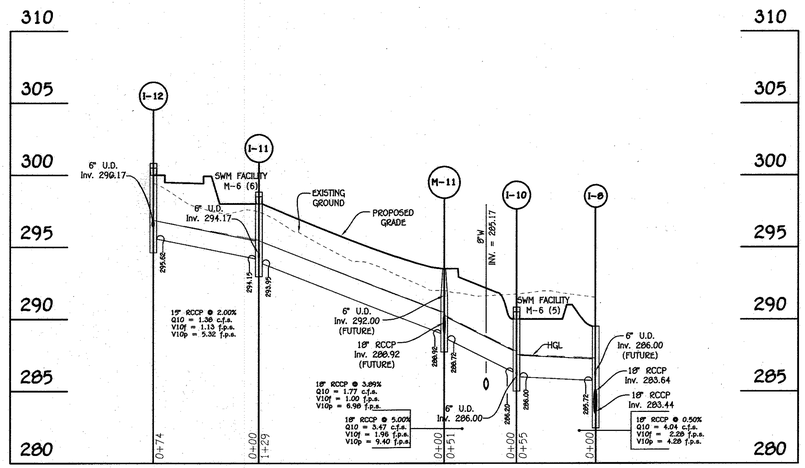

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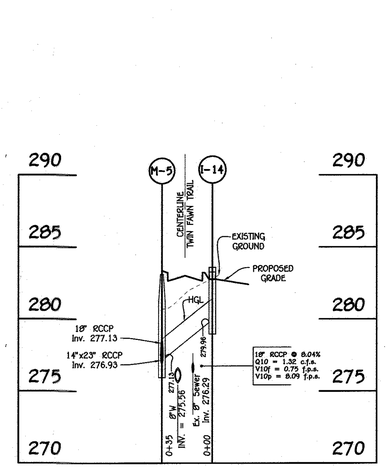

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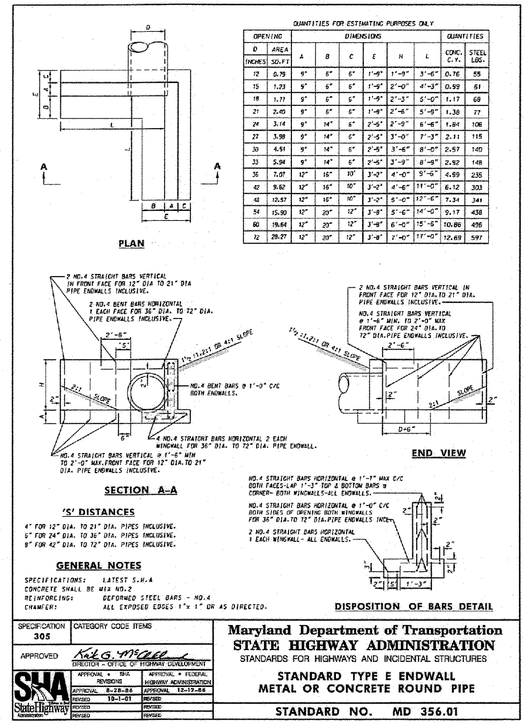

SPECIFICATION	CATEGORY CODE ITEMS
305	

APPROVED: Kirk G. McCord
DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL + DIG REVISIONS	APPROVAL + FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 8-28-84	APPROVAL 12-13-84
REVISED 10-1-01	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STANDARD TYPE E ENDWALL
METAL OR CONCRETE ROUND PIPE

STANDARD NO. MD 356.01

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — DATE 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — DATE 12-21-15

Chief, Development Engineering Division — DATE 12-11-15

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(410) 461 - 2855

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE INVERT ELEVATIONS	10/21/16

0' 50' 100' 200'
SCALE: 1" = 50'

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STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

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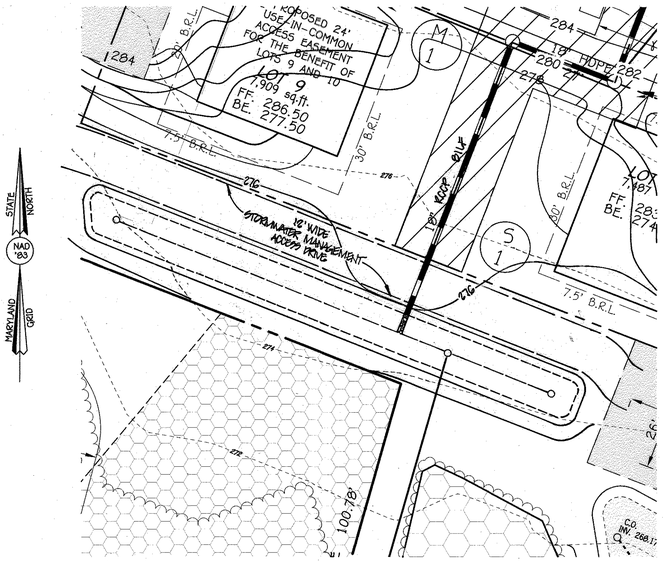
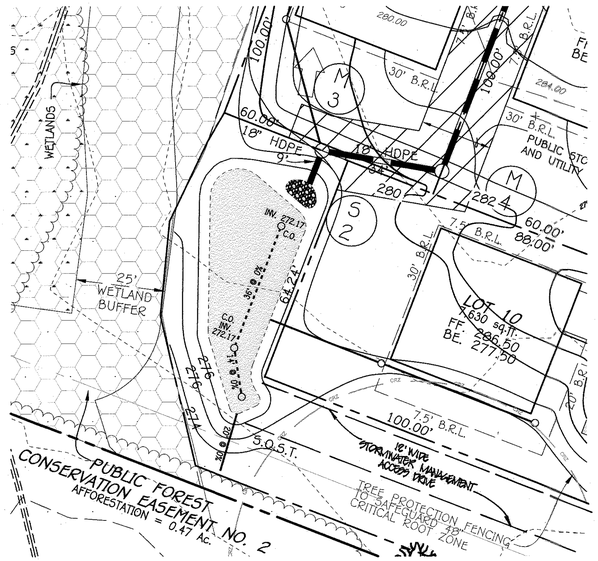
STORM DRAIN PROFILES AND DETAILS
FOX WOOD MANOR
LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 13 OF 24 F-15-053

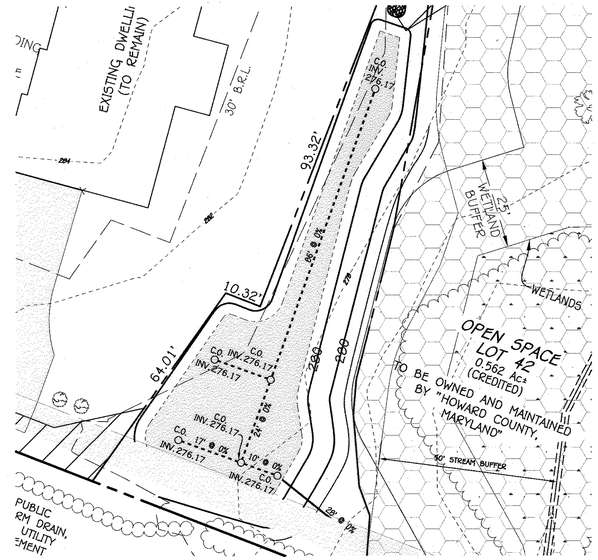
I:\2012\12036\dwg\Finals\Plan Set\12036_13 Stormdrain Profiles.dwg, 11/5/2015 6:02:31 PM, 1:1



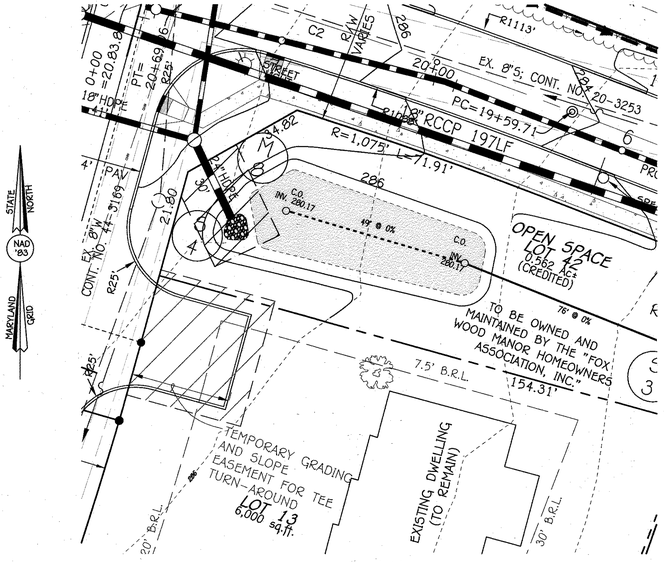
F-6 (1)
(BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 42,521 SqFt.
FILTER AREA: 1,597 SqFt.
ELEVATION: 273.00
PERIMETER: 202'
WEIR ELEVATION: 274.00



M-6 (2)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 21,609 SqFt.
FILTER AREA: 1,172 SqFt.
ELEVATION 275
PERIMETER 160'
WEIR ELEVATION 276

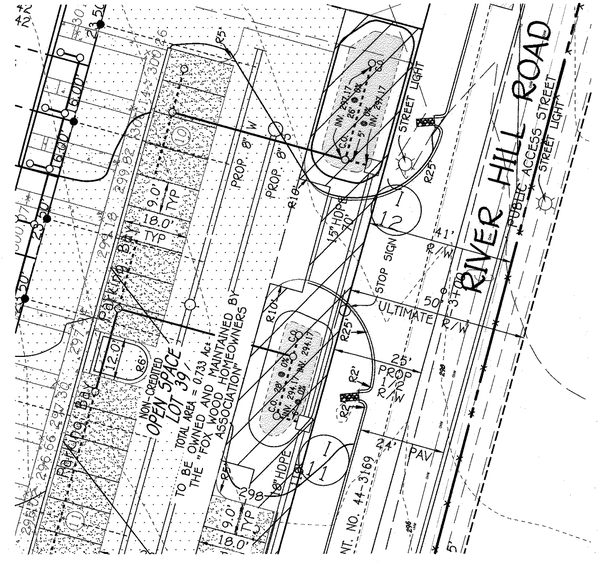


F-6 (3)
(BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 59,363 SqFt.
FILTER AREA: 2,289 SqFt.
ELEVATION 279.00
PERIMETER 320'
WEIR ELEVATION 280.00



F-6 (4)
(BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 49,470 SqFt.
FILTER AREA: 1,312 SqFt.
ELEVATION 283
PERIMETER 161'
WEIR ELEVATION 284

M-6 (5)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 6,879 SqFt.
FILTER AREA: 606 SqFt.
ELEVATION 289
PERIMETER 95'
WEIR ELEVATION 290



M-6 (6)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 4,195 SqFt.
FILTER AREA: 319 SqFt.
ELEVATION 297
PERIMETER 78'
WEIR ELEVATION 298

M-6 (7)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 19,734 SqFt.
FILTER AREA: 528 SqFt.
ELEVATION 299
PERIMETER 98'
WEIR ELEVATION 300

0' 20' 40' 80'
SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — DATE 12/18/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development — DATE 12-21-15
Chief, Development Engineering Division — DATE 12-11-15

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

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE SWM FACILITY NO.(1) AND SWM ACCESS DRIVE	10/21/15

OWNERS

KENNETH ECKER
LISA MARCELLINO - ECKER
9120 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

MICHAEL R. MARCELLINO
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THOMAS M MARCELLINO
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DEVELOPER

LAND DESIGN & DEVELOPMENT
5300 DORSEY HALL DRIVE
SUITE 102
ELLICOTT CITY, MARYLAND 21042
(443)-367-0422

STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANK JOHN MANALANSAN II — DATE 11/5/15

STORMWATER MANAGEMENT DETAILS
FOX WOOD MANOR
LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 14 OF 24 F-15-053

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Infiltration and Filter System Construction Specifications

Infiltration and filter systems either take advantage of existing permeable soils or create a permeable medium such as sand for WQ, and Re v. in some instances where permeability is great, these facilities may be used for Qp as well. The most common systems include infiltration trenches, infiltration basins, sand filters, and organic filters.

When properly planted, vegetation will thrive and enhance the functioning of these systems. For example, pre-treatment buffers will trap sediments that often are bound with phosphorous and metals. Vegetation planted in the facility will aid in nutrient uptake and water storage. Additionally, plant roots will provide arteries for stormwater to permeate soil for groundwater recharge. Finally, successful plantings provide aesthetic value and wildlife habitat making these facilities more desirable to the public.

Design Constraints:

> Planting buffer strips of at least 20 feet will cause sediments to settle out before reaching the facility, thereby reducing the possibility of clogging.
> Determine areas that will be saturated with water and water table depth so that appropriate plants may be selected (hydrology will be similar to bioretention facilities, see figure A.5 and Table A.4 for planting material guidance).
> Plants known to send down deep taproots should be avoided in systems where filter fabric is used as part of facility design.
> Test soil conditions to determine if soil amendments are necessary.
> Plants shall be located so that access is possible for structure maintenance.
> Stabilize heavy flow areas with erosion control mats or sod.
> Temporarily divert flows from seeded areas until vegetation is established.
> See Table A.5 for additional design considerations.

Bio-retention

Soil Bed Characteristics

The characteristics of the soil for the bioretention facility are perhaps as important as the facility location, size, and treatment volume. The soil must be permeable enough to allow runoff to filter through the media, while having characteristics suitable to promote and sustain a robust vegetative cover crop. In addition, much of the nutrient pollutant uptake (nitrogen and phosphorus) is accomplished through absorption and microbial activity within the soil profile. Therefore, soils must balance their chemical and physical properties to support biotic communities above and below ground.

The planting soil should be a sandy loam, loamy sand, loam (USDA), or a loam/sand mix (should contain a minimum 35 to 60% sand, by volume). The clay content for these soils should be less than 5% by volume (Environmental Quality Resources (EQR), 1996; Engineering Technology Inc. and Biohabitats, Inc. (ETAB), 1993). Soils should fall within the SM, ML, SC classifications or the Unified Soil Classification System (USCS). A permeability of at least 1.0 feet per day (0.5"/hr) is required (a conservative value of 0.5 feet per day is used for design). The soil should be free of stones, stumps, roots, or other woody material over 1" in diameter. Brush or seeds from noxious weeds (e.g., Johnson Grass, Mugwort, Nutsedge, and Canada Thistle or other noxious weeds as specified under COMAR 15.08.01.05.) should not be present in the soils. Placement of the planting soil should be in 12 to 18 lifts that are loosely compacted (tamped lightly with a backhoe bucket or traversed by dozer tracks). The specific characteristics are presented in Table A.3.

Table A.3 Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate - P2O5)	75 lbs. per acre, minimum
Potassium (potash - 1(K2O)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	0 to 5 %
Silt	30 to 55 %
Sand	35 to 60%

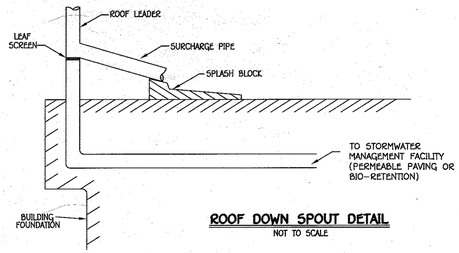
Mulch Layer

The mulch layer plays an important role in the performance of the bioretention system. The mulch layer helps maintain soil moisture and avoids surface sealing, which reduces permeability. Mulch helps prevent erosion, and provides a microenvironment suitable for soil biota at the mulch/soil interface. It also serves as a pretreatment layer, trapping the finer sediments, which remain suspended after the primary pretreatment.

The mulch layer should be standard landscape style, single or double shredded hardwood mulch or chips. The mulch layer should be well aged (stockpiled or stored for at least 12 months), uniform in color, and free of other materials, such as weed seeds, soil, roots, etc. The mulch should be applied to a maximum depth of three inches. Grass clippings should not be used as a mulch material.

Planting Guidance

Plant material selection should be based on the goal of simulating a terrestrial forested community of native species. Bioretention simulates an upland-species ecosystem. The community should be dominated by trees, but have a distinct community of understory trees, shrubs and herbaceous materials. By creating a diverse, dense plant cover, a bioretention facility will be able to treat stormwater runoff and withstand urban stresses from insects, disease, drought, temperature, wind, and exposure.
The proper selection and installation of plant materials is key to a successful system. There are essentially three zones within a bioretention facility (Figure A.5). The lowest elevation supports plant species adapted to standing and fluctuating water levels. The middle elevation supports plants that like drier soil conditions, but can still tolerate occasional inundation by water. The outer edge
is the highest elevation and generally supports plants adapted to dryer conditions. A sample of appropriate plant materials for bioretention facilities are included in Table A.4. The layout of plant material should be flexible, but should follow the general principals described in Table A.5. The objective is to have a system, which resembles a random, and natural plant layout, while maintaining optimal conditions for plant establishment and growth. For a more extensive bioretention plan, consult ETAB, 1993 or Claytor and Schueler, 1997.

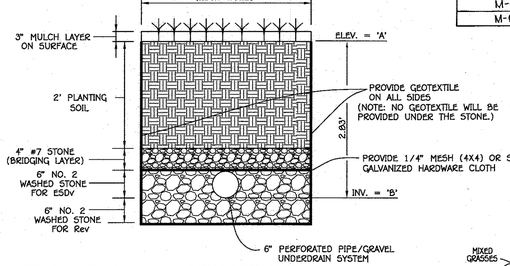


ROOF DOWN SPOUT DETAIL
NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6) AND (F-6)

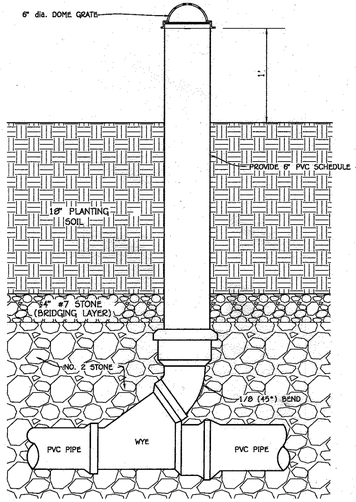
1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS. WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

FACILITY NO.	A	B
F-6 (1)	273.00	270.17
M-6 (2)	275.00	272.17
F-6 (3)	279.00	276.17
F-6 (4)	283.00	280.17
M-6 (5)	289.00	286.17
M-6 (6)	297.00	294.17
M-6 (7)	299.00	296.17
M-6 (8)	283.00	280.17
M-6 (9)	284.00	281.17
M-6 (10)	284.00	281.17
M-6 (11)	271.00	268.17

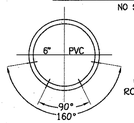


NOTE: THE BOTTOM OF EACH BIO-RETENTION FACILITY (M-6) SHALL BE ROTOTILLED PRIOR TO STONE INSTALLATION.

TYPICAL SECTION - BIO-RETENTION FACILITY (F-6)
NO SCALE

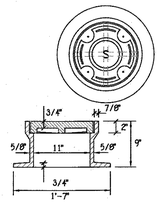


TYPICAL CLEAN-OUT DETAIL
NO SCALE



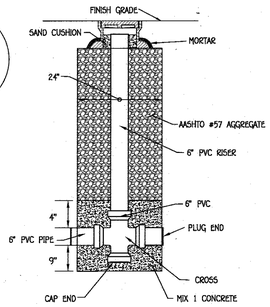
PIPE SIZE: 6"
HOLE SIZE: 3/8"
CENTER TO CENTER: 3"
ROWS OF HOLES: 2 @ 90°
2 @ 160° (+/-3°)

SCH40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE
NO SCALE

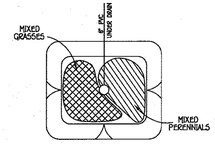


LAMPHOLE FRAME & COVER

NOTE:
Material shall be gray iron casting. Castings must be machined on bearing surfaces.



CLEANOUT/ WATER QUALITY SAMPLING PORT DETAIL
NOT TO SCALE



MICRO-BIORETENTION PLANTING DETAIL
NOT TO SCALE

MIXED PERENNIALS
CUT-LEAF CONEFLOWER
ORIGINAL FLOWER
TRADESCANT ASTER

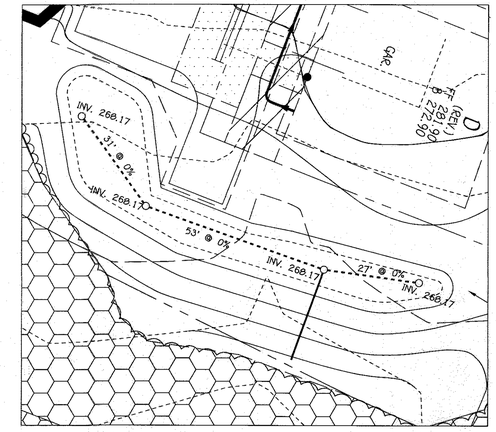
SHRUBS
INK BERRY
ARROWWOOD
BAYBERRY

MIXED GRASSES
VIRGINIA SWITCHGRASS
PENNSYLVANIA SEDGE
LITTLE BLUESTEM

SEE PLANT MATERIAL CHARTS FOR QUANTITIES AND SPACING

NOTE:
PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION

PRIVATE STORMWATER MANAGEMENT SIZING CHART (FINAL DESIGN TO BE PROVIDED AT SITE DEVELOPMENT PLAN STAGE)									
AREA ID	6" BIO PVC PIPE	BIO 6" PVC PIPE PERFORATED	BIO FILTER AREA	AREA OF PERMEABLE PAVING	TOTAL DEPTH OF PERMEABLE PAVING	6" BIO PVC PIPE	BIO 6" PVC PIPE PERFORATED	DRY WELL SIZE
F-6 (8)	96	48	884					
M-6 (9)	56	35	1,089					
M-6 (10)	45	29	590					
F-6 (11)	26	105	1,374					
A-2 (1)				1,620	1.90	22	66	
A-2 (2)				1,782	2.42	17	88	
A-2 (3)				1,937	2.31	10	84	
A-2 (4)				1,782	1.24	20	101	
M-5 (1a)								9 X 7 X 5
M-5 (1b)								9 X 7 X 5
M-5 (2a)								9 X 7 X 5
M-5 (2b)								9 X 7 X 5
M-5 (3a)								9 X 7 X 5
M-5 (3b)								9 X 7 X 5
M-5 (4a)								9 X 7 X 5
M-5 (4b)								9 X 7 X 5



DRAINAGE AREA F-6 (1) BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
97	MIXED PERENNIALS	1 FT.
19	SHRUBS / MIXED GRASSES	2 FT.

DRAINAGE AREA M-6 (2) MICRO-BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
74	MIXED PERENNIALS	1 FT.
37	SHRUBS / MIXED GRASSES	2 FT.

DRAINAGE AREA F-6 (3) BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
143	MIXED PERENNIALS	1 FT.
71	SHRUBS / MIXED GRASSES	2 FT.

DRAINAGE AREA F-6 (4) BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
82	MIXED PERENNIALS	1 FT.
41	SHRUBS / MIXED GRASSES	2 FT.

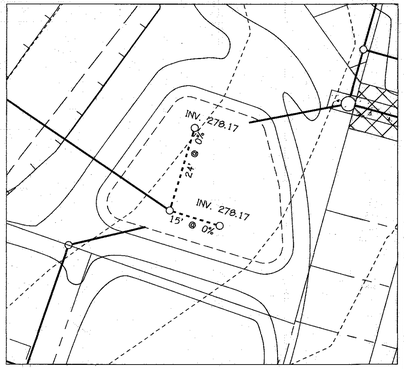
DRAINAGE AREA M-6 (5) MICRO-BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
38	MIXED PERENNIALS	1 FT.
19	SHRUBS / MIXED GRASSES	2 FT.

DRAINAGE AREA M-6 (6) MICRO-BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
20	MIXED PERENNIALS	1 FT.
10	SHRUBS / MIXED GRASSES	2 FT.

DRAINAGE AREA M-6 (7) MICRO-BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
33	MIXED PERENNIALS	1 FT.
17	SHRUBS / MIXED GRASSES	2 FT.

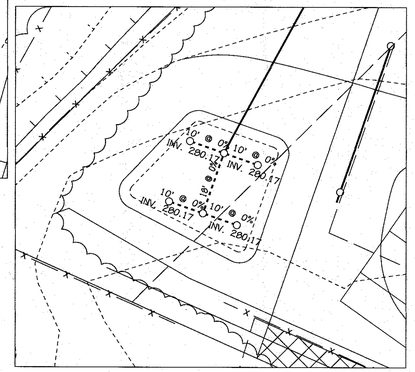
DRAINAGE AREA M-6 (8) MICRO-BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
49	MIXED PERENNIALS	1 FT.
25	SHRUBS / MIXED GRASSES	2 FT.

DRAINAGE AREA M-6 (9) MICRO-BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
39	MIXED PERENNIALS	1 FT.
20	SHRUBS / MIXED GRASSES	2 FT.



NOTE:
FINAL DESIGN OF STORMWATER MANAGEMENT TO BE PROVIDED AT SDP STAGE OF PROJECT

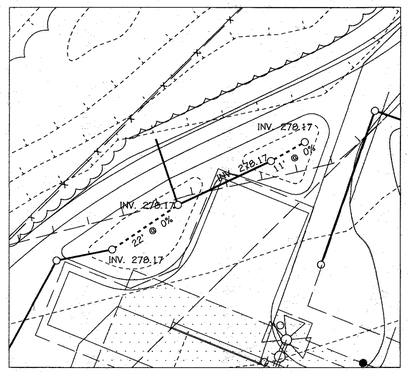
F-6 (11)
(BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 43,736 SqFt.
FILTER AREA: 1,374 SqFt.
ELEVATION: 272
PERIMETER: 270
WEIR ELEVATION: 271



NOTE:
FINAL DESIGN OF STORMWATER MANAGEMENT TO BE PROVIDED AT SDP STAGE OF PROJECT

M-6 (9)
(BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 15,512 SqFt.
FILTER AREA: 1,522 SqFt.
ELEVATION: 281
PERIMETER: 144
WEIR ELEVATION: 282

F-6 (8)
(BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 30,499 SqFt.
FILTER AREA: 884 SqFt.
ELEVATION: 283
PERIMETER: 117
WEIR ELEVATION: 284



M-6 (10)
(BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 16,360 SqFt.
FILTER AREA: 590 SqFt.
ELEVATION: 281
PERIMETER: 144
WEIR ELEVATION: 282

NOTE:
FINAL DESIGN OF STORMWATER MANAGEMENT TO BE PROVIDED AT SDP STAGE OF PROJECT

DRAINAGE AREA M-6 (10) MICRO-BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
21	MIXED PERENNIALS	1 FT.
11	SHRUBS / MIXED GRASSES	2 FT.

DRAINAGE AREA M-6 (11) MICRO-BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
31	MIXED PERENNIALS	1 FT.
16	SHRUBS / MIXED GRASSES	2 FT.

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — DATE 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — DATE 12-21-15

Chief, Development Engineering Division — DATE 12-11-15

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

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD SWM FACILITIES AND CHARTS	12/21/15

0' 20' 40' 80'
SCALE: 1" = 20'

OWNERS

KENNETH ECKER
LISA MARCELLINO - ECKER
9120 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

MICHAEL R MARCELLINO
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DEVELOPER

LAND DESIGN & DEVELOPMENT
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PROFESSIONAL CERTIFICATION

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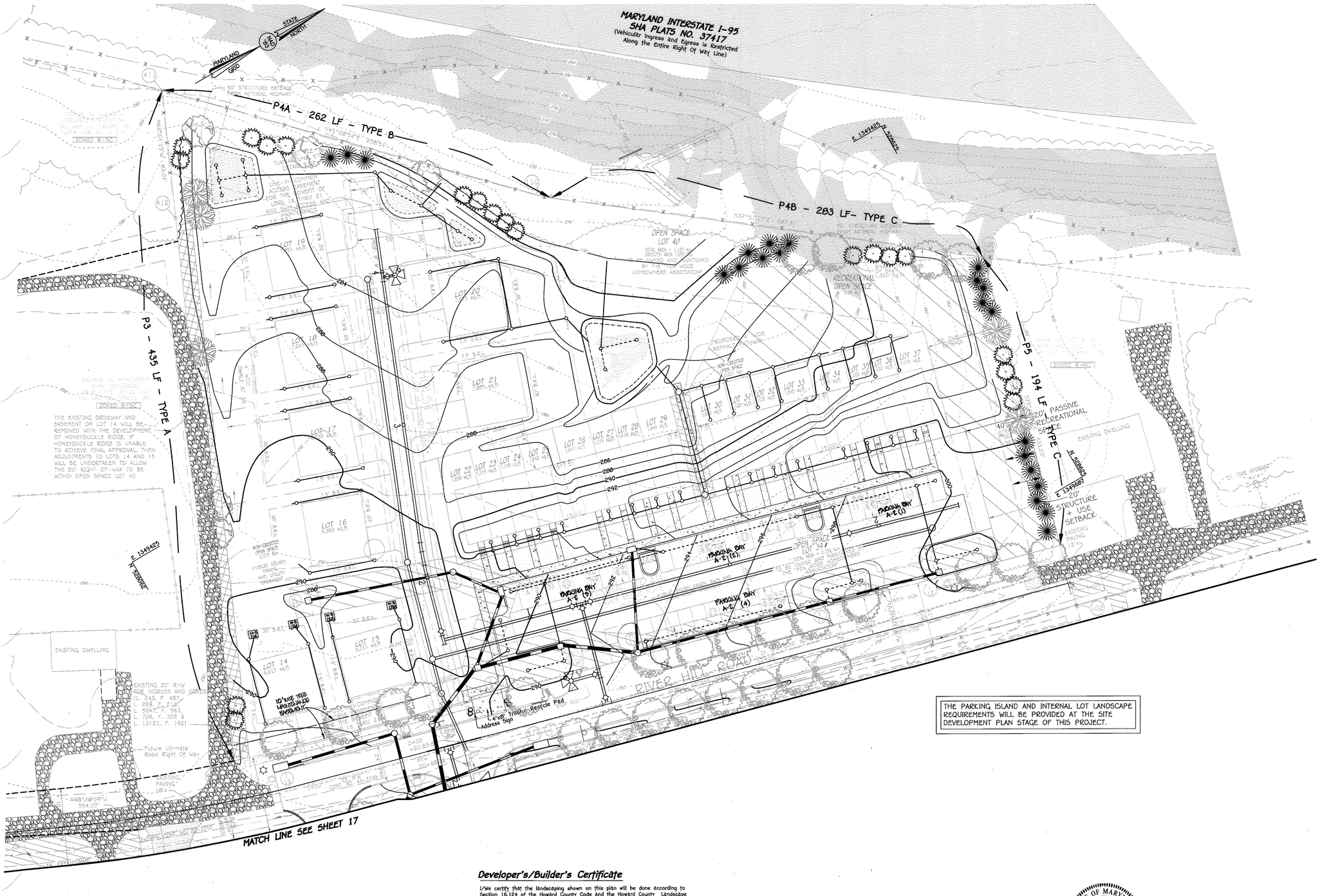
FRANK JOHN MANALANSAN II — DATE 11/5/15

STORMWATER MANAGEMENT NOTES AND DETAILS

FOX WOOD MANOR

LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 15 OF 24 F-15-053



LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×362.2	SPOT ELEVATION
12"RCP	PROPOSED STORM DRAIN PIPE
#"S	PROPOSED SEWER
#"W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON-CREDITED OPEN SPACE
LOD	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
SF	SILT FENCE
	15-24% SLOPES
	25% OR GREATER SLOPES
	'B' SOILS
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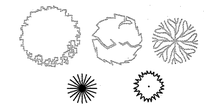
	ERODABLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO REMAIN)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING RG&E EASEMENT
	EXISTING FOREST TO BE REMOVED

LANDSCAPING LEGEND



THE PARKING ISLAND AND INTERNAL LOT LANDSCAPE REQUIREMENTS WILL BE PROVIDED AT THE SITE DEVELOPMENT PLAN STAGE OF THIS PROJECT.

Developer's/Builder's Certificate

I/We certify that the landscaping shown on this plan will be done according to Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of notice of Landscape Installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Developer/Builder — 11/6/15 Date

0' 30' 60' 120'

SCALE: 1" = 30'

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — 12/17/2015 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 12-21-15 DATE

Chief, Development Engineering Division — 12-11-15 DATE

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

REVISIONS		
NO.	DESCRIPTION	DATE
1	REMOVE SWM FACILITY & ADD TREE MAINTENANCE EASEMENT	10/2/16

OWNERS

KENNETH ECKER
LISA MARCELLINO - ECKER
9120 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

MICHAEL R MARCELLINO
9131 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

BONNY A MARCELLINO
THOMAS M MARCELLINO
9141 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

DEVELOPER

LAND DESIGN & DEVELOPMENT
5300 DORSEY HALL DRIVE
SUITE 102
ELLICOTT CITY, MARYLAND 21042
(443)-367-0422

STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21478 — PROFESSIONAL LAND SURVEYOR

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21478, EXPIRATION DATE: 7/14/17.

FRANK JOHN MANALANSAN II — 11/6/15 DATE

LANDSCAPE PLAN
FOX WOOD MANOR
LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 16 OF 24 F-15-053

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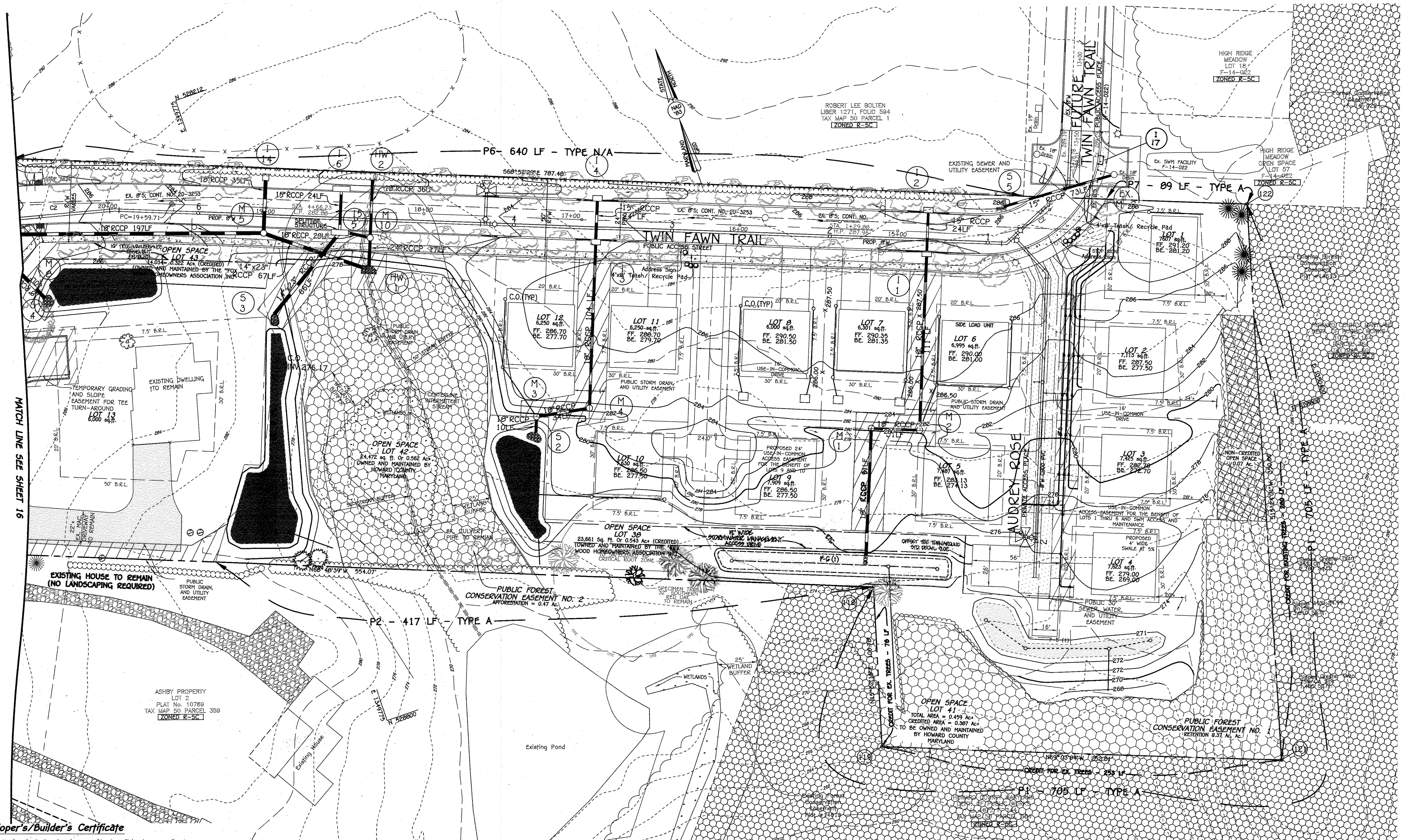

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Developer/Builder 11/5/15 Date

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways 12/8/2015 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development 12-21-15 DATE

Chief, Development Engineering Division 12-11-16 DATE

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

REVISIONS

NO.	DESCRIPTION	DATE
1	ADD I-17 INLET, TREE MAINTENANCE EASEMENT & SWM FACILITY	12/21/16

0' 30' 60' 120'

SCALE: 1" = 30'

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FRANK JOHN MANALANSAN II 11/5/15 DATE

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FOX WOOD MANOR

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SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 17 OF 24 F-15-053

NOTES

1. THE PERIMETER LANDSCAPE OBLIGATION IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A LANDSCAPE SURETY IN THE AMOUNT OF $13,590.00 BASED ON (20) SHADE TREES @ $300/SHADE TREE, 48 EVERGREEN TREES @ $150/EVERGREEN TREE, AND (13) SHRUBS @ $30/SHRUB SHALL BE BONDED AS PART OF THE DPW DEVELOPERS AGREEMENT.
2. 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 LANDSCAPING 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.
3. THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

SCHEDULE A – PERIMETER LANDSCAPE EDGE

PERIMETER	1	2	3	4A	4B	5	6	7	TRASH	TRASH	TRASH	TOTAL
CATEGORY	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO ROADWAY (SFD SIDE TO ROW)	ADJACENT TO ROADWAY (SFA REAR TO ROW)	SFA ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES (ROW TO SFD)	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO RIVER HILL ROAD	ADJACENT TO LOTS 8–11 UIC DRIVE	ADJACENT TO LOT 1	
LANDSCAPE TYPE	A	A	A	B	C	C	N/A	A				
LINEAR FEET OF PERIMETER	705 L.F.	417 L.F.	435 L.F.	262 L.F.	283 L.F.	194 L.F.	640 L.F.	89 L.F.				
CREDIT FOR EXISTING VEGETATION LINEAR FEET (LF) OF CREDIT REMAINING PERIMETER (LF)	611 LF OF EX. TREES 94 LF REMAINING	N/A	N/A	N/A	97 LF OF EX. TREES 186 LF REMAINING	N/A	N/A	N/A				
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES	2 (97'/60' = 1.6 OR 2)	7 (417'/60' = 7)	7 (435'/60' = 7.3 OR 7)	5/7 (262'/50' = 5.2 OR 5) (262'/40' = 6.6 OR 7)	5/9 (186'/40' = 4.7 OR 5) (186'/20' = 9.3 OR 9)	5/10 (194'/40' = 4.9 OR 5) (194'/20' = 9.7 OR 10)	N/A	1 (89'/60' = 1.48 OR 1)				32 26
CREDIT FOR EXISTING VEGETATION SHADE TREES SMALL/MEDIUM DECIDUOUS OR EVERGREEN TREES (2:1 SUBSTITUTION)	0 0	1 0	0 0	0 0	0 0	0 0	0 0	0 0				1 0
NUMBER OF PLANTS PROVIDED SHADE TREES SMALL/MEDIUM DECIDUOUS OR EVERGREEN TREES (2:1 SUBSTITUTION)	1 2	5 2	5 4	3 11	4 11	2 16	0 0	0 2	0 0	0 0	0 0	20 48
SHRUBS (10:1 SUBSTITUTION)									4	4	5	13

PERIMETER LANDSCAPE PLANT LIST

QTY.	KEY	NAME	SIZE
4		ACER RUBRUM 'ARMSTRONG' (ARMSTRONG COLUMNAR RED MAPLE)	2.5"–3" CAL. FULL CROWN, B&B
7		GLEDITSIA TRIACANTHOS INERMIS 'IMPERIAL' (IMPERIAL THORNLESS HONEYLOCUST)	2.5"–3" CAL. FULL CROWN, B&B
9		TILIA CODATA 'GREENSPIRE' (GREENSPIRE LITTLELEAF LINDEN)	2.5"–3" CAL. FULL CROWN, B&B
22		ILEX X 'NELLIE R. STEVENS' (NELLIE STEVENS HOLLY)	5'–6' HT, B&B
26		THUJA STANDISHII X PLICATA (GREEN GIANT ARBORVITAE)	5'–6' HT, B&B
13		TAXUS MEDIA 'HICKSII' (HICKS YEW)	2.5'–3' HT, CONT/B&B

TOTAL: 20 SHADE TREES, 48 EVERGREEN TREES, 13 SHRUBS

STREET TREE PLANTING SCHEDULE

SYMBOL	ROAD NAME	TYPE & QTY.	SIZE	COMMENTS
	TWIN FAWN TRAIL	GLEDITSIA TRIACANTHOS INERMIS 'IMPERIAL' IMPERIAL THORNLESS HONEYLOCUST 36 TREES (*1420 LF/40 = 35.5)	2.5"–3" CAL.	SPACING 40' APART
	RIVER HILL ROAD	ACER RUBRUM 'ARMSTRONG' ARMSTRONG COLUMNAR RED MAPLE 23 TREES (*904 LF/40 = 22.6)	2.5"–3" CAL.	SPACING 40' APART (SINCE ADEQUATE ROW EXISTS ALONG THE BOLTEN PROPERTY, STREET TREES HAVE BEEN PLACED IN THE ROW ALONG THE BOLTEN PROPERTY)

TOTAL QUANTITY = 59 STREET TREES
* LENGTH EXCLUDES AREAS WITHIN INTERSECTIONS.

PLANTING SPECIFICATIONS

PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN.

ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE NURSERY GROWN, UNIFORMLY BRANCHED, HAVE A VIGOROUS ROOT SYSTEM, AND SHALL CONFORM TO THE SPECIES, SIZE, ROOT AND SHAPE SHOWN ON THE PLANT LIST AND THE AMERICAN ASSOCIATION OF NURSERYMEN (ANN) STANDARDS. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUN SCALD BRANCHES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORCED LEADERS WILL NOT BE ACCEPTED. ALL PLANTS SHALL BE FRESHLY DUG, NO HEALED-IN PLANTS FROM COLD STORAGE WILL BE ACCEPTED.

UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATION SHALL CONFORM TO "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS", (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECT, LATEST EDITION, INCLUDING ALL ADDENDA.

CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THE LANDSCAPE GUIDELINES. CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING, WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.

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

PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE ACCOMPLISHED BY THE TEMPORARY INSTALLATION OF 4 FOOT HIGH SNOW FENCE OR BLAZE ORANGE SAFETY FENCE AT THE DRIP LINE.

CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN THE GROWING SEASON OF COMPLETION OF SITE CONSTRUCTION.

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

PLANT QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN TAKE PRECEDENCE.

ALL SHRUBS SHALL BE PLANTED IN CONTINUOUS TRENCHES OR PREPARED PLANTING BEDS AND MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILS AND SPECIFIED EXCEPT WHERE NOTED ON PLANS.

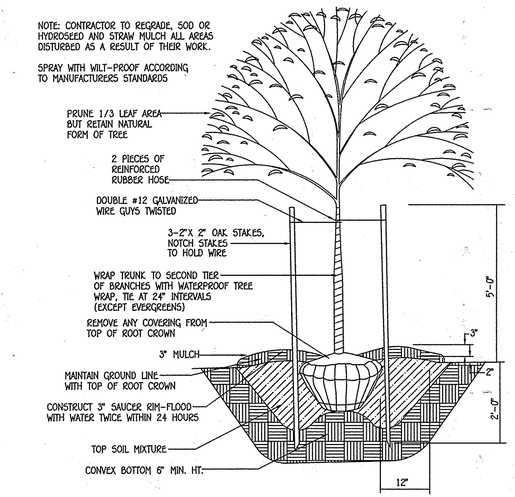
POSITIVE DRAINAGE SHALL BE MAINTAINED IN PLANTING BEDS (2 PERCENT SLOPE).

PLANTING MIX SHALL BE AS FOLLOWS: DECIDUOUS PLANTS – TWO PARTS TOPSOIL, ONE PART WELL-ROTTED COW OR HORSE MANURE. ADD 3 LBS. OF STANDARD FERTILIZER PER CUBIC YARD OF PLANTING MIX. EVERGREEN PLANTS – TWO PARTS TOPSOIL, ONE PART HUMUS OR OTHER APPROVED ORGANIC MATERIAL. ADD 3 LBS. OF EVERGREEN (ACIDIC) FERTILIZER PER CUBIC YARD OF PLANTING MIX. TOPSOIL SHALL CONFORM TO THE LANDSCAPE GUIDELINES.

WEED CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. CAUTION: BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUND COVER TO BE TREATED.

ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED AND SEEDED.

THIS PLAN IS INTENDED FOR LANDSCAPE USE ONLY. SEE OTHER PLAN SHEETS FOR MORE INFORMATION ON GRADING, SEDIMENT CONTROL, LAYOUT, ETC.



TREE PLANTING DETAIL

NOT TO SCALE

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Developer/Builder — Date: 11/5/15

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — DATE: 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — DATE: 12-21-15

Chief, Development Engineering Division — DATE: 12.11.15

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REVISIONS		
NO.	DESCRIPTION	DATE

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FRANK JOHN MANALANSAN II — DATE: 11/6/15

LANDSCAPE NOTES AND DETAILS
FOX WOOD MANOR

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SHEET 10 OF 24

F-15-053

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APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — DATE 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — DATE 12-21-15

Chief, Development Engineering Division — DATE 12-11-15

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REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE SWM FACILITY & ADD TREE MAINTENANCE EASEMENT	12/21/16

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(443)-367-0422

MD DNR Qualified Professional

STATE OF MARYLAND — STEPHANIE J. TUITE — No. 38386 — PROFESSIONAL ENGINEER

Stephanie J. Tuite, RLA, PE,
Qualified Professional

FOREST CONSERVATION PLAN
FOX WOOD MANOR
LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
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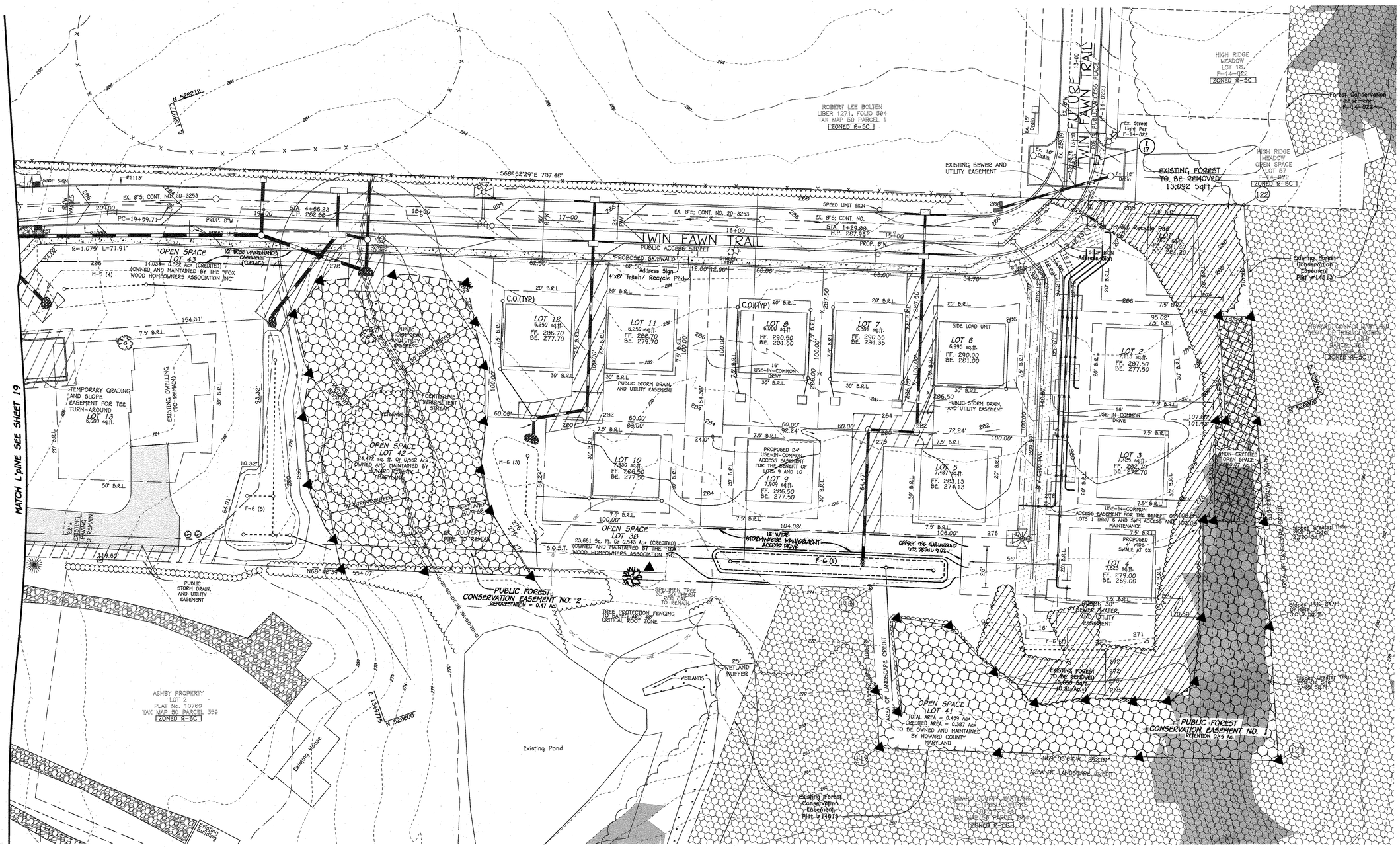
SCALE: 1"=30' DATE: NOVEMBER 4, 2015
SHEET 19 OF 24 F-15-053



LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×362.2	SPOT ELEVATION
12"SDP	PROPOSED STORM DRAIN PIPE
#"S	PROPOSED SEWER
#"W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON-CREDITED OPEN SPACE
LOD	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
SF	SILT FENCE
	15-24% SLOPES
	25% OR GREATER SLOPES
	'B' SOILS
	'C' SOILS
	ERODABLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO REMAIN)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING R&A'E EASEMENT
	EXISTING FOREST TO BE REMOVED

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — DATE 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — DATE 12-21-15

Chief, Development Engineering Division — DATE 12-11-15

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

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD INLET I-17, FREE MAINTENANCE EASEMENT & REMOVE SWM FACILITY #2.1	12/21/16

OWNERS

KENNETH ECKER
LISA MARCELLINO - ECKER
9120 RIVER HILL RD
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SUITE 102
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(443)-367-0422

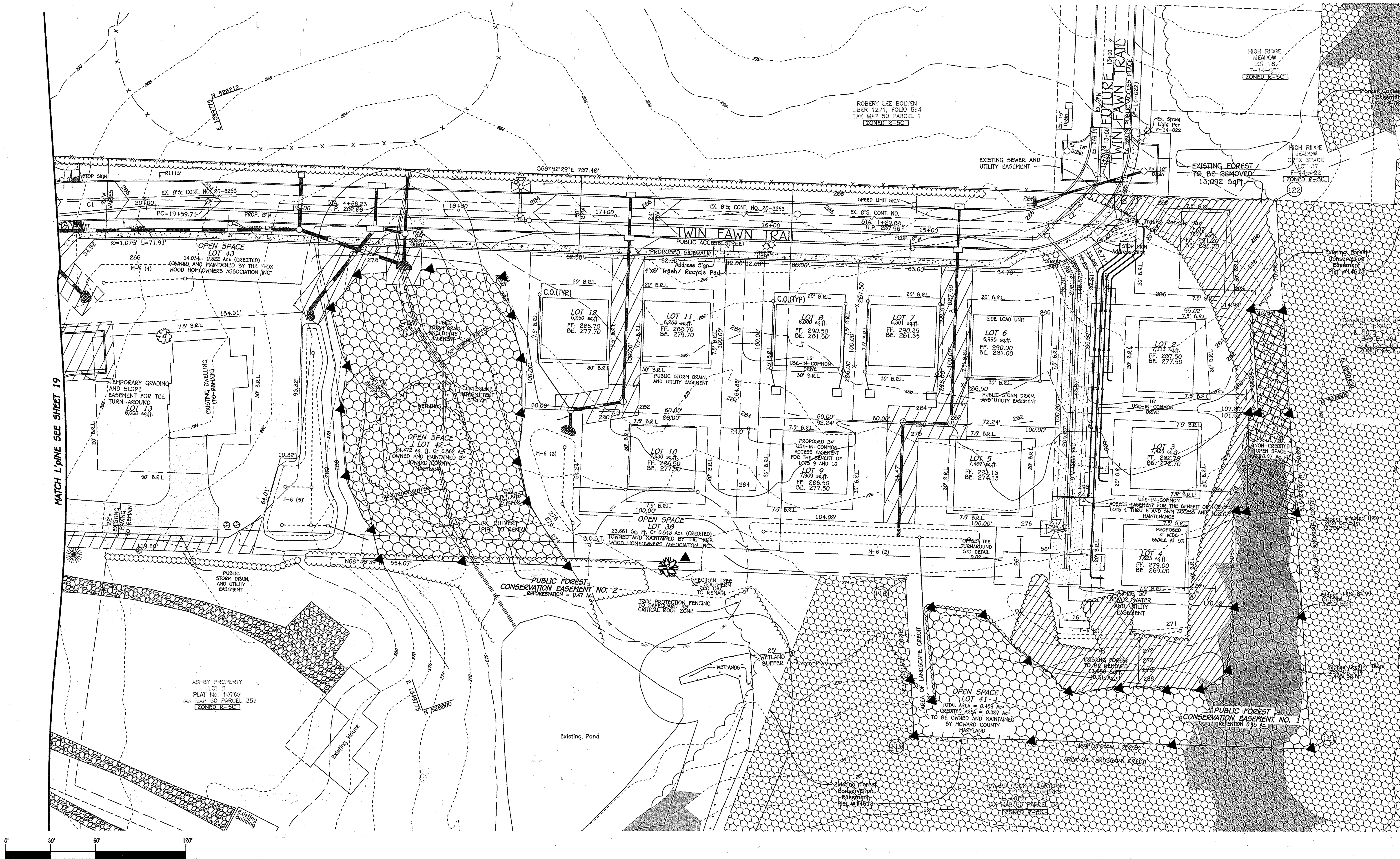
MD DNR Qualified Professional

STATE OF MARYLAND — STEPHANIE J. TUITE — No. 38356 — PROFESSIONAL ENGINEER

Stephanie J. Tuite, RLA, PE,
Qualified Professional

FOREST CONSERVATION PLAN
FOX WOOD MANOR

LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 460
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1"=30' DATE: NOVEMBER 4, 2015
SHEET 20 OF 24 F-15-053



SCALE: 1" = 30'

LEGEND

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	EXISTING BG&E EASEMENT
	EXISTING FOREST TO BE REMOVED

APPROVED: DEPARTMENT OF PUBLIC WORKS

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Chief, Division of Land Development — 12-21-15 DATE

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AND OPEN SPACE LOTS 38 THRU 43
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ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1"=30' DATE: NOVEMBER 4, 2015

Reforestation Note:

The reforestation obligation will be met within priority planting areas on the site. This includes floodplain, wetland and buffers. The final planting location and the planting specifications, details, and schedule will be provided on Final Forest Conservation Plan.

Forest Stand Data

Key	Community Type	Acreage (NTA)	Dominant Vegetation	General Condition	Retention Priority
F1	Oak/Poplar	1.7	Pinus virginiana, Fagus grandiflora Liriodendron tulipifera, Quercus alba, Quercus velutina,	Good	Low
F2	Virginia Pine	0.8	Pinus virginiana , Prunus serotina, Sassafras albidum	Good	Moderate

See accompanying report for complete stand descriptions

FCE Planting Area – 0.47 acres

Planting units required: 330 (165 whips)
Planting units provided: 330 (130 whips and 20 trees)

Qty	Species	Size	Spacing	Total FCA Units
10	Acer rubrum – Red maple	1" cal.	15' o.c.	
10	Quercus alba – White oak	1" cal.	15' o.c.	
20 Total 1" caliper trees (3.5 planting units per tree) =				70 Total FCA unit credit
15	Acer rubrum – Red maple	2–3' whip	11' o.c.	
15	Cercis canadensis – Red bud	2–3' whip	11' o.c.	
15	Cornus florida – Flowering dogwood	2–3' whip	11' o.c.	
15	Liriodendron tulipifera – Tulip poplar	2–3' whip	11' o.c.	
15	Prunus serotina – Black cherry	2–3' whip	11' o.c.	
15	Robinia pseudo–acacia – Black locust	2–3' whip	11' o.c.	
13	Quercus alba – White oak	2–3' whip	11' o.c.	
13	Viburnum prunifolium – Blackhaw	2–3' whip	11' o.c.	
130 Total whip plantings (2 planting units per tree) =				260 Total FCA unit credit
Total Unit Credit			(260 + 70)	330

1" CAL. TREES = 200/ACRE (20 TREES/200 = 0.10 AC.)
WHIPS w/shelters = 350/ACRE = 350 x 0.37 AC. = 130 WHIPS
3.5 Planting units = 1 – 1" Cal. Tree
2 Planting units = 1 Whip

Planting Notes:

Planting units defined by the spacing requirements established in the FCA Manual. One plant unit is defined as 1 seedling or whip without shelter.
The Manual states that 700 seedlings/whips without shelters are required per acre, or 350 whips w/shelters, or 200 1" caliper trees, or 100 2" caliper trees.
By conversion it has been determined that a seedling or whip without shelter = 1 unit, whip with shelter = 2 units, 1"caliper tree = 3.5 units and 2" caliper tree = 7 units. The use of plant units simplifies the plant density calculations when mixing stock size.
** – These species should not be planted within the wetland limits.

1" caliper trees should be staggered along the outer perimeter of the planting area to serve as demarcation of the boundary. The trees should be no closer than 15 Foot Spacing. Whip spacing to be placed on 11 foot centers, shelters will be required per Howard County policy.

Planting shall be made in a curvilinear fashion along contour. The planting should avoid a grid appearance but should be spaced to facilitate maintenance

Multiflora rose/heavy brush removal/control may be required prior to installation of planting.

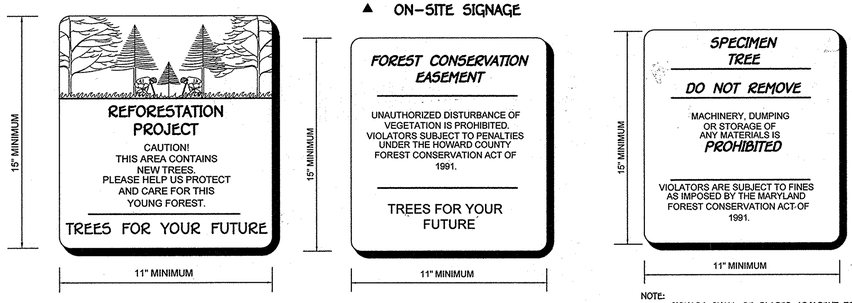
All whips are required to be installed with tree shelters per Howard County FCA requirements.

PATTERN SPACING DIAGRAM

* * * * * * * * * * *
* * * * * * * * * * *
* * * * * * * * * * *
# # # # # # # # #
# # # # # # # # #

* – whip w/shelter 11' on center spacing
# – 1" caliper tree 15' on center spacing
Species shall be randomly interspersed, rows should be planting along contours

▲ ON–SITE SIGNAGE



NOTE: SIGNAGE SHALL BE PLACED ADJACENT TO SPECIMEN TREE AND SHALL REMAIN IN PLACE IN PERPETUITY

Specimen Tree Chart

Key	Species, Size (dbh)	Comment
A	SOUTHERN RED OAK, 32"	GOOD, ROOT ZONE CURRENTLY IMPACTED BY DRIVEWAY

NOTE:
The existing specimen tree located within Open Space Lot 38 is to remain and in accordance with MDNR's State Conservation Program (State Bill 666) it must be left undisturbed, unless a formal waiver petition is granted.

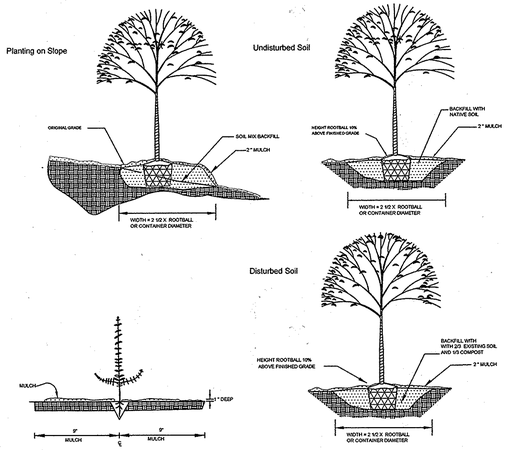
FSD NOTES:

1. No rare, threatened or endangered species or their appropriate habitat were observed on the property.
2. Surrounding land use is primarily residential.
3. Approximately 1.3 acres of forest extends onto adjacent offsite property within 100 feet of the subject property.
4. No wetlands, streams or buffers are present on the property.

FOREST CONSERVATION WORKSHEET VERSION 1.0

PROJECT: FOX WOODS MANOR
DATE: JUNE 11, 2013

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	9.39
B. DEDUCTIONS (AREA WITHIN 100 YEAR FLOODPLAIN)	0.00
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00
D. NET TRACT AREA	9.39
LAND USE CATEGORY: HIGH DENSITY RESIDENTIAL	
E. AFFORESTATION THRESHOLD (NET TRACT AREA (C) x 15%)	1.41
F. CONSERVATION THRESHOLD (NET TRACT AREA (C) x 20%)	1.88
EXISTING FOREST COVER	
G. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	2.50
H. AREA OF FOREST ABOVE AFFORESTATION TRESHOLD	-
I. AREA OF FOREST ABOVE CONSERVATION TRESHOLD	0.62
BREAK-EVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	1.1
BREAKEVEN POINT	2.00
K. CLEARING PERMITTED WITHOUT MITIGATION	0.50
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE	2.05
M. TOTAL AREA OF FOREST TO BE RETAINED	0.45
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION TRESHOLD	0.16
P. REFORESTATION FOR CLEARING BELOW THE CONSERVATION TRESHOLD	2.86
Q. CREDIT FOR RETENTION ABOVE THE CONSERVATION TRESHOLD	0.00
R. TOTAL REFORESTATION REQUIRED	3.02
S. TOTAL AFFORESTATION REQUIRED	0.00
T. TOTAL PLANTING REQUIREMENT	3.02



Seeding and Whip Planting Specification

Planting/Soil Specifications

1. Installation of bareroot plant stock shall take place between March 15 – April 20; b&b/container stock March 15 –May 30 or September 15 – November 15. Fall planting of B&B stock is not recommended.
2. Disturbed areas shall be seeded and stabilized as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed.
3. Bareroot plants shall be installed so that the top of root mass is level with the top of existing grade. Roots shall be dipped in an anti–desiccant gel prior to planting. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part pine fines or equivalent.
4. Fertilizer shall consist of Agriform 22–0–2, or equivalent, applied as per manufacturer's specifications, for woody plants. Herbaceous plants shall be fertilized with Osmocote 8–6–12.
5. Plant material shall be transported to the site in a tarped or covered truck. Plants shall be kept moist prior to planting.
6. All non–organic debris associated with the planting operation shall be removed from the site by the contractor.

Sequence of Construction

1. Sediment control shall be installed in accordance with general construction plan for site.
2. Plants shall be installed as per Plant Schedule and the Planting/Soil Specifications for the project.
3. Upon completion of the planting, signage shall be installed as shown.
4. Plantings shall be maintained and guaranteed in accordance with the Maintenance and Guarantee requirements for project.

Maintenance of Plantings

1. Maintenance of plantings shall last for a period of 2 years.
2. Plantings must receive 2 gallons of water, either through precipitation or watering, weekly during the 1st growing season, as needed. During second growing season, once a month during May–September, if needed.
3. Invasive exotics and noxious weeds will be removed, as required, from planting areas mechanically and/or with limited herbicide application (see groundcover note where appropriate). Old field successional species will be retained.
4. Plants will be examined a minimum two times during the growing season for serious plant pests and diseases. Serious problems will be treated with the appropriate agent.
5. Dead branches will be pruned from plantings.

Guarantee Requirements

1. A 75 percent survival rate of forestation plantings will be required at the end of 2 growing seasons. All plant material below the 75 percent threshold will be replaced at the beginning of the next growing season. Wild trees arising from natural regeneration may be counted up to 50 percent towards the total survival number if they are healthy, native species at least 12 inches tall.

Surety for Forestation

1. The developer shall post a surety (bond, letter of credit) to ensure that forestation plantings are completed. SEE GENERAL NOTE 31, SHEET 1.

Planting Notes

When possible, plants shall be installed within 24 hours of delivery. If installation cannot be performed within this time frame, plant stock shall be watered and protected from dessication

Application of herbicide, Round–up or equivalent, may be used to reduce plant competition from old field successional growth at the time of installation. Mowing, re–application of herbicide, or a combination thereof, may be used to control unwanted, competing vegetation.

Planting shall be installed within one year or two growing seasons of subdivision approval. Plantings shall be installed in accordance with the time schedule included in Note 1 of the planting /Seeding Specifications.

FCP NOTES

1. Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.
2. Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective land covenants.
3. Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or the FCE boundary, whichever is greater.
4. There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
5. No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.
6. Temporary fencing shall be used to protect forest resources during construction. The fencing shall be placed along all FCE boundaries which occur within 15 feet of the proposed limits of disturbance.
7. Permanent signage shall be placed 50–100' apart along the boundaries of all areas included in Forest Conservation Easements.
8. The Forest Conservation Act requirements will be met through the onsite retention of 0.45 acres of forest, onsite planting of 0.47 acres and the remaining 2.55 acres of obligation will be provided by offsite reforestation on the Rosebar Property, Preservation Parcel "A", SDP–97–115 and F–99–019, Tax Map 50, Grid 1, Parcels 405, 429 and 468.
9. The Forest Conservation Reforestation / Afforestation Easement plantings are not to be considered landscaping, as it is usually practiced. The purpose of these plantings is to create a new forest community that will replace to some degree the forest resources that have been lost during recent land development. Their primary purpose is environmental and not aesthetic. The reforestation stand will require special management and initially may not look attractive."

THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING.
HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

Construction Period Protection Program

A. Forest Protection Techniques

1. Soil Protection Area (Critical Root Zone)

The soil protection area, or critical root zone, of a tree is that portion of the soil column where most of its roots may be found. The majority of roots responsible for water and nutrient uptake are located just below the soil surface.

The limit of disturbance (LOD) line depicted on the plan shows the proposed extent of construction activities. Eco–Science Professionals, or another qualified professional designated by the developer, will assist in the field staking of the LOD to ensure that the Critical Root Zone for the Forest Retention Area is determined in accordance with the In–Field Edge Determination Guidelines in Appendix B. Eco–Science Professionals, or another qualified professional designated by the developer, will also assess the condition of the new forest edge to determine if selective thinning or pruning is needed to improve the condition of the edge.

2. Fencing And Signage

All forest retention areas will be protected from unauthorized intrusion by appropriate signage and fencing. Signage and fencing will be installed prior to any construction activity. Installation of these devices will be supervised by Eco–Science Professionals or another qualified professional. Fencing will placed along all LOD lines that occur within 50 feet of existing treelines. Signage will be placed along the edge of the FCE every 100 feet. Fencing will consist of blaze orange mesh fence or super silt fence. See Forest Conservation Plan for standard specifications.

B. Pre–Construction Meeting

Upon staking of limits of disturbance and installation of all signage, a pre–construction meeting will be held between the developer, contractor and appropriate County inspector. The purpose of the meeting will be to verify that all tree protection measures outlined in the FCP are in place, that all sediment control is in order, and to notify the contractor of possible penalties for non–compliance with the FCP.

C. Storage Facilities/Equipment Cleaning

All equipment storage, parking, washout facilities, material stockpiling, etc. associated with construction of the project will be restricted to those areas shown within the limit of disturbance. Washing of equipment will be prohibited within all forest retention areas. Wastewater resulting from equipment cleaning will be controlled to prevent runoff into wetlands, streams and other environmentally sensitive areas.

D. Sequence of Construction

The following timetable represents the proposed timetable for construction of the proposed project. The construction start date for this project has not been formalized. The actual project start date is predicated on the issuance of all necessary permits and approvals for the project. The terms outlined in the Forest Conservation Plan will be enabled upon commencement of the project.

Below find a sequence of construction.

1. Install all tree protection signage, fencing, and sediment control devices.
2. Hold pre–construction meeting between developer, contractor and County inspector.
3. Grade site and construct improvements. Stabilize all disturbed areas in accordance with grading plan.
4. Remove sediment control. Replace any forest retention signage in poor condition.
5. Hold post–construction meeting with County inspectors to insure compliance with FCP.

E. Construction Monitoring

Eco–Science Professionals, or another qualified professional designated by the developer, will monitor construction of the project to ensure that all activities are in compliance with the Forest Conservation Plan. This will include inspections to ensure that signage is properly established and that no unauthorized intrusions have been made into forest retention areas.

F. Activities Permitted During Construction

The forest conservation plan will allow the following activities within forest resources during the construction phase of the project:

1. Passive recreation (birdwatching, hiking, etc.)

These activities will not damage or negatively impact the forest resources on the property.

G. Post–Construction Meeting

Upon completion of construction, Eco–Science Professionals, or another qualified professional designated by the developer, will notify the County that construction has been completed and arrange for a post–construction meeting to review the project site. The meeting will allow the County inspector to verify that all Forest Conservation Easement limits have been properly restored and that all post construction protection measures (permanent signage) have been installed.

Post–Construction Management Plan

The post–construction management plan will further ensure that all Forest Conservation Easement Areas are maintained. The developer will be responsible for implementation of the post–construction management plan.

The following items will be incorporated into the plan for the subject property:

A. Signage

Signage indicating the limits of the forest retention areas shall be maintained.

FOREST CONSERVATION DATA

EASEMENT NO.	RETENTION AREA	PLANTING AREA	TOTAL EASEMENT AREA
1	0.45 AC.	0.00 AC.	0.45 AC.
2	0.00 AC.	0.47 AC.	0.47 AC.
TOTAL	0.45 AC.	0.47 AC.	0.92 AC.

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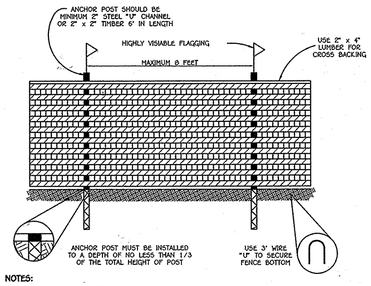

NOTES:
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT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

TREE PROTECTION DETAIL

NOT TO SCALE

0' 100' 200' 400'

SCALE: 1" = 100'

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — DATE 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — DATE 12-21-15

Chief, Development Engineering Division — DATE 12.11.15

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SHEET 21 OF 24 F–15–053

PLANTING SPECIFICATIONS AND NOTES

SITE PREPARATION AND SOILS

1. PROTECTION FENCING IS 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 THROUGH 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 FIVE (5), 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 VERY DEEP, WELL DRAINED NATURE OF THE 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.

MAINTENANCE SCHEDULE

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

1. 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.

NOTE :

THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENTS EXCEPT AS PERMITTED BY THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.

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 THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.

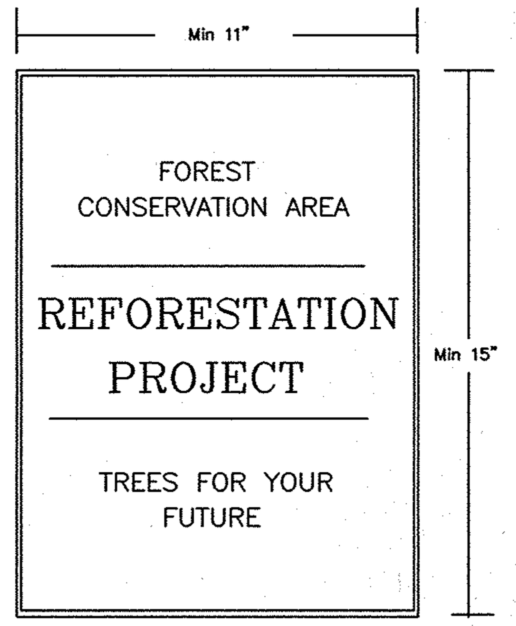
SOILS CLASSIFICATION

SYMBOL	DESCRIPTION
BaA	BAILE SILT LOAM, 0 TO 3 PERCENT SLOPES (D)
ChB	CHILLUM-RUSSETT LOAMS, 2 TO 5 PERCENT SLOPES (B)
GgA	GLENELG LOAM, 0 TO 3 PERCENT SLOPES (B)
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES (B)

OFF-SITE FOREST CONSERVATION EASEMENT AREAS

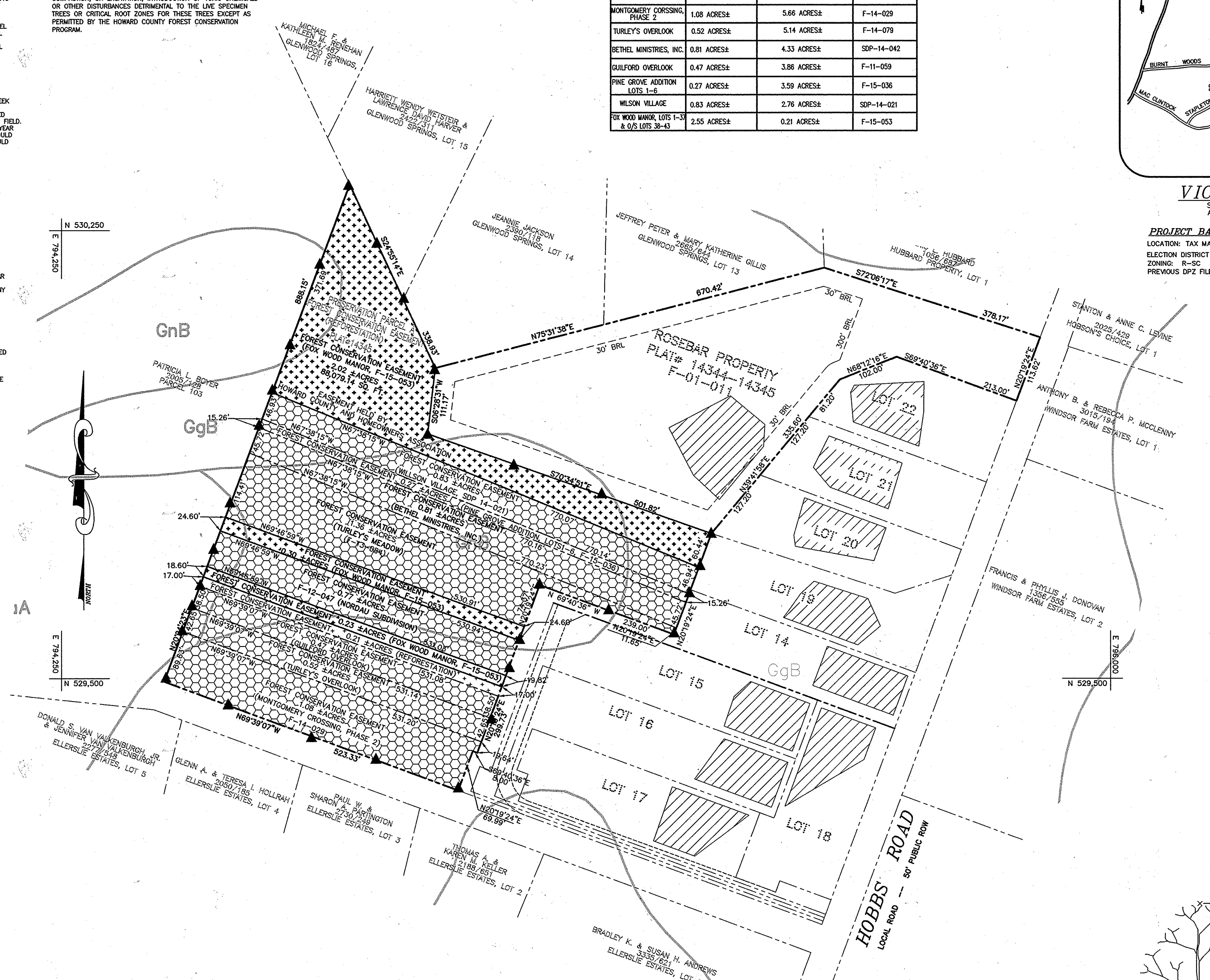
TOTAL EASEMENT AVAILABLE FOR PLANTING: 8.87 ACRES±

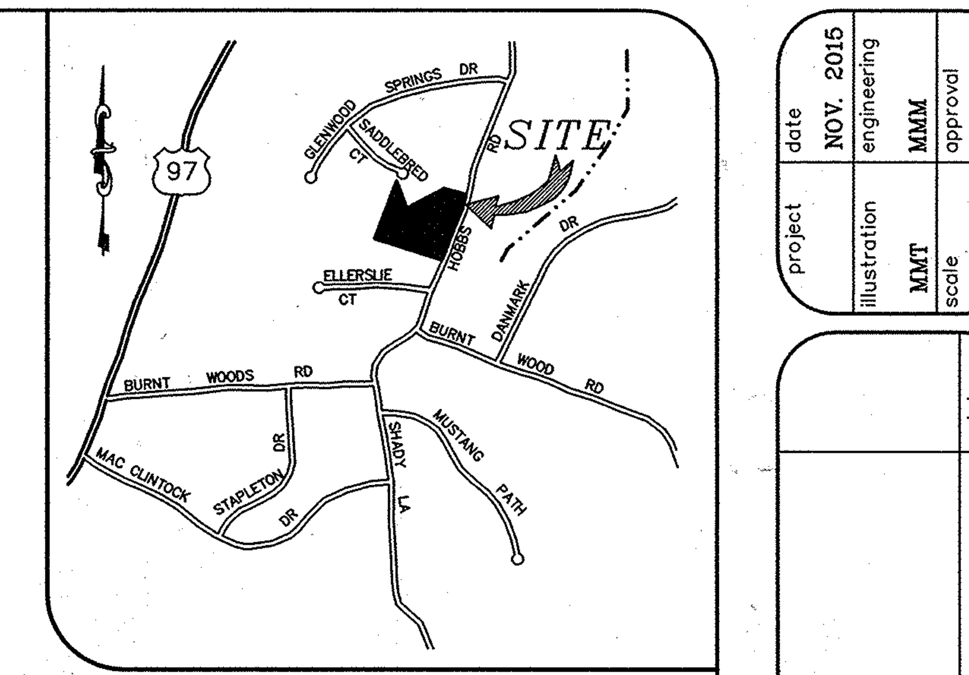
PROJECT	EASEMENT AREA PROVIDED	REMAINING EASMENT AREA	FINAL PLAN #
NORDAU PROPERTY	0.77 ACRES±	8.10 ACRES±	F-12-047
TURLEY'S MEADOW	1.36 ACRES±	6.74 ACRES±	F-13-084
MONTGOMERY CORSSING, PHASE 2	1.08 ACRES±	5.66 ACRES±	F-14-029
TURLEY'S OVERLOOK	0.52 ACRES±	5.14 ACRES±	F-14-079
BETHEL MINISTRIES, INC.	0.81 ACRES±	4.33 ACRES±	SDP-14-042
GUILFORD OVERLOOK	0.47 ACRES±	3.86 ACRES±	F-11-059
PINE GROVE ADDITION LOTS 1-6	0.27 ACRES±	3.59 ACRES±	F-15-036
WILSON VILLAGE	0.83 ACRES±	2.76 ACRES±	SDP-14-021
FOX WOOD MANOR, LOTS 1-37 & 0/S LOTS 38-43	2.55 ACRES±	0.21 ACRES±	F-15-053



SIGNAGE DETAILS

NOT TO SCALE





VICINITY MAP

SCALE : 1" = 2000'
ADC MAP 17 B-4

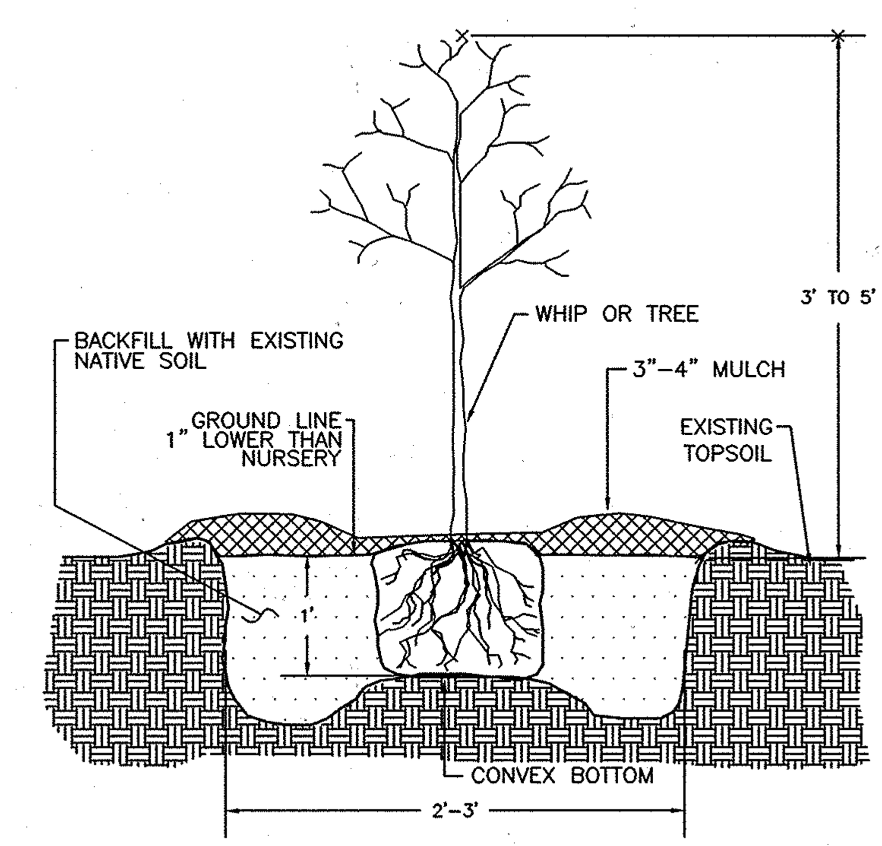
PROJECT BACKGROUND:

LOCATION: TAX MAP: 50 GRID: 1 PARCELS: 405, 429 AND 468
ELECTION DISTRICT : SIXTH
ZONING: R-SC
PREVIOUS DPZ FILES: SP-14-003, ECP-13-074

LEGEND

- EXISTING SEPTIC EASEMENT
- FOREST CONSERVATION EASEMENT (REFORESTATION) THAT SATISFY OTHER SUBDIVISION FOREST CONSERVATION OBLIGATION.
- EXISTING FOREST CONSERVATION EASEMENT (REFORESTATION) F-01-11 AVAILABLE.
- PROPOSED FOREST CONSERVATION EASEMENT FOR FOX WOOD MANOR
- ▲ DENOTES FOREST CONSERVATION SIGNAGE

FOREST CONSERVATION IN ACCORDANCE WITH SECTION 16.1202 OF THE FOREST CONSERVATION MANUAL SHALL BE PROVIDED BY PLACEMENT OF 2.55 ACRES OF REQUIRED REFORESTATION FOR THE FOX WOOD MANOR, LOTS 1 THRU 37 AND OPEN SPACE LOTS 38 THRU 43 INTO AN OFF-SITE EASEMENT ON PROPERTY IDENTIFIED AS THE ROSEBAR PROPERTY, PRESERVATION PARCEL A, LOCATED ON TAX MAP NO. 14 AND IDENTIFIED AS PARCEL 221, SITUATED ON THE WEST SIDE OF HOBBS ROAD. THE ROSEBAR FOREST CONSERVATION EASEMENT HAS BEEN SHOWN ON SHEET 18 OF SDP-97-115/NEW COLONY VILLAGE. WITH THIS PLAN 2.55 ACRES OF REFORESTATION DEDUCTED FROM THE TOTAL FC EASEMENT LOCATED ON ROSEBAR. SURETY FOR THE OFF-SITE FOREST CONSERVATION EASEMENT ON THE ROSEBAR PROPERTY HAS BEEN PREVIOUSLY POSTED BY THE OWNER OF THE EASEMENT HOLDER.



TREE PLANTING DETAIL

CONTAINER GROWN

MD DNR QUALIFIED PROFESSIONAL
MASHID TRINGA 11/20/15

OWNER / DEVELOPER

WOODBINE BRANTLY, LLC
5300 DORSEY HALL DRIVE
ELLICOTT CITY, MARYLAND 21042
(413)367-0422

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 12.11.15

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12.21.15

STATE OF MARYLAND — R. JACOB HIKMAT — No. 17942 — 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. 17942, EXP DATE 09/03/16

R. JACOB HIKMAT P.E. — DATE: 11/20/16

project	date NOV. 2015	engineering MMM	approval RJH
illustration MMT	scale 1"=100'		

no.	description	date
	revisions	

FOX WOOD MANOR, LOTS 1 THRU 37 AND OPEN SPACE LOTS 38 THRU 43

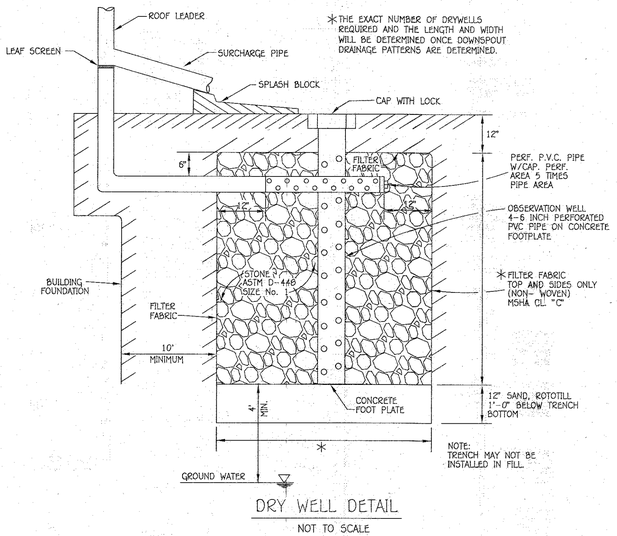
FOREST CONSERVATION EASEMENT GRANTED FROM ROSBAR PROPERTY, PRESERVATION PARCEL "A"
FORTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

OFFSITE FOREST CONSERVATION PLAN

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

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)

A. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
B. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
C. THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
D. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
E. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.



DRY WELL DETAIL
NOT TO SCALE

F-6 (11)
BORING #1
MICRO-BIO. TOP 271.00
EXISTING ELEV. 270.00
MICRO-BIO. BOTTOM 267.00
BORING BOTTOM 261.00

F-6 (1)
BORING #2
EXISTING ELEV. 275.00
MICRO-BIO. TOP 273.00
MICRO-BIO. BOTTOM 269.00
BORING BOTTOM 265.00

M-6 (2)
BORING #3
MICRO-BIO. TOP 275.00
EXISTING ELEV. 274.50
MICRO-BIO. BOTTOM 271.00
BORING BOTTOM 268.00

F-6 (4)
BORING #4
EXISTING ELEV. 284.00
MICRO-BIO. TOP 283.00
MICRO-BIO. BOTTOM 279.00
BORING BOTTOM 279.00

M-5 (1) / M-5 (2)
BORING #5
EXISTING ELEV. 291.00 — EXISTING ELEV.
MICRO-BIO. TOP 290.00 — MICRO-BIO. TOP
MICRO-BIO. BOTTOM 286.00 — MICRO-BIO. BOTTOM
BORING BOTTOM 281.00 — BORING BOTTOM

M-6 (10)
BORING #6
MICRO-BIO. TOP 281.00
EXISTING ELEV. 279.00
MICRO-BIO. BOTTOM 277.00
BORING BOTTOM 271.00

M-6 (6) / M-6 (7)
BORING #8
299.00 — MICRO-BIO. TOP
EXISTING ELEV. 298.00 — EXISTING ELEV.
MICRO-BIO. TOP 297.00
295.00* — MICRO-BIO BOTTOM
MICRO-BIO. BOTTOM 293.00
BORING BOTTOM 287.00 — BORING BOTTOM

* THE LOWEST ELEVATION OF PERMEABLE PAVING IN THIS AREA IS 294.00

F-6 (3)
BORING #9
EXISTING ELEV. 280.00
MICRO-BIO. TOP 279.00
MICRO-BIO. BOTTOM 275.00
BORING BOTTOM 278.00

F-6 (5)
BORING #13
EXISTING ELEV. 288.00
MICRO-BIO. TOP 283.00
MICRO-BIO. BOTTOM 279.00
BORING BOTTOM 273.00

M-6 (5)
BORING #14
EXISTING ELEV. 291.00
290.00 *
MICRO-BIO. TOP 289.00
MICRO-BIO. BOTTOM 285.00
BORING BOTTOM 278.00

* THE LOWEST ELEVATION OF PERMEABLE PAVING IN THIS AREA IS 290.00

M-6 (9)
BORING #15
EXISTING ELEV. 282.00
MICRO-BIO. TOP 281.00
MICRO-BIO. BOTTOM 277.00
BORING BOTTOM 267.00

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — DATE 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development — DATE 12-31-15
Chief, Development Engineering Division — DATE 12-11-15

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

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE SWM BORING DATA CHARTS & ADD DRYWELL DETAIL & NOTES	12/21/15

OWNERS

KENNETH ECKER
LISA MARCELLINO - ECKER
9120 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

MICHAEL R. MARCELLINO
9131 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

BONNY A MARCELLINO
THOMAS M MARCELLINO
9141 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

DEVELOPER

LAND DESIGN & DEVELOPMENT
5300 DORSEY HALL DRIVE
SUITE 102
ELLICOTT CITY, MARYLAND 21042
(443)-367-0422

STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

PROFESSIONAL CERTIFICATION

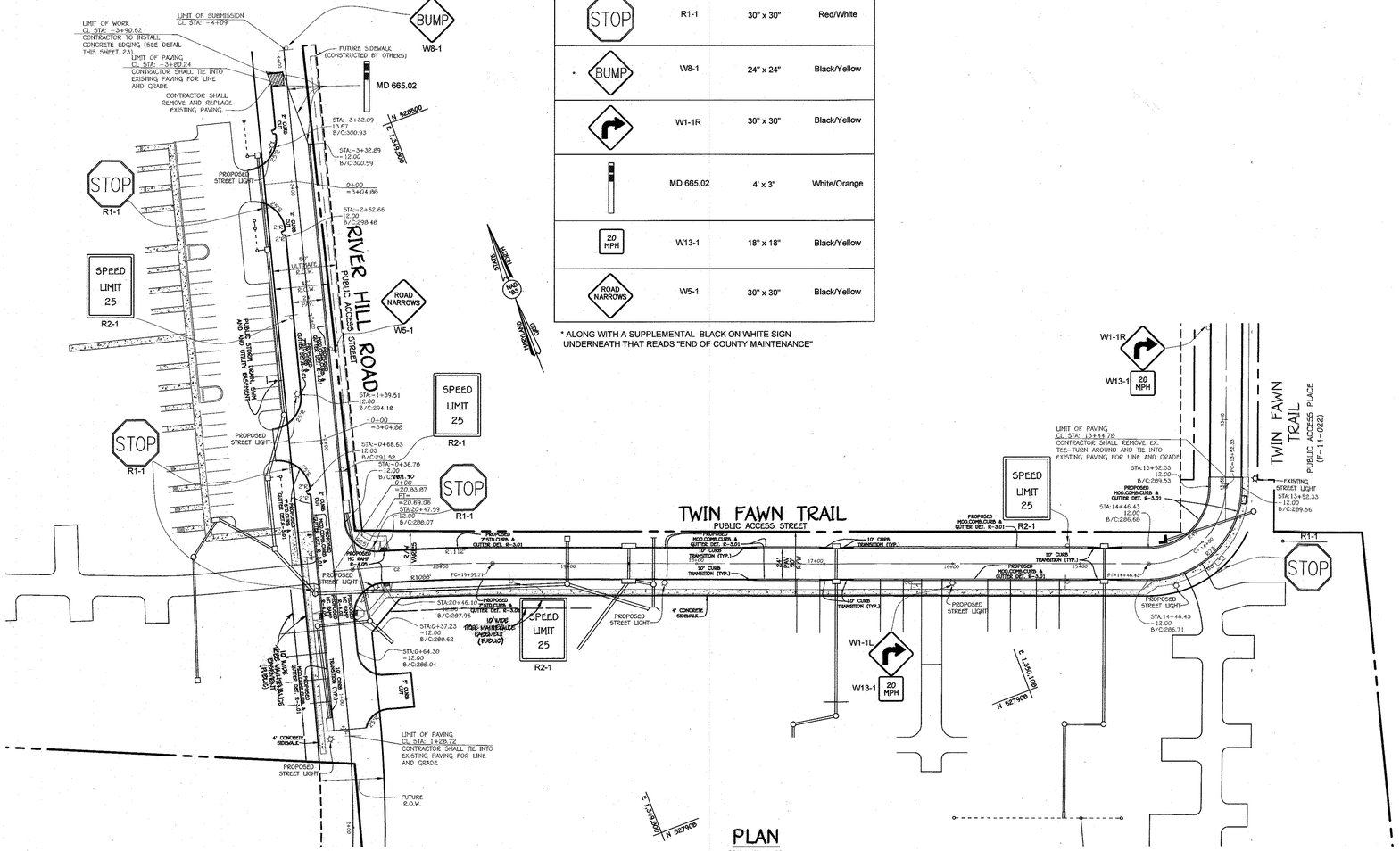
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

Frank John Manalansan II — 11/5/15
FRANK JOHN MANALANSAN II — DATE

SWM NOTES, DETAILS AND SOIL BORINGS
FOX WOOD MANOR
LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: NOT TO SCALE DATE: NOVEMBER 4, 2015
SHEET 23 OF 24 F-15-053

SIGNING LEGEND			
Size	Description	Size	Color
SPEED LIMIT 25	R2-1	24" x 30"	Black/White
STOP	R1-1	30" x 30"	Red/White
BUMP	W8-1	24" x 24"	Black/Yellow
	W1-1R	30" x 30"	Black/Yellow
	MD 665.02	4' x 3"	White/Orange
20 MPH	W13-1	18" x 18"	Black/Yellow
ROAD NARROWS	W5-1	30" x 30"	Black/Yellow

* ALONG WITH A SUPPLEMENTAL BLACK ON WHITE SIGN UNDERNEATH THAT READS "END OF COUNTY MAINTENANCE"

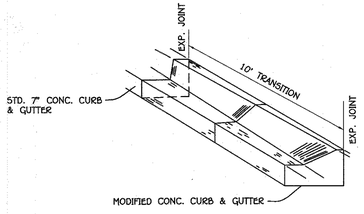


PLAN
SCALE: 1" = 50'

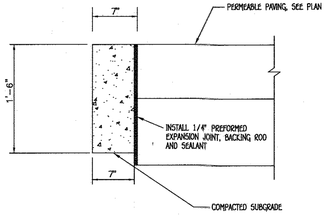
DETAIL R-2.01

NOTES:
1) 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. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
2) ALL SIGN LOCATIONS AND ALL PAVEMENT MARKINGS SHALL BE APPROVED BY HOWARD COUNTY TRAFFIC PRIOR TO ANY SIGNING OR PAVEMENT MARKING INSTALLATIONS.
3) HOWARD COUNTY TRAFFIC WILL FIELD DETERMINE ALL PAVEMENT MARKINGS, CONTACT TRAFFIC AT 410-313-5752. STARTING AND ENDING POINTS SHOWN ON THESE PLANS ARE APPROXIMATE.

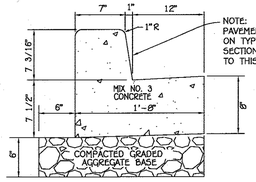
CURVE TABLE							
CURVE #	ROAD NAME	STATION	RADIUS	LENGTH	DELTA	TANGENT	CHORD
C1	TWIN FAWN TRAIL	STA 13+52.33 TO STA 14+46.43	60.00'	94.09'	095°29'35"	84.74'	S 66°11'54" W
C2	TWIN FAWN TRAIL	STA 19+59.71 TO STA 20+69.06	1100.00'	109.35'	005°12'31"	109.31'	N 71°43'22" W



CONCRETE CURB & GUTTER TRANSITION
NO SCALE

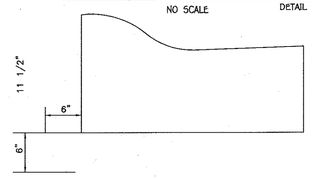


CONCRETE EDGING
NO SCALE

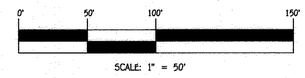


NOTE: PAVEMENT WIDTH INDICATED ON TYPICAL STREET SECTIONS TO BE MEASURED TO THIS POINT (FLOW LINE)

STD. 7" CONC. CURB AND GUTTER
NO SCALE DETAIL R-3.01



MODIFIED COMBINATION CURB AND GUTTER
NO SCALE DETAIL R-3.01

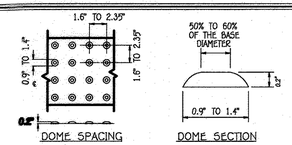


SCALE: 1" = 50'

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/15.

FRANK JOHN MANALANSAN II — 11/5/15 DATE

STATE OF MARYLAND · FRANK JOHN MANALANSAN II · No. 21476 · PROFESSIONAL LAND SURVEYOR



DOME SPACING — DOME SECTION

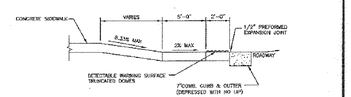
PLACEMENT GUIDELINES
(MATT DETAILS OR OPTIONAL 12"x12" TILE TECH PAVERS(RED))
NO SCALE

WHERE ISLANDS OR MEDIANS ARE LESS THAN 6 FEET WIDE, THE DETECTABLE WARNING SHOULD EXTEND ACROSS THE FULL LENGTH OF THE CUT THROUGH THE ISLAND OR MEDIAN

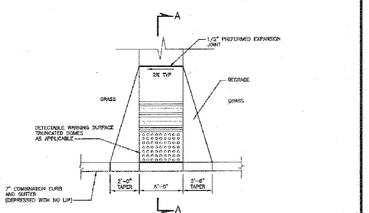
NOTES
1. THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 TO 8 INCHES FROM THE FACE OF CURB.
2. FOR SKEWED APPLICATIONS DETECTABLE WARNING SHALL BE PLACED SUCH THAT THE DOMES CLOSEST TO THE BACK OF CURB ARE NO LESS THAN 0.5" AND NO MORE THAN 3.0" FROM THE BACK OF CURB. TRUNCATED DOME SURFACES SHALL BE FABRICATED TO PROVIDE FULL DOMES ONLY.
3. DETECTABLE WARNING SURFACE SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 611 OF THE SPECIFICATIONS.
4. DETECTABLE WARNING SURFACES ARE REQUIRED AT STREET CROSSING & SIGNALIZED INTERSECTIONS.

DETECTABLE WARNING SURFACE GUIDELINES
STD. DETAIL MD. 655-40

NOTES:
1. ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH AND DEPTH OF RAMP. SEE DETAIL R-4.01.
2. GRADE AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
3. 4'-0" SIDEWALK REQUIRES PASSING AREA (SEE DETAIL R-4.01).

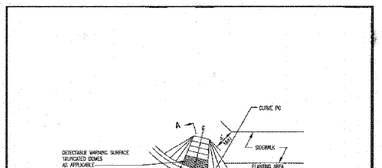


SECTION A-A

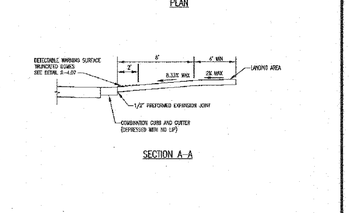


RAMP PERPENDICULAR TO CURB

	Howard County, Maryland Department of Public Works	SIDEWALK RAMP Layout & Grading Perpendicular to Curb	Detail R-4.05
Director			
Bureau of Highways			
Approved 12/7/2015	Chief, Bureau of Engineering		



PLAN



SECTION A-A

MODIFIED

	Howard County, Maryland Department of Public Works	SIDEWALK RAMP Type B Ramp	Detail R-4.03
Director			
Bureau of Highways			
Approved 12/7/2015	Chief, Bureau of Engineering		

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — DATE 12/8/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — DATE 12-21-15

Chief, Development Engineering Division — DATE 12.11.15

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

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD I-17 INLET AND TREE MAINTENANCE EASEMENTS	10/21/16

OWNERS
KENNETH ECKER
LISA MARCELLINO - ECKER
9120 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

MICHAEL R MARCELLINO
9131 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

BONNY A MARCELLINO
THOMAS M MARCELLINO
9141 RIVER HILL RD
LAUREL, MARYLAND 20723-1781
(443)-367-0422

DEVELOPER
LAND DESIGN & DEVELOPMENT
5300 DORSEY HALL DRIVE
SUITE 102
ELLICOTT CITY, MARYLAND 21042
(443)-367-0422

ROAD GEOMETRY AND SIGNAGE PLAN AND DETAILS
FOX WOOD MANOR
LOTS 1 THRU 37
AND OPEN SPACE LOTS 38 THRU 43
PREVIOUS FILE NUMBERS: SDP-05-067, ECP-13-074, SP-14-003, CONTRACT #24-4849-D
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOs.: 405, 429, 468
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 4, 2015
SHEET 24 OF 24 F-15-053