Approved: Department Of Planning And Zoning

Kent Sheubrooks — 8.3.16
Chief, Division Of Land Development — Date

8/11/16
Chief, Development Engineering Division — Date

Approved: Howard County Department Of Public Works

7/27/2016
Chief, Bureau Of Highways — Date

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISED GENERAL NOTE NO. 14	10/9/16

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLANS

ENCLAVE AT TIERNEY FARM

PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

R-ED (RESIDENTIAL: ENVIRONMENTAL DEVELOPMENT)

TAX MAP No. 34 GRID No. 18

PARCEL NOS. 88 & 97

HOWARD COUNTY, MARYLAND

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STREET LIGHT CHART

STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
VINCENT WAY	1+85	17' L	COLONIAL POST-TOP FIXTURE (LED-100) MOUNTED ON A 14' BLACK FIBERGLASS POLE
	3+92	17' L	
	6+19	27' L	
	6+77	18' R	
	9+71	17' R	
	12+42	17' L	
FLUTIE LANE	2+13	17' L	
NORTHROP WAY	0+22	24' R	
VINCENTS WAY	0+48	24' R	
FLUTIE LANE	0+52	29' R	COLONIAL POST-TOP FIXTURE (LED-150) MOUNTED ON A 14' BLACK FIBERGLASS POLE
GUILFORD ROAD	6+87	30' R	
	9+50	45' R	
	11+60	45' R	
	13+00	45' R	

STREET SIGN CHART(2)

STREET NAME	STATION	OFFSET	POSTED SIGN	SIGN CODE
VINCENT WAY	0+71	28' L	STOP	R1-1
	1+37	17' R	SPEED LIMIT 25 MPH	R2-1
	6+04	18' R	STOP (1)	R1-1
	6+91	19' L	STOP (1)	R1-1
FLUTIE LANE	0+71	21' L	STOP	R1-1
	1+69	18' R	SPEED LIMIT 25 MPH	R2-1
	4+00	18' R	STOP (1)	R1-1
	4+80	17' L	STOP (1)	R1-1
NORTHROP WAY	0+26	21' L	STOP	R1-1

1. PROVIDE 'ALL WAY' PANEL BELOW STOP SIGN
2. FOR PROPOSED SIGNAGE ALONG GUILFORD ROAD - SEE SHEET NO.17

GENERAL NOTES (CONTINUED)

30. IN ACCORDANCE WITH SECTION 128.0.A.1(J) OF THE ZONING REGULATIONS, ROOM EXTENSIONS AND BUILDING ADDITIONS BEING DEVELOPED UNDER THE R-ED REGULATIONS MAY PROJECT 10 FEET INTO A REAR SETBACK, ALONG NOT MORE THAN 60% OF THE REAR FACE OF A DWELLING, ON A LOT WHICH ADJOINS OPEN SPACE ALONG THE MAJORITY OF THE REAR LOT LINE.
31. TRAFFIC CONTROL DEVICES:
   (a) THE R1-1 (STOP) SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
   (b) THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
   (c) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MDMUTCD).
   (d) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED (QUICK PUNCH), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE (12 GAUGE) 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN ONE QUICK PUNCH HOLE ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
32. A NOISE STUDY IS NOT REQUIRED BECAUSE THE PROJECT DOES NOT FALL WITHIN THE GUIDELINES OF DESIGN MANUAL, VOLUME III, ROADS AND BRIDGES, SECTION 9.2, F.2.
33. OPEN SPACE LOTS 51 AND 52 WILL BE OWNED BY THE ENCLAVE AT TIERNEY FARM HOMEOWNERS ASSOCIATION, INC.
34. OPEN SPACE LOTS 53 AND 54 WILL BE OWNED BY THE DEPARTMENT OF RECREATION AND PARKS.
35. THE PLAN IS SUBJECT TO WP-15-069 WHICH ON DECEMBER 8, 2014, THE PLANNING DIRECTOR APPROVED A REQUEST TO WAIVE SECTION 16.1205(a)(7)(ii)(10) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH REQUIRES THE RETENTION OF STATE CHAMPION, TREES 75% OF THE DIAMETER OF STATE CHAMPION TREES, AND TREES 30" IN DIAMETER OR LARGER.

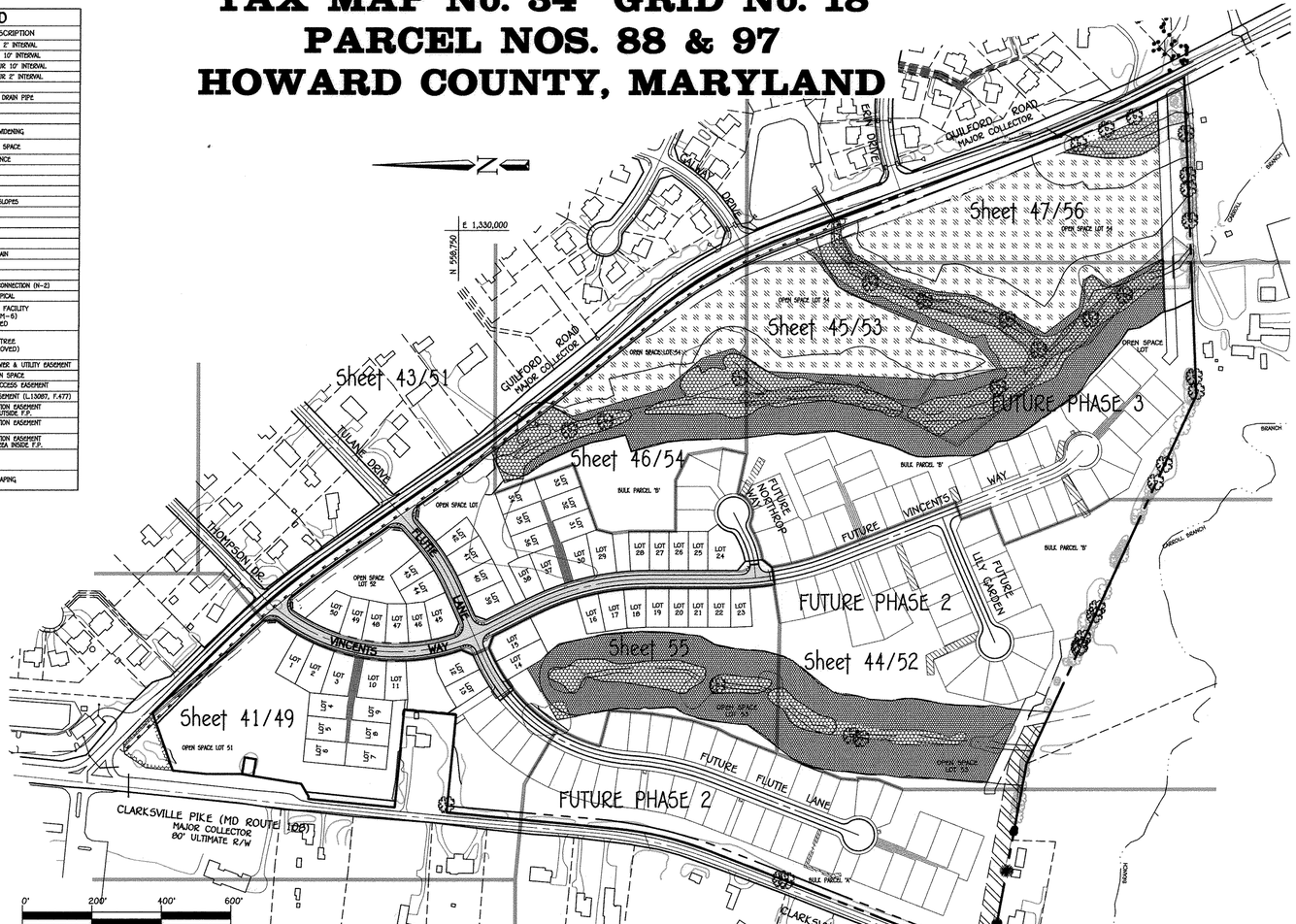
   APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:

   1. APPROVAL OF SECTION 16.1205(a)(7)(ii)(10) IS FOR THE REMOVAL OF FOURTEEN (14) SPECIMEN TREES IDENTIFIED AS SPECIMEN TREES 2355, 2356, 2357, 2358, 2362, 2363, 2364, 2366, 2367, 2368, 2390, 2391, 2392, 2393 ON THE VARIANCE PETITION EXHIBIT AND PRELIMINARY EQUIVALENT SKETCH PLAN. NO OTHER SPECIMEN TREES MAY BE REMOVED. REMOVAL OF THE FOURTEEN SPECIMEN TREES WILL REQUIRE MITIGATION OF 3"-4" CALIPER TREES. THE MITIGATED TREES SHALL SHALL BE NATIVE SPECIES AND BE SHOWN AS PART OF THE LANDSCAPE PLAN WITH THE FINAL PLAN, AND SHALL BE BONDED WITH THE LANDSCAPE OBLIGATION.
36. THE PRIVATE USE-IN-COMMON DRIVEWAY ACCESS EASEMENTS AND MAINTENANCE AGREEMENTS FOR SHARED DRIVEWAYS 4 THRU 9 AND 31 THRU 36 ARE RECORDED SIMULTANEOUSLY WITH THIS PLAT.
37. DECLARATION OF COVENANTS AND RESTRICTIONS FOR THE ENCLAVE AT TIERNEY FARM HOMEOWNERS ASSOCIATION, INC. ARE RECORDED SIMULTANEOUSLY WITH THE FINAL PLAT.
38. 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.
39. THE LOTS CREATED BY THIS SUBDIVISION PLAT ARE SUBJECT TO A FEE OR A ASSESSMENT TO COVER OR DEFRAY ALL OR PART OF THE DEVELOPERS COST OF THE INSTALLATION OF THE WATER AND SEWER FACILITIES, PURSUANT TO THE HOWARD COUNTY CODE SECTION 18.112. THIS FEE OR ASSESSMENT, WHICH RUNS WITH THE LAND, IS A CONTRACTUAL OBLIGATION BETWEEN THE DEVELOPER AND EACH OWNER OF THIS PROPERTY AND IS NOT IN ANY WAY A FEE OR ASSESSMENT OF HOWARD COUNTY.
40. THE NATURAL RESOURCE INVENTORY/FOREST STAND DELINEATION PLAN FOR THE ENCLAVE AT TIERNEY FARM WAS PREPARED BY ECOTONE, INC. ON JUNE 3, 2014 AND REVISED ON NOVEMBER 24, 2014.
41. PLAN SUBJECT TO PLANNING BOARD CASE NO. 409 APPROVED BY THE HOWARD COUNTY PLANNING BOARD ON JANUARY 28, 2015.
42. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS. THE DISTURBANCE TO THE ENVIRONMENTAL FEATURES FOR THE PUBLIC WATER AND SEWER CONNECTION TO REPAIR ESSENTIAL DISTURBANCE BY DPZ IN ACCORDANCE WITH SECTION 16.116(c) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

GENERAL NOTES CONTINUED - SEE SHEET 2

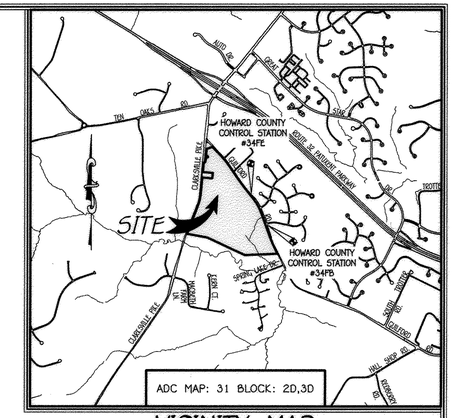
LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
X:362.2	SPOT ELEVATION
10"RCP	PROPOSED STORM DRAIN PIPE
8"S	PROPOSED SEWER
8"W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT 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)
DW	DRYWELL (M-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BGE EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	PERIMETER LANDSCAPING



LOCATION MAP

SCALE: 1" = 200'



VICINITY MAP

SCALE: 1" = 2000'

GENERAL NOTES

1. THE SUBJECT PROPERTY IS ZONED R-ED PER 10/06/2013 COMPREHENSIVE ZONING PLAN.
2. THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. 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 = 89.90 AC.±
   b. AREA OF FLOODPLAIN = 3.05 AC.±
   c. AREA OF 25% OR GREATER SLOPES = 0.0 AC.±
   d. NET AREA OF TRACT = 85.85 AC.±
   e. AREA OF PROPOSED ROAD R/W = (PHASE 1) = 5.451 AC.±
   f. AREA OF PROPOSED BUILDABLE LOTS = (PHASE 1) = 8.906 AC.±
   g. AREA OF PROPOSED BULK PARCELS (PHASE 1) = 37.792 AC.±
   h. AREA OF OPEN SPACE LOTS (PHASE 1) = 36.751 AC.±
   i. NUMBER OF BUILDABLE LOTS (PHASE 1) = 50 LOTS
   j. NUMBER OF BULK PARCELS (PHASE 1) = 2 PARCELS
   k. NUMBER OF OPEN SPACE LOTS (PHASE 1) = 4 LOTS
4. SUBDIVISION IS SUBJECT TO SECTION 104.0.F. OF THE ZONING REGULATIONS. AT LEAST 10% OF THE DWELLING UNITS SHALL BE MODERATE INCOME HOUSING UNITS (M.I.H.U.) OR AN ALTERNATIVE COMPLIANCE WILL BE PROVIDED. THE DEVELOPER SHALL EXECUTE A M.I.H.U. AGREEMENT WITH THE DEPARTMENT OF HOUSING TO INDICATE HOW THE M.I.H.U. REQUIREMENT WILL BE MET. THE M.I.H.U. AGREEMENT AND COVENANTS WILL BE RECORDED SIMULTANEOUSLY WITH THIS PLAT IN THE LAND RECORDS OFFICE OF HOWARD COUNTY, MARYLAND. THIS DEVELOPMENT WILL MEET M.I.H.U. ALTERNATIVE COMPLIANCE BY A PAYMENT OF A FEE-IN-LIEU TO THE DEPARTMENT OF HOUSING FOR EACH REQUIRED UNIT.
   MODERATE INCOME HOUSING UNIT (M.I.H.U.) TABULATION:
   a. M.I.H.U. REQUIRED (PHASE 1) = (50 LOTS X 10%) = 5 M.I.H.U.
   b. M.I.H.U. PROPOSED = DEVELOPER WILL PURSUE ALTERNATIVE COMPLIANCE BY PAYING A FEE-IN-LIEU TO THE HOWARD COUNTY HOUSING DEPARTMENT FOR THE UNITS REQUIRED BY THE DEVELOPMENT.
   c. AN EXECUTED M.I.H.U. AGREEMENT WITH THE HOWARD COUNTY HOUSING DEPARTMENT HAS BEEN COMPLETED.
5. EXISTING UTILITIES ARE BASED ON CONTR. 44-3483-D, AND CONTR. 34-4898-D.
6. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER AND PUBLIC SEWER WILL BE UTILIZED FOR THIS PROJECT.
7. BOUNDARY INFORMATION IS BASED ON A SURVEY PERFORMED ON OR ABOUT FEBRUARY, 2014 BY FISHER, COLLINS & CARTER, INC.
8. TOPOGRAPHY INFORMATION SHOWN IS TAKEN FROM HARFORD AERIAL CONTOUR MAPPING FLOWN ON DECEMBER 5, 2013 AND SUPPLEMENTED WITH A FIELD RUN TOPOGRAPHIC SURVEY PERFORMED ON OR ABOUT APRIL 2014 BY FISHER, COLLINS & CARTER, INC.
9. STORMWATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. WE ARE PROVIDING STORMWATER MANAGEMENT FOR PHASE 1, BY THE USE OF 5 AREAS OF (N-2) NON-ROOFTOP DISCONNECTION CREDIT, 4 (M-6) MICRO-BIORETENTION FACILITIES AND 7 (F-6) BIO-RETENTION FACILITIES TO MEET AND EXCEED THE REQUIRED ESD VOLUME. SEE CHART SHEET NO. 37 FOR OWNER AND MAINTENANCE OBLIGATIONS.
10. THE TRAFFIC STUDY DATED SEPTEMBER, 2014 FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP AND APPROVED ON MARCH 24, 2015.
11. THE WETLAND DELINEATION REPORT FOR THE ENCLAVE AT TIERNEY FARM WAS PREPARED BY ECOTONE INC. ON JUNE 3, 2014.
12. 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 BEYOND THE PIPESTEM LOT DRIVEWAY.
13. COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO:

CONTROL STATION NO. 34FB	NORTH 557,439.9130 FEET EAST 1,330,191.3224 FEET	ELEV. 406.148
CONTROL STATION NO. 34FE	NORTH 558,339.6005 FEET EAST 1,329,709.0245 FEET	ELEV. 431.118

14. THE FOREST CONSERVATION EASEMENT AREAS WITHIN THIS SUBDIVISION 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. THE FOREST CONSERVATION ACT REQUIREMENTS FOR THE ENCLAVE AT TIERNEY FARM SUBDIVISION WILL BE MET THROUGH THE ON-SITE RETENTION OF 6.79 (4.96 CREDITED) ACRES OF FOREST, AND ON-SITE PLANTING OF 10.44 ACRES IN COMBINED FCE#1 AND FCE#2. THE ADDITIONAL 11.78 ACRES OF ON-SITE PLANTING (FCE#3 & #4) WILL BE A FOREST BANK. NO SURETY IS REQUIRED FOR ON-SITE RETENTION. A SEPARATE DEVELOPERS AGREEMENT FOR THE ENCLAVE AT TIERNEY FARM (F-15-110) IS PROVIDED FOR THE TOTAL AREA OF FCE #1 AND FCE #2 REQUIRING A SURETY IN THE AMOUNT OF $227,883.00 (BASED ON 10.44 ACRES X 43,560 SQ. FT./ACRE X $0.50/SQ. FT.). A SEPARATE DEVELOPERS AGREEMENT FOR THE TREE BANK IS PROVIDED FOR THE TOTAL AREA OF FCE #3 AND FCE #4 REQUIRING A SURETY IN THE AMOUNT OF $294,962.00 (BASED ON 11.78 ACRES X 43,560 SQ. FT./ACRE X $0.50/SQ. FT.)
15. NO CEMETERIES EXIST ON THIS SITE BASED ON A VISUAL SITE VISIT AND BASED ON A EXAMINATION OF THE HOWARD COUNTY CEMETERY INVENTORY MAP.
16. SITE IS NOT ADJACENT TO A SCENIC ROAD.
17. THE 100 YEAR FLOODPLAIN SHOWN ON THIS PLAN WAS PREPARED BY FISHER, COLLINS AND CARTER, INC AND THE 100 YEAR FLOODPLAIN STUDY AND COMPUTATIONS REPORT, DATED NOVEMBER 20, 2014 AND APPROVED ON MARCH 24, 2015.
18. THE EXISTING STRUCTURE ON LOTS 14 AND 15 WILL BE REMOVED. ALL EXISTING BUILDINGS SHALL BE REMOVED PRIOR TO FINAL PLAT SIGNATURE. ANY WELLS AND SEPTIC SYSTEMS SERVING THE HOUSE OR OTHERWISE ON THE LOTS MUST BE PROPERLY ABANDONED WITH NOTIFICATION SUBMITTED TO THE HEALTH DEPARTMENT PRIOR TO HEALTH SIGNATURE OF THE FINAL PLAT.
19. ALL LOT/PARCEL AREAS ARE MORE OR LESS.
20. DISTANCES SHOWN ARE BASED ON SURVEYED MEASUREMENT AND NOT REDUCED TO NAD '83 GRID.
21. 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 - 16 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.
22. ARTICLES OF INCORPORATION FOR THE ENCLAVE AT TIERNEY FARM HOMEOWNERS ASSOCIATION, INC. WILL BE FILED WITH THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION PRIOR TO RECORDATION OF THE FINAL PLAT.
23. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
24. A PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON JUNE 26, 2014 IN ACCORDANCE WITH SECTION 16.127 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
25. THE SWM FACILITIES LOCATED ON H.O.A. OPEN SPACE LOTS 51 AND 52 WILL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
26. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE LANDSCAPE SURETY FOR THE REQUIRED PERIMETER LANDSCAPING WILL BE POSTED AS PART OF THE DEVELOPERS AGREEMENT FOR THIS FINAL PLAN, F-15-110, IN THE AMOUNT OF $67,110 BASED ON (153) SHADE TREES @ $300/EVERGREEN TREE, 139 EVERGREEN TREES @ $150/EVERGREEN TREE, AND 12 SHRUBS @ $50/SHRUB. THE LANDSCAPING REQUIRED FOR THE SCREENING OF THE USE-IN-COMMON DRIVEWAY FROM THE ADJOINING LOTS WILL BE COMPLETED AS PART OF THE SDP REQUIREMENT.
27. A PRIVATE RANGE OF ADDRESS SIGN SHALL BE PROVIDED FOR LOTS 4 - 9 AND LOTS 31 - 36. THIS SIGN SHALL BE INSTALLED WHERE THE USE-IN-COMMON DRIVEWAY INTERSECTS VINCENTS WAY. 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. THERE SHALL BE AN ADDRESS SIGN AT THE POINT WHERE EACH INDIVIDUAL DRIVEWAY INTERSECTS WITH THE USE-IN-COMMON DRIVEWAY.
28. 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 OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
29. PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS: ECP-15-005, PB CASE NO. 409, SP-05-006 AND WP-15-069.

GENERAL NOTES CONTINUED THIS SHEET

OPEN SPACE TABULATION SUMMARY

Open Space Tabulation:
a. Open Space Required:
   1). Total Project Open Space Required = 44.45 Acres (88.90 Acres x 50%)
   2). Total Open Space Required For Phase I = 14.82 Acres (44.45 Acres x 50 Lots/150 Lots)
   3). Percentage Of Open Space Required (Phase I) = 33% (50 Lots (Phase I)/150 Lots (Phases 1, II, III)
b. Open Space Provided (Phase I) = 36.751 Acres (Lot 51 + Lot 52 + Lot 53 + Lot 54) (4.070 Ac. + 0.989 Ac. + 7.469 Ac. + 24.223 Ac.)
   1). Percentage Of Open Space Required (Phase I) = 82% (36.751 Ac./44.45 Ac.)

Recreational Open Space Tabulation:
a. Total Project Recreational Open Space Required (Phase I, II, III) = 45,000 Sq. Ft.
   1). Single Family Detached (150 Units x 300 Sq. Ft./Unit)
b. Recreational Open Space Provided (Open Space Lot 51) = 48,682 Sq. Ft.

SITE ANALYSIS DATA CHART

A. TOTAL AREA OF THIS SUBMISSION = 88.90 AC.±.
B. LIMIT OF DISTURBED AREA = 62.63 Ac.±
C. PRESENT ZONING DESIGNATION = R-ED.
D. TOTAL PROJECT NUMBER OF UNITS PROPOSED: 150 UNITS
E. OPEN SPACE TABULATION SEE TABULATION-SUMMARY THIS SHEET.
F. RECREATIONAL OPEN SPACE SEE TABULATION-SUMMARY THIS SHEET.
H. BUILDING COVERAGE OF SITE: 6.9 AC± OR 7.7%
I. PREVIOUS HOWARD COUNTY FILES: *ECP-15-005, PB CASE NO. 409, SP-05-006 AND WP-15-069*
J. TOTAL AREA OF FLOODPLAIN LOCATED ON SITE = 3.05 AC±
K. TOTAL AREA OF SLOPES IN EXCESS OF 25% = 0.0 AC±
L. NET TRACT AREA = 85.85 AC±
   (TOTAL SITE AREA - FLOODPLAIN - STEEP SLOPES AREA)
   (88.90 Ac - (3.05 Ac + 0.0 Ac)) = 85.85 AC±
M. TOTAL AREA OF WETLANDS (INCLUDING BUFFER) LOCATED ON SITE = 1.1 AC.±
N. TOTAL FOREST = 8.25 Ac.±
O. TOTAL GREEN OPEN AREA = 74.5 Ac.±
P. TOTAL IMPERVIOUS AREA = 14.4 Ac.±
Q. AREA OF ERODIBLE SOILS = 12.0 Ac.±
R. TOTAL PUBLIC ROAD R/W AC (PHASE 1) = 5.45 Ac±
S. TOTAL BUILDABLE LOT AREA (PHASE 1) = 8.906 Ac±

DENSITY TABULATION SUMMARY

A. ALLOWED BUILDABLE LOTS = 171 LOTS
   (NET TRACT ACREAGE X 2 LOTS PER ACRE)
   (GROSS TRACT AREA-FLOODPLAIN AREA-STEEP SLOPES AREA) X 2 LOTS/NET AREA
   (88.90 AC - 3.05 AC - 0.0 AC) X 2 LOTS/NET AREA
   (85.85 AC X 2 LOTS/NET AREA)
B. NUMBER OF BUILDABLE LOTS PROPOSED = 150 LOTS

PHASING CHART

PHASE	NO. OF LOTS	APFO YEAR	REMARKS	FINAL PLAN SUBMISSION
I	50*	2018	*includes 2 allocations for existing parcels	By November 6, 2015
II	70	2019	----	Between July 1, 2016 To December 31, 2016
III	30	2020	----	Between July 1, 2017 To October 31, 2017

NOTE:
FOR GRADING, EROSION AND SEDIMENT CONTROL PHASING - SEE SHEETS 25, 26, 27, 28, 29 AND 30

NOTE: TRAFFIC BEARING SIDEWALK LIMITS ARE SHOWN ON SHEET 38. THE DETAIL IS SHOWN ON SHEET 2.

PROFESSIONAL CERTIFICATION

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

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

Frank M. Manalansan II — 6/27/16
FRANK MANALANSAN II — Date

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

HODDINOTT LLC
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

TITLE SHEET
ENCLAVE AT TIERNEY FARM
PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 1 OF 58

F-15-110

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD GENERAL NOTE NO. 43	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

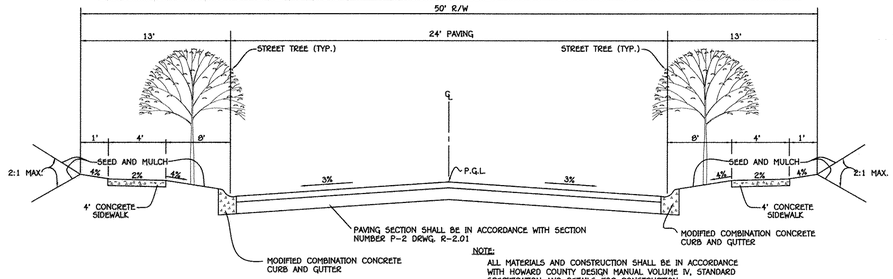
Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

ROADWAY INFORMATION CHART

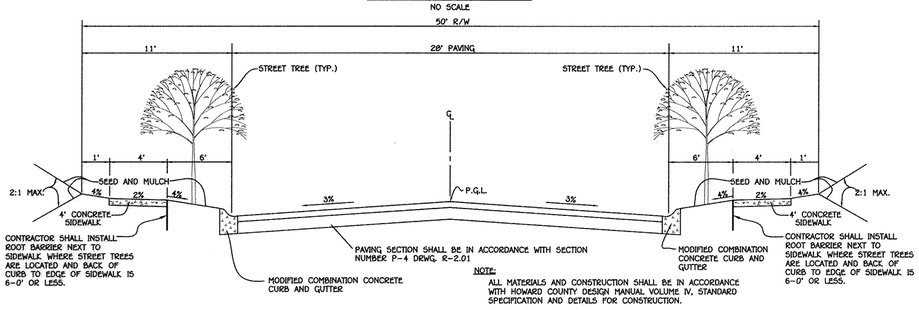
ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS	PAVING SECTION	TYPICAL ROADWAY SECTION
VINCENTS WAY-PHASE 1	MINOR COLLECTOR	35 M.P.H.	R-ED	0+00 TO 6+49	P-4	2
VINCENTS WAY-PHASE 1	PUBLIC ACCESS STREET	25 M.P.H.	R-ED	6+49 TO 15+29	P-2	1
FUTURE VINCENTS WAY-PHASE 2	PUBLIC ACCESS STREET	25 M.P.H.	R-ED	15+29 TO 25+07	P-2	1
FLUTIE LANE-PHASE 1	MINOR COLLECTOR	35 M.P.H.	R-ED	0+00 TO 4+46	P-4	2
FLUTIE LANE-PHASE 1	PUBLIC ACCESS STREET	25 M.P.H.	R-ED	4+46 TO 6+31	P-2	3
FUTURE FLUTIE LANE-PHASE 3	PUBLIC ACCESS STREET	25 M.P.H.	R-ED	6+31 TO 17+48.37	P-2	3
FUTURE NORTHROP WAY-PHASE 2	PUBLIC ACCESS STREET	25 M.P.H.	R-ED	0+00 TO 2+00	P-2	3
FUTURE LILY GARDEN COURT-PHASE 2	PUBLIC ACCESS STREET	25 M.P.H.	R-ED	0+00 TO 3+89	P-2	3



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

TYPICAL ROADWAY SECTION 1
PUBLIC ACCESS STREET

NO SCALE



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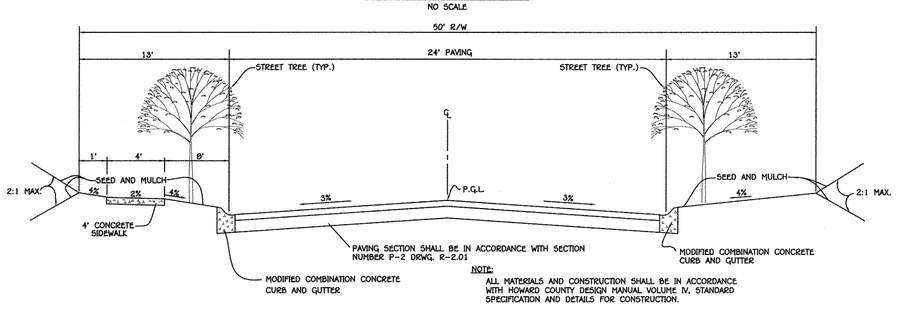
TYPICAL ROADWAY SECTION 2
MINOR COLLECTOR

NO SCALE



NOTE:
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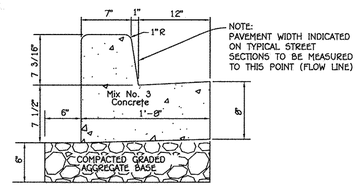
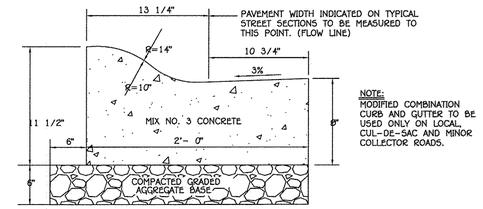
TYPICAL ROADWAY SECTION 3
PUBLIC ACCESS STREET

NO SCALE

NOTE:
SEE SHEETS 3-5 FOR TYPICAL ROAD SECTIONS ALONG GUILFORD ROAD



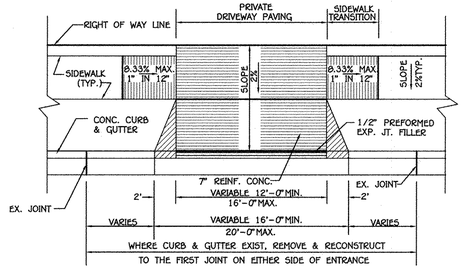
STD. 7" CONC. CURB AND GUTTER
NO SCALE — DETAIL R-3.01



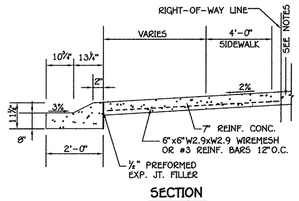
MODIFIED COMBINATION CURB AND GUTTER
NO SCALE — DETAIL R-3.01

DETAIL R-2.01

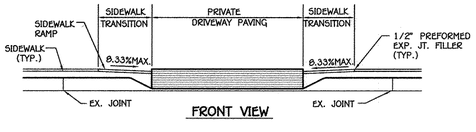
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥7	3 TO <5	5 TO <7	≥7
		PAVEMENT MATERIAL (INCHES)	MIN HMA WITH GAB			HMA WITH CONSTANT GAB		
P-2	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY; LOCAL ROADS: ACCESS PLACE, ACCESS STREET; CUL-DE-SACS: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM. PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM. PG 64-22; LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM. PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0
P-4	MINOR COLLECTORS: NON-RESIDENTIAL; MAJOR COLLECTORS:	HMA SUPERPAVE FINAL SURFACE 12.5 MM. PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE INTERMEDIATE SURFACE 12.5 MM. PG 64-22; LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE BASE 19.0 MM. PG 64-22, LEVEL 2 (LOW ESAL)	4.0	4.0	3.0	6.0	5.0	3.0
		GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0	6.0	6.0



PLAN



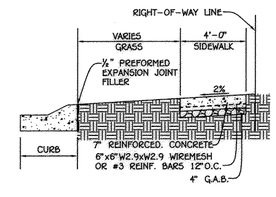
SECTION



FRONT VIEW

RESIDENTIAL DRIVEWAY ENTRANCE CLOSED SECTION W/MODIFIED COMBINATION CURB AND GUTTER AND SIDEWALK
NOT TO SCALE

NOTES
1. ALL RAMPS SHALL HAVE TEXTILE WARNING TEXTURE EXTENDING THE FULL WIDTH AND DEPTH OF THE RAMP.
2. PRIVATE DRIVEWAY PAVING (IF CONC. 1/2" PREFORMED EXP. JOINT FILLER IS TO BE PROVIDED AT THE RIGHT OF WAY LINE.)
3. TIE-IN GRADE OF PRIVATE DRIVEWAY SHALL NOT EXCEED 14%.



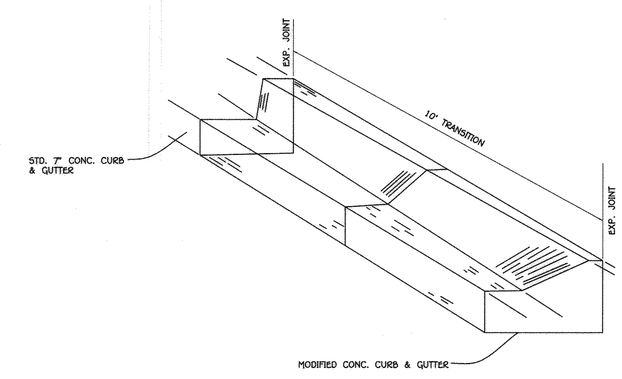
TRAFFIC BEARING SIDEWALK DETAIL
NOT TO SCALE

GENERAL NOTES (CONTINUED FROM SHEET 1)

43. THIS PLAN IS SUBJECT TO A REQUEST FOR ALTERNATIVE COMPLIANCE PETITION WP-16-152 TO SECTION 16.116(a) OF THE SUBDIVISION AND LAND DEVELOPMENT WHICH PROHIBITS GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES WITHIN STREAMS, WETLANDS AND THEIR BUFFERS. THE PLANNING DIRECTOR APPROVED THE REQUEST FOR ALTERNATIVE COMPLIANCE PETITION TO SECTION 16.116(a) ON SEPTEMBER 15, 2016.

APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
1. IN COMPLIANCE WITH THE DEVELOPMENT ENGINEERING DIVISION COMMENTS DATED AUGUST 29, 2016.
   A. APPLICANT SHALL CONVEY THE RUNOFF IN A NON-EROSIVE MANNER.
   B. APPLICANT SHALL PROVIDE BENCHES WHERE THE SLOPE HEIGHT EXCEEDS 20'. CHECK WITH SOIL CONSERVATION DISTRICT FOR FURTHER GUIDANCE.
   C. GRADING SHALL NOT IMPACT THE FLOODPLAIN AND ENVIRONMENTAL FEATURES.
2. IN COMPLIANCE WITH THE HOWARD SOIL CONSERVATION DISTRICT COMMENTS DATED JUNE 28, 2016.
   A. THE USE OF ITS ACCESS BRIDGES SHOULD BE THE LOWEST POSSIBLE TO SUPPORT THE NEEDED CONSTRUCTION VEHICLES TO MINIMIZE DISTURBANCE TO THE ENVIRONMENTAL FEATURES.
3. THE FINAL ROAD CONSTRUCTION DRAWINGS FOR F-15-110 MUST BE REVISED TO MIMIC THE ALTERNATIVE COMPLIANCE PETITION EXHIBIT. THE REVISIONS MUST BE APPROVED AND CHANGES MADE TO THE ORIGINALS, PRIOR TO APPLYING FOR A GRADING PERMIT.
4. ALL REVISIONS TO F-15-110 MUST BE IN COMPLIANCE WITH THE APPROVED MARYLAND DEPARTMENT OF ENVIRONMENT PERMIT (TRACKING NO. 15-NT-3284/201561979).
5. DISTURBANCE TO THE ENVIRONMENTAL FEATURES IS ONLY FOR THE USE OF THE TEMPORARY ACCESS BRIDGES. NO PERMANENT DISTURBANCE OF GRADING SHALL OCCUR WITHIN THE ENVIRONMENTAL FEATURES. ONCE THE TEMPORARY ACCESS BRIDGES ARE ABANDONED THE AREA MUST BE STABILIZED AND RESTORED AS FOREST CONSERVATION EASEMENT IN ACCORDANCE WITH THE FOREST CONSERVATION PLAN.
6. THE ALTERNATIVE COMPLIANCE FILE NUMBER, REQUESTED SECTIONS, DECISION DATE AND CONDITIONS OF APPROVAL SHALL BE INDICATED ON THE FINAL ROAD CONSTRUCTION PLANS AND SUBDIVISION PLAT AS A GENERAL NOTE. THIS PLAN IS ALSO SUBJECT TO A REQUEST FOR ALTERNATIVE COMPLIANCE PETITION TO SECTION 16.129(b)(2) OF THE SUBDIVISION AND LAND DEVELOPMENT WHICH REQUIRED GRADING TO BE PERFORMED UNDER A VALID PERMIT IN ACCORDANCE WITH THE APPROVED FINAL SUBDIVISION PLAN. THE PLANNING DIRECTOR DENIED THE REQUEST FOR ALTERNATIVE COMPLIANCE OF SECTION 16.129(A)(2) OF THE SUBDIVISION AND LAND DEVELOPMENT ON SEPTEMBER 15, 2016.

DENIAL WAS BASED ON THE FOLLOWING REASONS:
1. THE FINAL ROAD CONSTRUCTION PLANS, F-15-110, HAVE BEEN SIGNED BY THE DEPARTMENT OF PLANNING AND ZONING. THEREFORE, A MASS GRADING PLAN WILL NOT BE ACCEPTED. A GRADING PERMIT MUST BE VALID FOR ALL GRADING IN ACCORDANCE WITH THE FINAL ROAD CONSTRUCTION DRAWINGS. A REVISION TO THE FINAL ROAD CONSTRUCTION PLANS WILL BE REQUIRED.
2. A SMALL PORTION OF THE APPROVED FOREST CONSERVATION RETENTION EASEMENT WILL BE IMPACTED BY THE INSTALLATION OF THE TEMPORARY ACCESS BRIDGE. THE APPLICANT MUST REVISE THE FINAL FOREST CONSERVATION PLANS TO REVOKE THE RETENTION EASEMENT TO A REFORESTATION EASEMENT.



CONCRETE CURB & GUTTER TRANSITION
NO SCALE

0' 50' 100' 150'

SCALE: 1" = 50'

ROAD PLAN NOTES AND DETAILS

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

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

FRANK MANALANSAN II. — Date 6/29/16

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
8310 FORREST STREET-SUITE 200
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ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

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ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 2 OF 58

F-15-110

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS	10/9/16

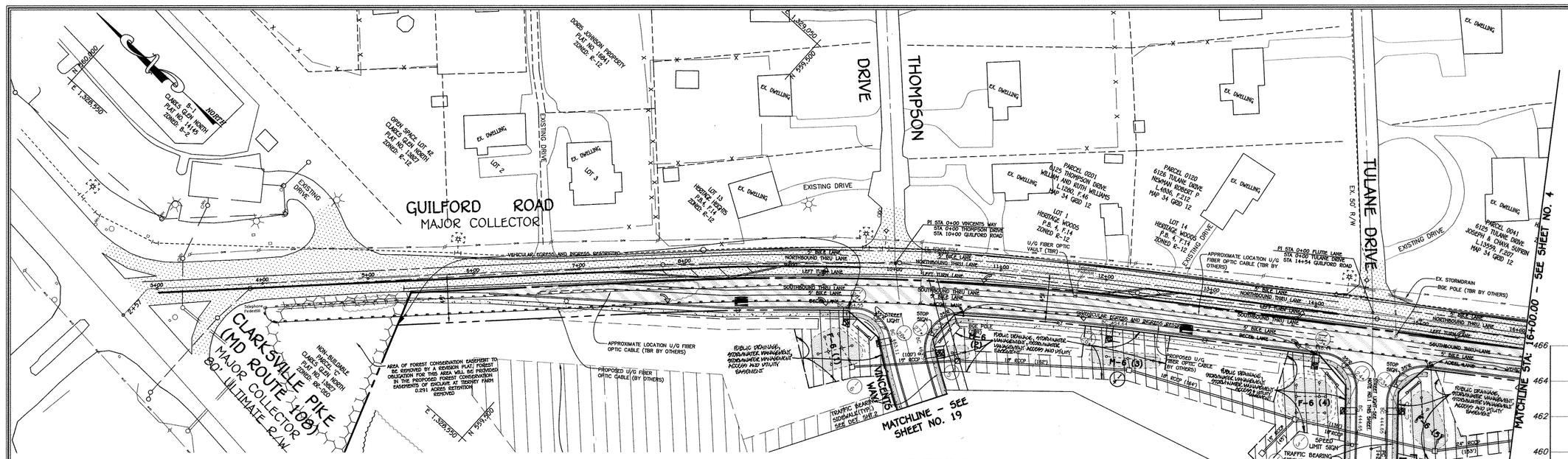
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

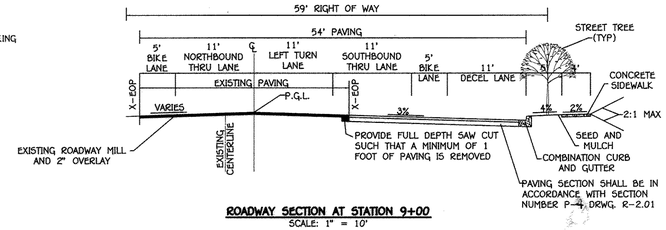
Chief, Development Engineering Division — Date 7/1/16

Approved: Howard County Department Of Public Works

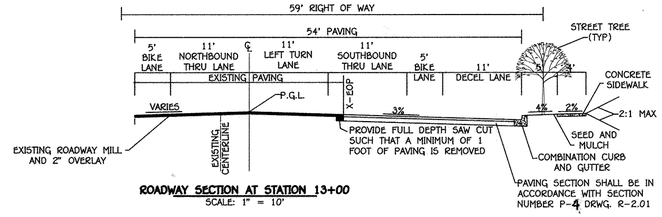
Chief, Bureau Of Highways — Date 7/27/2016



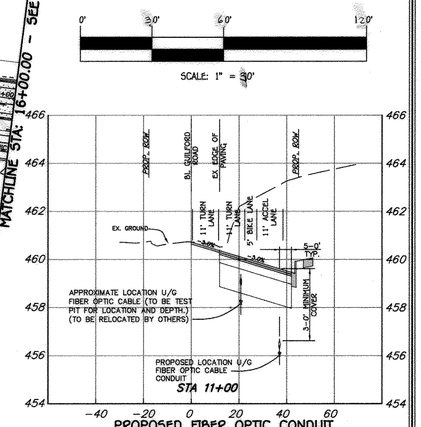
1. FOR STREET LIGHT AND SIGNAGE LOCATIONS- SEE SHEET 1
2. FOR SIGNAGE AND PAVEMENT MARKING PLAN:- SEE SHEET NO. 17



ROADWAY SECTION AT STATION 9+00
SCALE: 1" = 10'

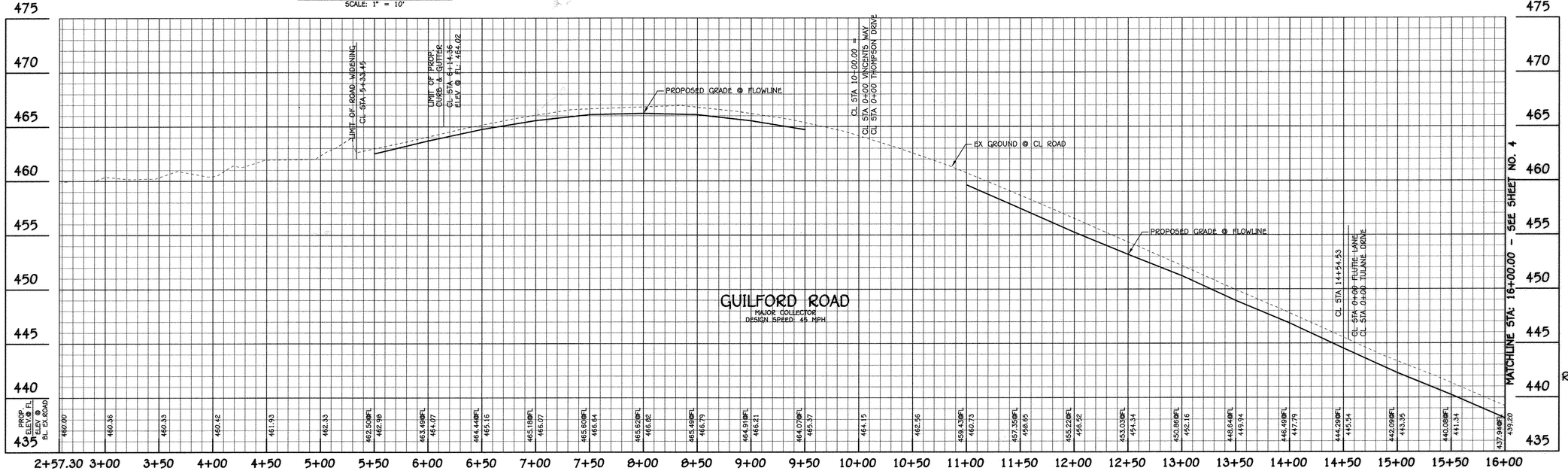


ROADWAY SECTION AT STATION 13+00
SCALE: 1" = 10'



PROPOSED FIBER OPTIC CONDUIT TYPICAL LOCATION(TYP.)

SCALE: 1" = 30'



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

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 CREDIT OPEN SPACE
	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)
DW	DRYWELL (N-1)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE T.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK PCE #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE T.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

ROAD IMPROVEMENT PLAN AND PROFILE
GUILFORD ROAD
STA: 2+57.30 - 16+00

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

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SHEET 3 OF 50

F-15-110

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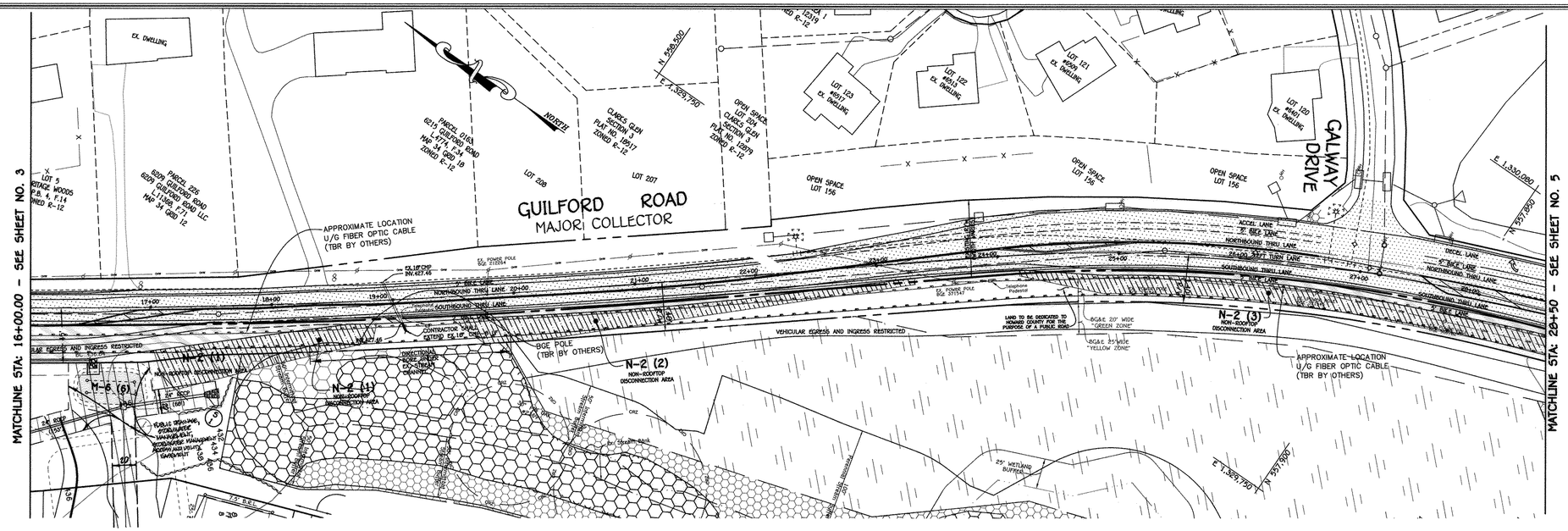

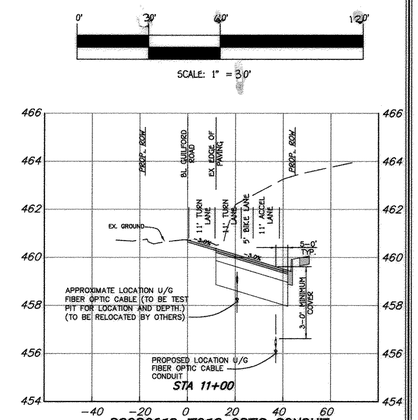

PROPOSED FIBER OPTIC CONDUIT
TYPICAL LOCATION(TYP.)
SCALE: HORIZ: 1" = 30'
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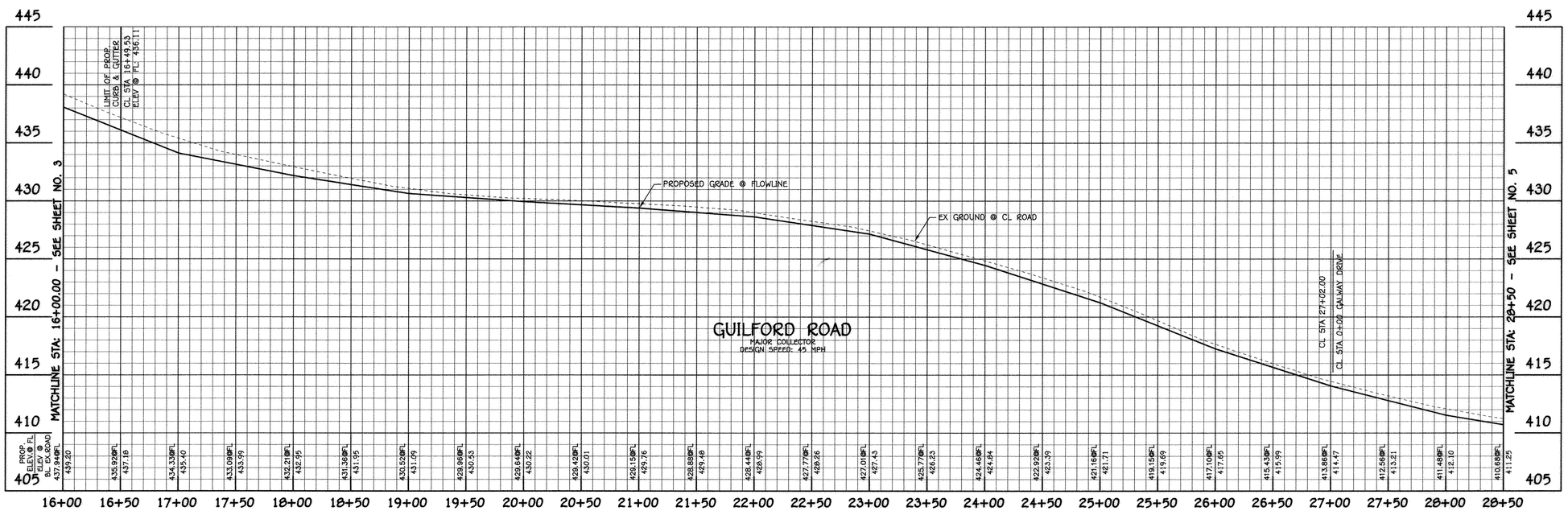

PROFILE
SCALE: HORIZ.: 1"=50'
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	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
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#" S	PROPOSED SEWER
#" W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	LIMIT OF DISTURBANCE
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	25% OR GREATER SLOPES
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ROAD IMPROVEMENT PLAN AND PROFILE
GUILFORD ROAD
STA: 16+00 - 28+55

ENCLAVE AT TIERNEY FARM PHASE 1

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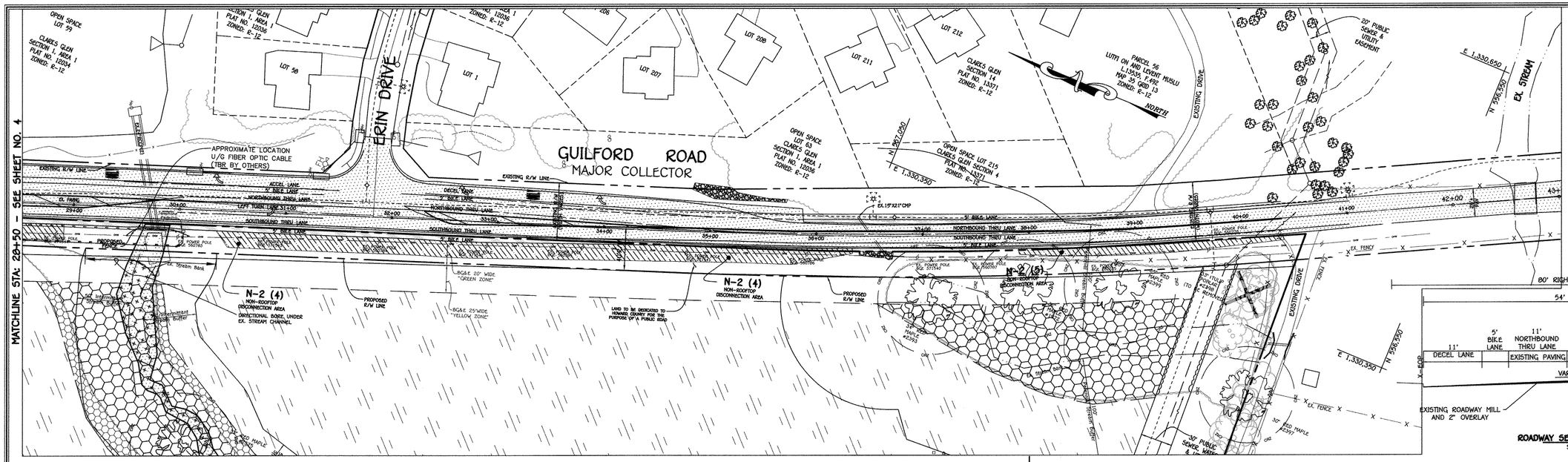
JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017



REVISIONS		
NO.	DESCRIPTION	DATE

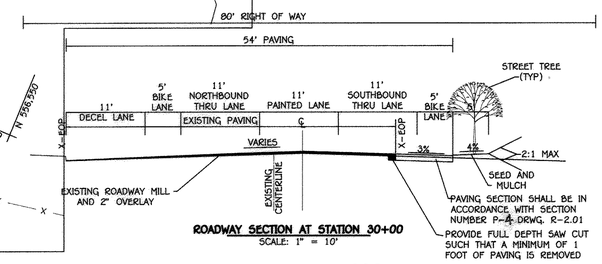
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

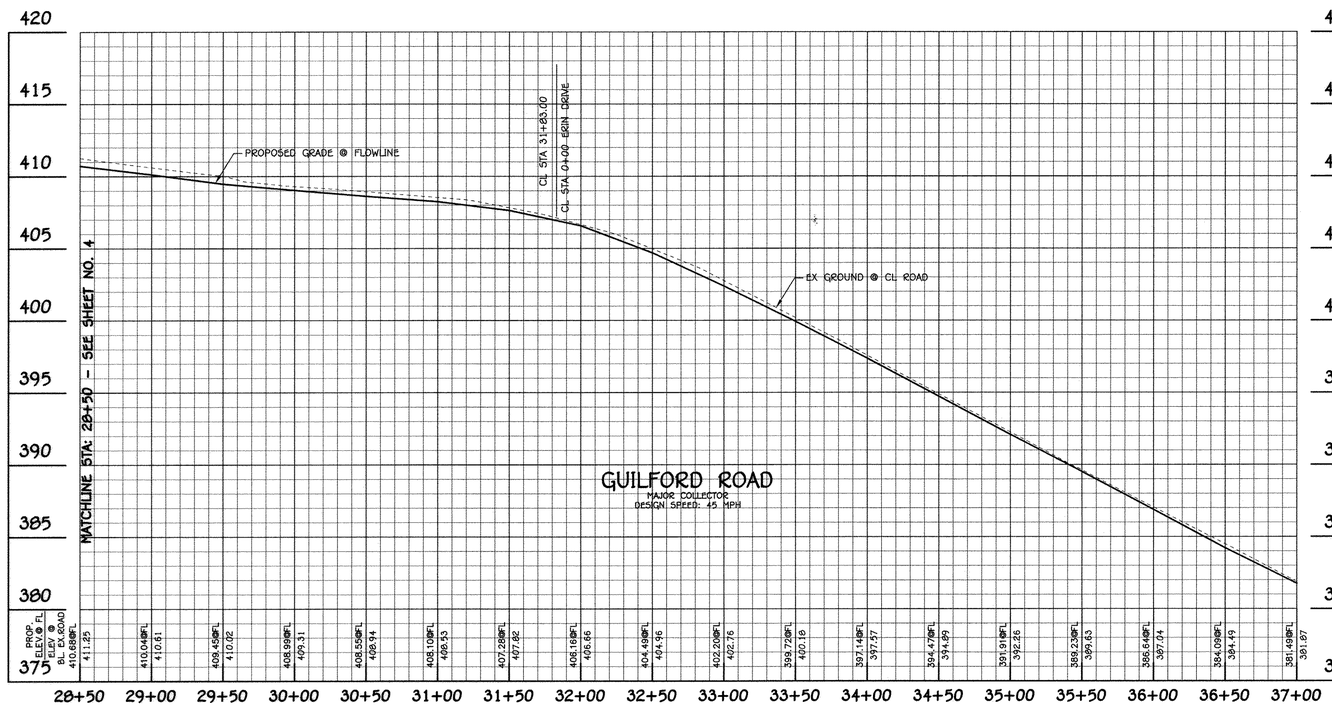
Chief, Developpment Engineering Division — Date 8/1/16

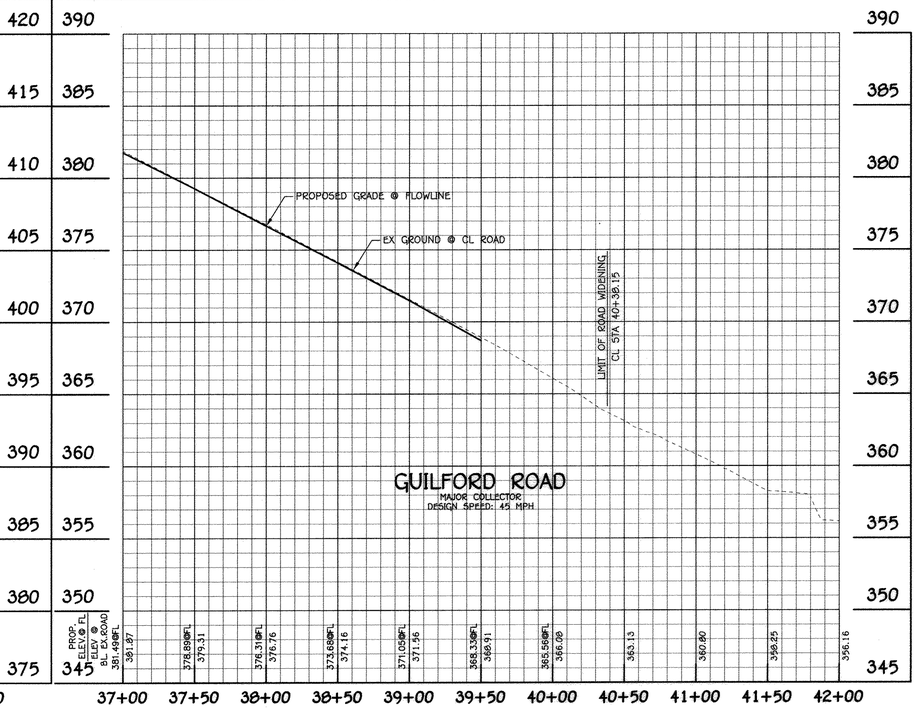
Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016



ROADWAY SECTION AT STATION 30+00
SCALE: 1" = 10'





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

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
X 342.2	SPOT ELEVATION
12"SCP	PROPOSED STORM DRAIN PIPE
PS	PROPOSED SEWER
PW	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
SF	SILT FENCE
	15-25% SLOPES
	25% OR GREATER SLOPES
	"B" SOILS
	"C" SOILS
	ERODABLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
DS	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE T.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK TOT #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE T.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

ROAD IMPROVEMENT PLAN AND PROFILE
GUILFORD ROAD
STA: 28+50 - 42+00

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

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 5 OF 58

F-15-110

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

STATE OF MARYLAND — 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 LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANK MANALANSAN II. — Date 6/29/16

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS
HODDINOTT LLC
8318 FORREST STREET-SUITE 200
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(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

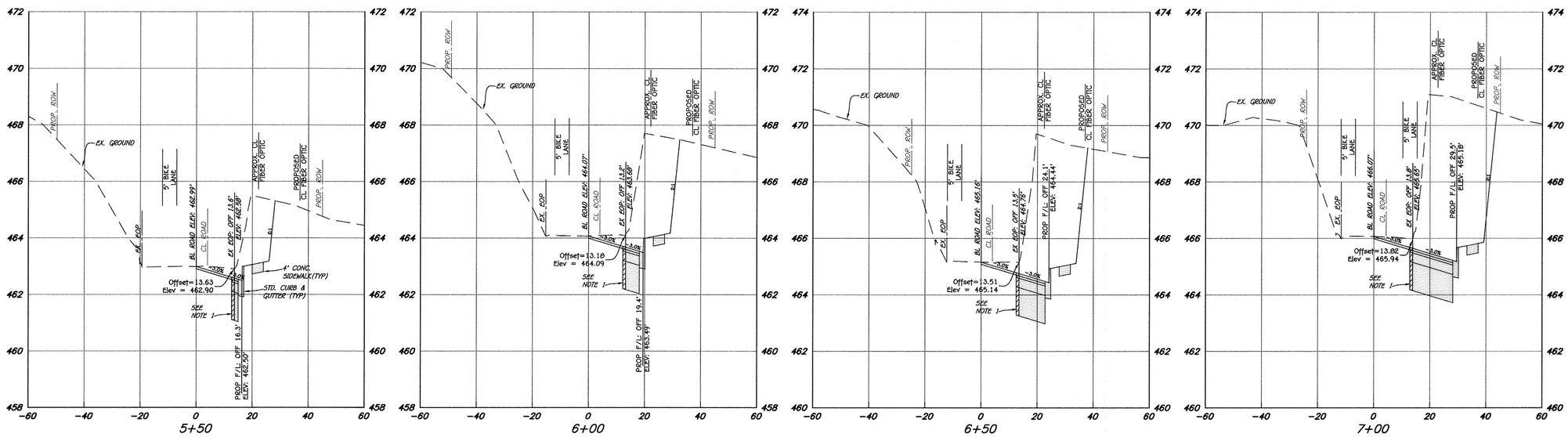
Chief, Development Engineering Division — Date 7/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

FOR ROAD SECTION AND PAVING DETAILS
-SEE SHEETS 3 - 5.

NOTES:
1) CONTRACTOR SHALL PROVIDE FULL DEPTH SAW CUT SUCH THAT A MINIMUM OF 1 FOOT FROM EXISTING EDGE OF PAVING IS REMOVED



0' 20' 40' 80'

SCALE: 1" = 20'

GUILFORD ROAD CROSS-SECTIONS
STA. 5+50 TO STA. 7+00

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

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FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 6 OF 58

F-15-110

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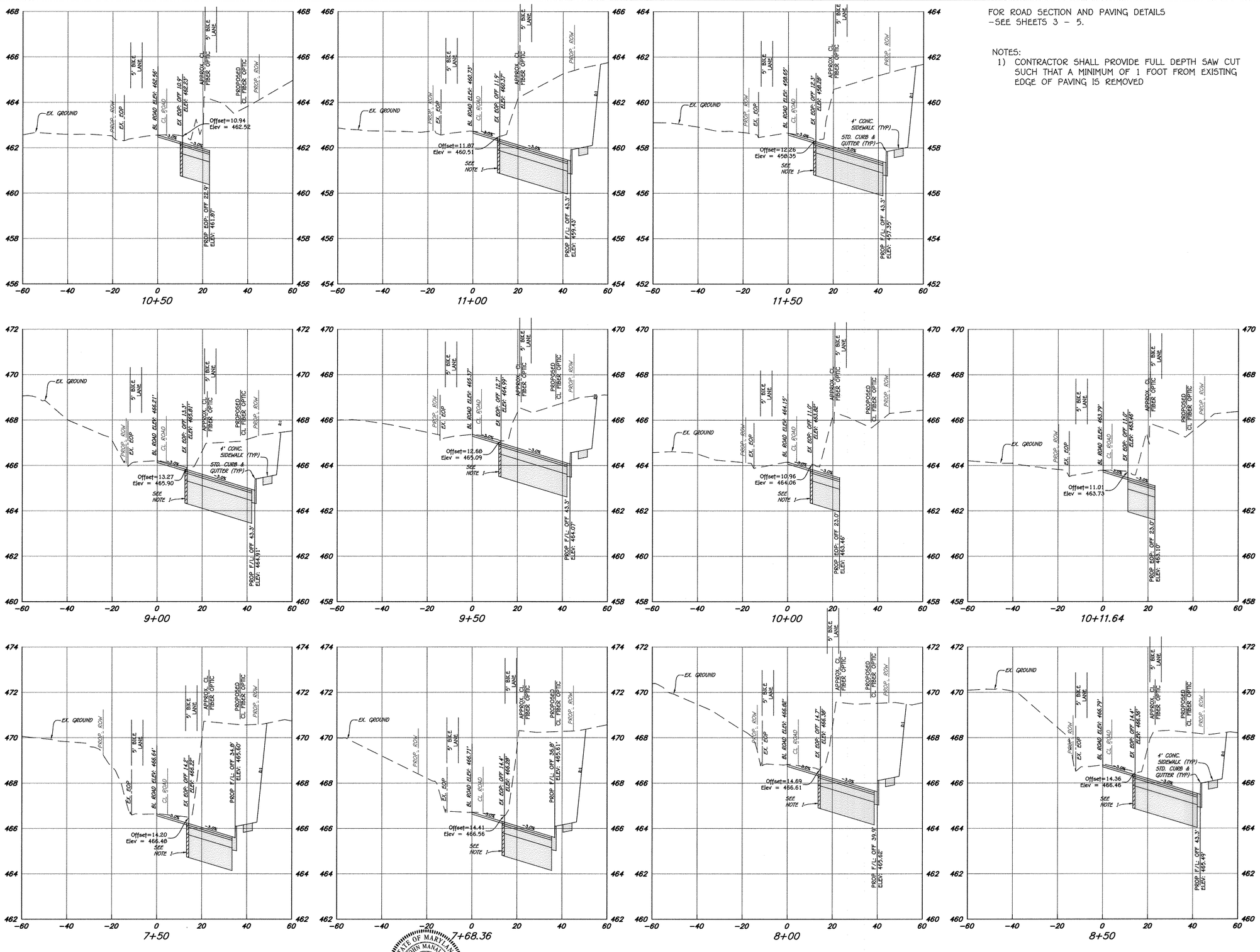

FOR ROAD SECTION AND PAVING DETAILS -SEE SHEETS 3 – 5.

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Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

0' 20' 40' 80'

SCALE: 1" = 20'

GUILFORD ROAD CROSS-SECTIONS
STA. 7+50 TO STA. 11+50

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

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PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 7 OF 58 **F-15-110**

FISHER, COLLINS & CARTER, INC.
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CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

PROFESSIONAL CERTIFICATION 1" = 20'

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Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7/27/2016

FOR ROAD SECTION AND PAVING DETAILS
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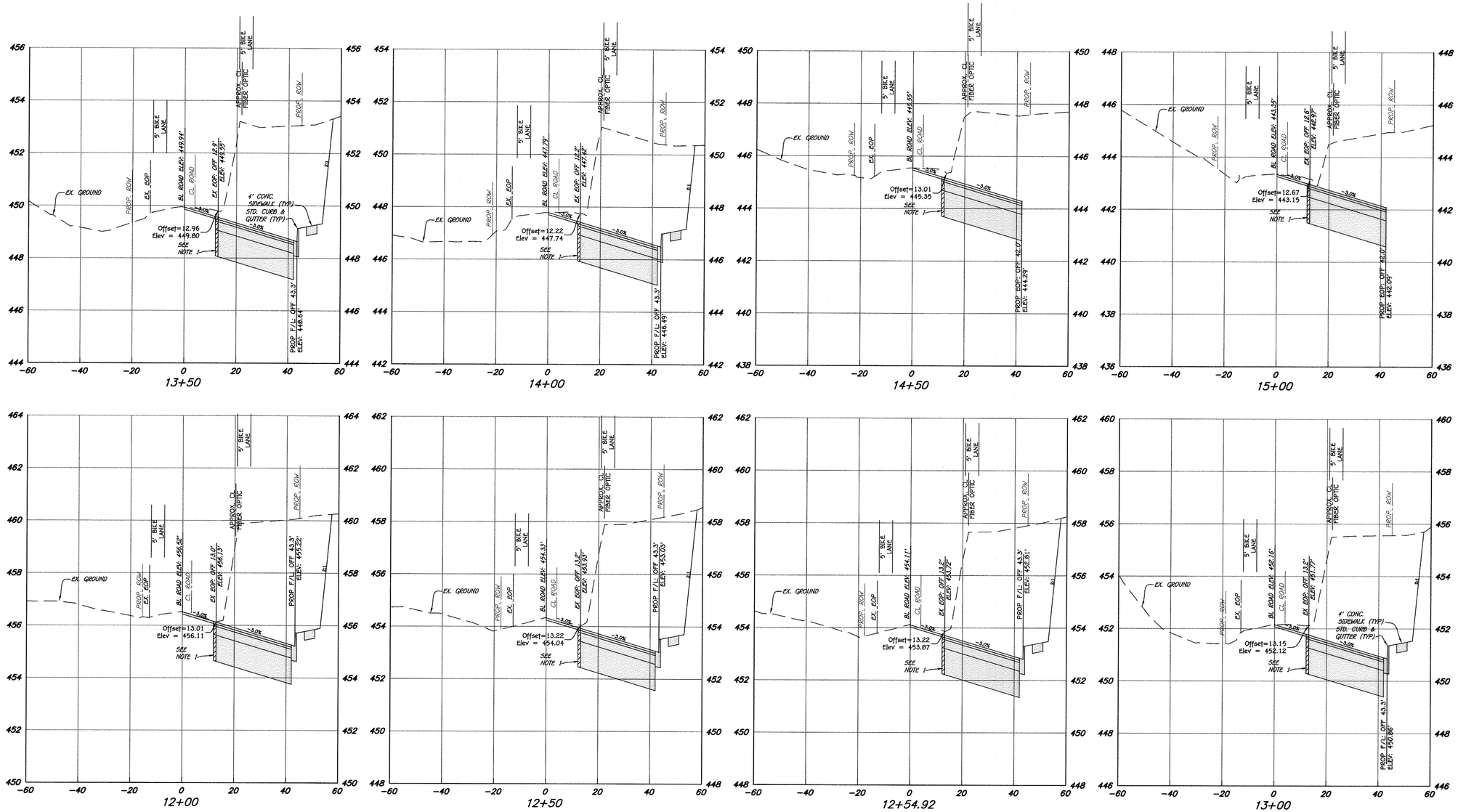
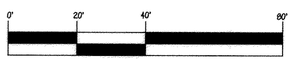


SCALE HORZ. 1" = 20'
VERT. 1" = 2'



SCALE: 1" = 20'

GUILFORD ROAD CROSS-SECTIONS
STA. 12+00 TO STA. 15+00

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 80 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 8 OF 58

F-15-110

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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FRANK JOHN MANALANSAN II — Date: 6/23/16

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REVISIONS		
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Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 8-3-16

Chief, Development Engineering Division — Date: 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7/27/2016

FOR ROAD SECTION AND PAVING DETAILS
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NOTES:
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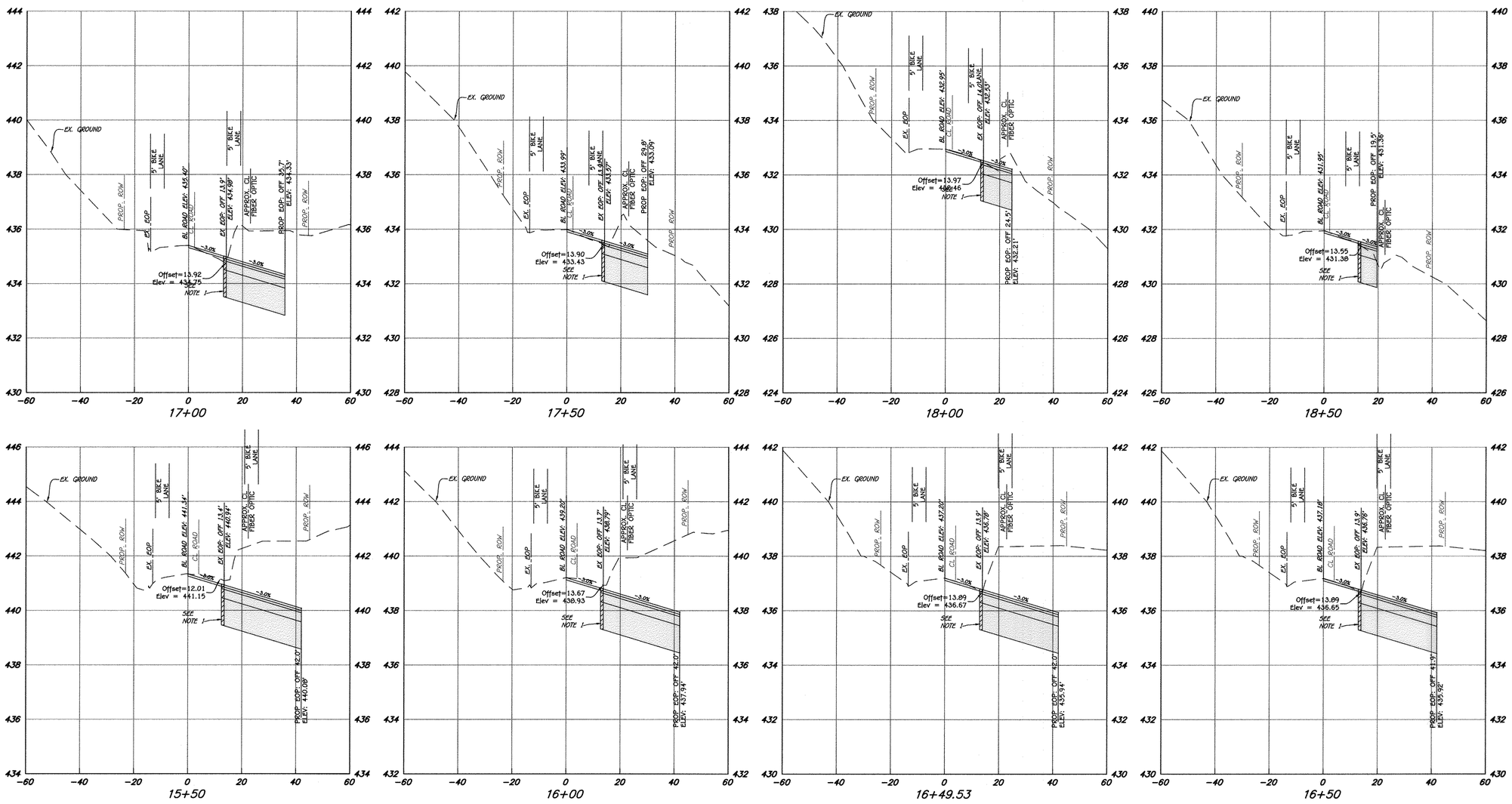
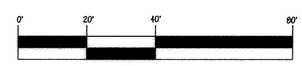


SCALE HORZ. 1" = 20'
VERT. 1" = 2'



GUILFORD ROAD CROSS-SECTIONS
STA. 15+50 TO STA. 18+50

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 9 OF 58

F-15-110

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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FRANK MANALANSAN II — Date: 6/23/16

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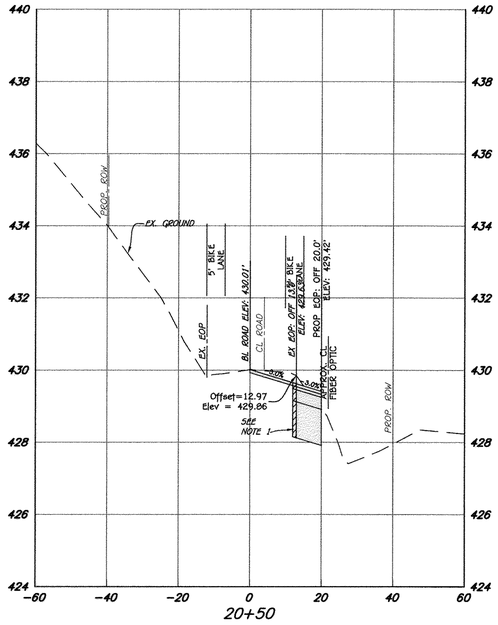

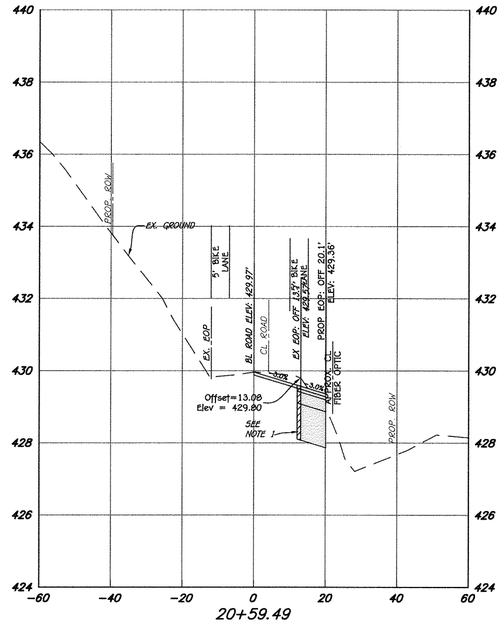

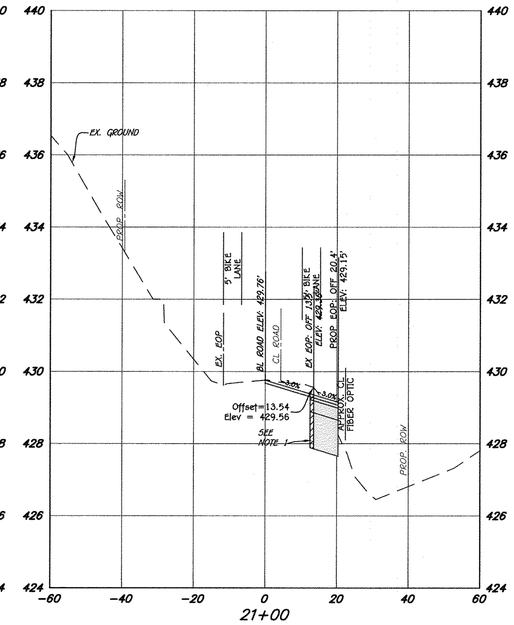

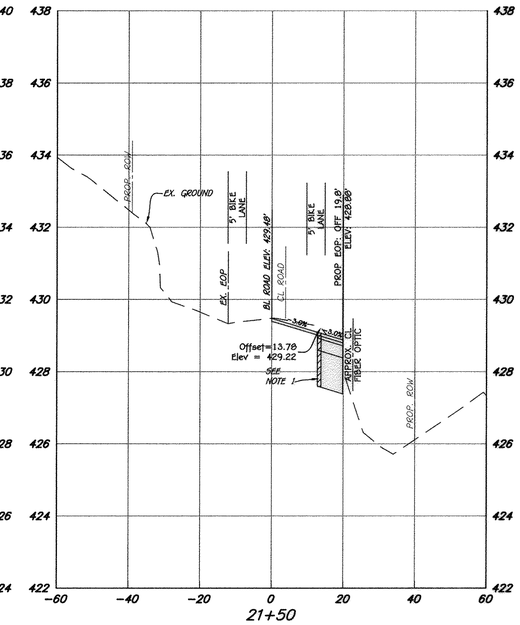

FOR ROAD SECTION AND PAVING DETAILS -SEE SHEETS 3 - 5.

NOTES:

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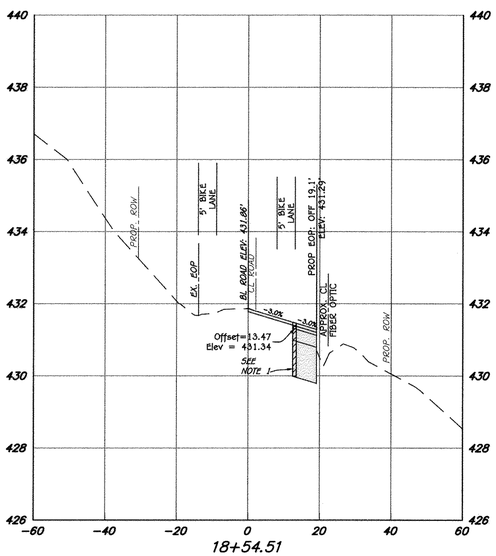

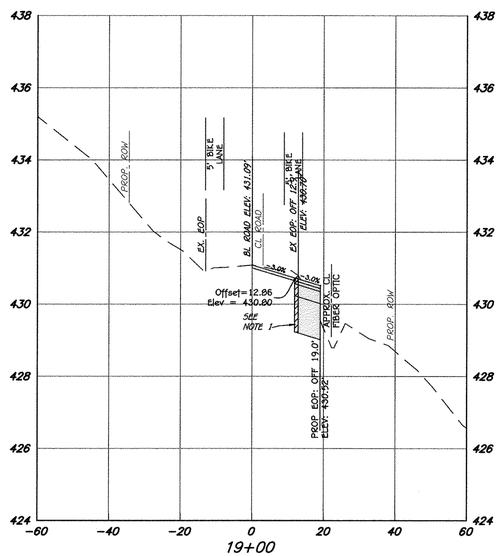

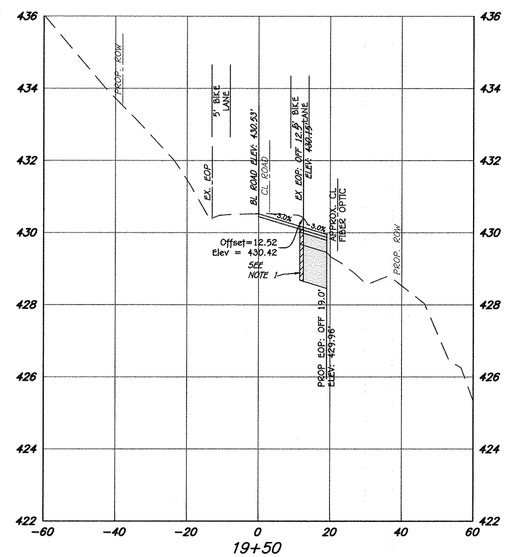

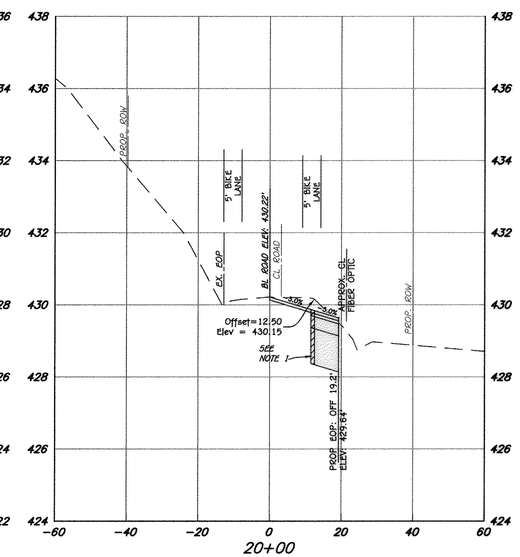

SCALE HORZ. 1" = 20'
VERT. 1" = 2'

0' 20' 40' 80'

SCALE: 1" = 20'

GUILFORD ROAD CROSS-SECTIONS
STA. 18+54.51 TO STA. 21+50

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
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ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 10 OF 58 **F-15-110**

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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STATE OF MARYLAND — FRANK JOHN MANALANSAN II — No. 21476 — PROFESSIONAL LAND SURVEYOR

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FRANK JOHN MANALANSAN II — Date 6/20/16

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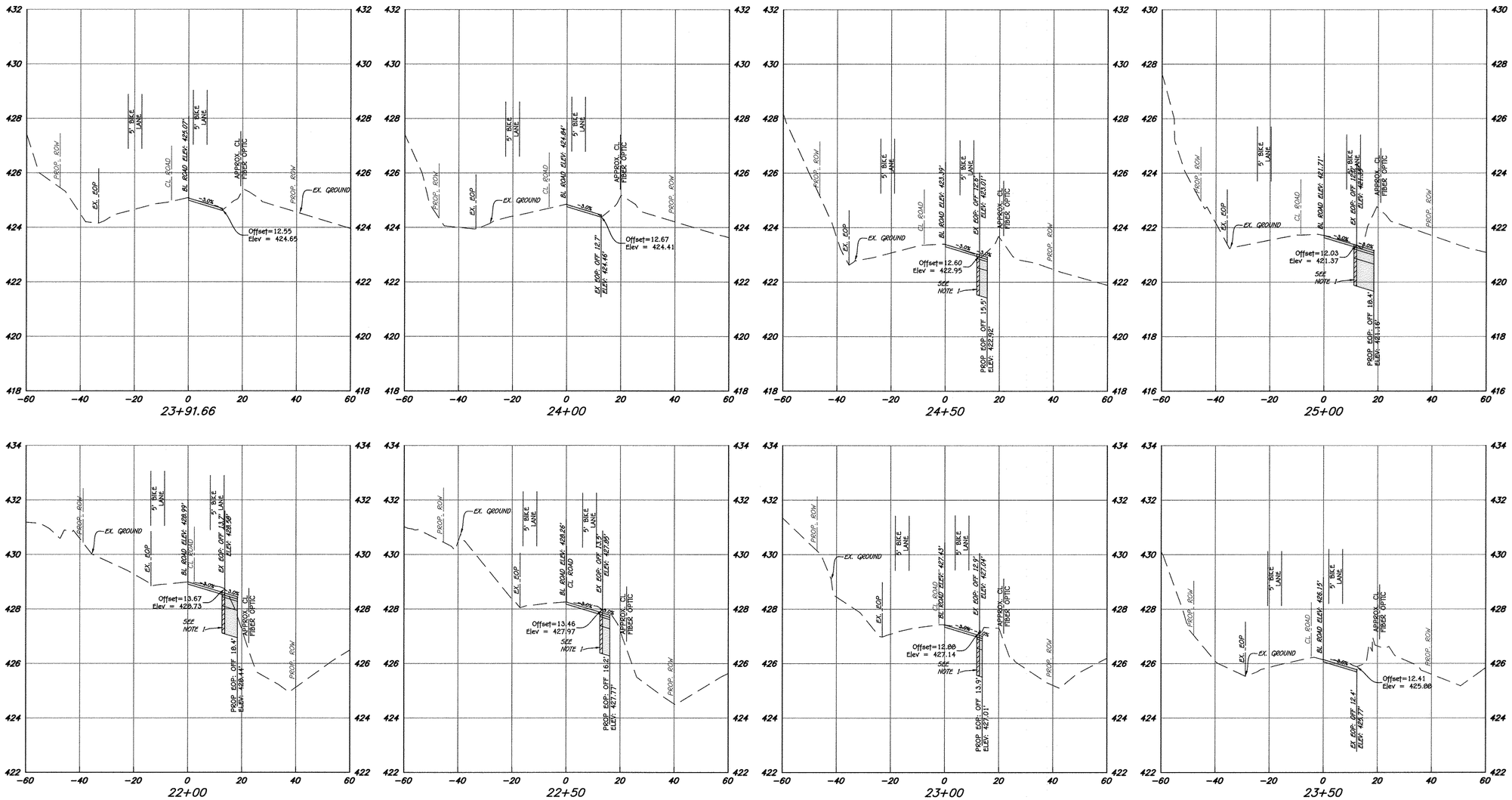

SCALE HORZ. 1" = 20'
VERT. 1" = 2'

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

GUILFORD ROAD CROSS-SECTIONS
STA. 22+00 TO STA. 25+00

ENCLAVE AT TIERNEY FARM PHASE 1

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SHEET 11 OF 58

F-15-110

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-SEE SHEETS 3 - 5.

NOTES:
1) CONTRACTOR SHALL PROVIDE FULL DEPTH SAW CUT SUCH THAT A MINIMUM OF 1 FOOT FROM EXISTING EDGE OF PAVING IS REMOVED

REVISIONS		
NO.	DESCRIPTION	DATE

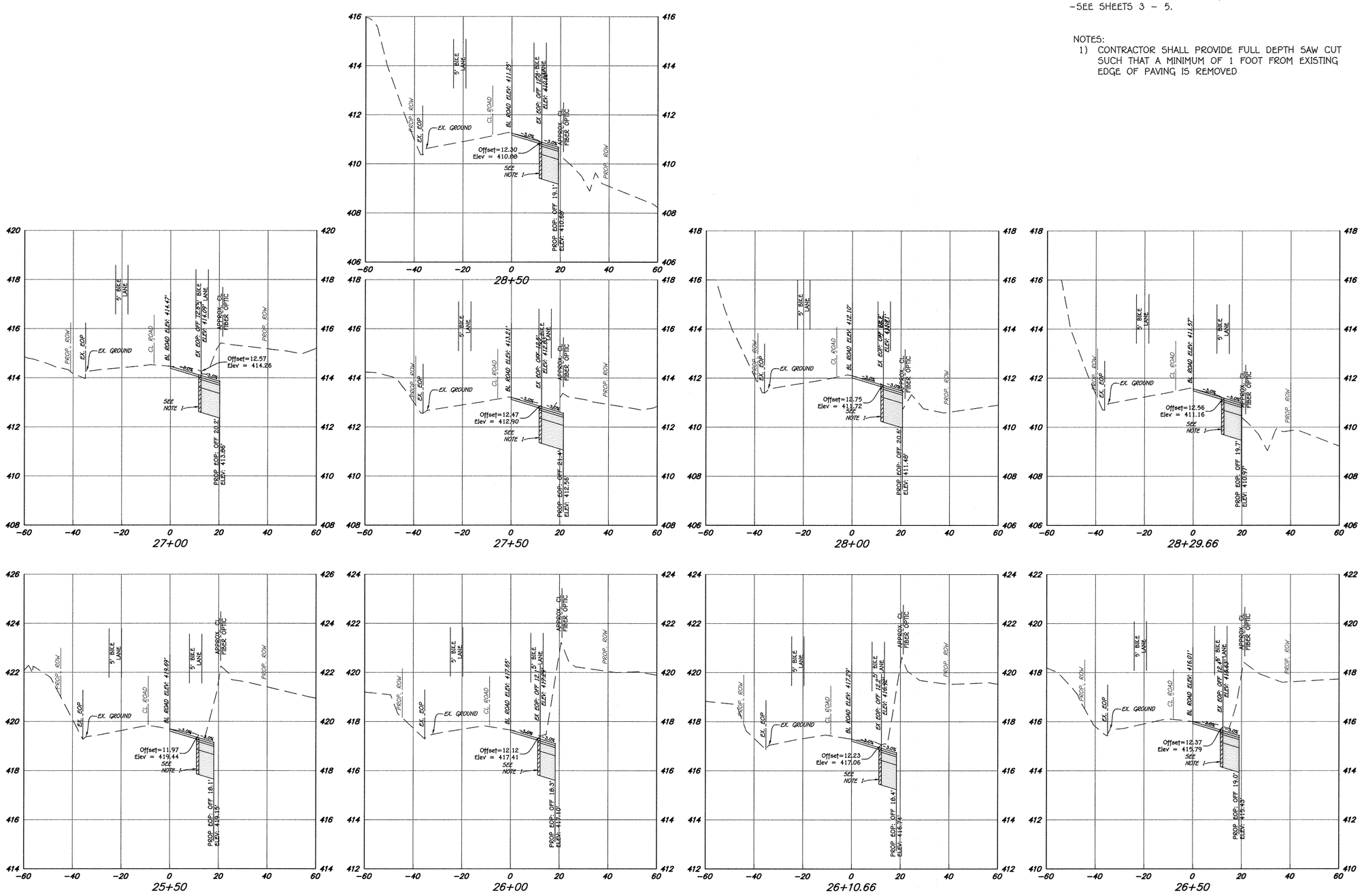
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8-1-16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016



SCALE HORZ. 1" = 20'
VERT. 1" = 2'

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

GUILFORD ROAD CROSS-SECTIONS
STA. 25+50 TO STA. 28+50

ENCLAVE AT TIERNEY FARM
PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 12 OF 58

F-15-110

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

STATE OF MARYLAND — FRANIE 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 LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANIE MANALANSAN II. — Date 6/29/16

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS
HODDINOTT LLC
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

NOTES:
1) CONTRACTOR SHALL PROVIDE FULL DEPTH SAW CUT SUCH THAT A MINIMUM OF 1 FOOT FROM EXISTING EDGE OF PAVING IS REMOVED

REVISIONS		
NO.	DESCRIPTION	DATE

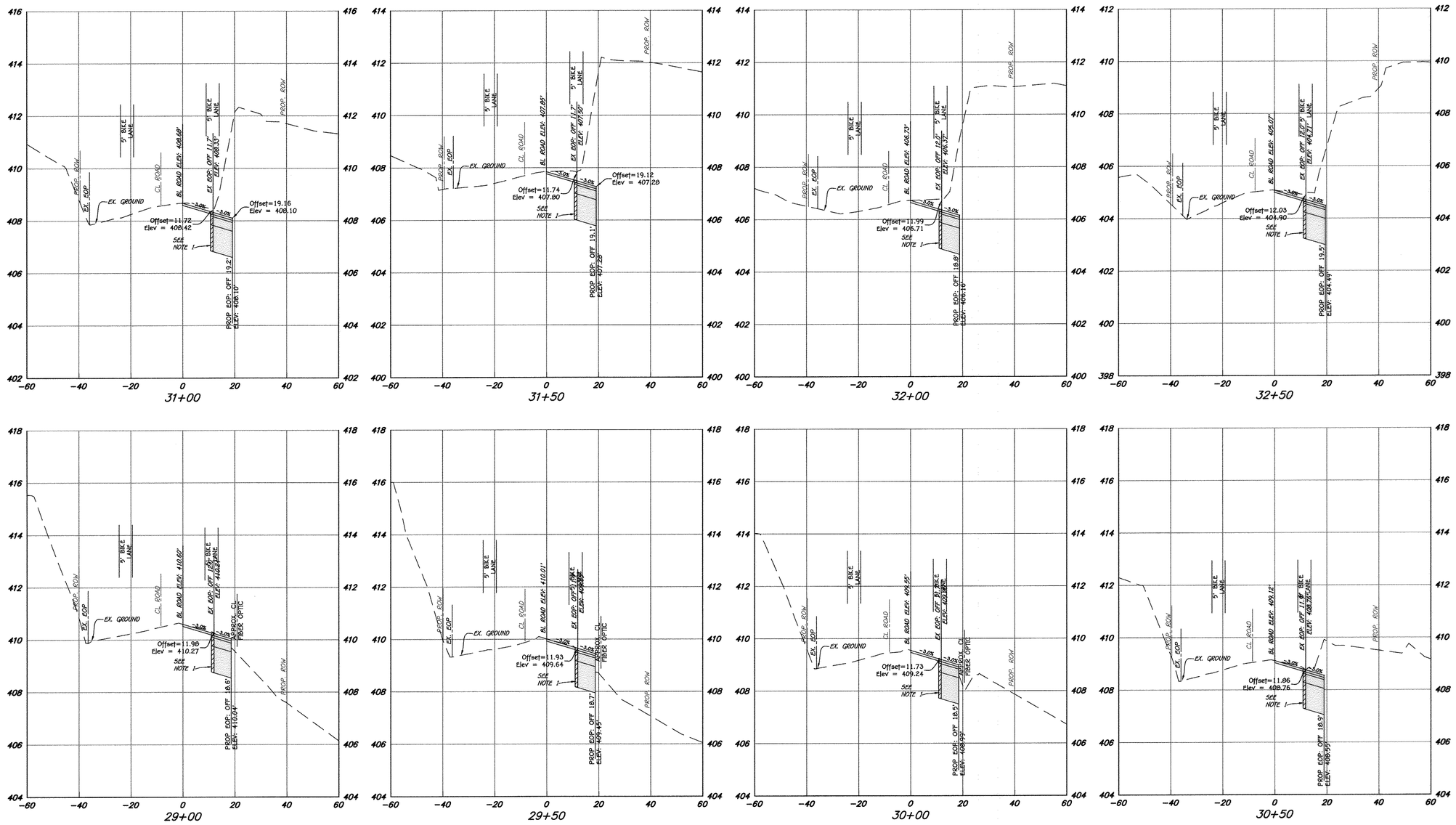
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016



SCALE HORZ. 1" = 20'
VERT. 1" = 2'

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

GUILFORD ROAD CROSS-SECTIONS
STA. 29+00 TO STA. 32+50

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 13 OF 58 **F-15-110**

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

STATE OF MARYLAND — 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 LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANK MANALANSAN II. — Date 6/29/16

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ELLICOTT CITY, MARYLAND 21043
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JEANNE C. HODDINOTT
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CLARKSVILLE, MARYLAND 21029
(410)-531-5017

REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 8-3-16

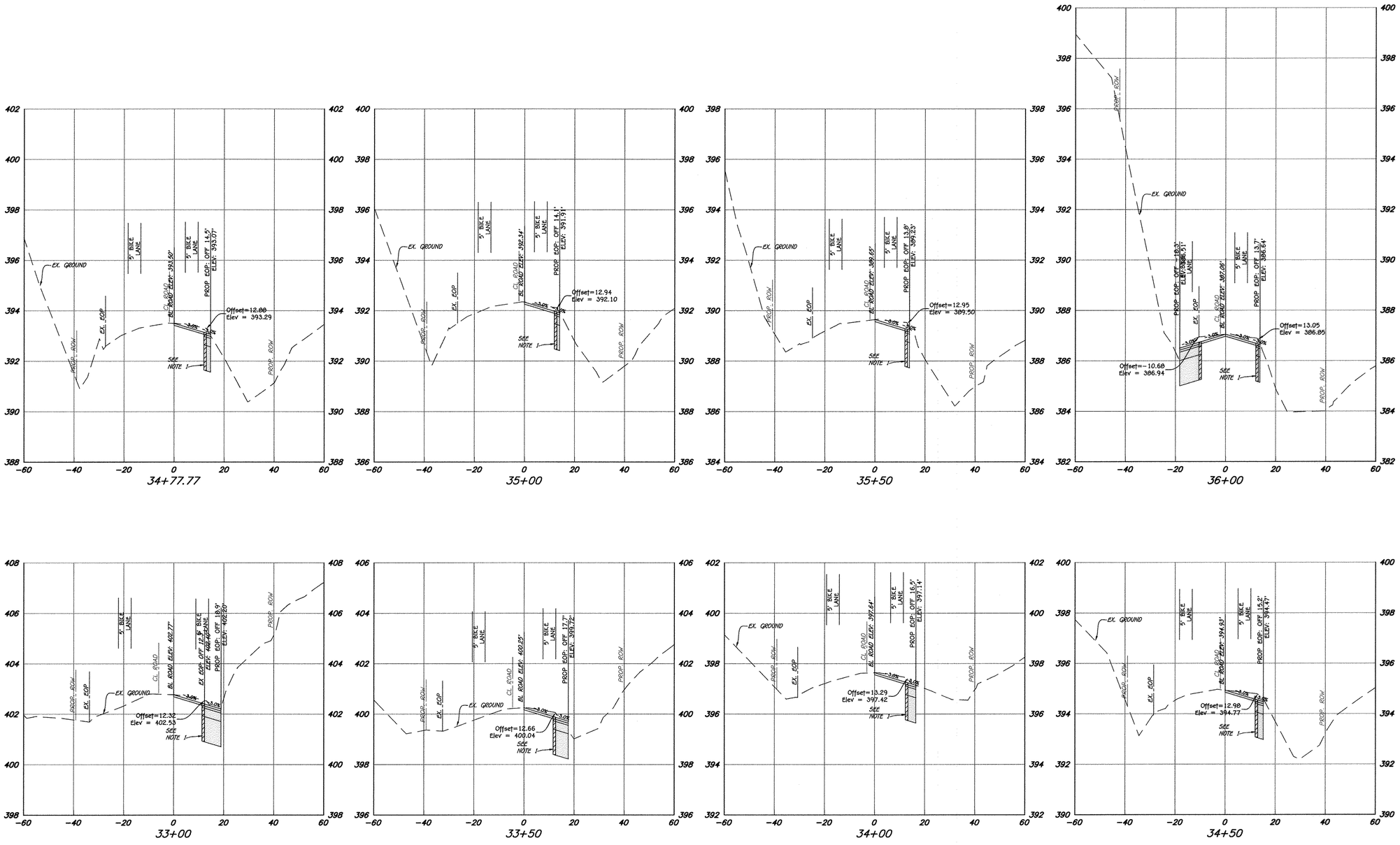
Chief, Development Engineering Division — Date: 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7/27/2016

FOR ROAD SECTION AND PAVING DETAILS
-SEE SHEETS 3 - 5.

NOTES:
1) CONTRACTOR SHALL PROVIDE FULL DEPTH SAW CUT SUCH THAT A MINIMUM OF 1 FOOT FROM EXISTING EDGE OF PAVING IS REMOVED



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VERT. 1" = 2'

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SCALE: 1" = 20'

GUILFORD ROAD CROSS-SECTIONS
STA. 33+00 TO STA. 36+00

ENCLAVE AT TIERNEY FARM
PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

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ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 14 OF 58

F-15-110

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

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

PROFESSIONAL CERTIFICATION

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FRANK ALAN MANALANSAN II — Date: 6/29/16

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

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(410)-992-4600

JEANNE C. HODDINOTT
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FOR ROAD SECTION AND PAVING DETAILS
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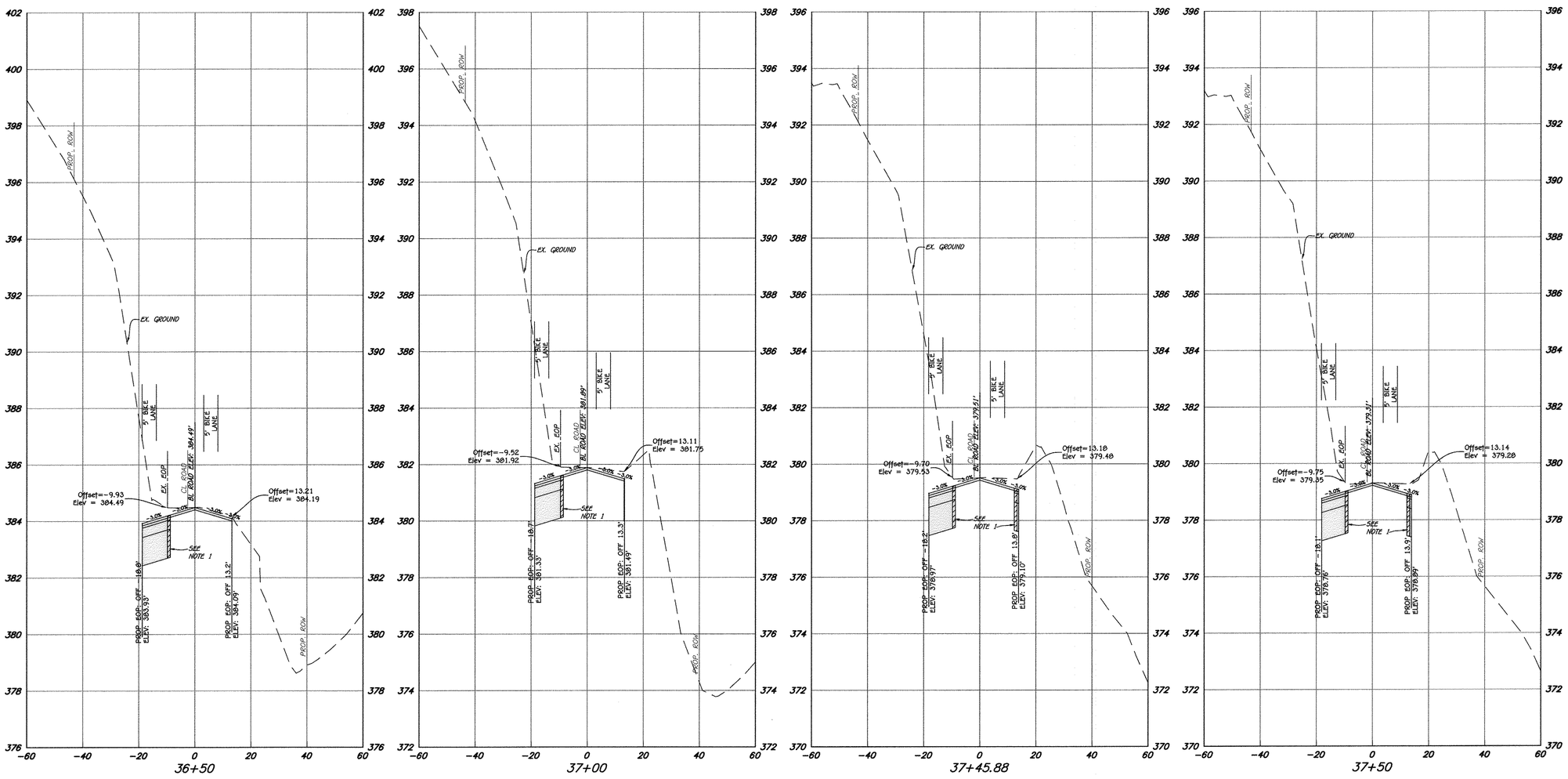
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016



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VERT. 1" = 2'

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SCALE: 1" = 20'

GUILFORD ROAD CROSS-SECTIONS
STA. 36+50 TO STA. 37+50

ENCLAVE AT TIERNEY FARM
PHASE 1

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SHEET 15 OF 58

F-15-110

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FRANK MANALANSAN II — Date 6/29/16

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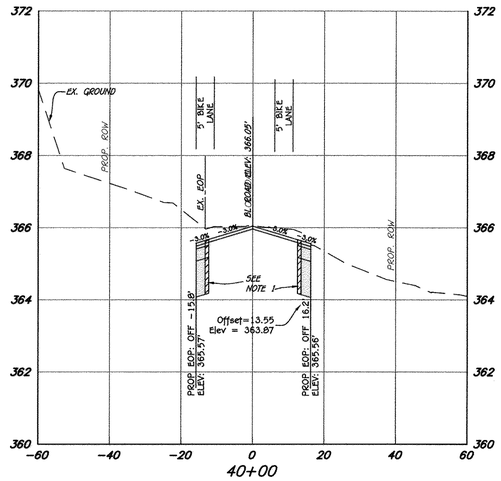
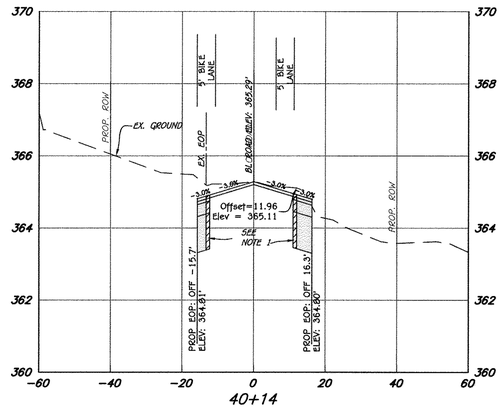
Approved: Howard County Department Of Public Works

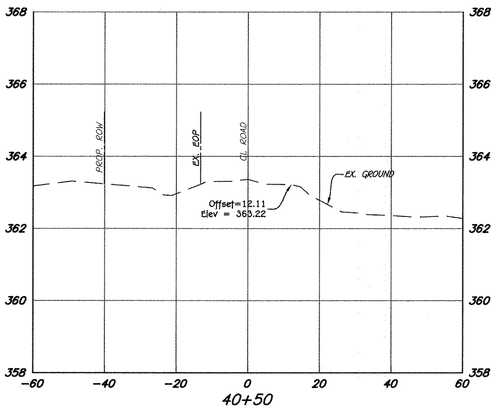
Chief, Bureau Of Highways — Date 7/27/2016



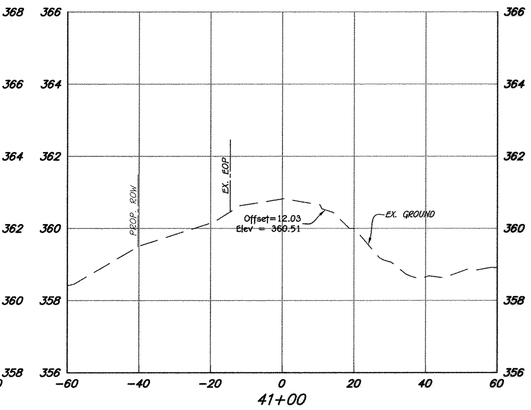
40+00



40+14



40+50



41+00

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NOTES:

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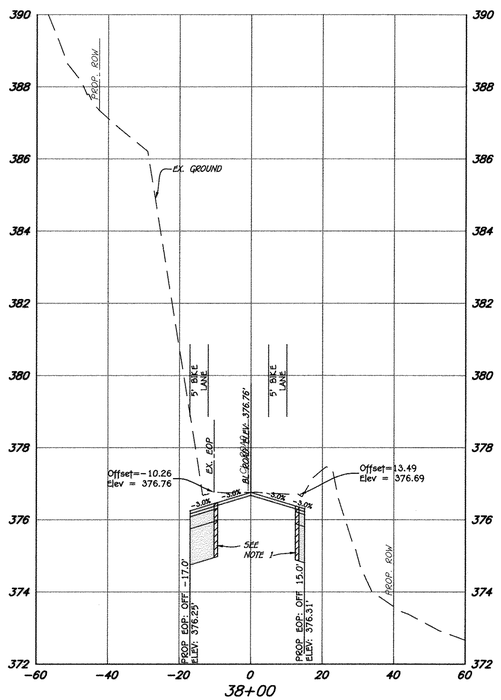
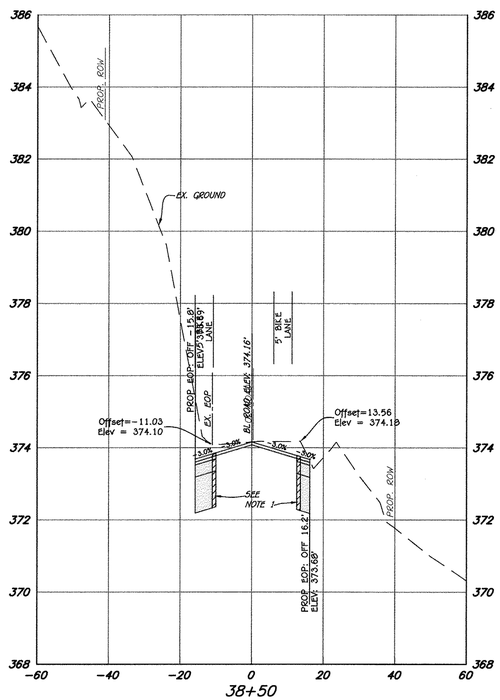
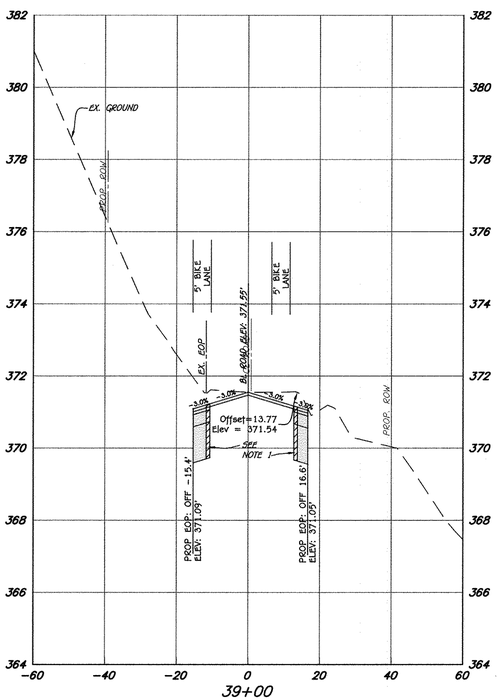


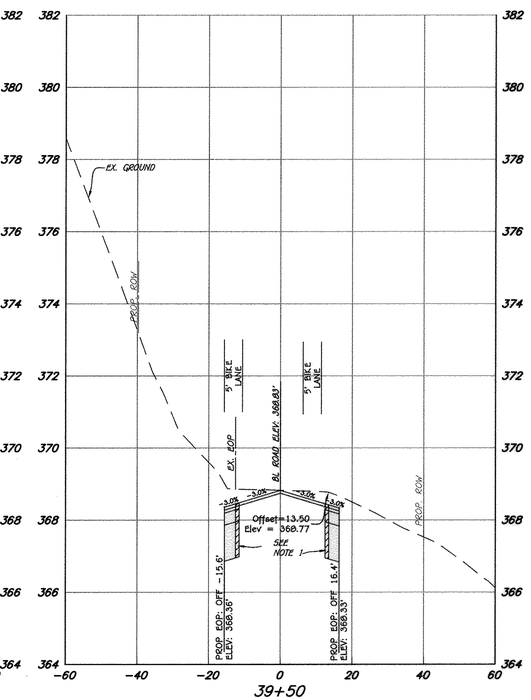
38+00



38+50



39+00



39+50

SCALE HORZ. 1" = 20'
VERT. 1" = 2'

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

GUILFORD ROAD CROSS-SECTIONS
STA. 38+00 TO STA. 41+00

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
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PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 16 OF 58

F-15-110

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

PROFESSIONAL CERTIFICATION

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FRANK MANALANSAN II. — Date 6/29/16

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

HODDINOTT LLC
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
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JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

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CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
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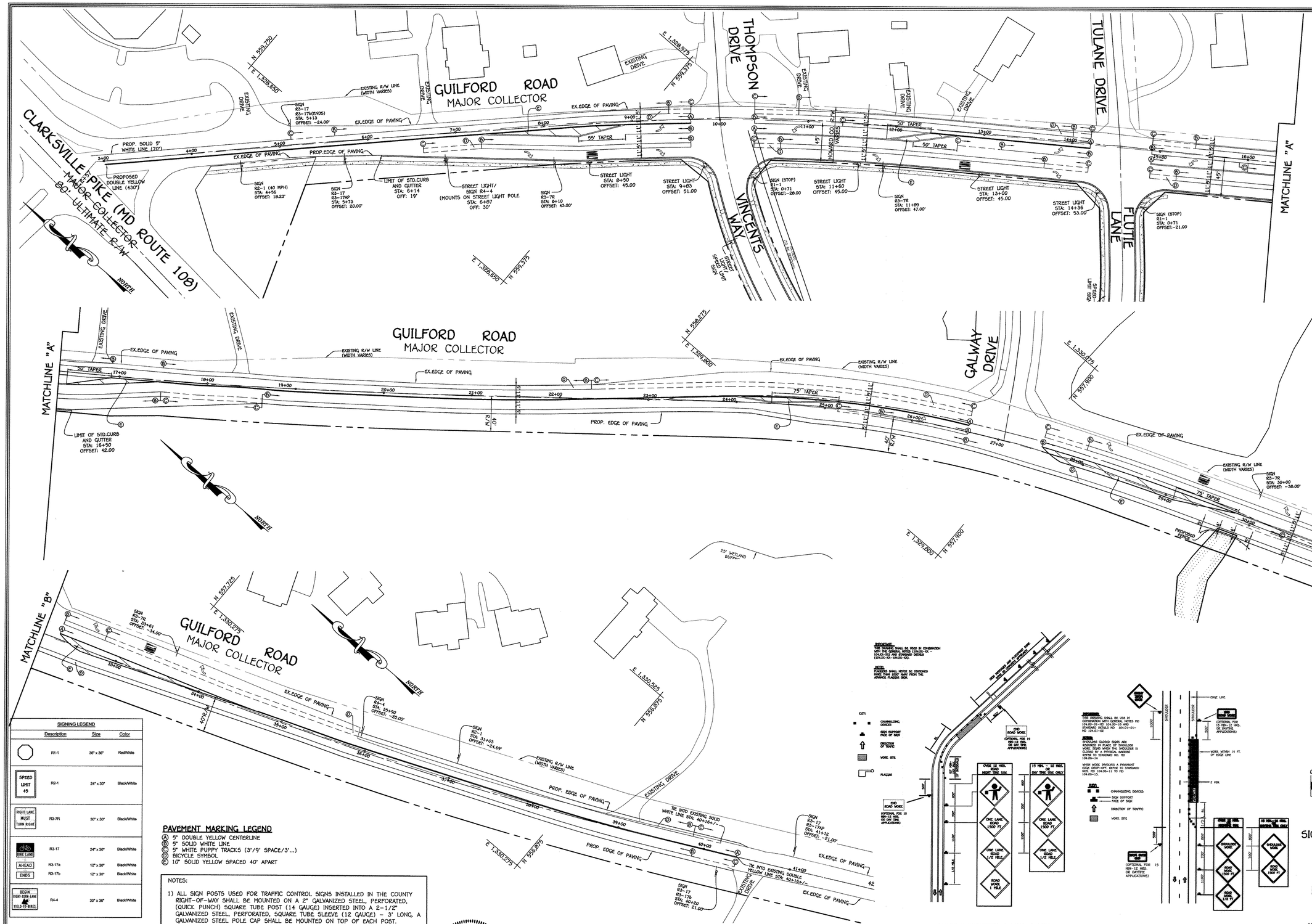

REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-2-16

Chief, Development Engineering Division — Date 8.1.16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

SIGNING LEGEND			
Description		Size	Color
	R1-1	36" x 36"	Red/White
SPEED LIMIT 45	R2-1	24" x 30"	Black/White
RIGHT LANE MUST TURN RIGHT	R3-7R	30" x 30"	Black/White
BIKE LANE	R3-17	24" x 30"	Black/White
AHEAD	R3-17a	12" x 30"	Black/White
ENDS	R3-17b	12" x 30"	Black/White
BEGIN RIGHT-TURN LANE YIELD TO BIKES	R4-4	30" x 36"	Black/White

PAVEMENT MARKING LEGEND

(A) 5" DOUBLE YELLOW CENTERLINE
(B) 5" SOLID WHITE LINE
(C) 5" WHITE PUPPY TRACKS (3'/9' SPACE/3'...)
(D) BICYCLE SYMBOL
(E) 10" SOLID YELLOW SPACED 40" APART

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.

FLAGGING OPERATION /-LANE, 2-WAY GREATER THAN 40 MPH

NO SCALE

SHOULDER WORK/2-LANE, 2-WAY GREATER THAN 40 MPH

NO SCALE

SCALE: 1" = 50'

SIGNAGE AND PAVEMENT MARKING PLAN
GUILFORD ROAD

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

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PARCEL NOS.: 80 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 17 OF 58

F-15-110

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

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

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FRANK MANALANSAN II — Date 6/29/16

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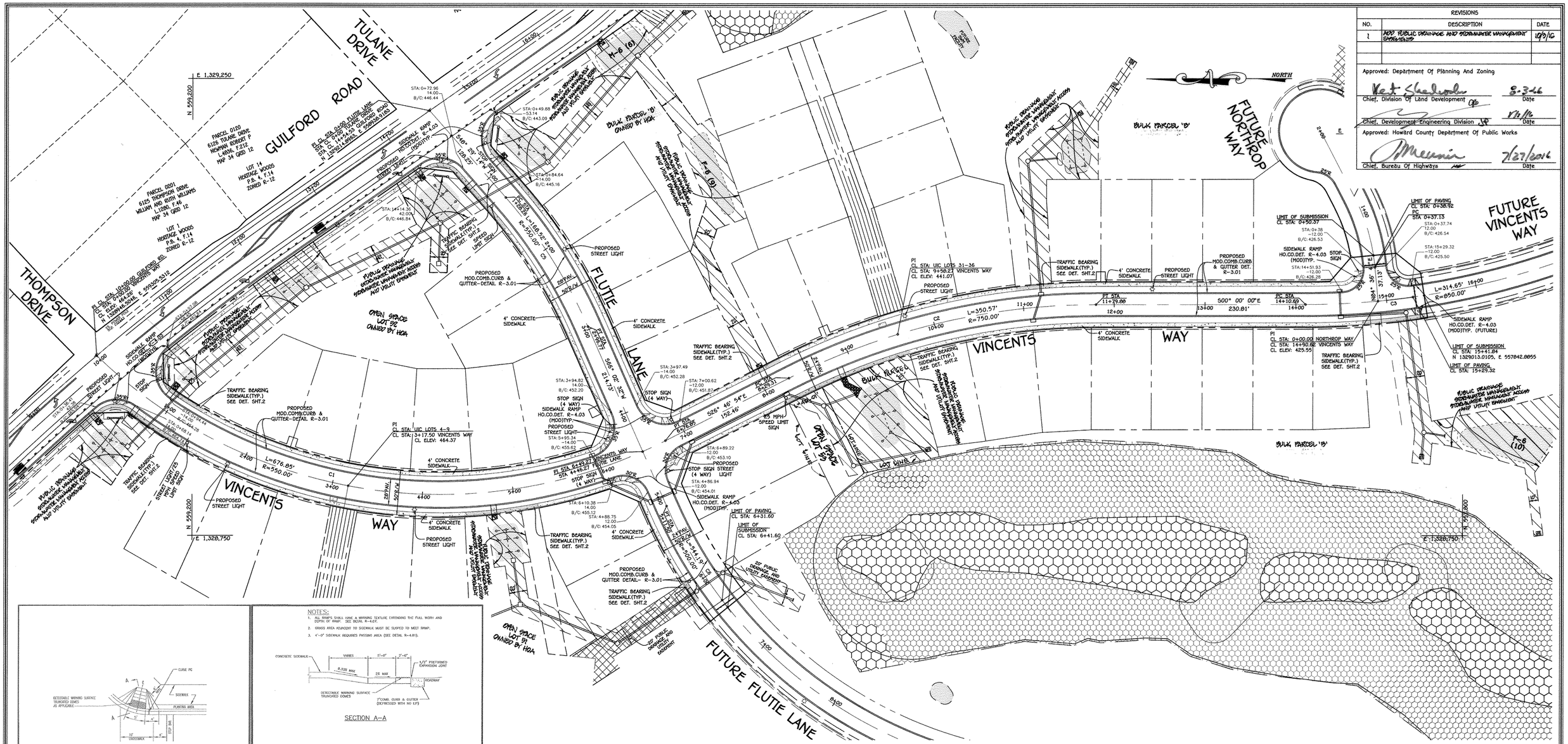


REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS	10/9/16

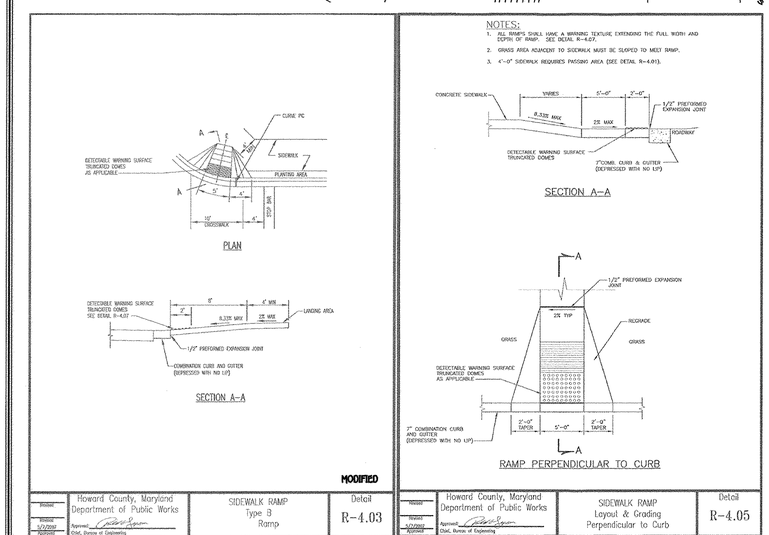
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/2/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016



NOTES:

1. ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH AND DEPTH OF RAMP. SEE DETAIL R-4.07.
2. GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
3. 4'-0" SIDEWALK REQUIRES PASSING AREA (SEE DETAIL R-4.01).

Revised	Howard County, Maryland Department of Public Works	SIDEWALK RAMP Type B Ramp	Detail R-4.03
Revised 5/2/2012	Approved: Chief, Bureau of Engineering		

Revised	Howard County, Maryland Department of Public Works	SIDEWALK RAMP Layout & Grading Perpendicular to Curb	Detail R-4.05
Revised 5/2/2012	Approved: Chief, Bureau of Engineering		

SPEED LIMIT 25 — R2-1

R1-1

PROPOSED ROAD ALIGNMENT CURVE TABLE					
CURVE #	DELTA	ARC LENGTH	RADIUS	CHORD DIRECTION	CHORD LENGTH
C1	010°25'03"	676.85'	550.00'	S8° 28' 23.82"W	634.94'
C2	007°30'22"	350.57'	750.00'	S13° 23' 27.00"E	347.39'
C3	006°44'26"	314.65'	850.00'	S10° 36' 17.54"E	312.86'
C5	010°25'03"	168.52'	550.00'	S57° 15' 53.15"W	167.86'
C6	011°27'33"	544.19'	500.00'	S34° 51' 45.70"W	517.72'

SIGNING LEGEND			
Size	Description	Size	Color
SPEED LIMIT 25	R2-1	24" x 30"	Black/White
	R1-1	30" x 30"	Red/White
	MD 665.02	4' x 3"	White/Orange

0' 50' 100' 200'

SCALE: 1" = 50'

GEOMETRY PLAN
NOTES AND DETAILS
VINCENTS WAY AND FLUTIE LANE

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

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PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
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SHEET 18 OF 58 **F-15-110**

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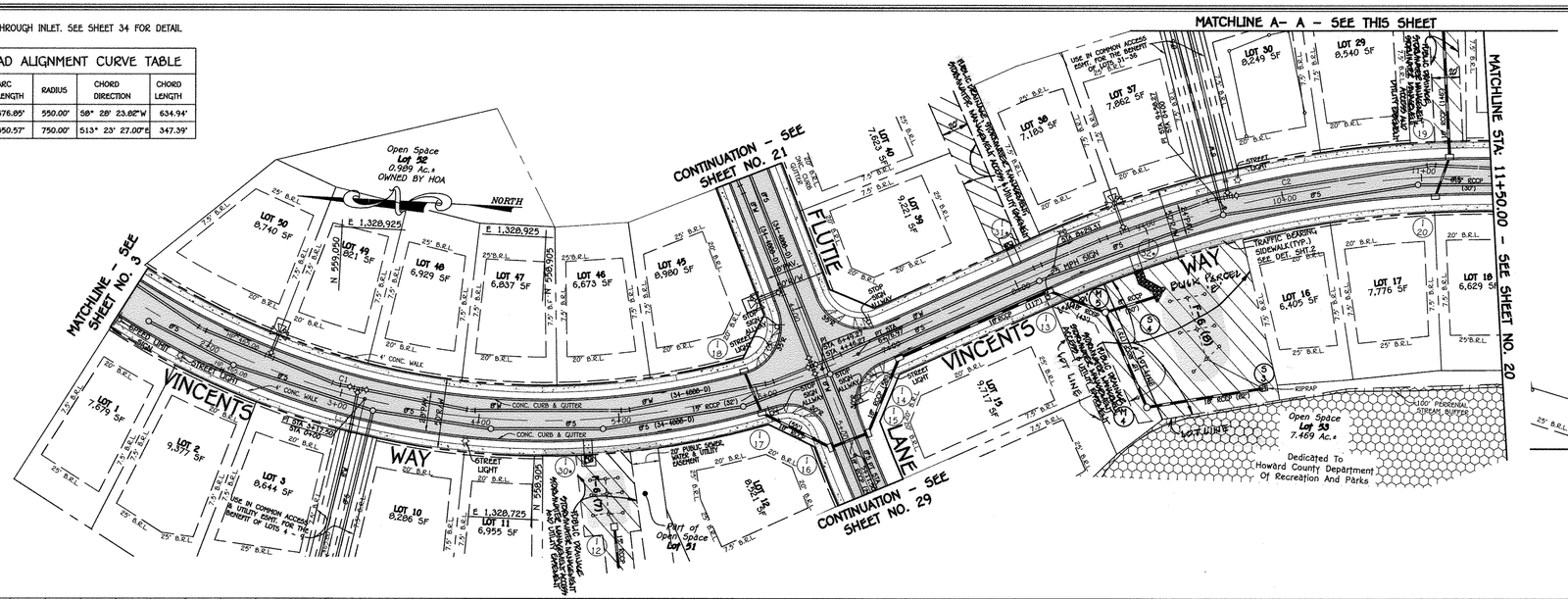
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

* DENOTES COG/COS FLOW THROUGH INLET. SEE SHEET 34 FOR DETAIL

PROPOSED ROAD ALIGNMENT CURVE TABLE

CURVE #	DELTA	ARC LENGTH	RADIUS	CHORD DIRECTION	CHORD LENGTH
C1	010°25'03"	676.85'	550.00'	S8° 28' 23.82"W	634.94'
C2	007°38'22"	350.57'	750.00'	S13° 23' 27.00"E	347.39'



REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8.3.16

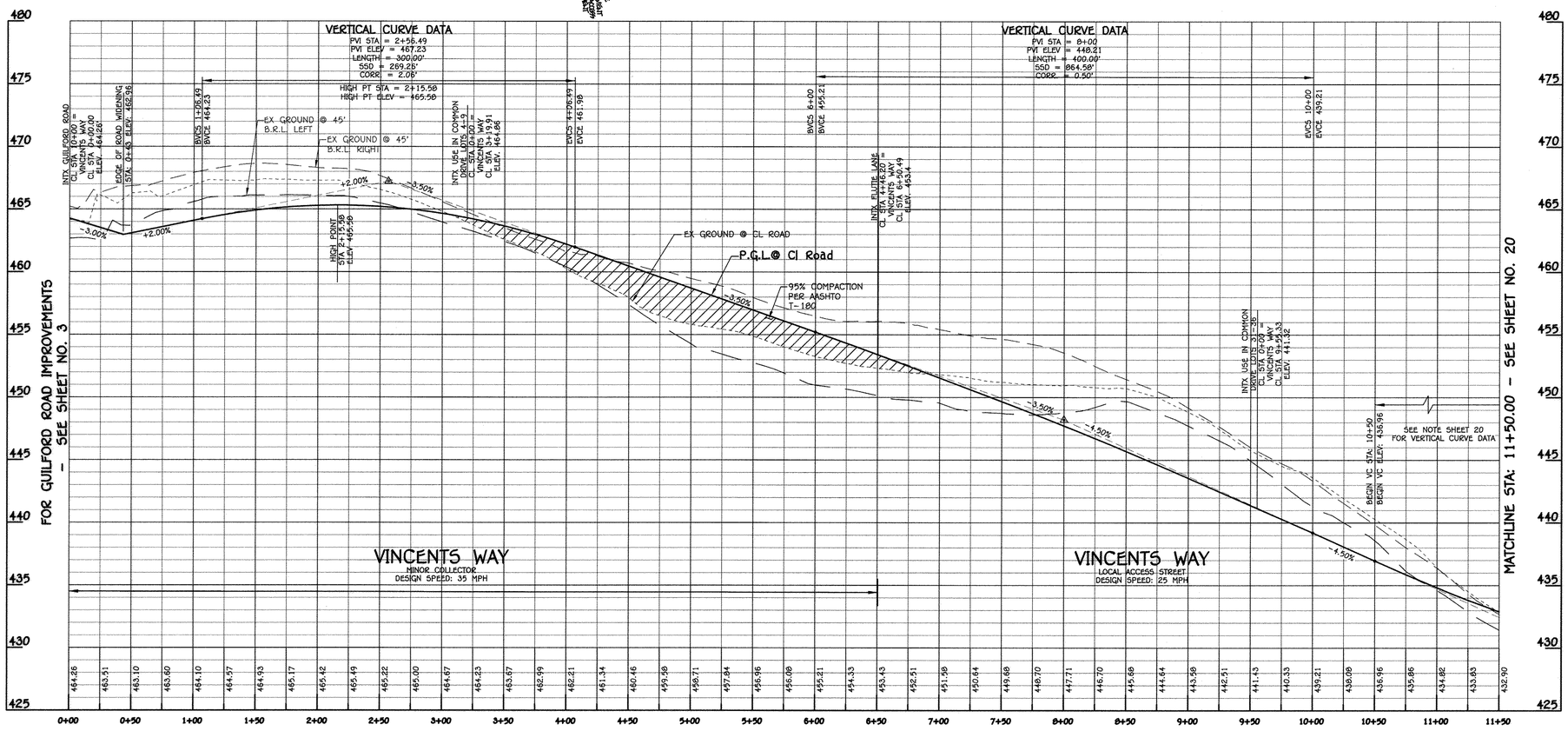
Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

LEGEND

SYMBOL	DESCRIPTION
12"CMP	PROPOSED STORM DRAIN PIPE
#5	PROPOSED SEWER
#4	PROPOSED WATER
	FOREST CONSERVATION EASEMENT
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED



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

SCALE: 1" = 50'

ROAD PLAN AND PROFILE
VINCENTS WAY
STA: 0+00 - 11+50.00

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 19 OF 58

F-15-110

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

STATE OF MARYLAND — 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 LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANK MANALANSAN II. — Date 6/20/16

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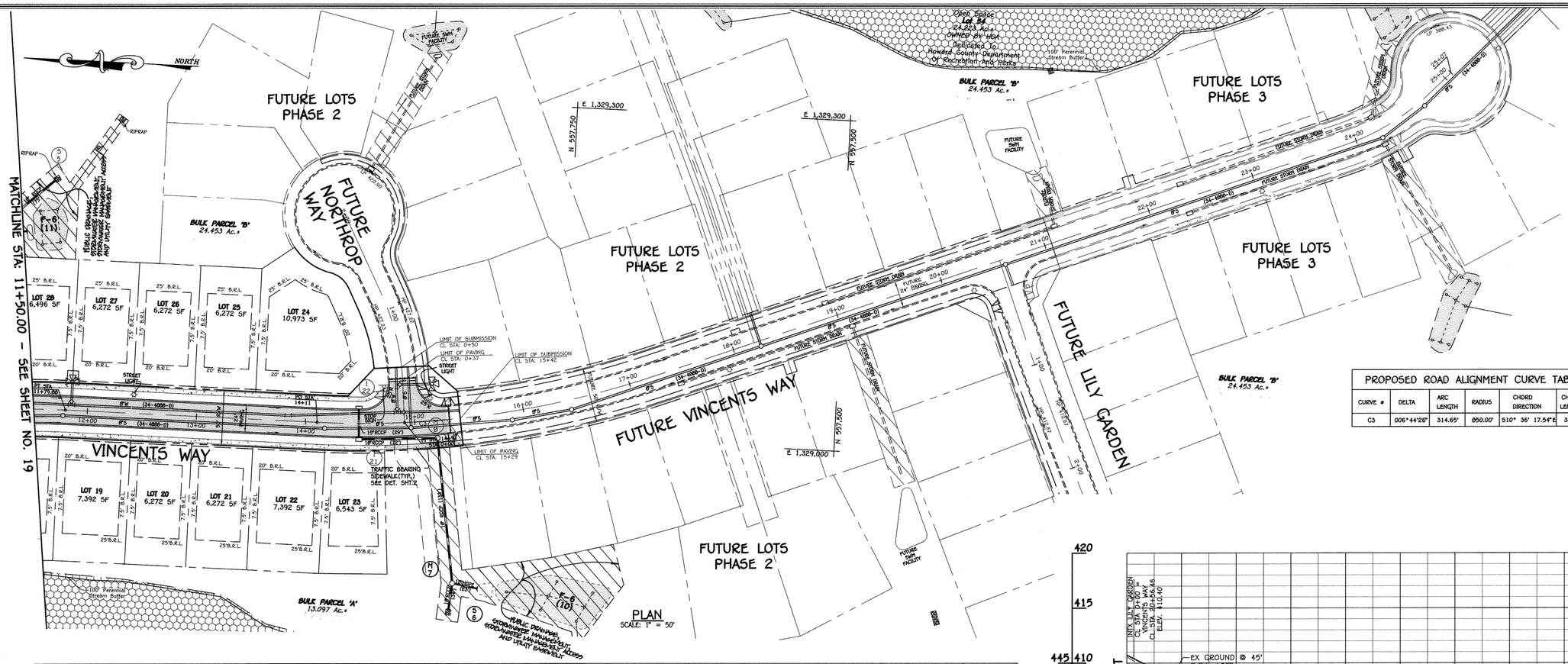

PLAN
SCALE: 1" = 50'

REVISIONS		
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Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

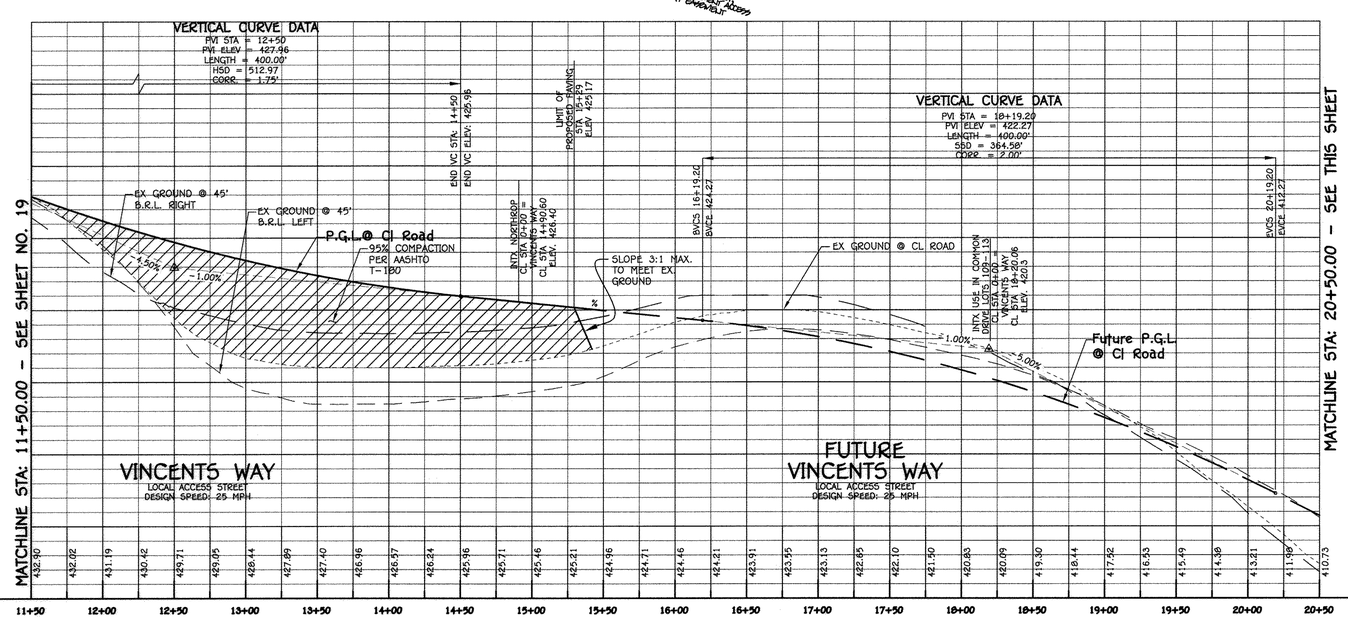
Chief, Bureau Of Highways — Date 7/27/2016

LEGEND

SYMBOL	DESCRIPTION
12" STORM	PROPOSED STORM DRAIN PIPE
S	PROPOSED SEWER
W	PROPOSED WATER
	FOREST CONSERVATION EASEMENT
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED

PROPOSED ROAD ALIGNMENT CURVE TABLE

CURVE #	DELTA	ARC LENGTH	RADIUS	CHORD DIRECTION	CHORD LENGTH
C3	006° 44' 26"	314.65'	850.00'	S10° 36' 17.54"E	312.86'



PROFILE
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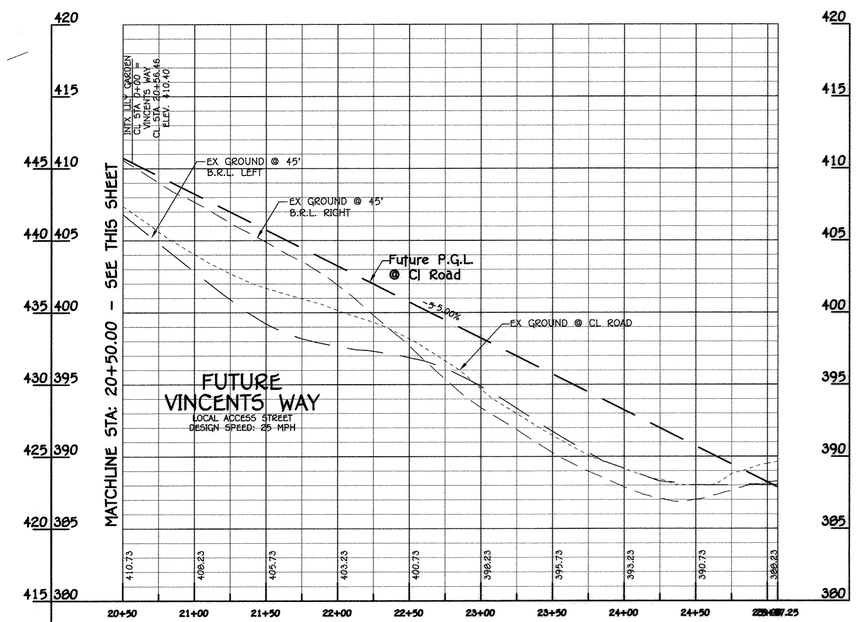
VERT.: 1"=5'



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

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

ROAD PLAN AND PROFILE
VINCENTS WAY
STA: 11+50.00 - 25+07.25

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 20 OF 58 **F-15-110**

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FRANK J. MANALANSAN II — Date 6/29/16

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Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

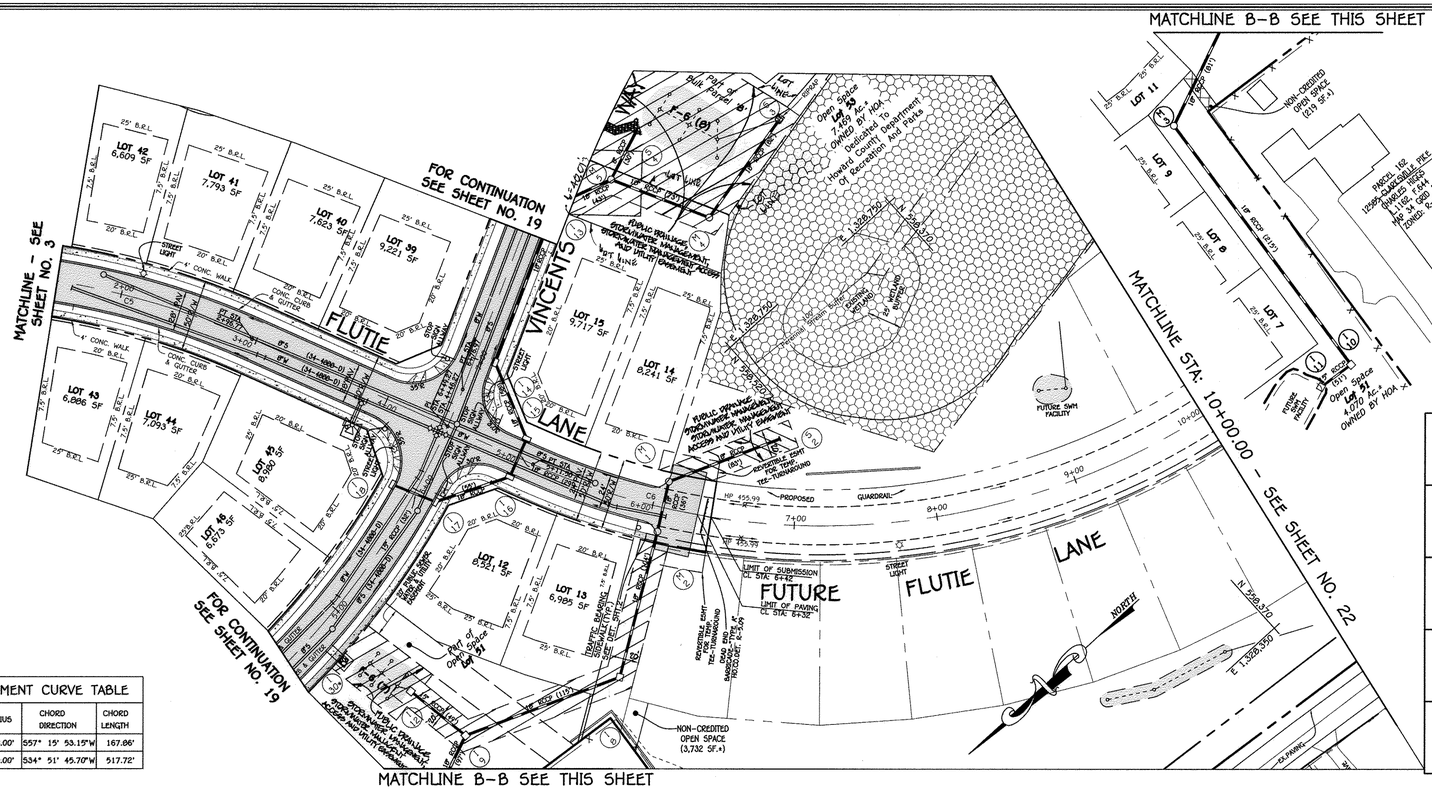
Chief, Development Engineering Division — Date 7/1/16

Approved: Howard County Department Of Public Works

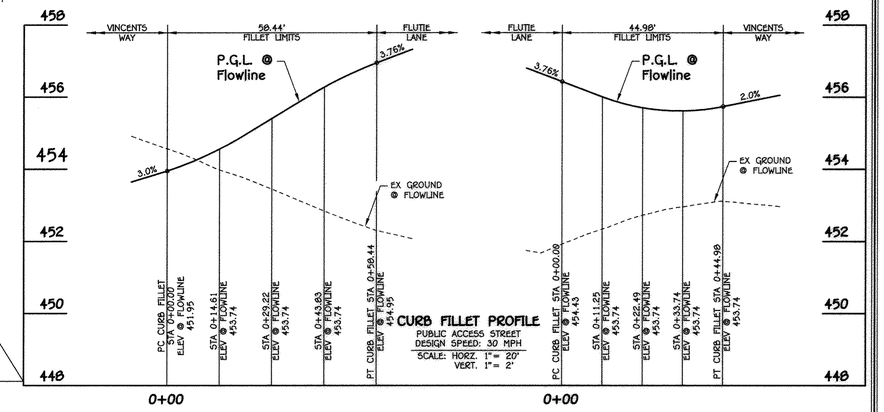
Chief, Bureau Of Highways — Date 7/27/2016

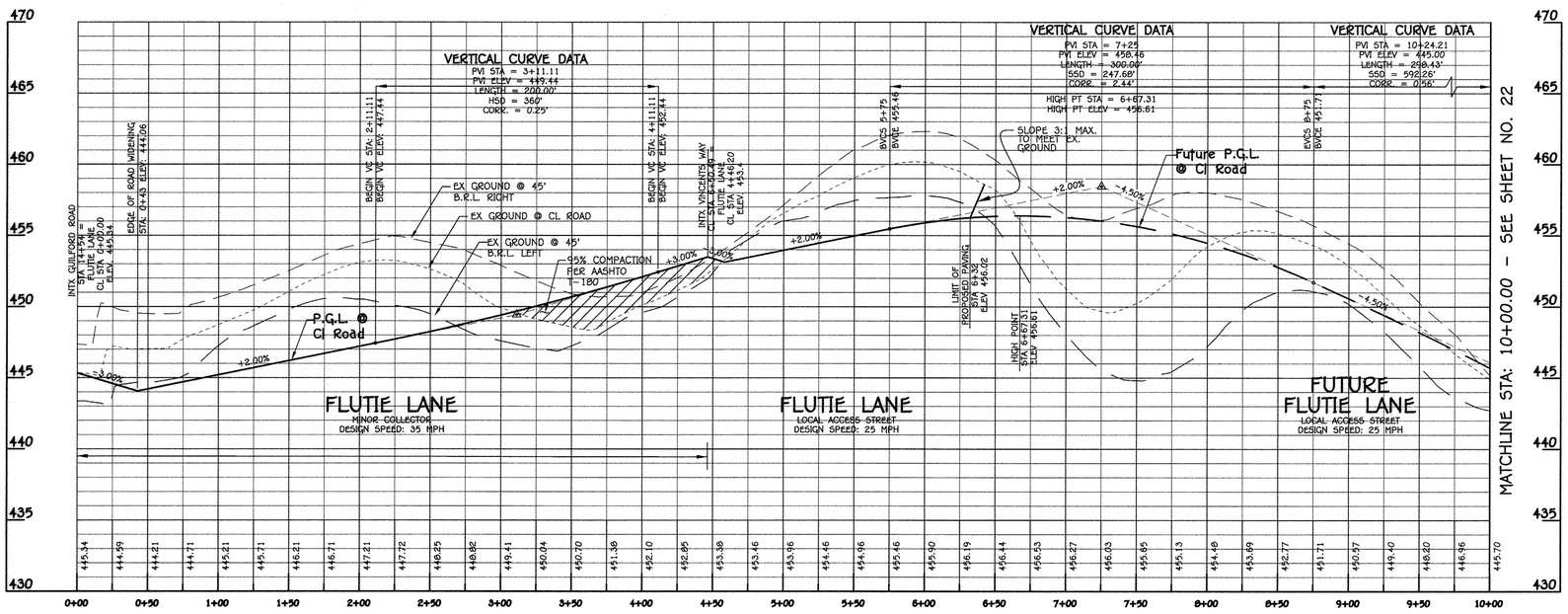
LEGEND

SYMBOL	DESCRIPTION
12"SDP	PROPOSED STORM DRAIN PIPE
8"S	PROPOSED SEWER
8"W	PROPOSED WATER
	FOREST CONSERVATION EASEMENT
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED



PROPOSED ROAD ALIGNMENT CURVE TABLE					
CURVE #	DELTA	ARC LENGTH	RADIUS	CHORD DIRECTION	CHORD LENGTH
C5	010°25'03"	168.52'	550.00'	S57° 15' 53.15"W	167.86'
C6	011°27'33"	544.19'	500.00'	S34° 51' 45.70"W	517.72'





PROFILE
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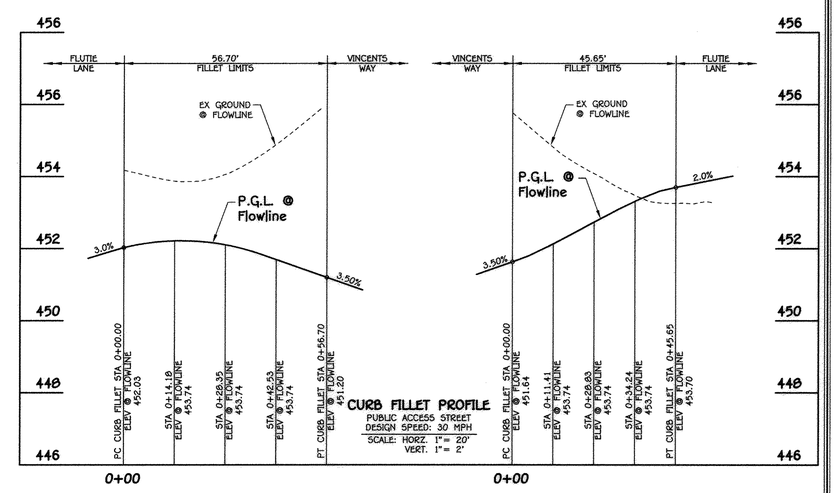

0' 20' 40' 80'
SCALE: 1" = 20'

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

ROAD PLAN AND PROFILE
FLUTIE LANE
STA: 0+00.00 -10+00.00

ENCLAVE AT TIERNEY FARM PHASE 1

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PARCEL NOS.: 00 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
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SHEET 21 OF 58

F-15-110

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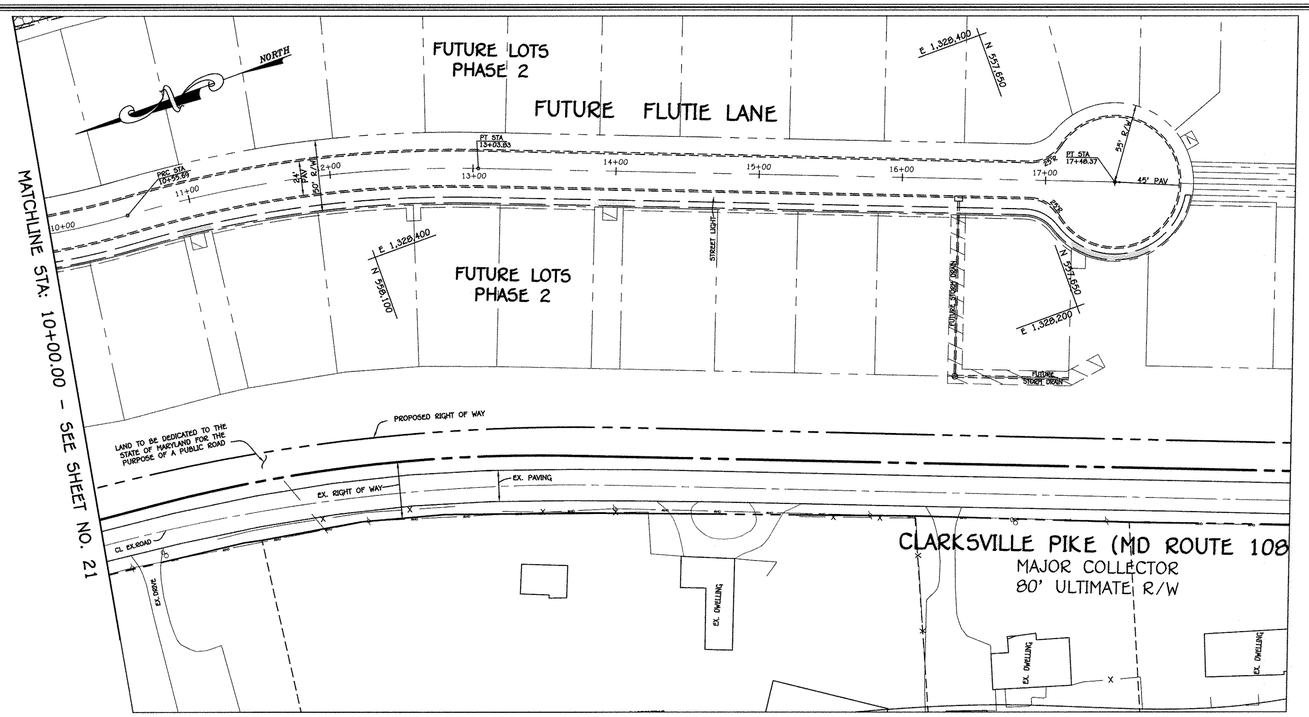

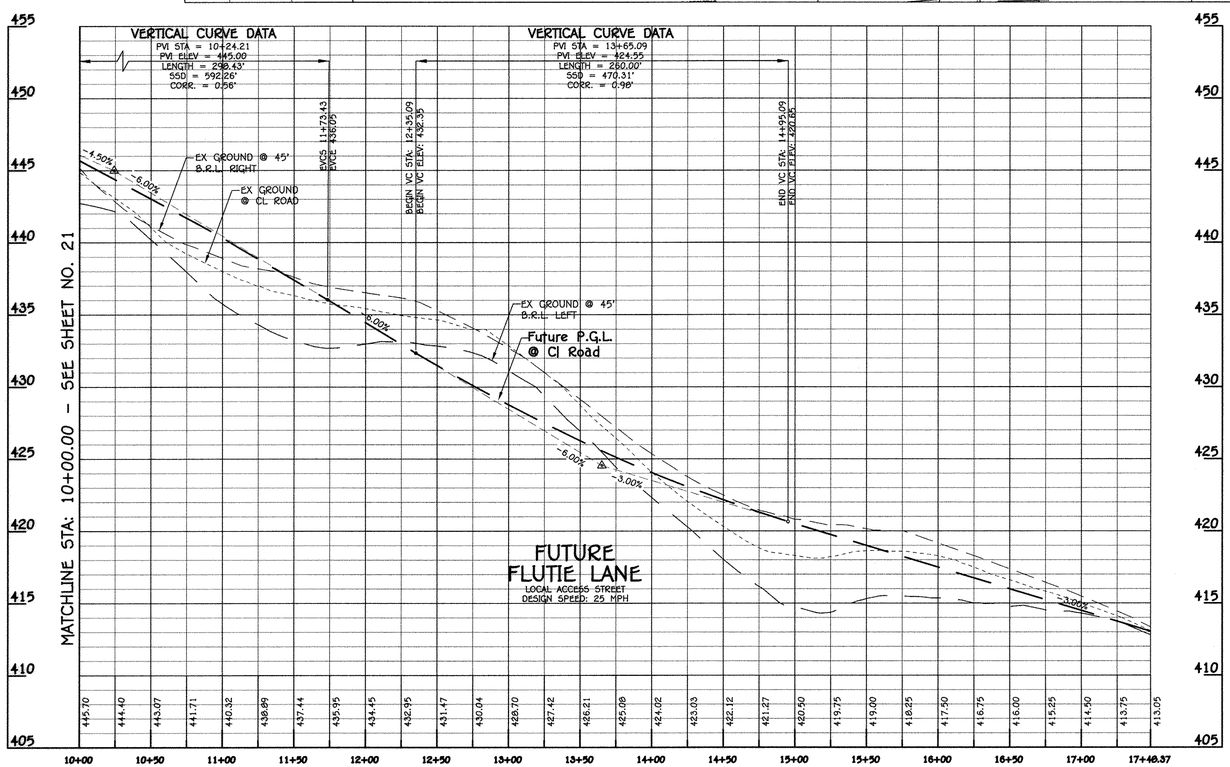

PROFILE
SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'

REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

LEGEND

SYMBOL	DESCRIPTION
15"ADDE	PROPOSED STORM DRAIN PIPE
PS	PROPOSED SEWER
PW	PROPOSED WATER
	FOREST CONSERVATION EASEMENT
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED

0' 50' 100' 200'

SCALE: 1" = 50'

ROAD PLAN AND PROFILE
FLUTIE LANE
STA: 10+00.00 - 17+48.37

ENCLAVE AT TIERNEY FARM PHASE 1

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SHEET 22 OF 58

F-15-110

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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.

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.

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.

A. SEEDING

CRITERIA

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.

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given at the following stages: a. Prior to the start of earth disturbance,

b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,

c. Prior to the start of another phase of construction or opening of another grading unit, d. Prior to the removal or modification of sediment control practices.

Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.

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 2011 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 is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.

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 topsoil (Sec. B-4-2), 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 applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).

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 CID.

6. Site Analysis For Total Site Area:

Total Area of Site:	88.9	Acres
Area Disturbed:	63.12	Acres
Area to be roofed or paved:	3.77	Acres
Area to be vegetatively stabilized:	59.35	Acres
Total Cut:	123,217	Cu. Yds.
Total Fill:	125,050	Cu. Yds.
Offsite waste/borrow area location:	On-Site	

7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

8. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:

- Inspection date
- Inspection type (routine, pre-storm event, during rain event)
- Name and title of inspector
- Weather information (current conditions as well as time and amount of last recorded precipitation)
- Brief description of project's status (e.g., percent complete) and/or current activities
- Evidence of sediment discharges
- Identification of plan deficiencies
- Identification of sediment controls that require maintenance
- Identification of missing or improperly installed sediment controls
- Compliance status regarding the sequence of construction and stabilization requirements
- Photographs
- Monitoring/sampling
- Maintenance and/or corrective action performed
- Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).

9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.

10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may allowed by the CID per the list of HSCD-approved field changes.

11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the CID, no more than 30 acres cumulatively may be disturbed at a given time.

12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.

13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.

14. All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation.

15. Stream channels must not be disturbed during the following restricted time periods (inclusive):

- Use I and IP March 1 - June 15
- Use III and IIIP October 1 - April 30
- Use IV March 1 - May 31

16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

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.

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 25-32. (2 WEEKS)
6. COMPLETE REMAINING CLEARING AND GRUBBING WITHIN INSTALLED PERIMETER CONTROLS AND COMMENCE INSTALLATION OF TEMPORARY ACCESS BRIDGES, TEMPORARY HAUL AND SEDIMENT TRAPS 1-10 WITH ASSOCIATED INTERNAL EARTH DIKES. (1 MONTH) FOR THIS CONSTRUCTION PHASE ONE, HOME CONSTRUCTION ON LOTS 34, 35 AND 36 IS DEFERRED UNTIL BASIN NO. 1 IS REMOVED.
7. REMOVE EXISTING PAVING AND STRUCTURE. (2 WEEKS)
8. BEGIN GRADING OF SITE TO PROPOSED ELEVATIONS AS DEFINED ON SHEETS 25-32. (1 MONTH)

NOTE: THE CONTRACTOR SHALL COORDINATE WITH THE INSPECTOR IN REGARDS TO THE REQUIREMENT THAT NO MORE THAN 20 ACRES OF "OPEN" GROUND SHALL BE DISTURBED AT ANY GIVEN TIME.

NOTE: THE 20 Ac. CONDITION CAN BE MET BY PHASE I GRADING TO CONSIST OF FLUTIE LANE TO STA. 6+50 AND AREA NORTH TO INCLUDE VINCENT WAY TO STA. 8+50. CONSTRUCT TRAP #1 AND BASIN #1 AND SPOIL AREA (SHEET 29 & 30).
PHASE II TO CONSIST OF REMAINDER OF FLUTIE LANE WITH TRAP #4 AND BASIN #2. PHASE III TO CONSIST OF THE REMAINDER OF VINCENT WAY, NORTHROP WAY & LILY GARDEN WITH TRAPS #2, #3, #5 THRU #8 AND BASIN #3.

9. COMMENCE INSTALLATION WATER AND SEWER LINES FROM CONTRACT 34-4888-D AND STORM DRAIN SYSTEMS INCLUDING TEMPORARY PIPES SUPPORTING SEDIMENT TRAPS SHOWN ON SHEETS 25-32. THIS INCLUDES SOST #5 FROM MH-8 TO S-6 WHICH IS DELAYED UNTIL TRAP IS REMOVED. (2 MONTHS)
10. BEGIN CONSTRUCTION OF CURB & GUTTER AND INSTALL ROAD BASE COURSE FOR VINCENTS WAY (0+00 TO 15+21) AND FLUTIE LANE (0+00 TO 6+32). (1 MONTH)
11. BEGIN CONSTRUCTION OF CURB AND GUTTER AND BASE COURSE FOR ROAD WIDENING OF GUILFORD ROAD (1 MONTH)
12. STABILIZE ALL DISTURBANCE WITH TEMPORARY SEEDING. (1 WEEK)
13. OBTAIN APPROVAL FROM SEDIMENT CONTROL INSPECTOR BEFORE PROCEEDING. (2 DAYS)
14. BEGIN REMOVAL OF SEDIMENT BASIN 1, SEDIMENT TRAPS 2,5 AND 10, AND ASSOCIATED INTERNAL EARTH DIKES. (1 WEEK)
    ALL REMAINING TRAPS ARE TO REMAIN TO SUPPORT FUTURE PHASES OF THIS PROJECT.
15. IN CONJUNCTION WITH THE REMOVAL OF SEDIMENT BASIN 1, SEDIMENT TRAPS 2,5 AND 10, REMOVE TEMPORARY PIPING AND COMMENCE INSTALLATION OF STORMWATER MANAGEMENT FACILITIES. (SEE SHEETS 38 & 39) AS WELL AND REMAINING STORM DRAINS. ALL SEDIMENT CONTROLS INTERRUPTED DURING THE INSTALLATION OF STORM DRAIN ARE TO BE REPAIRED IMMEDIATELY. (1 MONTH)
16. STABILIZE ALL DISTURBED AREAS WITH TEMPORARY SEEDING. (3 DAYS).
17. INSTALL FINISHED SURFACE COURSE, SIDEWALKS AND STREET TREES. (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.
20. 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.
21. THE CONTRACT SHALL COORDINATE WITH THE INSPECTOR IN REGARDS TO THE REQUIREMENT THAT NO MORE THAN 20- ACRES OF "OPEN" GROUND SHALL BE DISTURBED AT ANY GIVEN TIME. THIS MAY BE ACCOMPLISHED BY GRADING ONE SPECIFIED AREA AT A TIME, IF REQUIRED.

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

NOTE:
NO REVISION TO THE SEQUENCE OF CONSTRUCTION WILL BE ALLOWED WITHOUT PRIOR APPROVAL FROM HOWARD SOIL CONSERVATION DISTRICT.

NOTE:
THIS PLAN SUPPORTS ROAD AND INFRASTRUCTURE CONSTRUCTION TO SUPPORT FUTURE HOUSING CONSTRUCTION. NO HOMES MAY BE CONSTRUCTED UNDER THIS PLAN.

PHASE #1

Site Analysis For Phase 1 Site Area:

Total Area of Site:	28.26	Acres
Area Disturbed:	19.95	Acres
Area to be roofed or paved:	10.81	Acres
Area to be vegetatively stabilized:	9.14	Acres
Total Cut:	53,525	Cu. Yds.
Total Fill:	53,525	Cu. Yds.
Offsite waste/borrow area location:	On-Site	

PHASE #2

Site Analysis For Phase 3 Site Area:

Total Area of Site:	10.53	Acres
Area Disturbed:	7.89	Acres
Area to be roofed or paved:	5.95	Acres
Area to be vegetatively stabilized:	1.94	Acres
Total Cut:	25,320	Cu. Yds.
Total Fill:	25,320	Cu. Yds.
Offsite waste/borrow area location:	On-Site	

PHASE #3

Site Analysis For Phase 2 Site Area:

Total Area of Site:	15.37	Acres
Area Disturbed:	11.52	Acres
Area to be roofed or paved:	7.42	Acres
Area to be vegetatively stabilized:	4.10	Acres
Total Cut:	35,650	Cu. Yds.
Total Fill:	35,650	Cu. Yds.
Offsite waste/borrow area location:	On-Site	

PHASE #4

Site Analysis For Phase 4 Site Area:

Total Area of Site:	5.83	Acres
Area Disturbed:	4.37	Acres
Area to be roofed or paved:	2.50	Acres
Area to be vegetatively stabilized:	1.87	Acres
Total Cut:	8,812	Cu. Yds.
Total Fill:	10,555	Cu. Yds.
Offsite waste/borrow area location:	On-Site	

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISE SEQUENCE OF CONSTRUCTION	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 8.3.16

Chief, Development Engineering Division — Date: 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7/27/2016

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 Conditions And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature Of Engineer — Date: 7/8/16

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 — Date: 6/29/16

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

Howard Soil Conservation District — Date: 7/19/16

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20748, EXPIRATION DATE: 2/22/17.

ALDO M. VITUCCI P.E. — DATE: 7/8/16

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

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS
HODDINOTT LLC
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

GRADING, EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

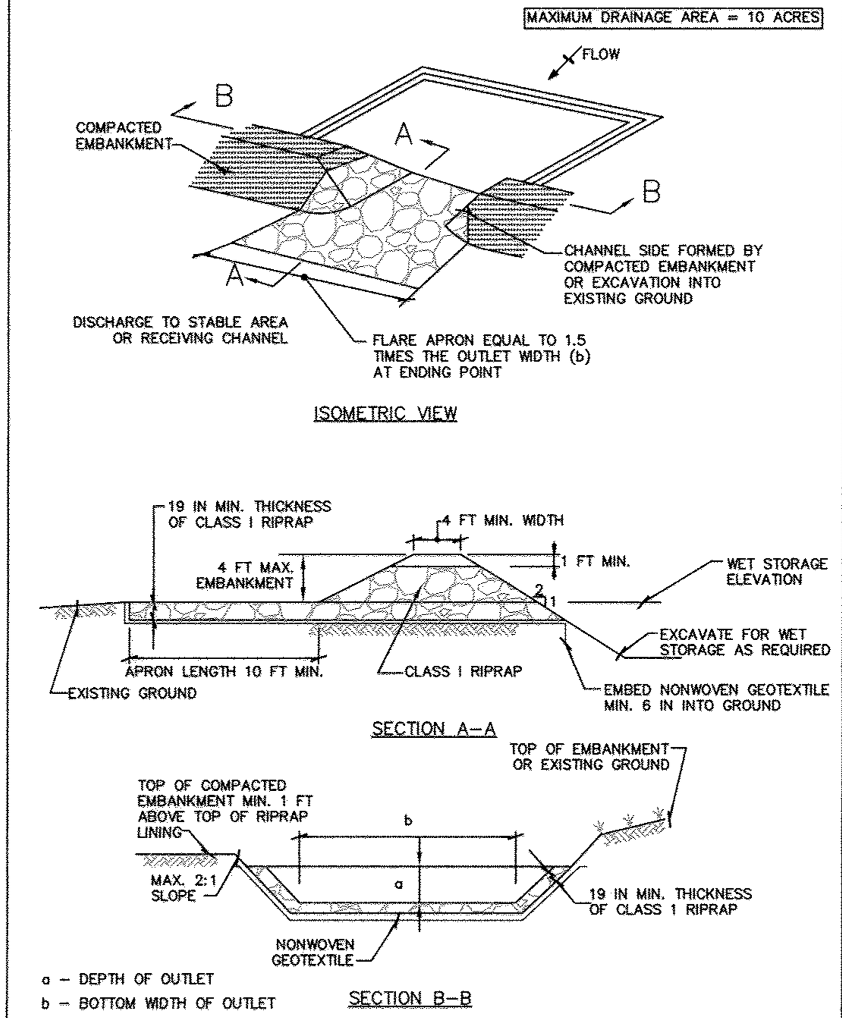
PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016

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

STANDARD SYMBOL: ST-III

MAXIMUM DRAINAGE AREA = 10 ACRES



CONSTRUCTION SPECIFICATIONS

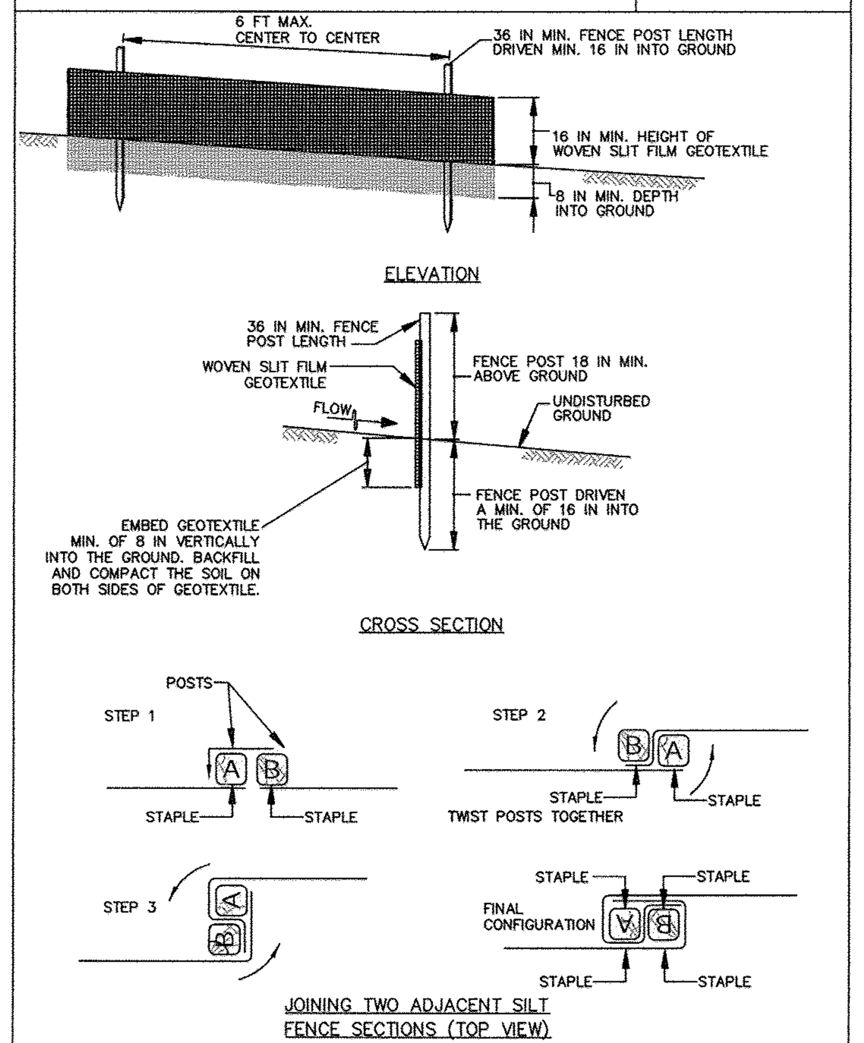
1. CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
2. CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
3. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE 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 E-1 SILT FENCE

STANDARD SYMBOL: ├──SF──┤



CONSTRUCTION SPECIFICATIONS

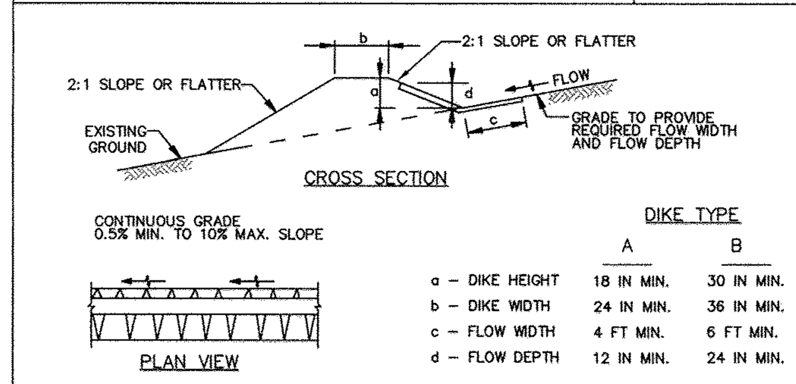
1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

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	DIKE TYPE 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

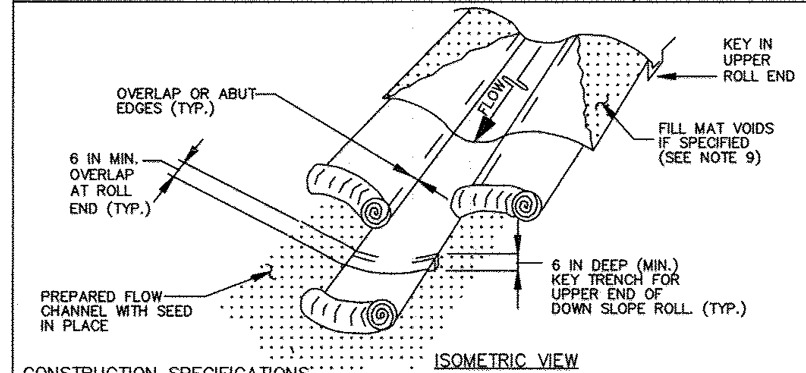
1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT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

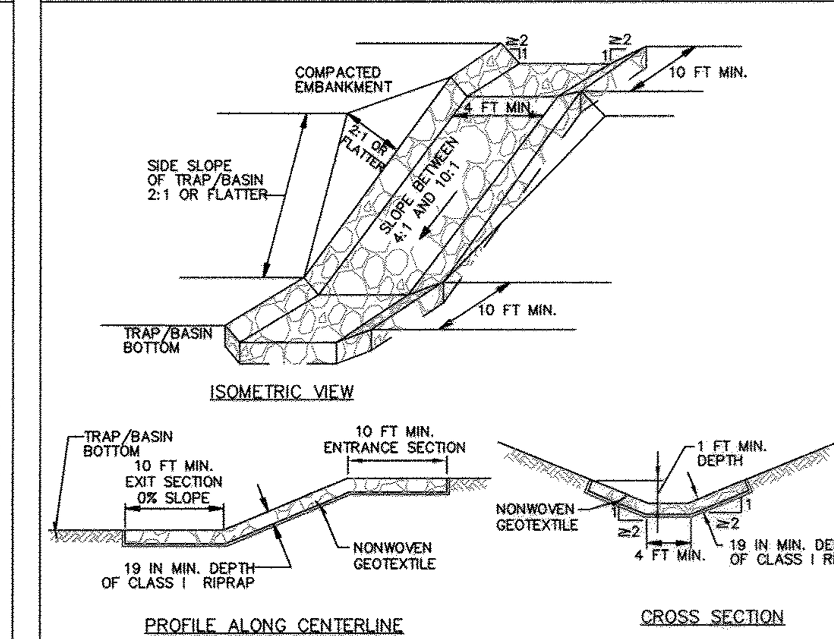
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN 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 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND 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 D-3-1 RIPRAP INFLOW PROTECTION

STANDARD SYMBOL: RRP



CONSTRUCTION SPECIFICATIONS

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

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

REVISIONS

NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

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 Conditions And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature Of Engineer — Date 7/8/16

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 — Date 6/29/16

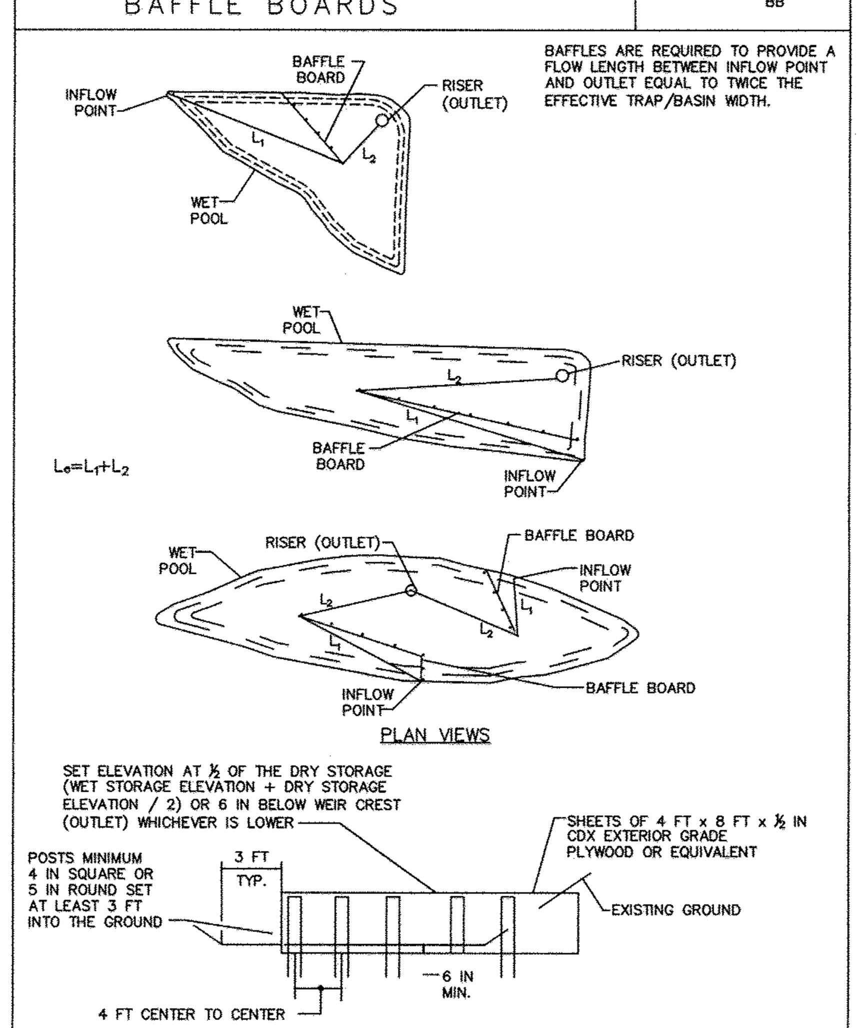
Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

Howard Soil Conservation District — Date 7/19/16

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.

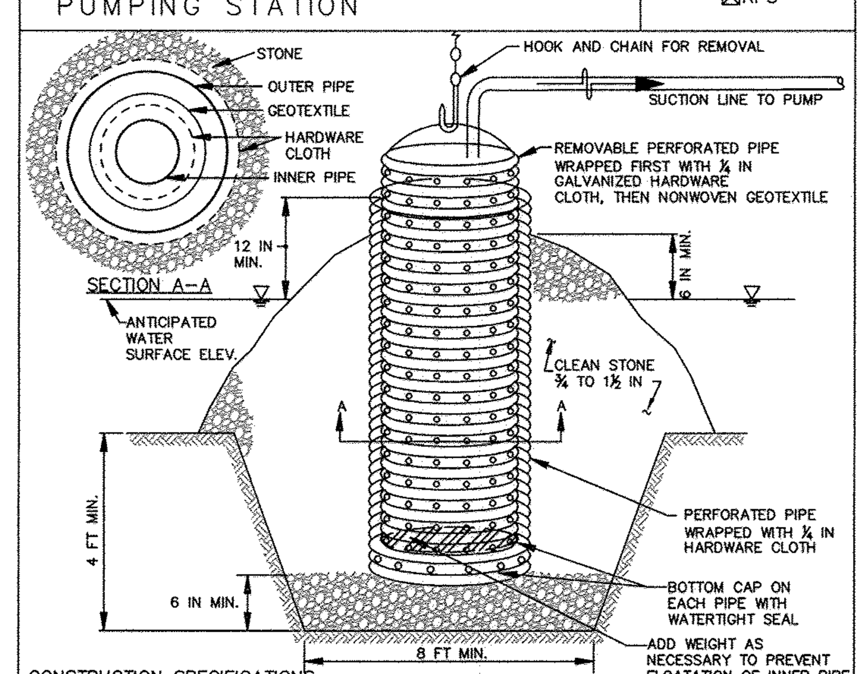


MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-1 REMOVABLE PUMPING STATION

STANDARD SYMBOL: ⊠RPS



CONSTRUCTION SPECIFICATIONS

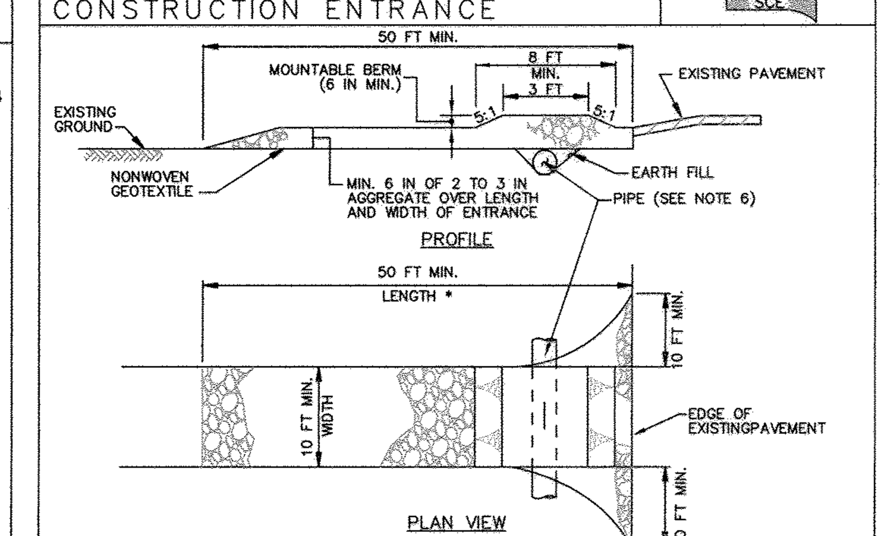
1. USE CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS 6 INCHES ON CENTER.
2. USE A MINIMUM 12 INCH DIAMETER INNER PIPE WITH AN OUTER PIPE A MINIMUM 6 INCHES LARGER IN DIAMETER. BOTTOM OF EACH PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
3. WRAP EACH PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH. ON INNER PIPE WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
4. EXCAVATE 8 FEET X 8 FEET X 4 FEET DEEP PIT FOR PIPE PLACEMENT. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
5. SET TOP OF INNER AND OUTER PIPES MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION (OR RISER CREST ELEVATION WHEN DEWATERING A BASIN).
6. BACKFILL PIT AROUND THE OUTER PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
7. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A REMOVABLE PUMPING STATION REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, PULL OUT INNER PIPE AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

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

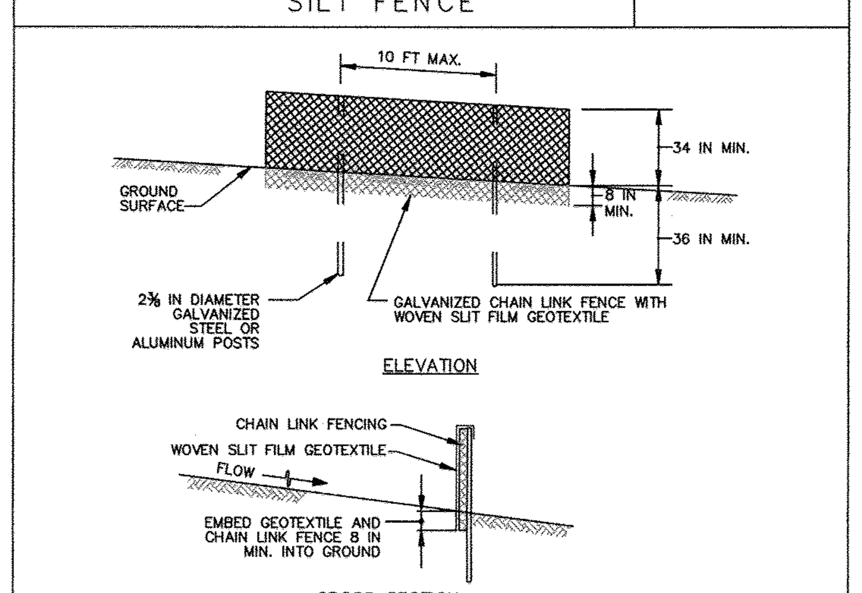
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING 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-3 SUPER SILT FENCE

STANDARD SYMBOL: ├──SSF──┤



CONSTRUCTION SPECIFICATIONS

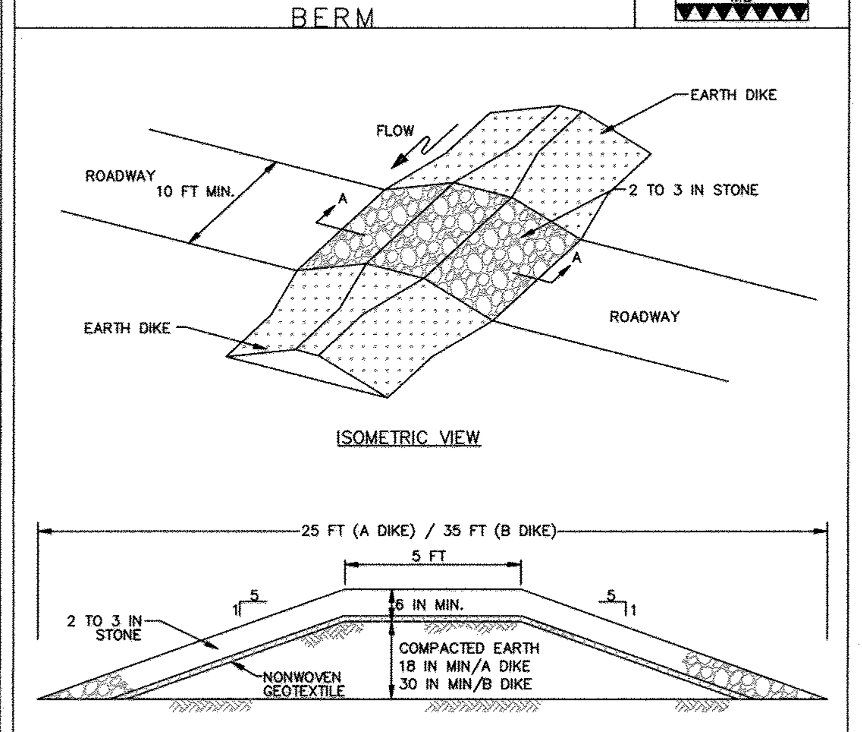
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY 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 C-8 MOUNTABLE BERM

STANDARD SYMBOL: MB



CONSTRUCTION SPECIFICATIONS

1. USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.
3. PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE BERM.
4. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.

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

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

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20748, EXPIRATION DATE: 2/22/17.

ALDO M. VITUCCI P.E. — DATE 7/8/16

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

HODDINOTT LLC
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

GRADING, EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18

PARCEL NOS.: 88 & 97

FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: JUNE 24, 2016

SHEET 24 OF 58 **F-15-110**

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-2-16

Chief, Development Engineering Division — Date 7/8/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

ENGINEER'S CERTIFICATE

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

STATE OF MARYLAND — No. 20748 — PROFESSIONAL ENGINEER

Signature Of Engineer — Date 7/6/16

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 — Date 6/29/16

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

Howard Soil Conservation District — Date 7/19/16

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 1 AREA B		
DRAINAGE AREA – INITIAL	1.20	ACRES
DRAINAGE AREA – INTERIM	---	ACRES
DRAINAGE AREA – FINAL	4.06	ACRES
TOTAL STORAGE REQUIRED	14,616	CF
TOTAL STORAGE PROVIDED	23,136	CF
WET STORAGE REQUIRED	7,308	CF
WET STORAGE PROVIDED	8,450 @ 444.0	CF
DRY STORAGE REQUIRED (TSWM)	7,405	CF
DRY STORAGE PROVIDED (TSWM)	14,713 @ 445.00	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	444.00	FT
TRAP BOTTOM ELEVATION	442.00	FT
TRAP BOTTOM DIMENSIONS	53 x 68	FT x FT
WEIR LENGTH	17	FT
WEIR CREST (DRY STORAGE) ELEVATION	445.00	FT
CLEANOUT ELEVATION	442.80	FT
TOP OF EMBANKMENT ELEVATION	448.00	FT
SIDE SLOPE	2	H:V RATIO
EMBANKMENT TOP WIDTH	5	FT
OUTLET PROTECTION – LENGTH	5	FT
OUTLET PROTECTION – DEPTH	18	IN

TEMPORARY SEDIMENT BASIN No.1 D.A. 'A'		
INITIAL D.A.	9.54	ACRES
FINAL D.A.	6.35	ACRES
STORAGE REQUIRED		
WET = 1800 x 9.54	17,172	CuFt.
DRY = 1800 x 9.54	17,172	CuFt.
STORAGE PROVIDED		
WET = 17,172 CuFt. @ ELEV. 437.20'		
DRY = 34,344 CuFt. @ ELEV. 438.28'	81,912 CuFt. @ RISER CREST FOR TSWM	
BOTTOM ELEV.	436.00	FT
STORAGE DEPTH	7.00	FT
TOP OF EMBANKMENT (8' wide)	443.65' CONSTRUCTED	
CLEANOUT ELEV.	436.60	FT
RISER CREST ELEV.	441.00	FT
1 YR. ORIFICE INV.	436.00	FT
Q1 exist.	0.52	c.f.s.
Q1 prop. = 0.60 c.f.s. @ ELEV. = 439.57'		

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
X.0	SPOT ELEVATION
	PROPOSED STORM DRAIN PIPE
	PROPOSED SEWER
	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	15-25% SLOPES
	25% OR GREATER SLOPES
	"B" SOILS
	"C" SOILS
	DISTURBABLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
DW	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (N-8) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING PUBLIC EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE T.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FOR #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE T.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

SEDIMENT CONTROL LEGEND

LOD	LIMIT OF DISTURBANCE
PHASE 1 L.O.D.	LIMIT OF DISTURBANCE. PHASING DIVISION
SSF	SUPER SILT FENCE
SF	SILT FENCE
SCE TYPE A-2	STABILIZED CONSTRUCTION ENTRANCE/MOUNTABLE BERM
	EARTH DIKE
P.S.	REMOVEABLE PUMPING STATION
F.B.	FILTER BAG
E.C.M.	EROSION CONTROL MATTING

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

NOTE:
1. NO GRADING MAY BEGIN IN THE AREAS OF THE SEDIMENT BASINS UNTIL THE PIPE MATERIALS (ANTI-SEEP COLLARS, CONCRETE, CMP, ETC ARE ON SITE AND ARE INSTALLED.
2. ALL SEDIMENT CONTROLS INTERUPTED BY STORM DRAIN INSTALLATION ARE TO BE REPAIRED IMMEDIATELY.

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 20748 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 20748, EXPIRATION DATE: 2/22/17.

ALDO M. VITUCCI P.E. — DATE 7/6/16

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JEANNE C. HODDINOTT
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CLARKSVILLE, MARYLAND 21029
(410)–531–5017

FOR GRADING AND SEDIMENT CONTROL PLAN–PHASE TWO –SEE SHEET NO. 27

GRADING, EROSION AND SEDIMENT CONTROL PLAN
PHASE ONE AND PHASE FOUR

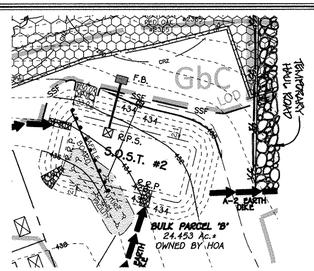
ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 80 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 25 OF 50 F-15-110

MATCHLINE: SEE SHEET 26

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO.		2 AREA C
DRAINAGE AREA – INITIAL	0.84	ACRES
DRAINAGE AREA – INTERIM	---	ACRES
DRAINAGE AREA – FINAL	0.97	ACRES
TOTAL STORAGE REQUIRED	3,492	CF
TOTAL STORAGE PROVIDED	14,082	CF
WET STORAGE REQUIRED	1,746	CF
WET STORAGE PROVIDED	1,746	CF
DRY STORAGE REQUIRED (TSWM)	3,492	CF
DRY STORAGE PROVIDED (TSWM)	11,749 @ 431.40	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	430.00	FT
TRAP BOTTOM ELEVATION	428.00	FT
TRAP BOTTOM DIMENSIONS	85 x 35	FT x FT
WEIR LENGTH	14	FT
WEIR CREST (DRY STORAGE) ELEVATION	433.00	FT
CLEANOUT ELEVATION	428.20	FT
TOP OF EMBANKMENT ELEVATION	434.00	FT
SIDE SLOPE	2	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
OUTLET PROTECTION – LENGTH	10	FT
OUTLET PROTECTION – DEPTH	19	IN



FINAL GRADING TRAP #2
SCALE: 1" = 30'

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO.		3 AREA D
DRAINAGE AREA – INITIAL	1.03	ACRES
DRAINAGE AREA – INTERIM	---	ACRES
DRAINAGE AREA – FINAL	4.42	ACRES
TOTAL STORAGE REQUIRED	15,912	CF
TOTAL STORAGE PROVIDED	29,280	CF
WET STORAGE REQUIRED	7,956	CF
WET STORAGE PROVIDED	9,752 @ 420.0	CF
DRY STORAGE REQUIRED (TSWM)	15,246	CF
DRY STORAGE PROVIDED (TSWM)	19,528 @ 423.0	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	420.00	FT
TRAP BOTTOM ELEVATION	418.00	FT
TRAP BOTTOM DIMENSIONS	50 x 86	FT x FT
WEIR LENGTH	10	FT
WEIR CREST (DRY STORAGE) ELEVATION	423.00	FT
CLEANOUT ELEVATION	420.50	FT
TOP OF EMBANKMENT ELEVATION	424.00	FT
SIDE SLOPE	2	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
OUTLET PROTECTION – LENGTH	10	FT
OUTLET PROTECTION – DEPTH	19	IN

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
X362.2	SPOT ELEVATION
	PROPOSED STORM DRAIN PIPE
	PROPOSED SEWER
	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREST OPEN SPACE
	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-1)
	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-5) OR (N-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING RGAC EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FCE #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

SEDIMENT CONTROL LEGEND

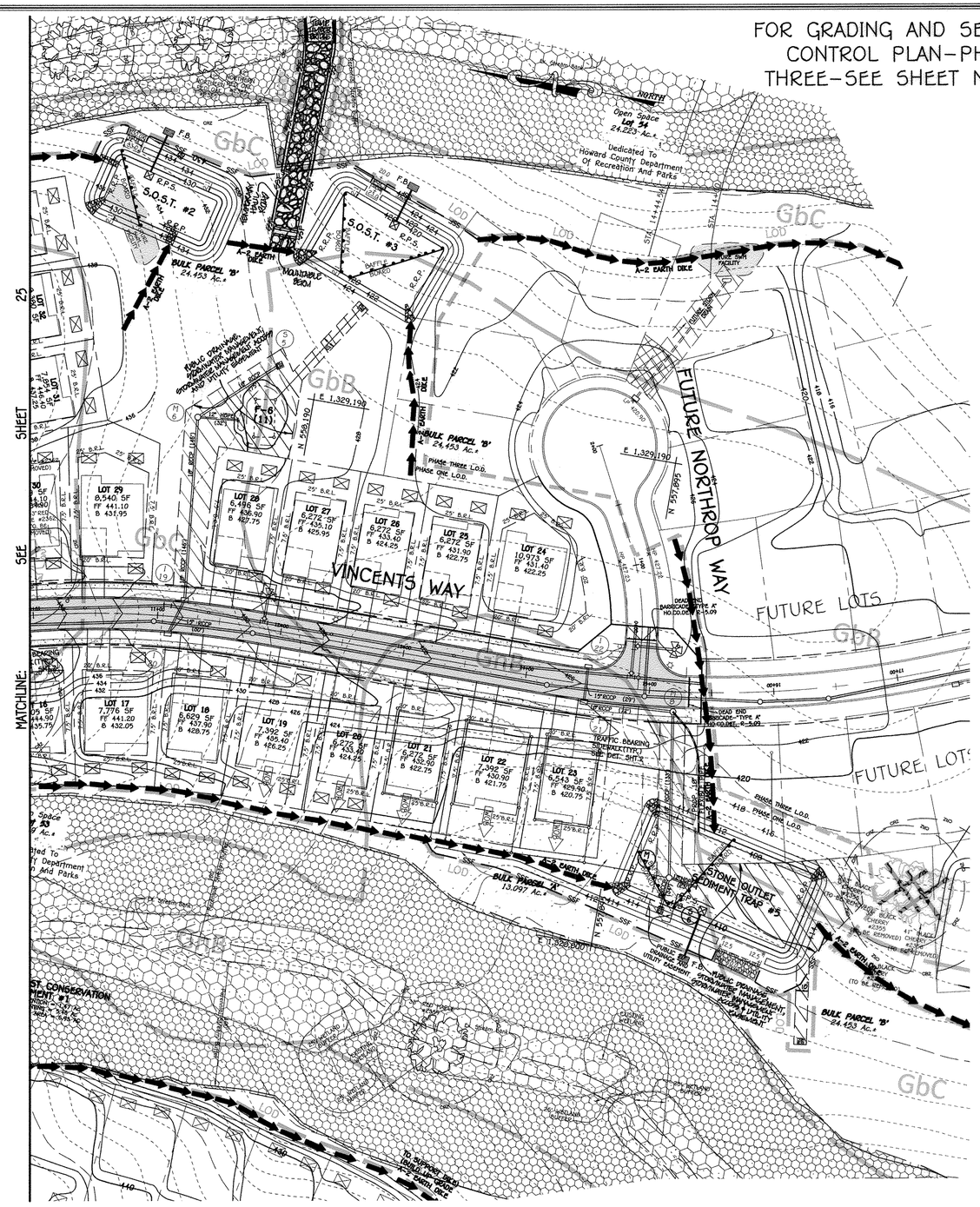
LOD	LIMIT OF DISTURBANCE
PHASE 1 L.O.D.	LIMIT OF DISTURBANCE PHASING DIVISION
SSF	SUPER SILT FENCE
SF	SILT FENCE
SCE	STABILIZED CONSTRUCTION ENTRANCE/MOUNTABLE BERM
TYPE A-2	EARTH DIKE
R.P.S.	REMOVEABLE PUMPING STATION
F.B.	FILTER BAG
E.C.M.	EROSION CONTROL MATTING

NOTE:
1. NO GRADING MAY BEGIN IN THE AREAS OF THE SEDIMENT BASINS UNTIL THE PIPE MATERIALS (ANTI-SEEP COLLARS, CONCRETE, CMP, ETC ARE ON SITE AND ARE INSTALLED.
2. ALL SEDIMENT CONTROLS INTERUPTED BY STORM DRAIN INSTALLATION ARE TO BE REPAIRED IMMEDIATELY.

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

FOR GRADING AND SEDIMENT CONTROL PLAN–PHASE THREE–SEE SHEET NO. 28



REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS, TEMPORARY ACCESS DRIVES AND HAUL ROAD	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 7/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

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 Conditions And That It Was Prepared In Accordance With The Regulations Of The Howard Soil Conservation District.

Signature Of Engineer — Date 7/9/16

DEVELOPER'S CERTIFICATE

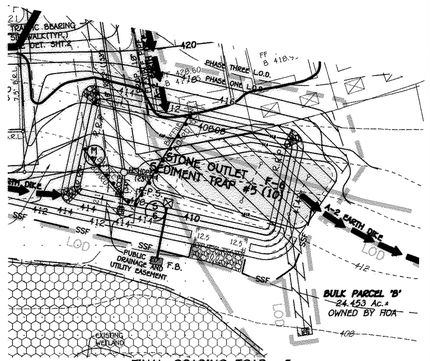
"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved 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 — Date 6/29/16

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

Howard Soil Conservation District — Date 7/19/16

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO.		5 AREA G
DRAINAGE AREA – INITIAL	6.23	ACRES
DRAINAGE AREA – INTERIM	---	ACRES
DRAINAGE AREA – FINAL	3.30	ACRES
TOTAL STORAGE REQUIRED	22,428	CF
TOTAL STORAGE PROVIDED	51,440	CF
WET STORAGE REQUIRED	11,214	CF
WET STORAGE PROVIDED	11,214	CF
DRY STORAGE REQUIRED (TSWM)	29,509	CF
DRY STORAGE PROVIDED (TSWM)	39,024 @ 412.00	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	410.00	FT
TRAP BOTTOM ELEVATION	408.00	FT
TRAP BOTTOM DIMENSIONS	135 x 60	FT x FT
WEIR LENGTH	36	FT
WEIR CREST (DRY STORAGE) ELEVATION	412.50	FT
CLEANOUT ELEVATION	408.60	FT
TOP OF EMBANKMENT ELEVATION	414.00	FT
SIDE SLOPE	2	H:V RATIO
EMBANKMENT TOP WIDTH	5	FT
OUTLET PROTECTION – LENGTH	10	FT
OUTLET PROTECTION – DEPTH	19	IN



FINAL GRADING TRAP #5
SCALE: 1" = 30'

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 20748 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 20748, EXPIRATION DATE: 2/22/17.

ALDO M. VITUCCI P.E. — DATE 7/9/16

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET–SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

HODDINOTT LLC
8318 FORREST STREET–SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

GRADING, EROSION AND SEDIMENT CONTROL PLAN
PHASE ONE
ENCLAVE AT TIERNEY FARM
PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 00 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 26 OF 50

F-15-110

FOR GRADING AND SEDIMENT CONTROL PLAN-PHASE ONE -SEE SHEET NO. 25 & 26

FOR GRADING AND SEDIMENT CONTROL PLAN-PHASE THREE-SEE SHEET NO. 28

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS	10/3/16

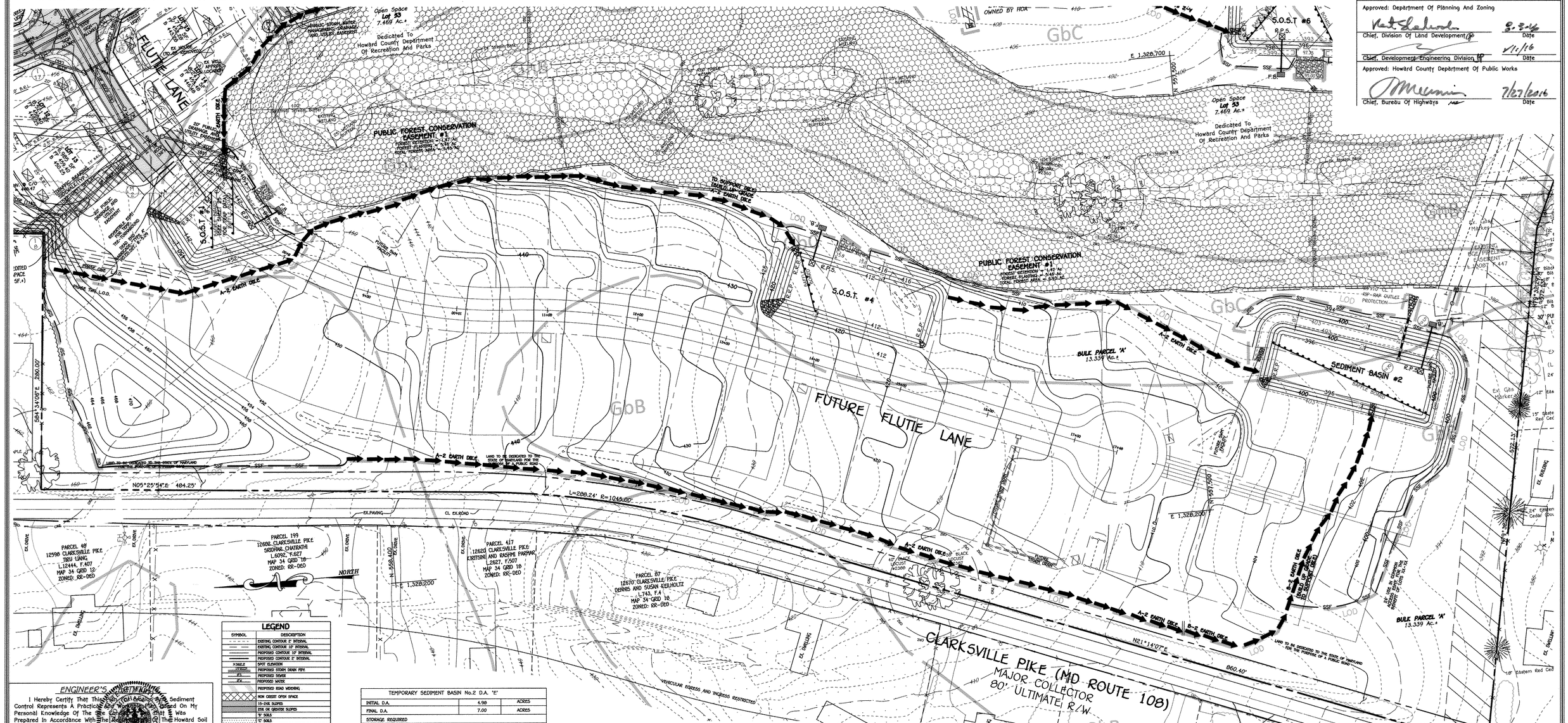
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 11/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016



LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×368.2	SPOT ELEVATION
	PROPOSED STORM DRAIN PIPE
	PROPOSED SEWER
	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	15-25% SLOPES
	25% OR GREATER SLOPES
	'B' SOILS
	'C' SOILS
	ERODIBLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE CHASE
	NON ROOFTOP DISCONNECTION (N-2)
SS	SNOWFILL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING EGAS EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FOR #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

ENGINEER'S CERTIFICATE

I Hereby Certify That This Plan, Consisting Of Sheets, Is Based On My Personal Knowledge Of The Site Conditions And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

PROFESSIONAL ENGINEER No. 20748

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."

Signature Of Developer — Date 6/28/16

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

Howard Soil Conservation District — Date 7/19/16

TEMPORARY SEDIMENT BASIN No.2 D.A. 'E'		
INITIAL D.A.	4.98	ACRES
FINAL D.A.	7.00	ACRES
STORAGE REQUIRED		
WET = 1800 x 7.00	12,600	CuFt.
DRY = 1800 x 7.00	12,600	CuFt.
STORAGE PROVIDED		
WET = 12,600 CuFt. @ ELEV. 397.40'		
DRY = 23,522 CuFt. @ ELEV. 398.40' 39,032 Cu.Ft. @ RISER CREST FOR TSWM		
BOTTOM ELEV.	396.00	FT
STORAGE DEPTH	7.10	FT
TOP OF EMBANKMENT (8' wide)	403.10' CONSTRUCTED	
CLEANOUT ELEV.	396.70	FT
RISER CREST ELEV.	399.75	FT
1 YR. ORIFICE INV.	396.00	FT
Q1 exist.	0.60	c.f.s.
Q1 prop. = 1.40 c.f.s. @ ELEV. = 398.15'		

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 4 AREA F		
DRAINAGE AREA - INITIAL	3.58	ACRES
DRAINAGE AREA - INTERIM	---	ACRES
DRAINAGE AREA - FINAL	2.01	ACRES
TOTAL STORAGE REQUIRED	12,888	CF
TOTAL STORAGE PROVIDED	38,226	CF
WET STORAGE REQUIRED	6,444	CF
WET STORAGE PROVIDED	6,444	CF
DRY STORAGE REQUIRED (TSWM)	12,888	CF
DRY STORAGE PROVIDED (TSWM)	12,888	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	413.20	FT
TRAP BOTTOM ELEVATION	412.00	FT
TRAP BOTTOM DIMENSIONS	50 x 156	FT x FT
WEIR LENGTH	35	FT
WEIR CREST (DRY STORAGE) ELEVATION	415.00	FT
CLEANOUT ELEVATION	412.30	FT
TOP OF EMBANKMENT ELEVATION	416.00	FT
SIDE SLOPE	2	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
OUTLET PROTECTION - LENGTH	10	FT
OUTLET PROTECTION - DEPTH	19	IN

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20748, EXPIRATION DATE: 2/22/17.

ALDO M. VITUCCI P.E. — DATE 7/8/16

STATE OF MARYLAND ALDO MICHAEL VITUCCI No. 20748 PROFESSIONAL ENGINEER

SEDIMENT CONTROL LEGEND

LOD	LIMIT OF DISTURBANCE
PHASE 1 L.O.D.	LIMIT OF DISTURBANCE PHASING DIVISION
SSF	SUPER SILT FENCE
SF	SILT FENCE
SCE TYPE A-2	STABILIZED CONSTRUCTION ENTRANCE/MOUNTABLE BERM
	EARTH DIKE
R.P.S.	REMOVEABLE PUMPING STATION
F.B.	FILTER BAG
E.C.M.	EROSION CONTROL MATTING

NOTE:
1. NO GRADING MAY BEGIN IN THE AREAS OF THE SEDIMENT BASINS UNTIL THE PIPE MATERIALS (ANTI-SEEP COLLARS, CONCRETE, CMP, ETC ARE ON SITE AND ARE INSTALLED.
2. ALL SEDIMENT CONTROLS INTERUPTED BY STORM DRAIN INSTALLATION ARE TO BE REPAIRED IMMEDIATELY.

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

HODDINOTT LLC
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ELLICOTT CITY, MARYLAND 21043
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JEANNE C. HODDINOTT
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(410)-531-5017

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

GRADING, EROSION AND SEDIMENT CONTROL PLAN PHASE TWO
ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 27 OF 58

F-15-110

SEDIMENT CONTROL LEGEND

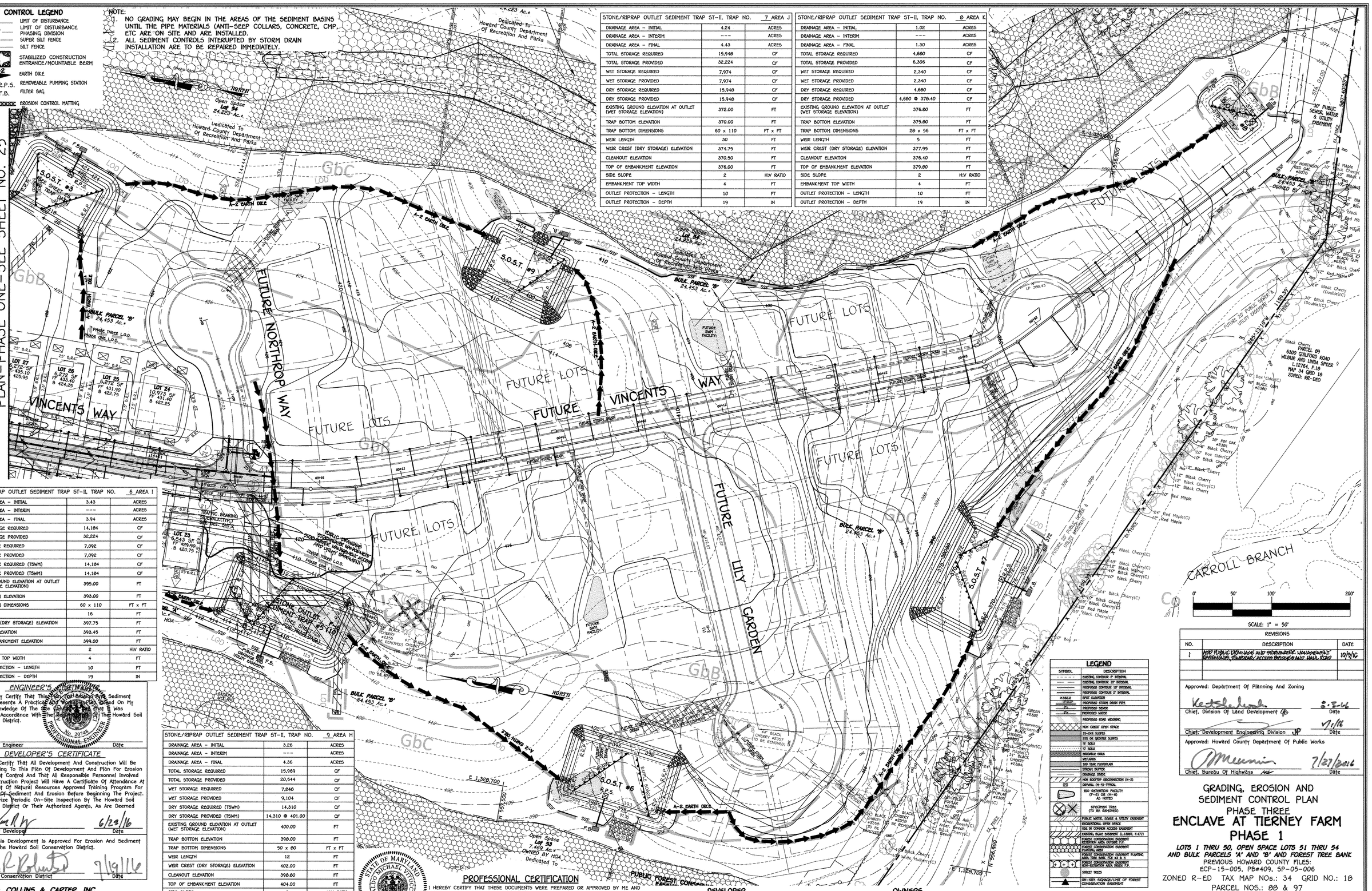
LOD	LIMIT OF DISTURBANCE
PHASE I L.O.D.	LIMIT OF DISTURBANCE PHASING DIVISION
SSF	SUPER SILT FENCE
SF	SILT FENCE
SCE TYPE A-2	STABILIZED CONSTRUCTION ENTRANCE/MOUNTABLE BERM
	EARTH DIKE
R.P.S.	REMOVEABLE PUMPING STATION
F.B.	FILTER BAG
E.C.M.	EROSION CONTROL MATTING

NOTE:
1. NO GRADING MAY BEGIN IN THE AREAS OF THE SEDIMENT BASINS UNTIL THE PIPE MATERIALS (ANTI-SEEP COLLARS, CONCRETE, CMP, ETC ARE ON SITE AND ARE INSTALLED.
2. ALL SEDIMENT CONTROLS INTERUPTED BY STORM DRAIN INSTALLATION ARE TO BE REPAIRED IMMEDIATELY.

FOR GRADING AND SEDIMENT CONTROL
PLAN-PHASE ONE-SEE SHEET NO. 25

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 7 AREA J		
DRAINAGE AREA – INITIAL	4.24	ACRES
DRAINAGE AREA – INTERIM	---	ACRES
DRAINAGE AREA – FINAL	4.43	ACRES
TOTAL STORAGE REQUIRED	15,948	CF
TOTAL STORAGE PROVIDED	32,224	CF
WET STORAGE REQUIRED	7,974	CF
WET STORAGE PROVIDED	7,974	CF
DRY STORAGE REQUIRED	15,948	CF
DRY STORAGE PROVIDED	15,948	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	372.00	FT
TRAP BOTTOM ELEVATION	370.00	FT
TRAP BOTTOM DIMENSIONS	60 x 110	FT x FT
WEIR LENGTH	30	FT
WEIR CREST (DRY STORAGE) ELEVATION	374.75	FT
CLEANOUT ELEVATION	370.50	FT
TOP OF EMBANKMENT ELEVATION	376.00	FT
SIDE SLOPE	2	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
OUTLET PROTECTION – LENGTH	10	FT
OUTLET PROTECTION – DEPTH	19	IN

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 9 AREA K		
DRAINAGE AREA – INITIAL	1.02	ACRES
DRAINAGE AREA – INTERIM	---	ACRES
DRAINAGE AREA – FINAL	1.30	ACRES
TOTAL STORAGE REQUIRED	4,680	CF
TOTAL STORAGE PROVIDED	6,306	CF
WET STORAGE REQUIRED	2,340	CF
WET STORAGE PROVIDED	2,340	CF
DRY STORAGE REQUIRED	4,680	CF
DRY STORAGE PROVIDED	4,680 @ 378.40	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	376.80	FT
TRAP BOTTOM ELEVATION	375.80	FT
TRAP BOTTOM DIMENSIONS	28 x 56	FT x FT
WEIR LENGTH	5	FT
WEIR CREST (DRY STORAGE) ELEVATION	377.95	FT
CLEANOUT ELEVATION	376.40	FT
TOP OF EMBANKMENT ELEVATION	379.80	FT
SIDE SLOPE	2	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
OUTLET PROTECTION – LENGTH	10	FT
OUTLET PROTECTION – DEPTH	19	IN



STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 6 AREA I		
DRAINAGE AREA – INITIAL	3.43	ACRES
DRAINAGE AREA – INTERIM	---	ACRES
DRAINAGE AREA – FINAL	3.94	ACRES
TOTAL STORAGE REQUIRED	14,184	CF
TOTAL STORAGE PROVIDED	32,224	CF
WET STORAGE REQUIRED	7,092	CF
WET STORAGE PROVIDED	7,092	CF
DRY STORAGE REQUIRED (TSWM)	14,184	CF
DRY STORAGE PROVIDED (TSWM)	14,184	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	395.00	FT
TRAP BOTTOM ELEVATION	393.00	FT
TRAP BOTTOM DIMENSIONS	60 x 110	FT x FT
WEIR LENGTH	16	FT
WEIR CREST (DRY STORAGE) ELEVATION	397.75	FT
CLEANOUT ELEVATION	393.45	FT
TOP OF EMBANKMENT ELEVATION	399.00	FT
SIDE SLOPE	2	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
OUTLET PROTECTION – LENGTH	10	FT
OUTLET PROTECTION – DEPTH	19	IN

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 9 AREA H		
DRAINAGE AREA – INITIAL	3.26	ACRES
DRAINAGE AREA – INTERIM	---	ACRES
DRAINAGE AREA – FINAL	4.36	ACRES
TOTAL STORAGE REQUIRED	15,969	CF
TOTAL STORAGE PROVIDED	20,544	CF
WET STORAGE REQUIRED	7,848	CF
WET STORAGE PROVIDED	9,104	CF
DRY STORAGE REQUIRED (TSWM)	14,310	CF
DRY STORAGE PROVIDED (TSWM)	14,310 @ 401.00	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	400.00	FT
TRAP BOTTOM ELEVATION	398.00	FT
TRAP BOTTOM DIMENSIONS	50 x 80	FT x FT
WEIR LENGTH	12	FT
WEIR CREST (DRY STORAGE) ELEVATION	402.00	FT
CLEANOUT ELEVATION	398.80	FT
TOP OF EMBANKMENT ELEVATION	404.00	FT
SIDE SLOPE	2	H:V RATIO
EMBANKMENT TOP WIDTH	6	FT
OUTLET PROTECTION – LENGTH	10	FT
OUTLET PROTECTION – DEPTH	19	IN

ENGINEER'S CERTIFICATE

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

Signature Of Engineer — Date

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 — Date 6/23/16

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

Howard Soil Conservation District — Date 7/19/16

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
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PROFESSIONAL CERTIFICATION

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ALDO M. VITUCCI P.E. — DATE 7/8/16

DEVELOPER

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JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
X.MSL	SPOT ELEVATION
ST.BOX	PROPOSED STORM DRAIN PIPE
P.S.	PROPOSED SEWER
P.W.	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	15-25% SLOPES
	25% OR GREATER SLOPES
	'B' SOILS
	'C' SOILS
	ERODABLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIKES
	NON ROOFTOP DISCONNECTION (N-2)
	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-5) OR (N-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING INGRESS EASEMENT (L.10087, F.477)
	FOREST CONSERVATION EASEMENT
	RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK. FCE #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS, TOWNHOME ACCESS DRIVEWAYS AND HALL ROAD	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-8-16

Chief, Development Engineering Division — Date 7/1/16

Approved: Howard County Department Of Public Works

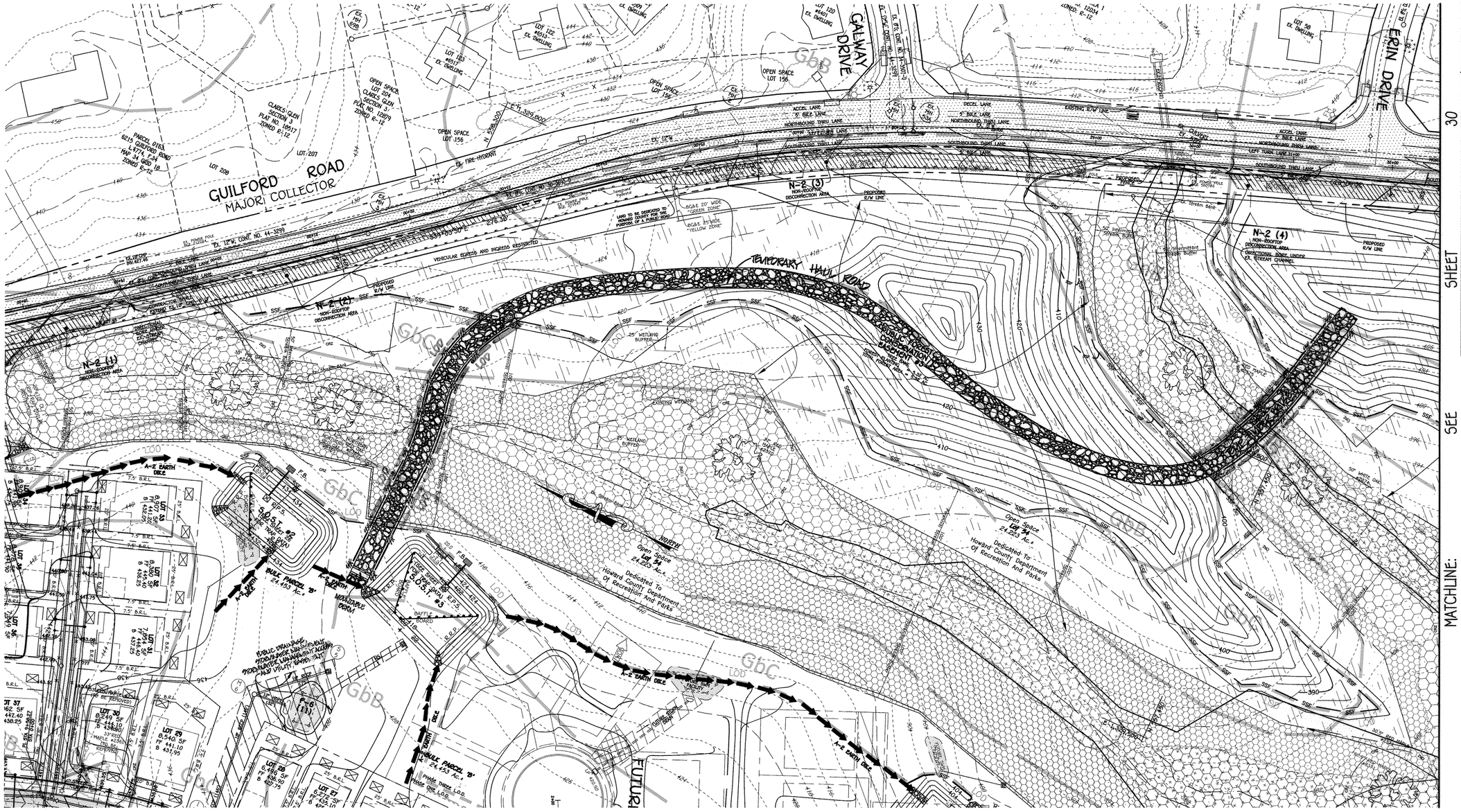
Chief, Bureau Of Highways — Date 7/27/2016

GRADING, EROSION AND SEDIMENT CONTROL PLAN
PHASE THREE
ENCLAVE AT TIERNEY FARM
PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK
PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 28 OF 58

F-15-110

FOR GRADING AND SEDIMENT CONTROL PLAN
-PHASES ONE AND FOUR -SEE SHEET NO. 25



FOR GRADING AND SEDIMENT CONTROL PLAN
-PHASE THREE - SEE SHEET NO. 28

NOTE:
1. NO GRADING MAY BEGIN IN THE AREAS OF THE SEDIMENT BASINS UNTIL THE PIPE MATERIALS (ANTI-SEEP COLLARS, CONCRETE, CMP, ETC ARE ON SITE AND ARE INSTALLED.
2. ALL SEDIMENT CONTROLS INTERUPTED BY STORM DRAIN INSTALLATION ARE TO BE REPAIRED IMMEDIATELY.

REVISIONS

NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS, SIDEWALKS, ACCURY PROPERTY & HAUL ROAD, REMOVE EASE	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 7/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

ENGINEER'S CERTIFICATE

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

PROFESSIONAL ENGINEER No. 20748

Signature Of Engineer — Date 7/8/16

DEVELOPER'S CERTIFICATE

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Signature Of Developer — Date 6/29/16

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

Howard Soil Conservation District — Date 7/19/16

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×360.2	SPOT ELEVATION
12"D.I.P.	PROPOSED STORM DRAIN PIPE
S	PROPOSED SEWER
W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	15-24% SLOPES
	25% OR GREATER SLOPES
	'B' SOILS
	'C' SOILS
	ERODIBLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE STATE
	NON ROOFTOP DISCONNECTION (N-2)
SS	DRYWELL (X-3)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING RIGHT EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE T.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FOR #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE T.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

SEDIMENT CONTROL LEGEND

LOD	LIMIT OF DISTURBANCE
PHASE 1 L.O.D.	LIMIT OF DISTURBANCE PHASING DIVISION
SSF	SUPER SILT FENCE
SF	SILT FENCE
SCE	STABILIZED CONSTRUCTION ENTRANCE/MOUNTABLE BERM
TYPE A-2	EARTH DIKE
R.P.S.	REMOVEABLE PUMPING STATION
F.B.	FILTER BAG
E.C.M.	EROSION CONTROL MATTING

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

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 20748 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 20748, EXPIRATION DATE: 2/22/17.

ALDO M. VITUCCI P.E. — DATE 7/8/16

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
8310 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS
HODDINOTT LLC
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ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

GRADING, EROSION AND
SEDIMENT CONTROL PLAN
STOCK PILE AREA ONE

ENCLAVE AT TIERNEY FARM
PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 80 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 29 OF 58

F-15-110

FOR GRADING AND SEDIMENT CONTROL
PLAN-PHASE THREE -SEE SHEET NO. 29

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×382.2	SPOT ELEVATION
12"CMP	PROPOSED STORM DRAIN PIPE
#3	PROPOSED SEWER
#4	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	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 BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING INGRESS EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BARR. FOR #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	OFF-SITE SEWAGE/LIMIT OF FOREST CONSERVATION EASEMENT

SEDIMENT CONTROL LEGEND

LOD	LIMIT OF DISTURBANCE
PHASE 1 L.O.D.	LIMIT OF DISTURBANCE PHASING DIVISION
SSF	SUPER SILT FENCE
SF	SILT FENCE
SCE	STABILIZED CONSTRUCTION ENTRANCE/MOUNTABLE BERM
TYPE A-2	EARTH DIKE
R.P.S.	REMOVEABLE PUMPING STATION
F.B.	FILTER BAG
E.C.M.	EROSION CONTROL MATTING

REVISIONS		
NO.	DESCRIPTION	DATE
1	MINOR REORGANIZATION EASEMENT	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

ENGINEER'S CERTIFICATE

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

Signature Of Engineer — Date 7/6/16

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 — Date 6/29/16

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

Howard Soil Conservation District — Date 7/19/16

NOTE:
1. NO GRADING MAY BEGIN IN THE AREAS OF THE SEDIMENT BASINS UNTIL THE PIPE MATERIALS (ANTI-SEEP COLLARS, CONCRETE, CMP, ETC ARE ON SITE AND ARE INSTALLED.
2. ALL SEDIMENT CONTROLS INTERUPTED BY STORM DRAIN INSTALLATION ARE TO BE REPAIRED IMMEDIATELY.

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GRADING, EROSION AND
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STOCK PILE AREA TWO

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PHASE 1

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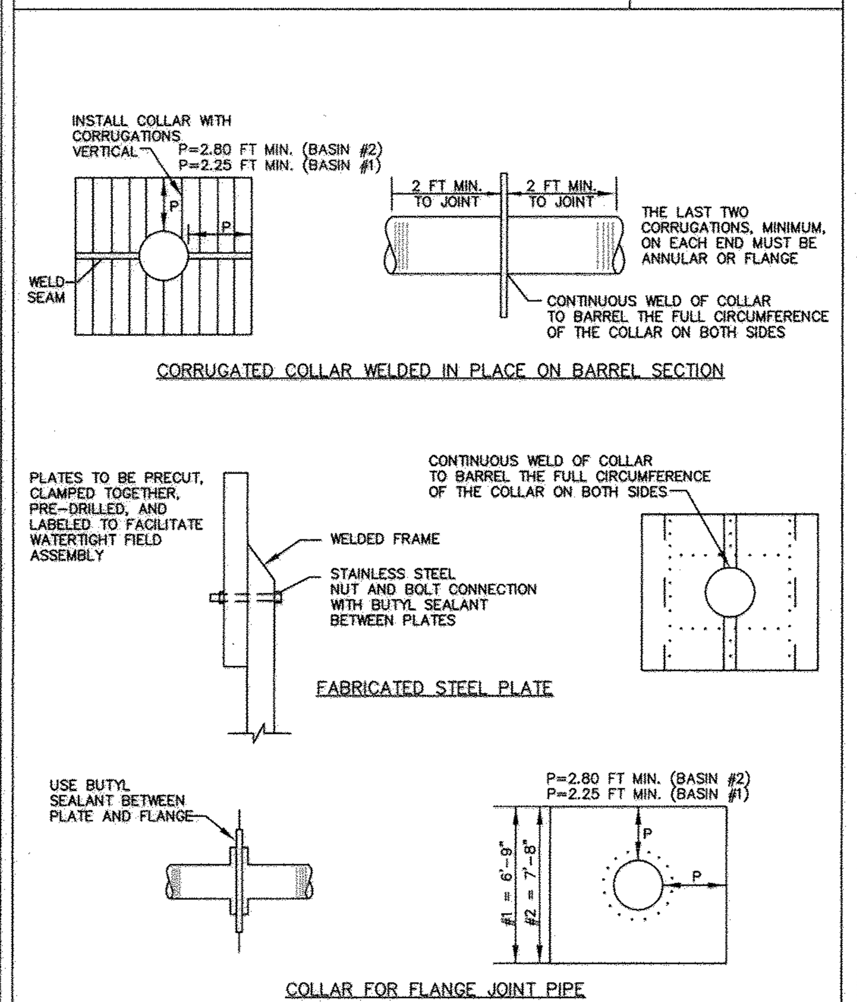
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 30 OF 50

F-15-110

DETAIL G-2-1 TYPICAL ANTI-SEEP COLLARS

STANDARD SYMBOL



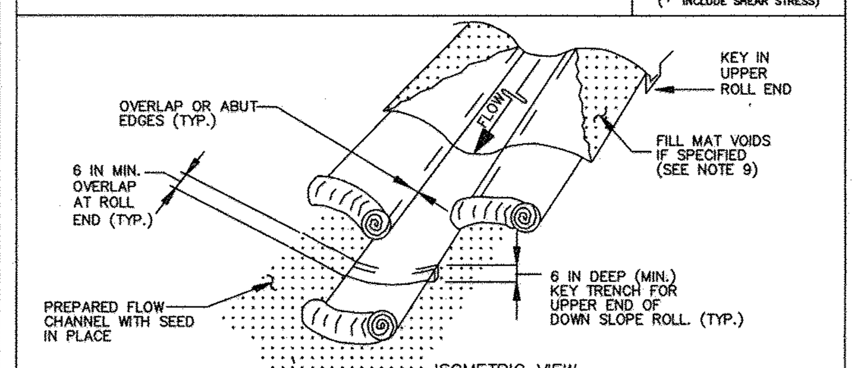
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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.

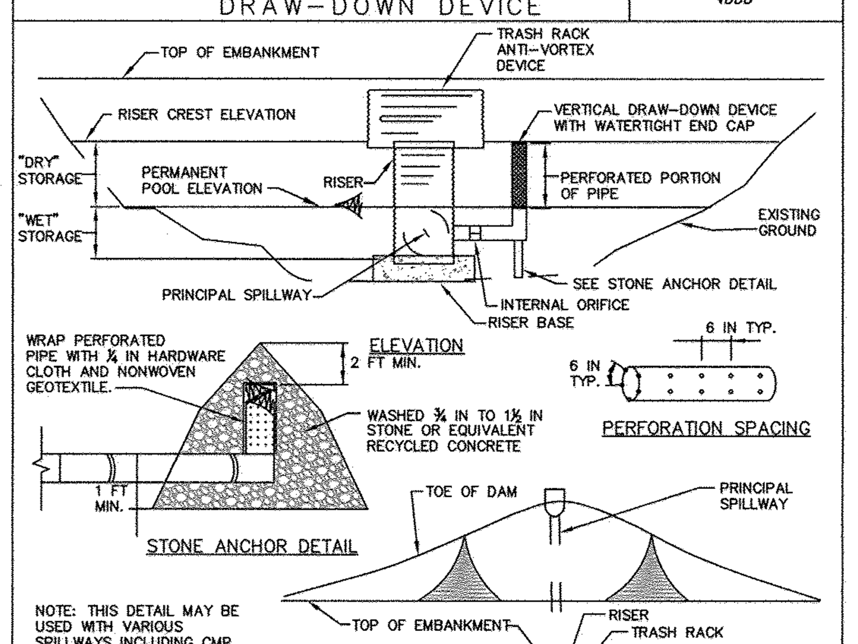
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL G-2-7 SEDIMENT BASIN SCHEMATIC VERTICAL DRAW-DOWN DEVICE

STANDARD SYMBOL

VDDD



CONSTRUCTION SPECIFICATIONS

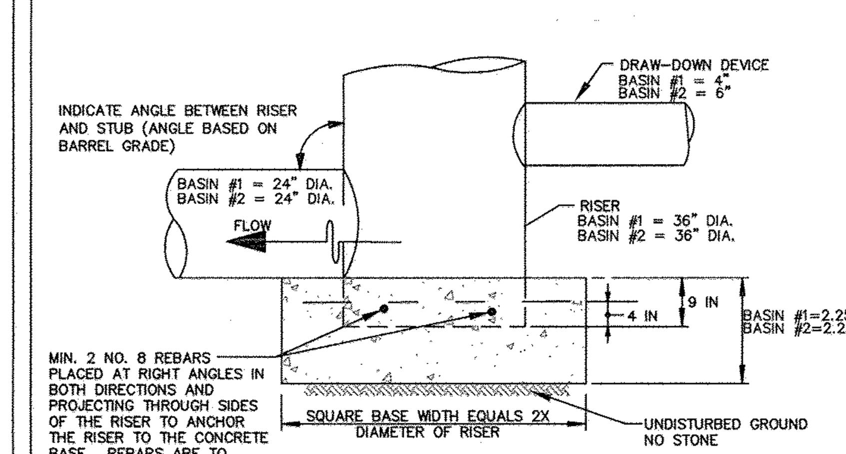
1. PERFORATE PIPE WITH 1 INCH DIAMETER PERFORATIONS SPACED 6 INCHES APART LONGITUDINALLY AND RADIALLY OR IN ACCORDANCE WITH APPROVED PLAN.
2. DO NOT EXTEND PERFORATIONS IN THE DRAW-DOWN DEVICE INTO WET STORAGE.
3. WRAP THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE FIRST WITH ¼ INCH GALVANIZED HARDWARE CLOTH, THEN WITH NONWOVEN GEOTEXTILE. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. DO NOT WRAP WITH MORE THAN ONE LAYER OF GEOTEXTILE.
4. AS AN ALTERNATE TO STONE ANCHORING, SECURE DRAW-DOWN DEVICE WITH TWO 1 INCH STEEL ANGLES SET 3 FEET MINIMUM INTO THE GROUND ATTACHED TO DRAW-DOWN DEVICE BY A 1 INCH WIDE GALVANIZED STEEL STRAP OR 12 GAUGE OR HEAVIER WIRE.
5. REMOVE SEDIMENT WHEN IT ACCUMULATES TO CLEANOUT ELEVATION (50% OF THE WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA IN A SUCH A MANNER THAT IT WILL NOT ERODE. MAINTAIN WATER TIGHT CONNECTIONS. REPLACE GEOTEXTILE AROUND PERFORATED RISER IF DRY STORAGE VOLUME DOES NOT DRAW DOWN WITHIN 10 HOURS.

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-2-2 CORRUGATED RISER BASE

STANDARD SYMBOL



CONSTRUCTION SPECIFICATIONS

1. BOTTOM OF CONCRETE BASE TO BE PLACED ON UNDISTURBED, NATURAL GROUND.
2. NO STONE IS ALLOWED UNDER BASE. IF NECESSARY, TO ACHIEVE STABILITY INCREASE DEPTH OF CONCRETE BASE.

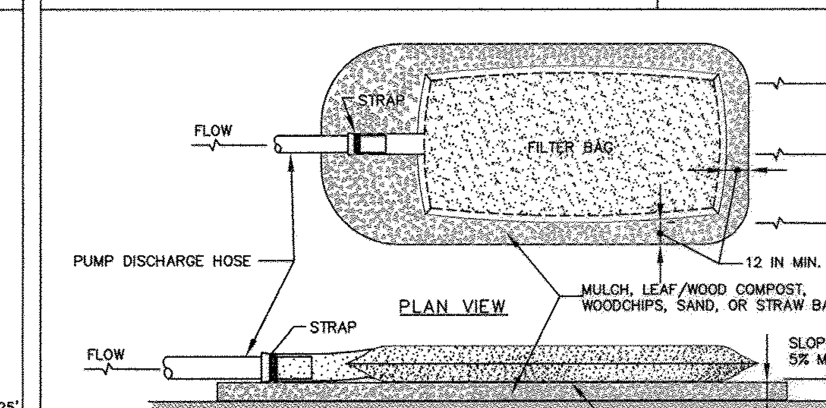
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-4 FILTER BAG

STANDARD SYMBOL

☒FB



CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D-4491
PERMITTIVITY (SEC⁻¹)	1.2 SEC⁻¹	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15–0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632

6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

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

REVISIONS

NO.	DESCRIPTION	DATE
1	ADD TEMPORARY ACCESS BRIDGE DETAILS	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8.3.16

Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

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 Conditions And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature Of Engineer — Date 7/8/16

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 — Date 6/29/16

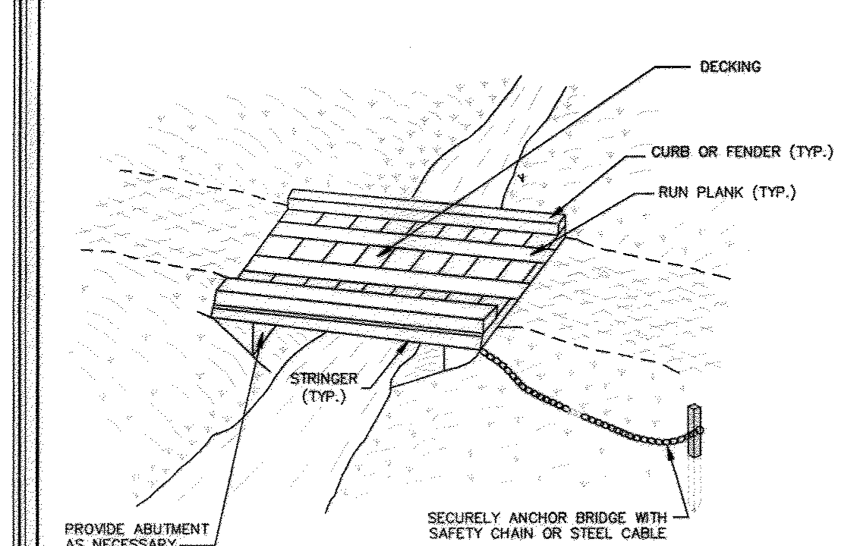
Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

Howard Soil Conservation District — Date 7/19/16

DETAIL H-4-1 TEMPORARY ACCESS BRIDGE

STANDARD SYMBOL

TB



LOCATION PLAN

NOTE:
TIME OF YEAR RESTRICTIONS DO NOT APPLY TO THE CONSTRUCTION OR REMOVAL OF A TEMPORARY ACESS BRIDGE UNLESS THERE IS DISTURBANCE TO THE STREAM CHANNEL.

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL H-4-1 TEMPORARY ACCESS BRIDGE

STANDARD SYMBOL

TB

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TEMPORARY BRIDGE STRUCTURE AT OR ABOVE THE BANK ELEVATION TO PREVENT IMPACTS FROM FLOATING MATERIALS AND DEBRIS.
2. PLACE ABUTMENTS PARALLEL TO, AND ON, STABLE BANKS.
3. CONSTRUCT BRIDGE TO SPAN ENTIRE CHANNEL UNLESS OTHERWISE INDICATED ON APPROVED PLAN.
4. USE STRINGERS CONSISTING OF LOGS, SAWN TIMBER, PRESTRESSED CONCRETE BEAMS, METAL BEAMS, OR OTHER APPROVED MATERIALS.
5. SELECT DECKING MATERIALS TO PROVIDE SUFFICIENT STRENGTH TO SUPPORT THE ANTICIPATED LOAD. PLACE ALL DECKING MEMBERS PERPENDICULAR TO THE STRINGERS, BUTT TIGHTLY, AND SECURELY FASTEN. DECKING MATERIALS MUST BE BUTTED TIGHTLY TO PREVENT ANY SOIL MATERIAL TRACKED ONTO THE BRIDGE FROM FALLING INTO THE WATERWAY BELOW.
6. SECURELY FASTEN OPTIONAL RUN PLANKING FOR THE LENGTH OF THE SPAN. PROVIDE A RUN PLANK FOR EACH TRACK OF THE EQUIPMENT WHEELS. ALTHOUGH RUN PLANKS ARE OPTIONAL, THEY MAY BE NECESSARY TO PROPERLY DISTRIBUTE LOADS.
7. INSTALL CURBS THE ENTIRE LENGTH OF THE OUTER SIDES OF THE DECK TO PREVENT SEDIMENT FROM ENTERING THE STREAM CHANNEL.
8. ANCHOR BRIDGE SECURELY AT ONLY ONE END USING STEEL CABLE OR CHAIN. ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOODWATERS FLOAT THE BRIDGE. ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOULDERS, OR DRIVEN STEEL POSTS. ANCHOR MUST BE SUFFICIENT TO PREVENT THE BRIDGE FROM FLOATING DOWNSTREAM.
9. AREAS DISTURBED DURING BRIDGE INSTALLATION AND\OR REMOVAL MUST NOT BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.
10. STABILIZE APPROACH TO BRIDGE AND KEEP FREE OF EROSION. CLEAN SEDIMENT FROM DECKING AND CURBS DAILY BY SCRAPING, SWEEPING, AND/OR VACUUMING. ENSURE THAT DECKING AND CURBS REMAIN TIGHTLY BUTTED WITHOUT GAPS. REMOVE DEBRIS TRAPPED BY BRIDGE. MAINTAIN AREAS ADJACENT TO CROSSING TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
11. AFTER THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE IT WITHIN 14 CALENDAR DAYS. IF SUBJECT TO THE USE DESIGNATION CLOSURE, REMOVE AT THE END OF CLOSURE PERIOD. PROTECT STREAM BANKS DURING BRIDGE REMOVAL AND STABILIZE ALL DISTURBED AREAS WITH EROSION CONTROL MATTING. ACCOMPLISH REMOVAL OF THE BRIDGE AND CLEAN UP OF THE AREA WITHOUT CONSTRUCTION EQUIPMENT WORKING IN THE WATERWAY CHANNEL. STORE ALL REMOVED MATERIALS IN AN APPROVED STAGING AREA.

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

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ALDO M. VITUCCI P.E. — DATE 7/8/16

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GRADING, EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18

PARCEL NOS.: 88 & 97

FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: JUNE 24, 2016

REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

ENGINEER'S CERTIFICATE

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STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 20748 — PROFESSIONAL ENGINEER

Signature Of Engineer — Date 7/8/16

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Signature Of Developer — Date 6/29/16

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

Howard Soil Conservation District — Date 8/2/16

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

Definition

Establishment of vegetative cover on cut and fill slopes.

Purpose

To provide timely vegetative cover on cut and fill slopes as work progresses.

Conditions Where Practice Applies

Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria

A. Incremental Stabilization – Cut Slopes
1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
2. Construction sequence example (Refer to Figure B.1):
a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
b. Perform Phase 1 excavation, prepare seedbed, and stabilize.
c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

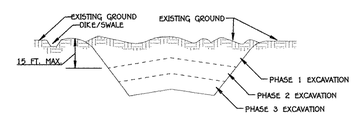


Figure B.1: Incremental Stabilization – Cut

B. Incremental Stabilization – Fill Slopes
1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
4. Construction sequence example (Refer to Figure B.2):
a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
c. Place Phase 1 fill, prepare seedbed, and stabilize.
d. Place Phase 2 fill, prepare seedbed, and stabilize.
e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

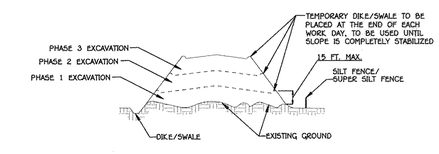
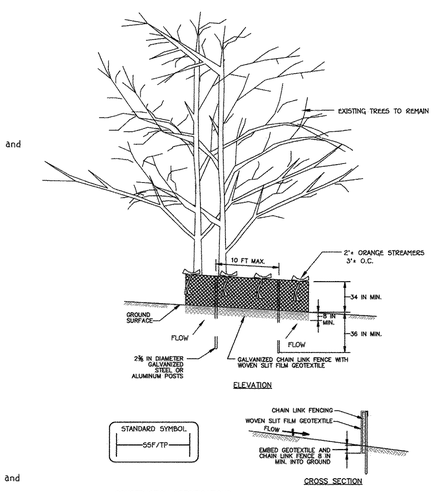


Figure B.2: Incremental Stabilization – Fill



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

GRADING, EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
PHASE ONE
ENCLAVE AT TIERNEY FARM
PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 32 OF 58

F-15-110

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

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 20748 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 20748, EXPIRATION DATE: 2/22/17.

ALDO M. VITUCCI P.E. — DATE 7/8/16

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
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ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

SOILS LEGEND

SOIL	NAME	K.w	CLASS
GbA	Gladstone loam, 0 to 3 percent slopes	0.2	B
GbB	Gladstone loam, 3 to 8 percent slopes	0.2	B
GbC	Gladstone loam, 8 to 15 percent slopes	0.2	B
GnB	Glenville - Baile silt loams, 0 to 8 percent slopes	0.37	C
MaD	Manor loam, 15 to 25 percent slopes	0.24	B

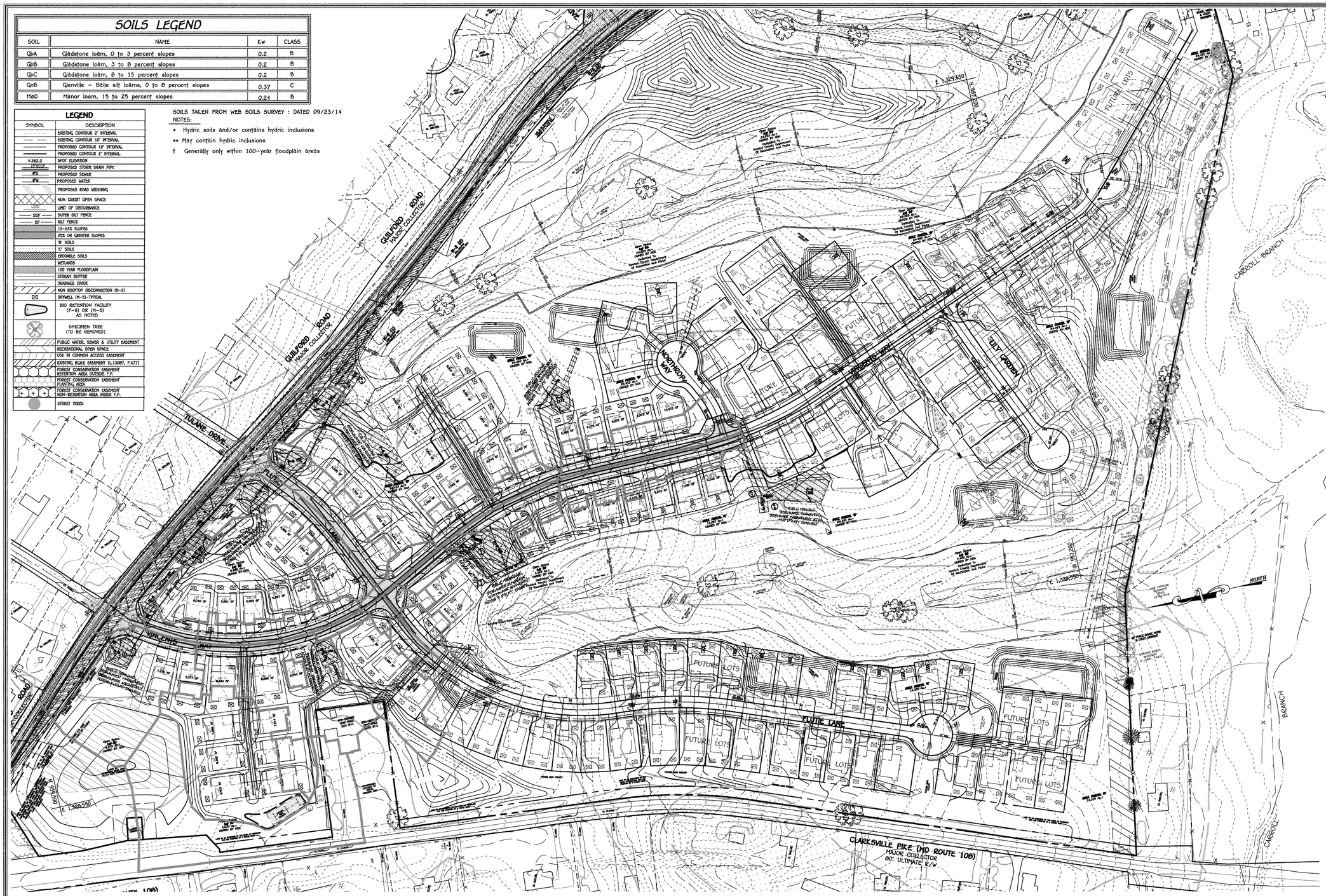
SOILS TAKEN FROM WEB SOILS SURVEY : DATED 09/23/14

NOTES:

- * Hydric soils and/or contains hydric inclusions
- ** May contain hydric inclusions
- † Generally only within 100-year floodplain areas

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 CREDIT 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)
DW	DRYWELL (M-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BGE EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES



REVISIONS		
NO.	DESCRIPTION	DATE
2	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

DRAINAGE AREA DATA

STRUCTURE NO.	AREA	'C'	ZONED	% IMP.
I-1	0.41 AC.	.68	R-ED	65%
I-2	0.61 AC.	.62	R-ED	58%
I-3	1.17 AC.	.58	R-ED	53%
I-4	0.40 AC.	.67	R-ED	65%
I-5	0.12 AC.	.49	R-ED	42%
I-6	1.51 AC.	.34	R-ED	24%
I-7	1.20 AC.	.26	R-ED	13%
I-8	0.78 AC.	.31	R-ED	20%
I-9	0.36 AC.	.28	R-ED	16%
I-10	0.22 AC.	.39	R-ED	30%
I-11	1.45 AC.	.41	R-ED	33%
I-12	1.01 AC.	.47	R-ED	40%
I-13	0.14 AC.	.43	R-ED	35%
I-14	0.09 AC.	.62	R-ED	59%
I-15	0.17 AC.	.59	R-ED	55%
I-16	0.19 AC.	.56	R-ED	51%
I-17	0.07 AC.	.75	R-ED	75%
I-18	0.53 AC.	.67	R-ED	64%
I-19	0.40 AC.	.64	R-ED	61%
I-20	0.29 AC.	.63	R-ED	60%
I-21	0.54 AC.	.62	R-ED	58%
I-22	0.69 AC.	.62	R-ED	58%
I-23	0.03 AC.	.70	R-ED	68%
I-24	0.04 AC.	.53	R-ED	47%
I-25	0.23 AC.	.88	R-ED	91%
I-26	0.29 AC.	.88	R-ED	91%
I-27	0.08 AC.	.61	R-ED	57%
I-28	0.23 AC.	.53	R-ED	48%
I-29	0.21 AC.	.75	R-ED	75%
I-30	0.55 AC.	.64	R-ED	61%
I-31	0.16 AC.	.61	R-ED	57%
I-32	0.03 AC.	.71	R-ED	70%

STORM DRAIN DRAINAGE AREA MAP AND SOILS MAP

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

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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 LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANK MANALANSAN II — Date 6/29/16

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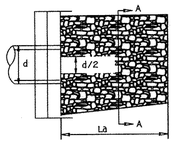
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

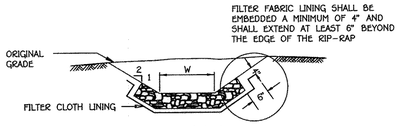
STRUCTURE SCHEDULE

STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV IN	INV OUT	LOCATION	TYPE	REMARKS
I-1	PUBLIC	435.50 **	430.58 (I-2) 24" 431.60 TWO (6")	430.33 24"	N 558709.57 E 1329275.25	'D' INLET	SD-4.10
I-2	PUBLIC	442.00 **	437.20 (I-3) 18" 438.17 (6")	436.70 24"	N 558808.65 E 1329158.74	'D' INLET	SD-4.10
I-3	PUBLIC	445.50 **	441.19 (I-7) 15" 441.19 (I-4) 18" 441.67 (6")	440.94 18"	N 558926.79 E 1329092.07	'D' INLET	SD-4.10
I-4	PUBLIC	454.00 **	448.00 (I-5) 18" 450.00 (6")	447.75 18"	N 559074.60 E 1329021.09	'D' INLET	SD-4.10
I-5	PUBLIC	462.50 **	456.78 (I-6) 15" 458.67 (6")	456.53 18"	N 559200.72 E 1328918.71	'D' INLET	SD-4.10
I-6	PUBLIC	462.00 **	458.17 (6")	457.78 15"	N 559271.01 E 1328847.25	'D' INLET	SD-4.10
I-7	PUBLIC	445.50 **	-------	442.53 15"	N 558928.60 E 1329047.53	'D' INLET	SD-4.10
I-8	PUBLIC	453.00 **	449.48 (I-9) 18"	449.23 18"	N 558730.81 E 1328632.07	'D' INLET	SD-4.10
I-9	PUBLIC	458.00 **	452.20 (M-3) 18" 452.45 (I-12) 15"	451.95 18"	N 558837.76 E 1328674.37	'D' INLET	SD-4.10
I-10	PRIVATE	460.00 **	455.75 (I-11) 15"	455.50 18"	N 558947.99 E 1328432.15	'D' INLET	SD-4.10
I-11	PRIVATE	460.00 **	456.17 (6")	456.14 15"	N 558973.90 E 1328434.61	'D' INLET	SD-4.10
I-12	PUBLIC	458.00 **	454.17 (6")	454.00 15"	N 558845.52 E 1328722.85	'D' INLET	SD-4.10
I-13	PUBLIC	447.15	443.93 (I-14) 18"	443.68 18"	VINCENTS WAY 8+19.38 12' R	A-5 INLET	SD-4.01
I-14	PUBLIC	451.71	448.16 (I-15) 18"	447.91 18"	VINCENTS WAY 7+03.14 12' R	A-5 INLET	SD-4.01
I-15	PUBLIC	454.19	449.85 (I-16) 18"	449.60 18"	FLUTIE LANE 5+00.31 12' L	A-5 INLET	SD-4.01
I-16	PUBLIC	454.19	450.39 (I-17) 18"	450.14 18"	FLUTIE LANE 5+00.31 12' R	A-5 INLET	SD-4.01
I-17	PUBLIC	455.41	451.74 (I-18) 15"	451.49 18"	VINCENTS WAY 5+99.37 14' R	A-5 INLET	SD-4.01
I-18	PUBLIC	455.53	-------	452.06 15"	VINCENTS WAY 5+95.08 14' L	A-5 INLET	SD-4.01
I-19	PUBLIC	434.14	431.23 (I-20) 15"	430.98 18"	VINCENTS WAY 11+20.47 12' L	A-5 INLET	SD-4.01
I-20	PUBLIC	434.64	-------	431.38 15"	VINCENTS WAY 11+09.36 12' R	A-5 INLET	SD-4.01
I-21	PUBLIC	426.21	421.98 (I-22) 15"	421.73 18"	VINCENTS WAY 14+49 12' R	A-5 INLET	SD-4.01
I-22	PUBLIC	426.21	-------	422.55 15"	VINCENTS WAY 14+49 12' L	A-5 INLET	SD-4.01
I-23 *	PUBLIC	445.25	-------	444.32	FLUTIE LANE 0+92.58 14' L	COG/COS OPENING	MD-374.68
I-24 *	PUBLIC	445.25	-------	444.32	FLUTIE LANE 0+92.58 14' R	COG/COS OPENING	MD-374.68
I-25 *	PUBLIC	446.87	-------	445.94	GUILFORD ROAD 14+06.21 42 R	COG/COS OPENING	MD-374.68
I-26 *	PUBLIC	455.43	-------	454.50	GUILFORD ROAD 12+08.97 42 R	COG/COS OPENING	MD-374.68
I-27 *	PUBLIC	464.19	-------	463.26	VINCENTS WAY 0+92.04 14' L	COG/COS OPENING	MD-374.68
I-28 *	PUBLIC	463.71	-------	462.78	VINCENTS WAY 0+71.27 14' R	COG/COS OPENING	MD-374.68
I-29 *	PUBLIC	465.03	-------	464.10	GUILFORD ROAD 9+54.51 42 R	COG/COS OPENING	MD-374.68
I-30 *	PUBLIC	459.70	-------	458.77	VINCENTS WAY 4+76.92 14' R	COG/COS OPENING	MD-374.68
I-31 *	PUBLIC	444.44	-------	443.51	VINCENTS WAY 8+06.29 12' L	COG/COS OPENING	MD-374.68
I-32 *	PUBLIC	447.70	-------	446.77	VINCENTS WAY 8+88 12' R	COG/COS OPENING	MD-374.68
M-1	PUBLIC	456.23	447.58 (M-2) 18"	447.33 18"	FLUTIE LANE 6+07.39 18.5' L	4' DIA. MANHOLE	G-5.12
M-2	PUBLIC	456.23	448.19 (I-8) 18"	447.94 18"	FLUTIE LANE 6+07.39 18.5' R	4' DIA. MANHOLE	G-5.12
M-3	PRIVATE	464.00	453.43 (I-10) 18"	453.18 18"	N 558912.74 E 1328644.38	4' DIA. MANHOLE	G-5.12
M-4	PUBLIC	449.00	440.66 (M-5) 18"	440.41 18"	N 558470.96 E 1328026.62	4' DIA. MANHOLE	G-5.12
M-5	PUBLIC	450.00	443.25 (I-13) 18"	442.18 12" 443.00 18"	N 558503.98 E 1328092.18	4' DIA. MANHOLE	G-5.12
M-6	PUBLIC	434.79	430.25 (I-19) 18"	429.18 12" 430.00 18"	N 558279.73 E 1329159.97	4' DIA. MANHOLE	G-5.12
M-7	PUBLIC	415.99	411.25 (M-8) 18"	411.12 12" 411.00 18"	N 557842.77 E 1328863.00	4' DIA. MANHOLE	G-5.12
M-8	PUBLIC	425.63	421.01 (I-21) 18"	420.73 18"	VINCENTS WAY 15+19.70 16' R	4' DIA. MANHOLE	G-5.12
S-1	PUBLIC	431.99	429.99 (I-1) 24"	-------	N 558659.73 E 1329320.97	END SECTION	D-5.51
S-2	PUBLIC	448.00	446.50 (M-1) 18"	-------	N 558537.15 E 1328679.61	END SECTION	D-5.51
S-3	PUBLIC	440.67	439.17 (M-4) 18"	-------	N 558391.26 E 1328043.65	END SECTION	D-5.51
S-4	PUBLIC	443.53	442.03 (M-5) 18"	-------	N 558469.67 E 1328904.80	END SECTION	D-5.51
S-5	PUBLIC	430.75	429.25 (M-6) 18"	-------	N 558224.10 E 1329210.70	END SECTION	D-5.51
S-6	PUBLIC	411.50	410.00 (M-7) 18"	-------	N 557845.01 E 1328839.10	END SECTION	D-5.51

** DENOTES THROAT OPENING
* DENOTES COG/COS FLOW THROUGH OPENING. SEE DETAIL ON THIS SHEET



PLAN VIEW



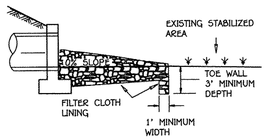
SECTION A-A

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 small 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

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	7.02	10.02	0.7006	0.7888	0.005	0.0707	6.0'	0.90	0.04	2.03	14.06	9.5"	15"	19"	24"	10'
S-2	4.80	8.03	0.5981	0.7099	0.005	0.0707	4.5'	0.79	0.04	1.83	8.78	9.5"	15"	19"	18"	7'
S-3	3.42	7.18	0.4763	0.6099	0.005	0.0707	4.5'	0.60'	0.04	1.58	5.42	9.5"	15"	19"	18"	5'
S-4	3.49	7.23	0.4826	0.6165	0.005	0.0707	4.5'	0.61'	0.04	1.59	5.55	9.5"	15"	19"	18"	5'
S-5	2.49	6.56	0.3800	0.5247	0.005	0.0707	4.5'	0.46'	0.04	1.37	3.42	9.5"	15"	19"	18"	5'
S-6	3.70	7.36	0.5026	0.6321	0.005	0.0707	4.5'	0.65'	0.04	1.65	6.09	9.5"	15"	19"	18"	5'

PIPE SCHEDULE (PUBLIC)

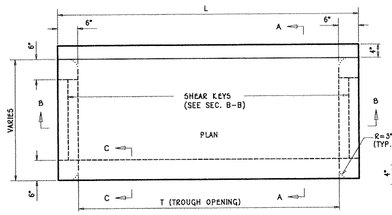
SIZE	CLASS	LENGTH
6"	PERFORATED PVC, SCH.40	972 L.F.
6"	PVC, SCH.40	232 L.F.
15"	RCCP, CL. IV	285 L.F.
18"	RCCP, CL. IV	1,658 L.F.
24"	RCCP, CL. IV	221 L.F.

NOTE: RCCP, CL. IV MAY BE SUBSTITUTED WITH HDPE PIPE MATERIAL WHERE DEPTH OF COVER PERMITS.

PIPE SCHEDULE (PRIVATE)

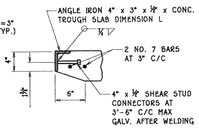
SIZE	CLASS	LENGTH
12"	RCCP, CL. IV	30 L.F.
15"	RCCP, CL. IV	41 L.F.
18"	RCCP, CL. IV	259 L.F.

NOTE: RCCP, CL. IV MAY BE SUBSTITUTED WITH HDPE PIPE MATERIAL WHERE DEPTH OF COVER PERMITS.



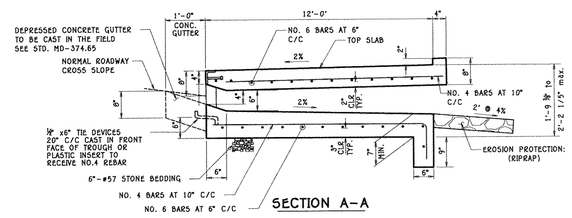
PRECAST CONCRETE TOP SLAB

SLAB TYPE	L	T
I	6'-0"	5'-0"

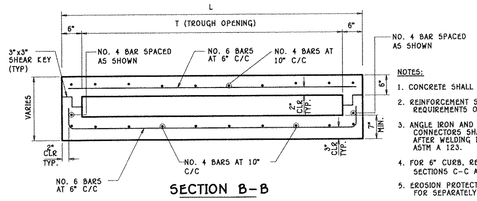


NOTE: FOR 6" CURB, SEE NOTE 4 BELOW.

SECTION C-C



SECTION A-A



SECTION B-B

NOTES:
1. CONCRETE SHALL BE MIX # 6 (4500 PSI).
2. REINFORCEMENT STEEL SHALL MEET THE REQUIREMENTS OF ASTM A615, GRADE 60.
3. ANGLE IRON AND SHEAR STUD CONNECTORS SHALL BE GALVANIZED AFTER WELDING IN ACCORDANCE WITH ASTM A 123.
4. FOR 6" CURB, REFER TO MD 374.55-01, SECTIONS C-C AND D-D.
5. EROSION PROTECTION TO BE PAID FOR SEPARATELY.

PRECAST OR CAST-IN-PLACE COG/COS OPENING FOR 8" CURB
(5' TROUGH OPENING ONLY)

Scale: 1" = 50'

REVISIONS

NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Kent Sheubrooks — 8-3-16
Chief, Division Of Land Development — Date

8/1/16
Chief, Development Engineering Division — Date

Approved: Howard County Department Of Public Works

7/27/2016
Chief, Bureau Of Highways — Date

STORM DRAIN PROFILES, NOTES AND DETAILS

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 34 OF 58 **F-15-110**

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

STATE OF MARYLAND — 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 LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

Frank John Manalansan II — 6/29/16
FRANK MANALANSAN II. — Date

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
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(410)-992-4600

OWNERS

HODDINOTT LLC
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JEANNE C. HODDINOTT
P.O. BOX 166
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(410)-531-5017

REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

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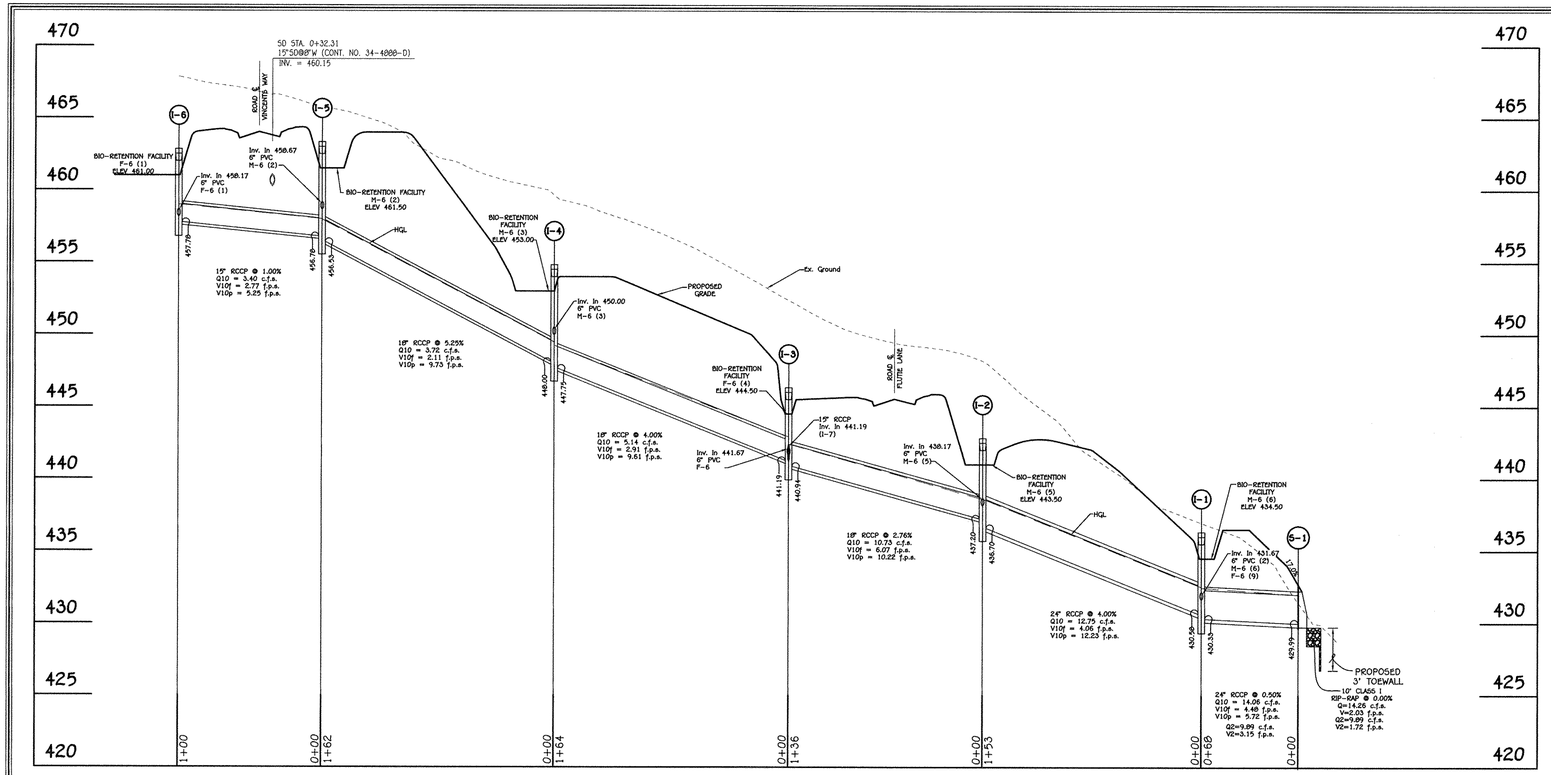

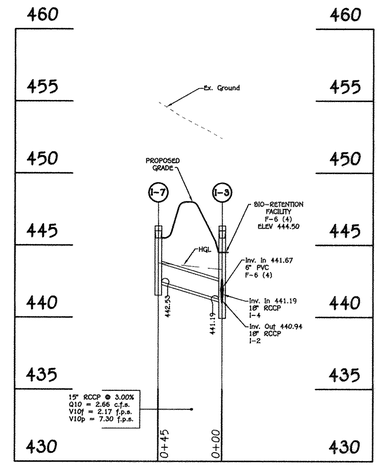

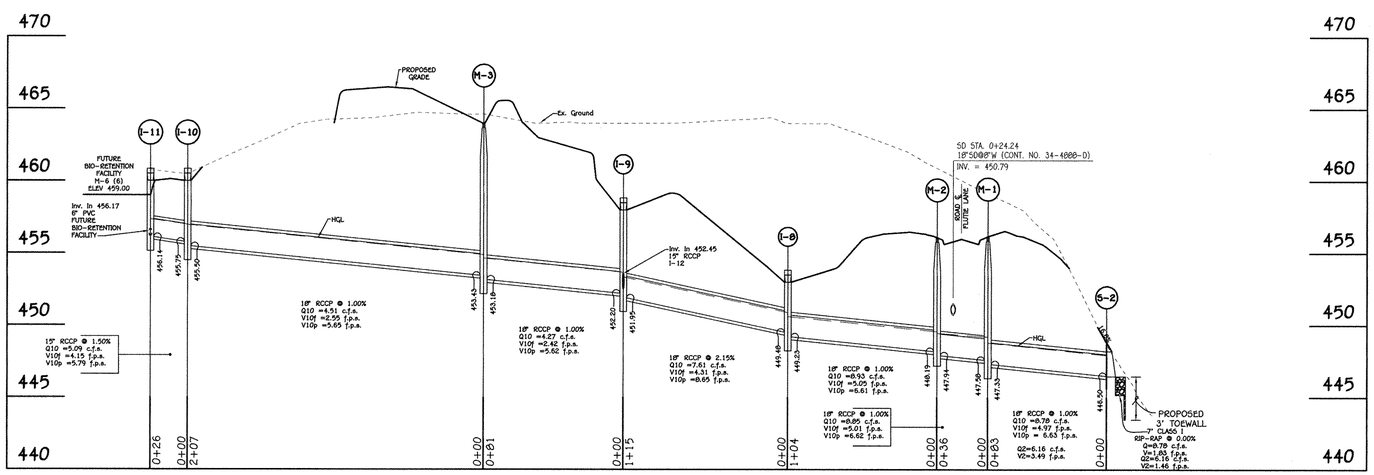

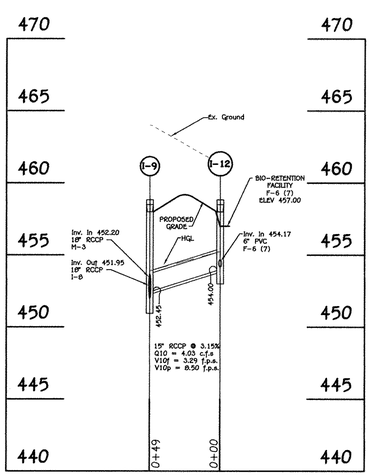

0' 50' 100' 150'

Scale: 1" = 50'

STORM DRAIN PROFILES

ENCLAVE AT TIERNEY FARM PHASE 1

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SHEET 35 OF 58

F-15-110

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REVISIONS		
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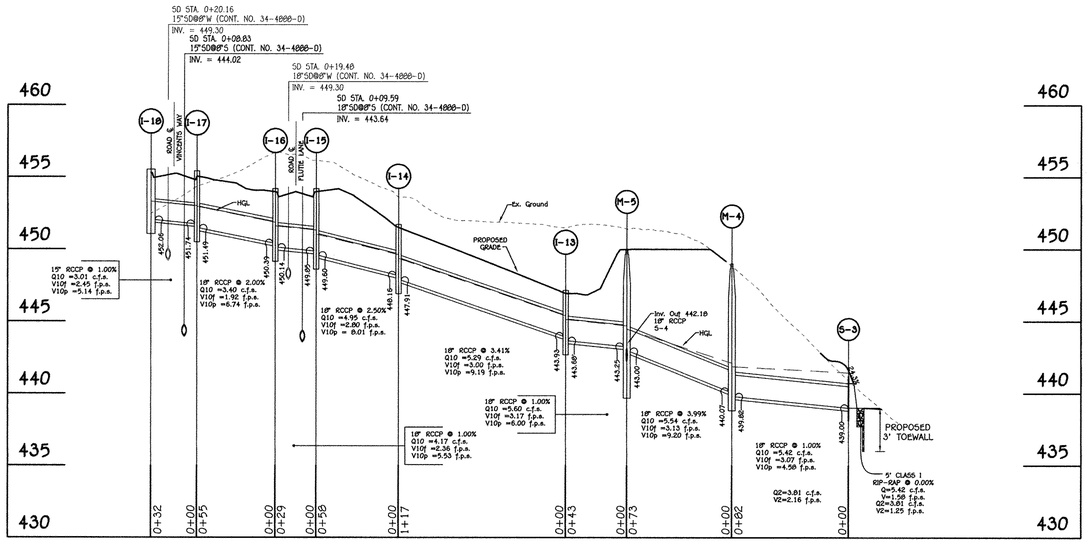
Chief, Division Of Land Development — Date: 8-3-16

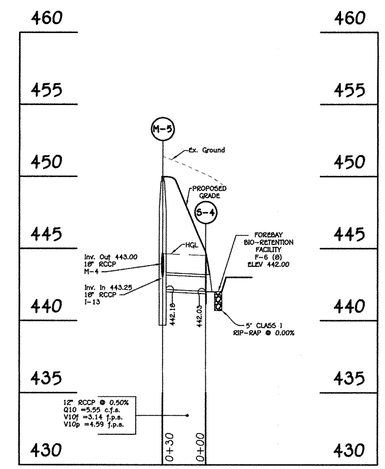
Chief, Development Engineering Division — Date: 8/11/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7/27/2016



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



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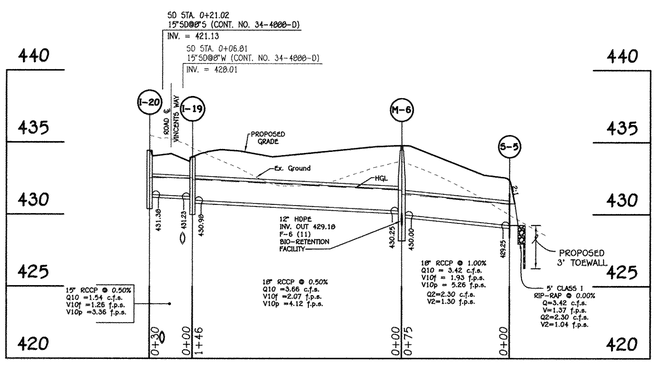

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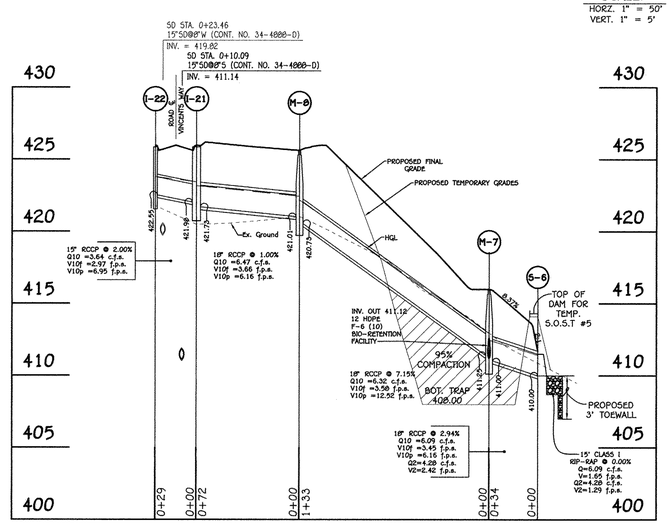

SCALE:
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VERT. 1" = 5'

0' 50' 100' 150'
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STORM DRAIN PROFILES

ENCLAVE AT TIERNEY FARM
PHASE 1

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SHEET 36 OF 58

F-15-110

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.
5. OWNERSHIP AND MAINTENANCE OBLIGATIONS FOR THE BIO RETENTION FACILITIES WHICH INCLUDES FOREBAYS, INLET STRUCTURES, UNDERDRAINS, PLANTING MATERIALS AND OUTFALLS SHALL BE CONSIDERED PRIVATELY OWNED, UNLESS OTHERWISE NOTED, SHALL BE THE RESPONSIBILITY OF THE ENCLAVE AT TIERNEY FARM HOMEOWNERS ASSOCIATION. IF A STRUCTURE OR STORM DRAIN IS DESIGNATED AS PUBLIC, OWNERSHIP AND MAINTENANCE OBLIGATIONS SHALL BE THE RESPONSIBILITY OF HOWARD COUNTY. (SEE STRUCTURE SCHEDULE AND PIPE SCHEULE FOR PUBLIC/PRIVATE DESIGNATION-SHEET 34)

FACILITY NO.	A	B
F-6 (1)	461.00	458.17
M-6 (2)	461.50	458.67
M-6 (3)	453.00	450.17
F-6 (4)	444.50	441.67
M-6 (5)	441.00	438.17
M-6 (6)	434.50	431.67
F-6 (7)	457.00	454.17
F-6 (8)	442.00	439.17
F-6 (9)	437.00	434.17
F-6 (10)	411.00	408.17
F-6 (11)	429.00	426.17

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 25% 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 –I(K2O)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	10 to 25 %
Silt	30 to 55 %
Sand	35 to 60%

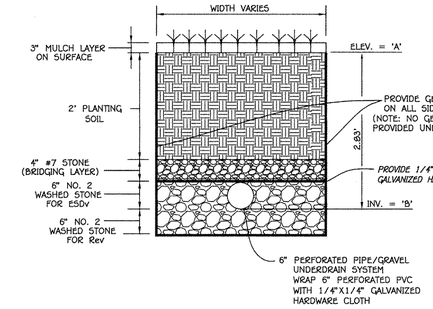
Mulch Layer

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.

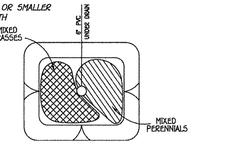
Planting Guidance

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.

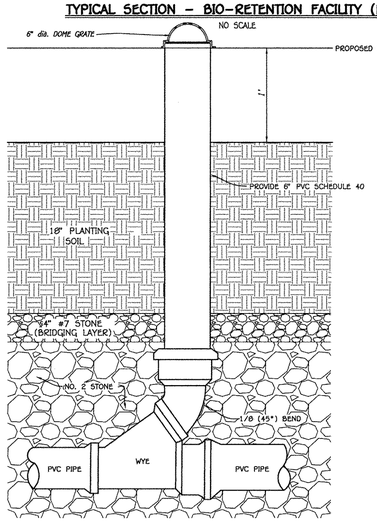


NOTE: THE BOTTOM OF EACH BIO-RETENTION FACILITY (M-6) SHALL BE ROTOTILLED PRIOR TO STONE INSTALLATION.

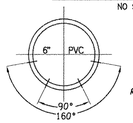
TYPICAL SECTION – BIO-RETENTION FACILITY (F-6)
NO SCALE



MICRO-BIORETENTION PLANTING DETAIL
NOT TO SCALE

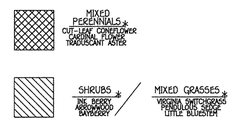


TYPICAL CLEAN-OUT DETAIL
NO SCALE



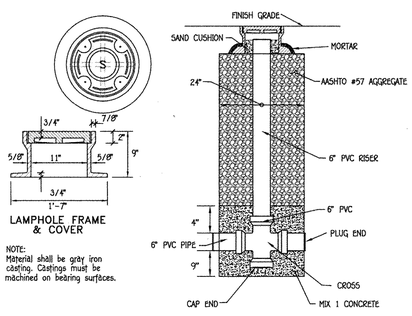
PIPE SIZE: 6"
HOLE SIZE: 3/8"
CENTER TO CENTER: 3"
ROWS OF HOLES: 2 @ 90°
2 @ 160° (+/-3°)

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



SEE PLANT MATERIAL CHARTS FOR QUANTITIES AND SPACING

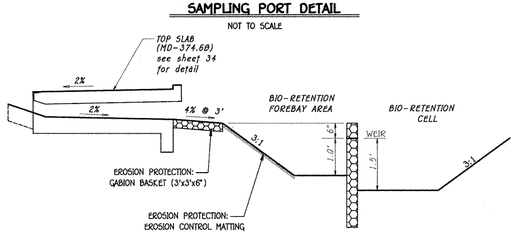
NOTE:
PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION



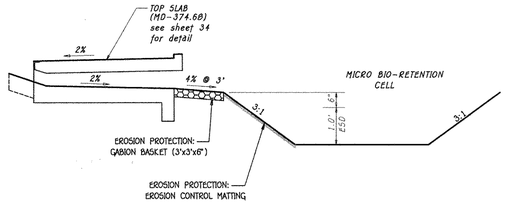
LAMPHOLE FRAME & COVER

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

CLEANOUT/ WATER QUALITY SAMPLING PORT DETAIL
NOT TO SCALE



SCHEMATIC SECTION
FLOW INLET INTO BIO-RETENTION FOREBAY
NO SCALE



SCHEMATIC SECTION
FLOW INLET INTO MICRO BIO-RETENTION
NO SCALE

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

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

DRAINAGE AREA M-6 (3) BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
57	MIXED PERENNIALS	1 FT.
29	SHRUBS / MIXED GRASSES	2 FT.

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

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

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

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

DRAINAGE AREA F-6 (8) BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
136	MIXED PERENNIALS	1 FT.
68	SHRUBS / MIXED GRASSES	2 FT.

DRAINAGE AREA F-6 (9) BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
102	MIXED PERENNIALS	1 FT.
51	SHRUBS / MIXED GRASSES	2 FT.

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

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

STORMWATER MANAGEMENT PRACTICES (CONT'D)

SWM FACILITY TYPE/ID	OWNERSHIP/ MAINTENANCE	LOT #	ESDv REQUIRED CU.FT.	ESDv PROVIDED CU.FT.	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)	MICRO BIO-RETENTION F-6 (Y/N)
F-6 (12)	PRIVATE(3)	0.2 LOT 51	SEE NOTE #4	SEE NOTE #4					Y
M-6 (13)	PRIVATE(4)	BULK PARC."B"	SEE NOTE #4	SEE NOTE #4				Y	

NOTES:
(3) OWNED AND MAINTAINED BY THE ENCLAVE AT TIERNEY FARM HOMEOWNERS ASSOCIATION
(4) FINAL DESIGN FOR STORMWATER MANAGEMENT FACILITIES #12 AND #13 SHALL BE PROVIDED AT THE SITE DEVELOPMENT PLAN STAGE

STORMWATER MANAGEMENT PRACTICES

SWM FACILITY TYPE/ID	OWNERSHIP/ MAINTENANCE	LOT#	ESDv REQUIRED CU.FT.	ESDv PROVIDED CU.FT.	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)	MICRO BIO-RETENTION F-6 (Y/N)
F-6 (1)	PRIVATE(1)	0.5 LOT 51	1,450 (STORAGE)	1,586 (STORAGE)					Y
M-6 (2)	PRIVATE(1)	0.5 LOT 52	225 (STORAGE)	340 (STORAGE)				Y	
M-6 (3)	PRIVATE(1)	0.5 LOT 52	1,100 (STORAGE)	1,124 (STORAGE)				Y	
F-6 (4)	PRIVATE(1)	0.5 LOT 52	1,776 (STORAGE)	1,797 (STORAGE)					Y
M-6 (5)	PRIVATE(1)	BULK PARCEL"A"	1,526 (STORAGE)	1,612 (STORAGE)				Y	
M-6 (6)	PRIVATE(1)	BULK PARCEL"A"	1,139 (STORAGE)	1,552 (STORAGE)				Y	
F-6 (7)	PRIVATE(1)	0.5 LOT 51	1,084 (STORAGE)	1,302 (STORAGE)					Y
F-6 (8)	PRIVATE(1)	BULK PARCEL"A"	2,224 (STORAGE)	2,790 (STORAGE)					Y
F-6 (9)	PRIVATE(1)	BULK PARCEL"A"	1,604 (STORAGE)	1,948 (STORAGE)					Y
F-6 (10)	PRIVATE(1)	BULK PARCEL"A"	3,243 (STORAGE)	3,678 (STORAGE)					Y
F-6 (11)	PRIVATE(1)	BULK PARCEL"A"	1,289 (STORAGE)	1,372 (STORAGE)					Y
N-2 (1)	PRIVATE(1)	PUBLIC ROW	360	360		Y			
N-2 (2)	PRIVATE(1)	PUBLIC ROW	359	359		Y			
N-2 (3)	PRIVATE(1)	PUBLIC ROW	527	527		Y			
N-2 (4)	PRIVATE(1)	PUBLIC ROW	643	643		Y			
N-2 (5)	PRIVATE(1)	PUBLIC ROW	141	141		Y			
TOTAL			= 15,624	= 21,133					

NOTES:
(1) PROPERTY OWNED AND JOINTLY MAINTAINED BY HOWARD COUNTY AND THE ENCLAVE AT TIERNEY FARM HOMEOWNERS ASSOCIATION.
(2) FOR STRUCTURE SCHEDULE AND PIPE SCHEDULE – SEE SHEET 34

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE STORMWATER MANAGEMENT PRACTICES TABLE & NOTES	10/9/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 7/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

B.4.C Specifications for Micro-Bioretention, Rain Gardens, Landscape Infiltration & Infiltration Berms

1. Material Specifications
The allowable materials to be used in these practices are detailed in Table B.4.1.

2. Filtering Media or Planting Soil
The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.
The planting soil shall be tested and shall meet the following criteria:

Soil Component – Loamy Sand or Sandy Loam (USDA Soil Textural Classification)

Organic Content – Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).

Clay Content – Media shall have a clay content of less than 5%.

pH Range Should be between 5.5 – 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.
There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

3. Compaction
It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

4. Plant Material
Recommended plant material for micro-bioretention practices can be found in Appendix A, Section A.2.3.

5. Plant Installation
Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3".Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8 th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

6. Underdrains
Underdrains should meet the following criteria:

Pipe– Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTMF 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4 rigid pipe (e.g., PVC or HDPE).

Perforations – If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" (No. 4 or 4x4) galvanized hardware cloth.

Gravel –The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.

The main collector pipe shall be at a minimum 0.5% slope.
A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.

A 4" layer of pea gravel (1/4" to 3/8" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

7. Miscellaneous
These practices may not be constructed until all contributing drainage area has been stabilized

STORMWATER MANAGEMENT NOTES AND DETAILS

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK
PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 37 OF 58

F-15-110

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 LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

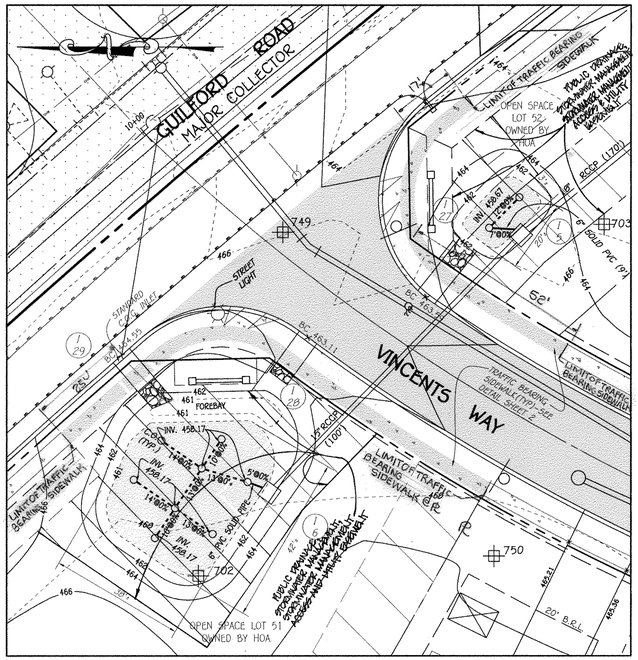
FRANK JOHN MANALANSAN II. — Date 6/29/16

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS
HODDINOTT LLC
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

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



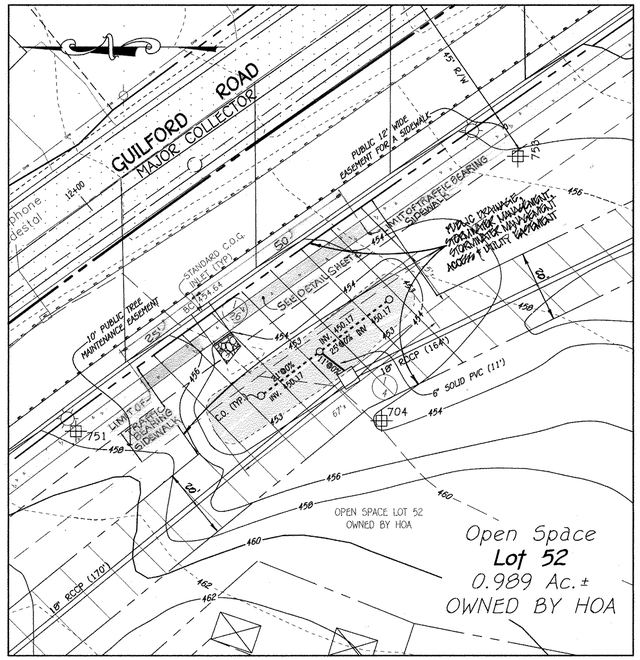
F-6 (1)

(BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 60,460 SqFt.
FILTER AREA: 1385 SqFt.
ELEVATION 461
PERIMETER 135'
WEIR ELEVATION 462

NOTE:
1) STORMWATER MANAGEMENT FACILITIES TO BE PRIVATELY OWNED AND JOINTLY MAINTAINED.

M-6 (2)

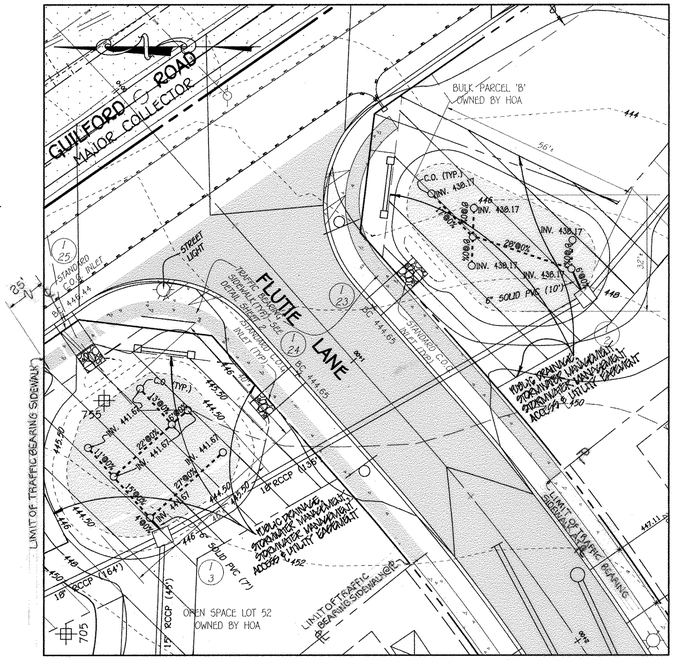
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 5,271 SqFt.
FILTER AREA: 250 SqFt.
ELEVATION 461.5
PERIMETER 60'
WEIR ELEVATION 462.5



M-6 (3)

(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 17,395 SqFt.
FILTER AREA: 957 SqFt.
ELEVATION 453
PERIMETER 154'
WEIR ELEVATION 454

NOTE:
1) STORMWATER MANAGEMENT FACILITY TO BE PRIVATELY OWNED AND JOINTLY MAINTAINED.



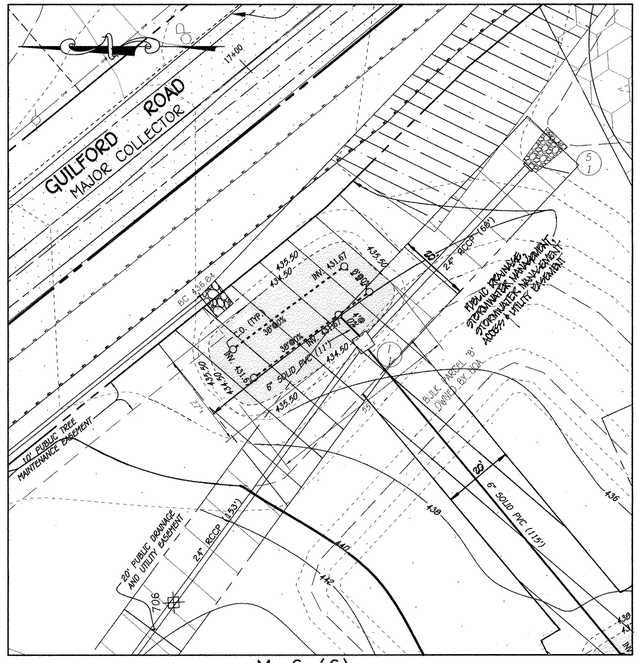
F-6 (4)

(BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 41,930 SqFt.
FILTER AREA: 1,574 SqFt.
ELEVATION 444.5
PERIMETER 143'
WEIR ELEVATION 445.5

NOTE:
1) STORMWATER MANAGEMENT FACILITIES TO BE PRIVATELY OWNED AND JOINTLY MAINTAINED.

M-6 (5)

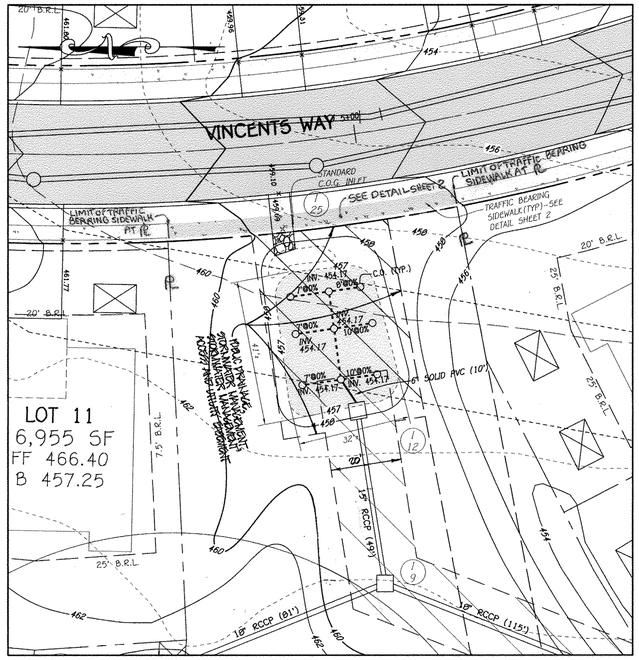
(BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 26,571 SqFt.
FILTER AREA: 1,416 SqFt.
ELEVATION 441.0
PERIMETER 146'
WEIR ELEVATION 442.0



M-6 (6)

(BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 17,927 SqFt.
FILTER AREA: 1,334 SqFt.
ELEVATION 434.5
PERIMETER 145'
WEIR ELEVATION 435.5

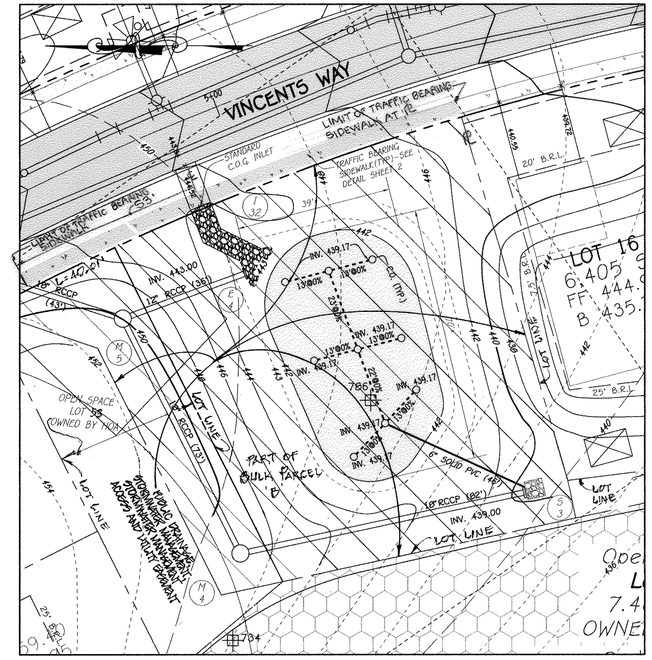
NOTE:
1) STORMWATER MANAGEMENT FACILITY TO BE PRIVATELY OWNED AND JOINTLY MAINTAINED.



F-6 (7)

(BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 35,291 SqFt.
FILTER AREA: 1,160 SqFt.
ELEVATION 457
PERIMETER 128'
WEIR ELEVATION 458

NOTE:
1) STORMWATER MANAGEMENT FACILITY TO BE PRIVATELY OWNED AND JOINTLY MAINTAINED.



F-6 (8)

(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 60,339 SqFt.
FILTER AREA: 2,500 SqFt.
ELEVATION 442
PERIMETER 188'
WEIR ELEVATION 443

NOTE:
1) STORMWATER MANAGEMENT FACILITY TO BE PRIVATELY OWNED AND JOINTLY MAINTAINED.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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(410) 461 - 2855

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 LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANK MANALANSAN II — Date: 6/20/16

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

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(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

REVISIONS

NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENT	10/9/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 8-3-16

Chief, Development Engineering Division — Date: 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7/27/2016

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×342.2	SPOT ELEVATION
12"RCP	PROPOSED STORM DRAIN PIPE
PS	PROPOSED SEWER
PW	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT 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)
DRY WELL	DRYWELL (M-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FOR #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

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

STORMWATER MANAGEMENT PLANS, NOTES AND DETAILS

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 80 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 30 OF 50

F-15-110

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENT AND REVISED BIO-RETENTION FACILITIES F-6(10) AND M-6(13)	10/3/16

Approved: Department Of Planning And Zoning

Kent Sheubrooks — Chief, Division Of Land Development — 8.3.16 Date

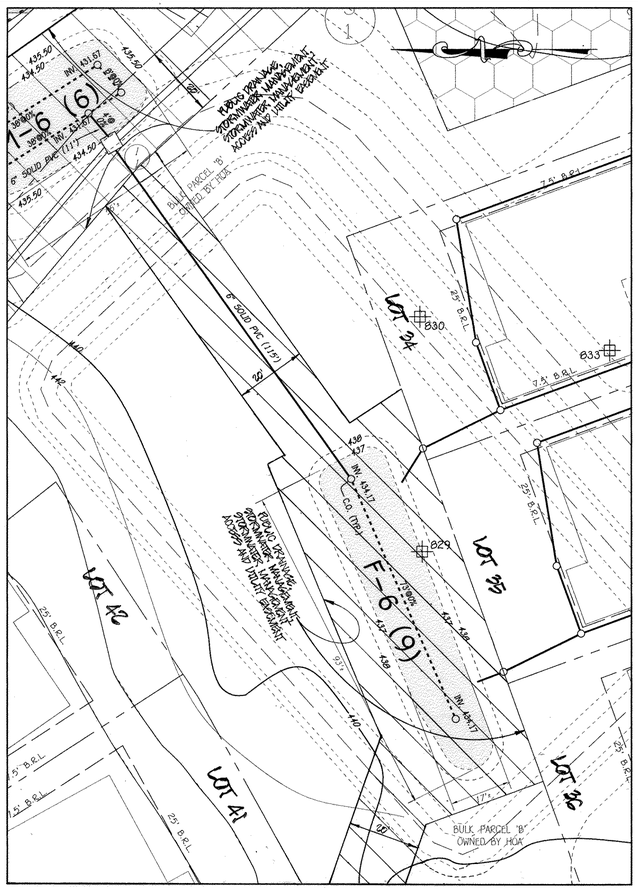
Chief, Development Engineering Division — 8/1/16 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 7/27/2016 Date

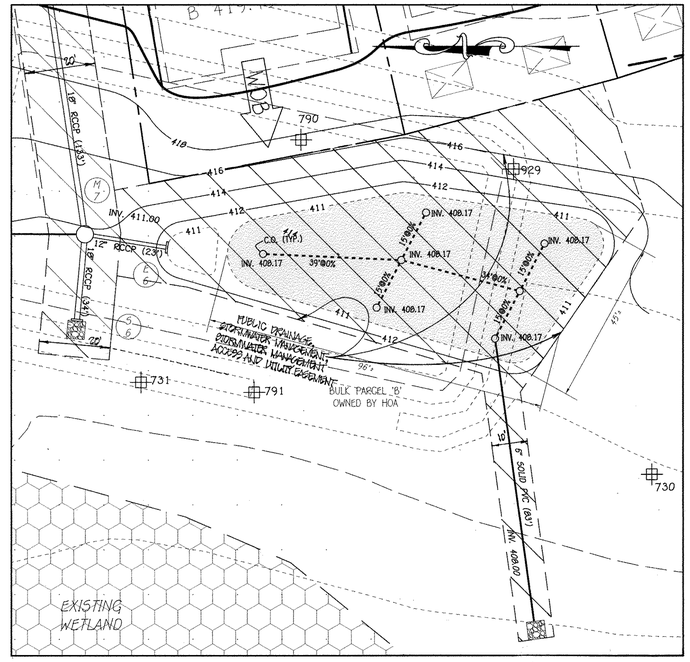
LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×262.2	SPOT ELEVATION
12"RCP	PROPOSED STORM DRAIN PIPE
PS	PROPOSED SEWER
PW	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
LOD	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
SF	SILT FENCE
	15-24% SLOPES
	25% OR GREATOR 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 BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FCE #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT



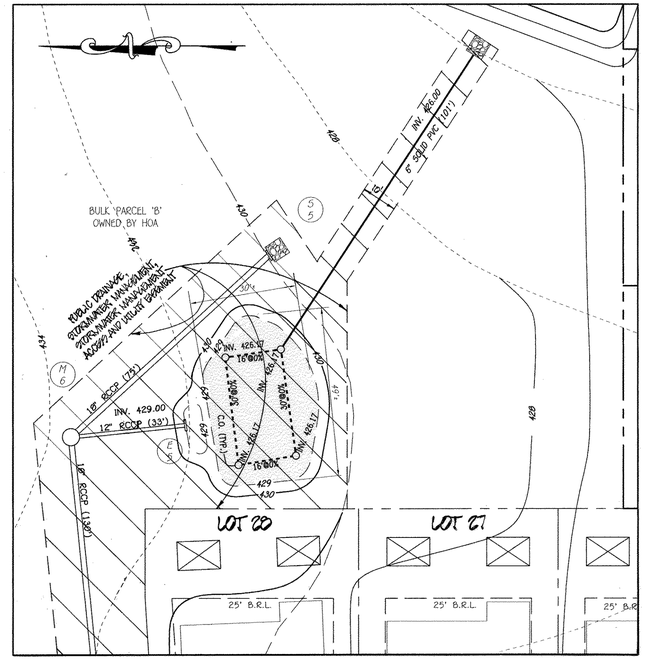
F-6 (9)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 57,544 SQ.FT.
FILTER AREA: 1,630 SQ.FT.
ELEVATION 437
PERIMETER 212'
WEIR ELEVATION 438

NOTE:
1) STORMWATER MANAGEMENT FACILITY TO BE PRIVATELY OWNED AND JOINTLY MAINTAINED.



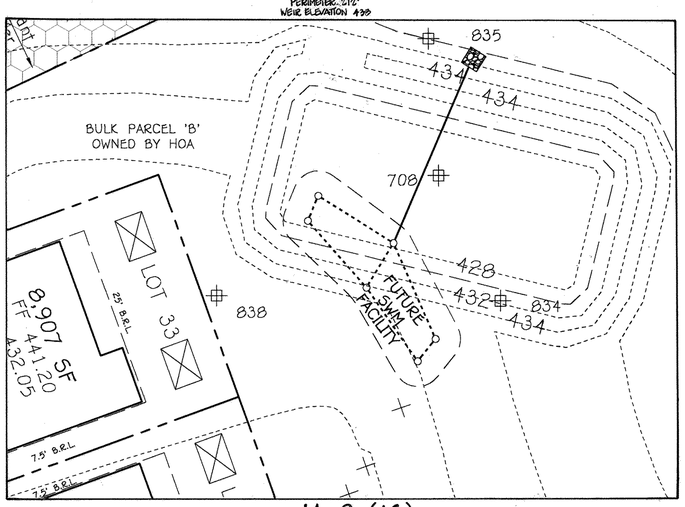
F-6 (10)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 69,218 SQ.FT.
FILTER AREA: 3,304 SQ.FT.
ELEVATION 411
PERIMETER 249'
WEIR ELEVATION 412

NOTE:
1) STORMWATER MANAGEMENT FACILITY TO BE PRIVATELY OWNED AND JOINTLY MAINTAINED.



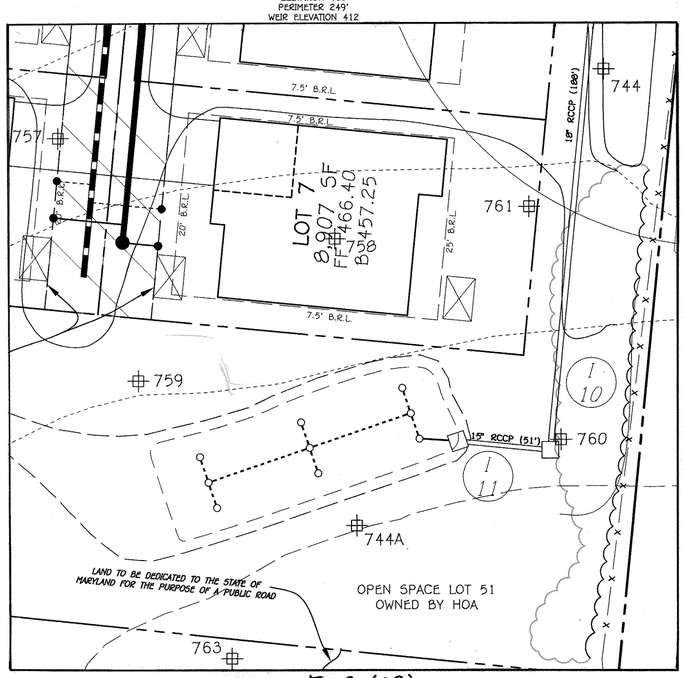
F-6 (11)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 36,965 SQ.FT.
FILTER AREA: 1,177 SQ.FT.
ELEVATION 429
PERIMETER 130'
WEIR ELEVATION 430

NOTE:
1) STORMWATER MANAGEMENT FACILITY TO BE PRIVATELY OWNED AND JOINTLY MAINTAINED.



M-6 (13)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: XXXXX SQ.FT.
FILTER AREA: 1,630 SQ.FT.
ELEVATION 437
PERIMETER 212'
WEIR ELEVATION 438

NOTE:
1) STORMWATER MANAGEMENT FACILITY TO BE OWNED AND MAINTAINED BY HOMEOWNERS ASSOCIATION.
2) FINAL DESIGN TO BE PROVIDED WITH SITE DEVELOPMENT PLAN.



F-6 (12)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: XXXXX SQ.FT.
FILTER AREA: 1,630 SQ.FT.
ELEVATION 437
PERIMETER 212'
WEIR ELEVATION 438

NOTE:
1) STORMWATER MANAGEMENT FACILITY TO BE OWNED AND MAINTAINED BY HOMEOWNERS ASSOCIATION.
2) FINAL DESIGN TO BE PROVIDED WITH SITE DEVELOPMENT PLAN.

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

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 LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

Frank John Manalansan II — FRANK MANALANSAN II. — 6/29/16 Date

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8310 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

HODDINOTT LLC
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ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
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(410)-531-5017

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

STORMWATER MANAGEMENT PLANS, NOTES AND DETAILS

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 39 OF 58

F-15-110

REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 8-3-16

Chief, Development Engineering Division — Date: 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7/27/2016

F-6 (1)
BORING #702

EXISTING ELEV.	468.32	
MICRO-BIO. TOP	461.00	14'
MICRO-BIO. BOTTOM	457.50	
BORING BOTTOM	454.32	

* SEE NOTE 1

M-6 (2)
BORING #703

EXISTING ELEV.	465.86	
MICRO-BIO. TOP	461.50	
MICRO-BIO. BOTTOM	458.00	15'
WATER	455.86	
BORING BOTTOM	450.86	

M-6 (3)
BORING #704

EXISTING ELEV.	459.93	
MICRO-BIO. TOP	453.00	14.5'
MICRO-BIO. BOTTOM	449.50	
BORING BOTTOM	445.43	

* SEE NOTE 1

F-6 (4)
BORING #755

EXISTING ELEV.	450.26	
MICRO-BIO. TOP	444.50	14'
MICRO-BIO. BOTTOM	441.00	
BORING BOTTOM	436.26	

* SEE NOTE 1

M-6 (5)
BORING #706

EXISTING ELEV.	442.84	
MICRO-BIO. TOP	441.00	
MICRO-BIO. BOTTOM	437.50	
WATER	432.84	15'
BORING BOTTOM	427.84	

M-6 (6)
BORING #706

EXISTING ELEV.	442.84	
MICRO-BIO. TOP	434.5	15'
WATER	432.84	
MICRO-BIO. BOTTOM	431.00	
BORING BOTTOM	427.84	

F-6 (7)
BORING #769

EXISTING ELEV.	462.75	
MICRO-BIO. TOP	457.00	13'
MICRO-BIO. BOTTOM	453.50	
BORING BOTTOM	449.75	

* SEE NOTE 1

F-6 (8)
BORING #786

EXISTING ELEV.	447.02	
MICRO-BIO. TOP	442.00	13'
MICRO-BIO. BOTTOM	438.50	
WATER	435.52	
BORING BOTTOM	434.02	

F-6 (9)
BORING #829

EXISTING ELEV.	438.93	
MICRO-BIO. TOP	437.00	
MICRO-BIO. BOTTOM	433.50	13.5'
BORING BOTTOM ROCK	425.43	

* SEE NOTE 1

F-6 (10)
BORING #929

EXISTING ELEV.	416.77	
MICRO-BIO. TOP	411.00	13.5'
MICRO-BIO. BOTTOM	407.50	
BORING BOTTOM ROCK	403.27	

* SEE NOTE 1

F-6 (11)
BORING #836

MICRO-BIO. TOP	429.00	
MICRO-BIO. BOTTOM	425.50	
EXISTING ELEV.	422.29	
BORING BOTTOM ROCK	411.29	11'

* SEE NOTE 1

F-6 (101)
BORING #759

EXISTING ELEV.	462.15	
MICRO-BIO. TOP	459.00	
MICRO-BIO. BOTTOM	455.50	14'
WATER	449.15	
BORING BOTTOM	448.15	

F-6 (102)
BORING #834

EXISTING ELEV.	433.73	
MICRO-BIO. TOP	433.00	
MICRO-BIO. BOTTOM	429.50	12'
ROCK	423.73	
BORING BOTTOM	421.73	

* SEE NOTE 1

*NOTE 1 – NO WATER FOUND

BORING LOGS, NOTES AND DETAILS

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18

PARCEL NOS.: 88 & 97

FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: JUNE 24, 2016

SHEET 40 OF 58 **F-15-110**

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

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FRANK ANTON MANALANSAN II — Date: 6/29/16

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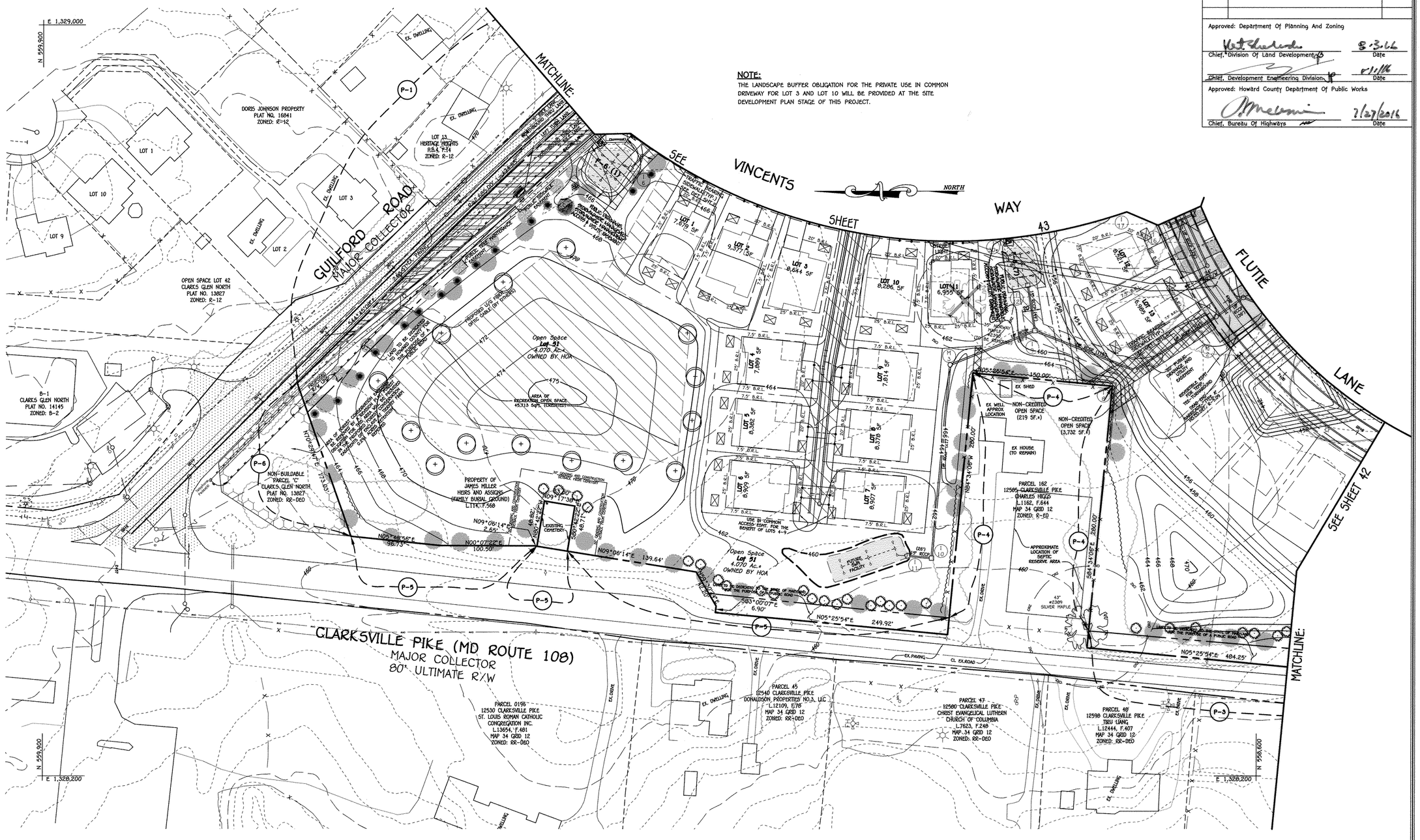
JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)–531–5017

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 5' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 5' INTERVAL
+362.2	SPOT ELEVATION
12"RCP	PROPOSED STORM DRAIN PIPE
8"S	PROPOSED SEWER
8"W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	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)
DO	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING SCALE EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	PERIMETER LANDSCAPING



NOTE:
THE LANDSCAPE BUFFER OBLIGATION FOR THE PRIVATE USE IN COMMON DRIVEWAY FOR LOT 3 AND LOT 10 WILL BE PROVIDED AT THE SITE DEVELOPMENT PLAN STAGE OF THIS PROJECT.

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 8-3-16

Chief, Development Engineering Division — Date: 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7/27/2016

0' 50' 100' 200'

SCALE: 1" = 50'

STREET TREE AND LANDSCAPE PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97

FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 41 OF 58

F-15-110

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

LANDSCAPE DEVELOPER'S CERTIFICATE

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

Name — Date: 6/20/16

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

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FRANK JOHN MANALANSAN II — Date: 6/20/16

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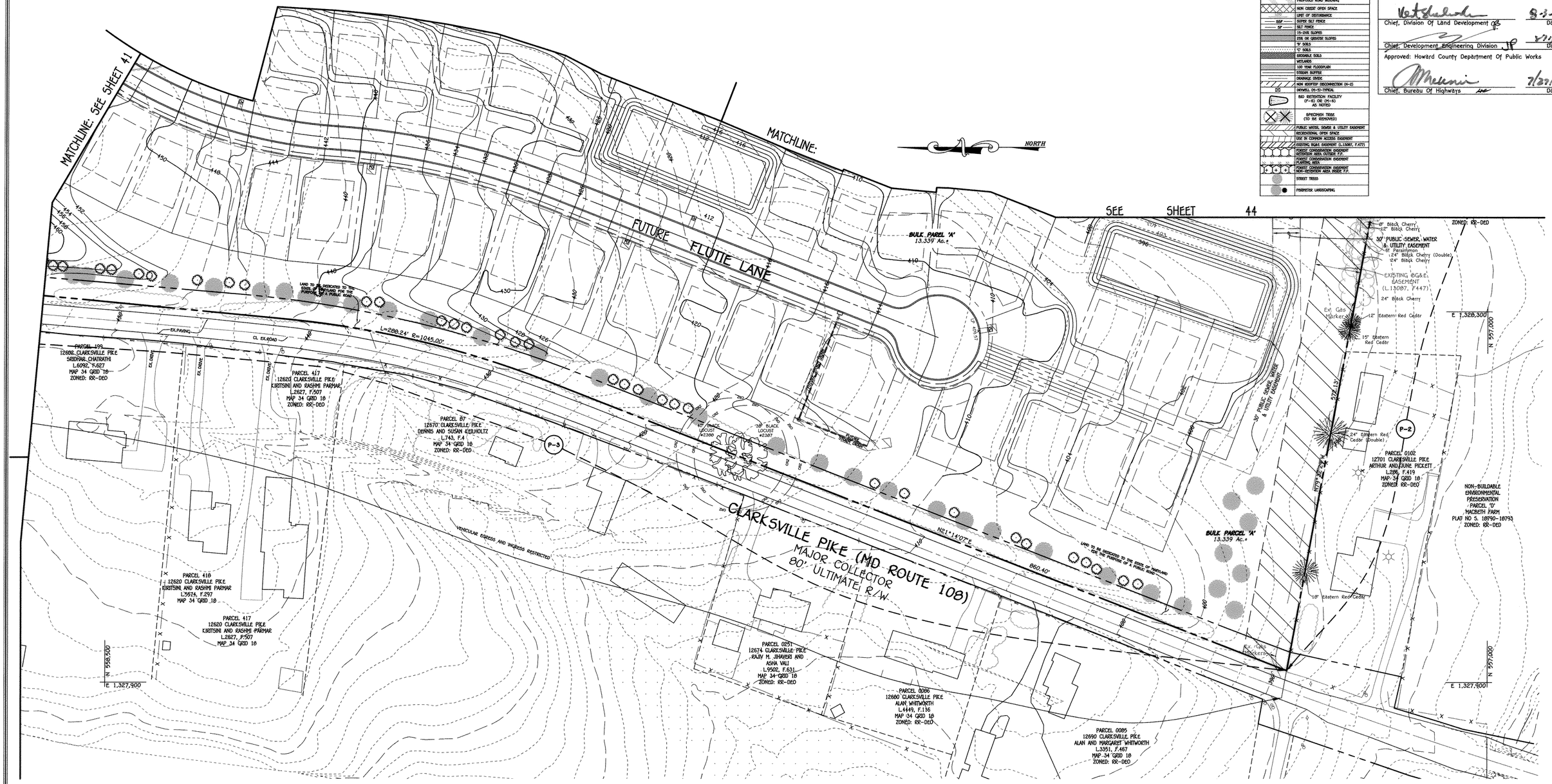

LEGEND

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 CREDIT OPEN SPACE
	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
SF	SILT FENCE
	15-25% SLOPES
	25% OR GREATER SLOPES
	'B' SOILS
	'C' SOILS
	ERODIBLE SOILS
	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
DW	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE SIGNAGED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT (L.13087, F.447)
	FOREST CONSERVATION EASEMENT RETENTION AREA (NUMBER F.F.)
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA (NUMBER F.F.)
	STREET TREES
	PERIMETER LANDSCAPING

REVISIONS

NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 8-3-16

Chief, Development Engineering Division — Date: 8/2/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7/27/2016

0' 50' 100' 200'

SCALE: 1" = 50'

STREET TREE AND LANDSCAPE PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 42 OF 50

F-15-110

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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FRANK MANALANSAN II — Date: 6/29/16

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REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×368.6	SPOT ELEVATION
17 INLET	PROPOSED STORM DRAIN PIPE
FS	PROPOSED SEWER
FW	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	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)
DI	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (N-8) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
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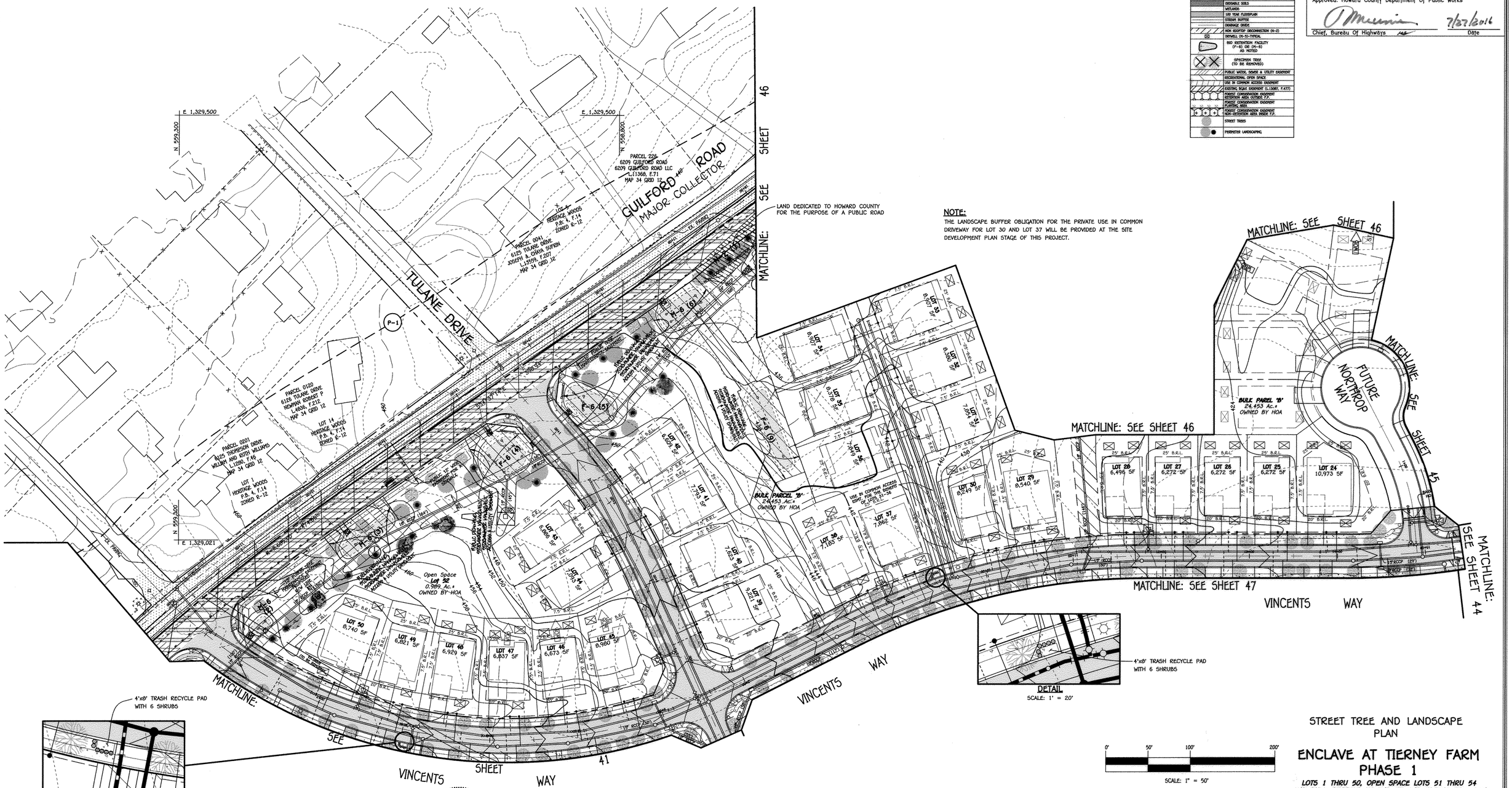
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BGE&E EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTLOTS F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
+ + + +	FOREST CONSERVATION EASEMENT NON-RETENTION AREA BREEZE F.P.
	STREET TREES
	PERIMETER LANDSCAPING



NOTE:
THE LANDSCAPE BUFFER OBLIGATION FOR THE PRIVATE USE IN COMMON DRIVEWAY FOR LOT 30 AND LOT 37 WILL BE PROVIDED AT THE SITE DEVELOPMENT PLAN STAGE OF THIS PROJECT.

LANDSCAPE DEVELOPER'S CERTIFICATE

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STREET TREE AND LANDSCAPE PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 43 OF 58

F-15-110

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENT	10/9/16

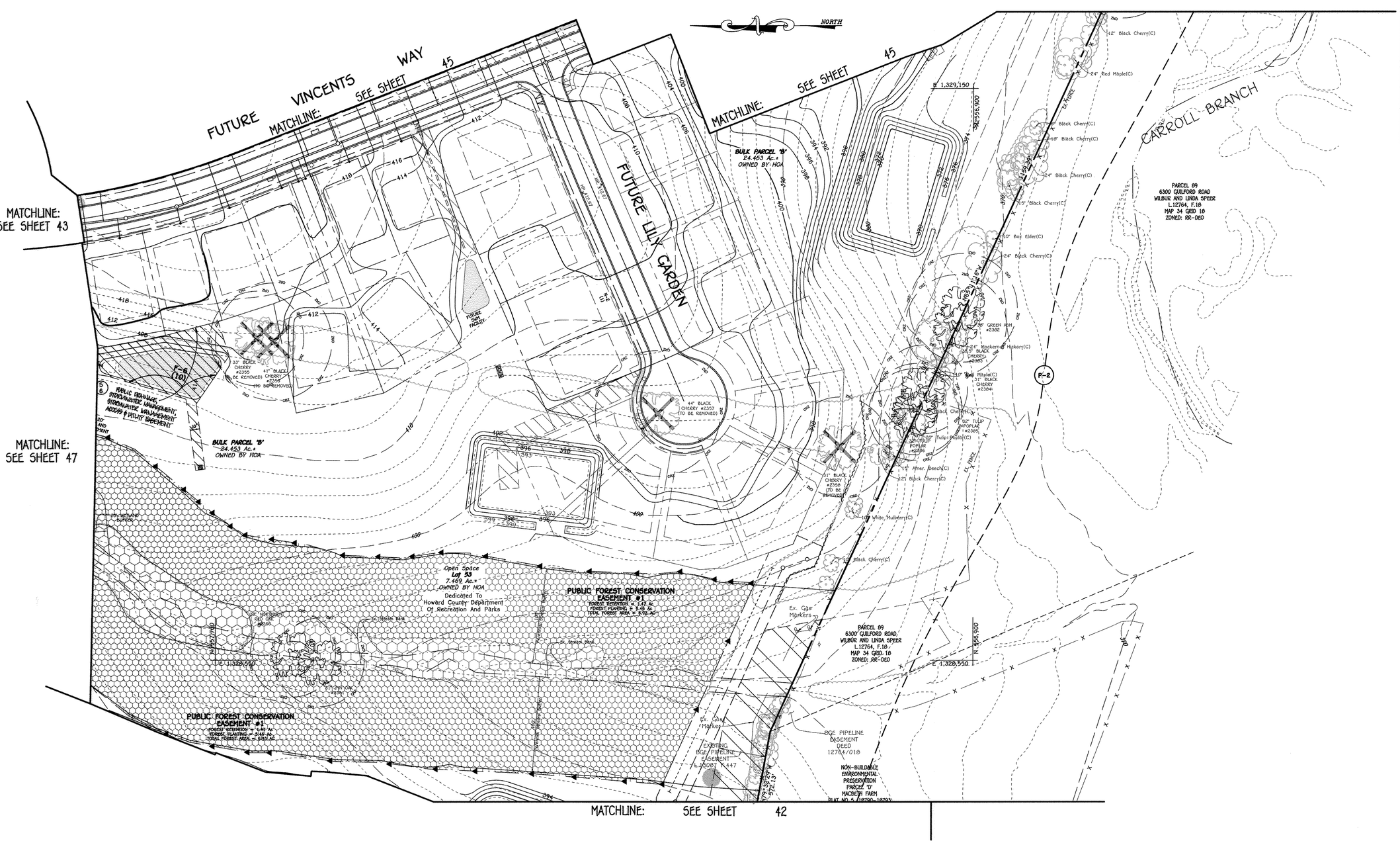
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 8-3-16

Chief, Development Engineering Division — Date: 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7/27/2016



PLAN

SCALE: 1" = 50'

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×382.2	SPOT ELEVATION
STORM	PROPOSED STORM DRAIN PIPE
SS	PROPOSED SEWER
W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	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)
DS	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-5) OR (N-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE 'B' COMMON ACCESS EASEMENT
	EXISTING BGE& EASEMENT (L.10087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	PERIMETER LANDSCAPING

0' 50' 100' 200'

SCALE: 1" = 50'

STREET TREE AND LANDSCAPE PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 44 OF 58

F-15-110

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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Name — Date: 6/29/16

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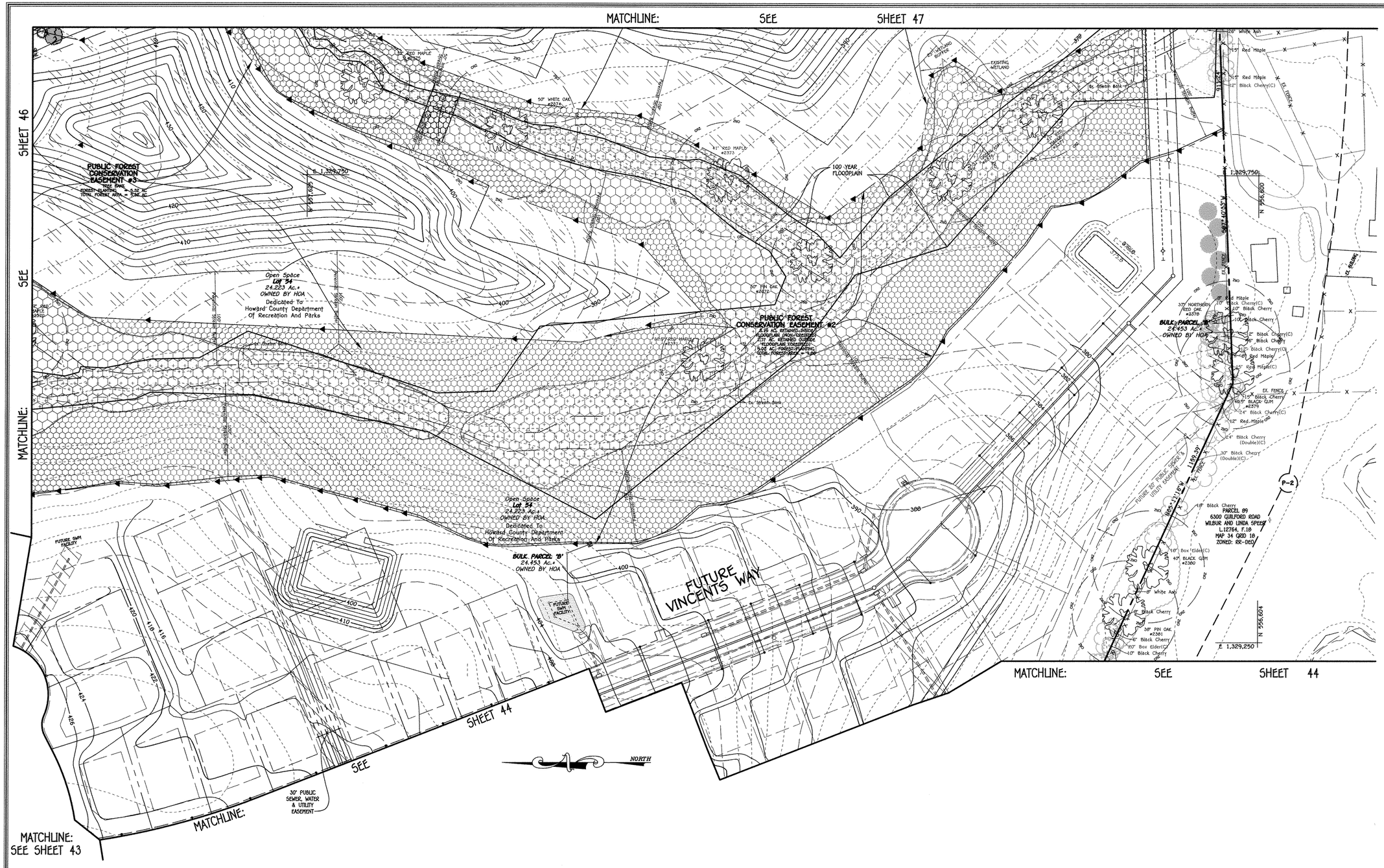

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE REFORESTATION EASEMENT	10/9/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/4/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
X368.2	SPOT ELEVATION
STORM	PROPOSED STORM DRAIN PIPE
SS	PROPOSED SEWER
W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	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)
DS	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING RG&E EASEMENT (L.13097, F.477)
	FOREST CONSERVATION EASEMENT RESTORATION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT NON-RESTORATION AREA INSIDE F.P.
	STREET TREES
	PERIMETER LANDSCAPING

0' 50' 100' 200'

SCALE: 1" = 50'

STREET TREE AND LANDSCAPE PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18

PARCEL NOS.: 88 & 97

FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: JUNE 24, 2016

SHEET 45 OF 58 **F-15-110**

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

LANDSCAPE DEVELOPER'S CERTIFICATE

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

Name — Date 6-29-16

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 LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANK MANALANSAN II. — Date 6/29/16

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

HODDINOTT LLC
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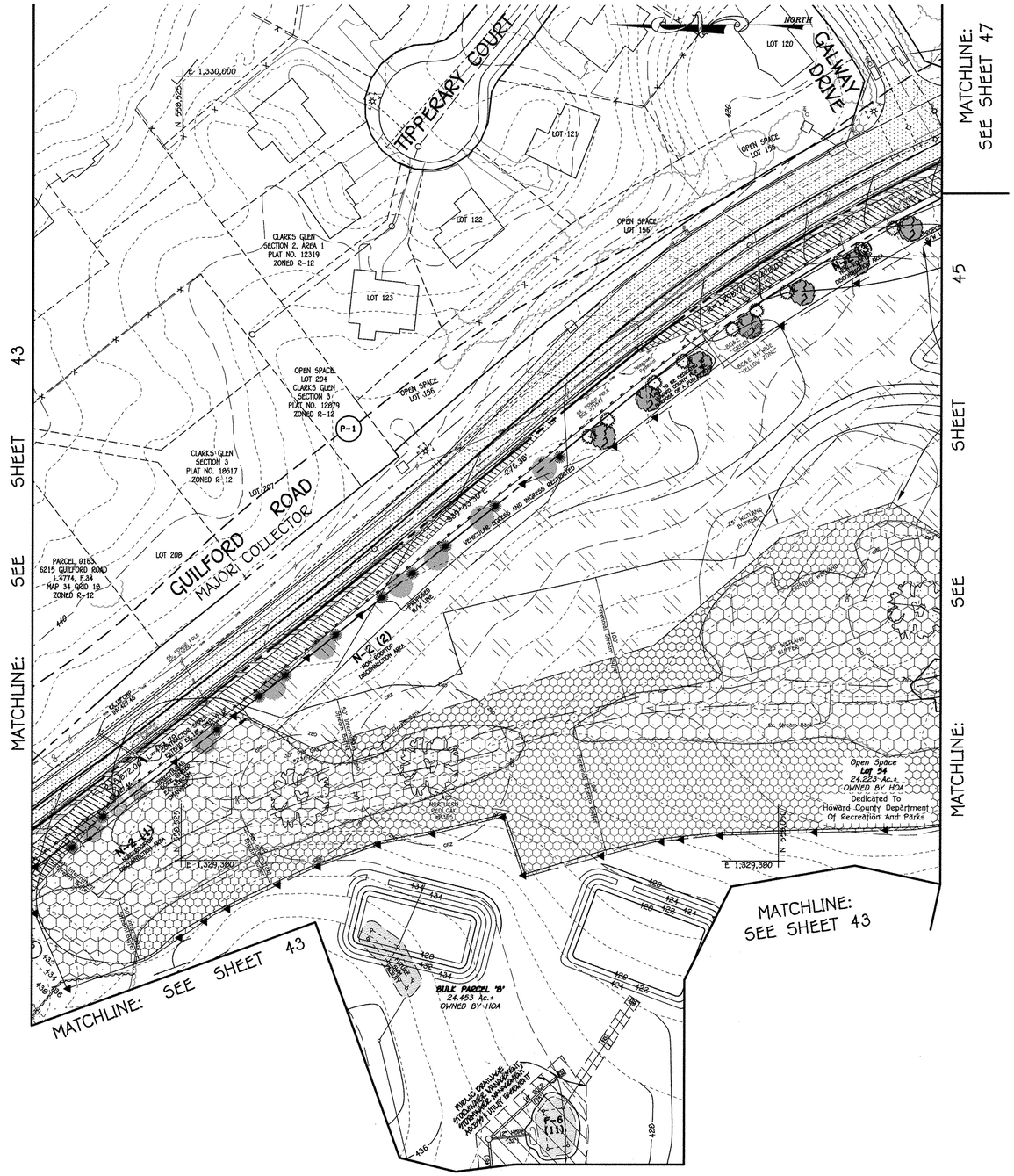
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×368.2	SPOT ELEVATION
12"RCP	PROPOSED STORM DRAIN PIPE
S	PROPOSED SEWER
W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	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)
	BERMUDA (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (N-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING PG&E EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	PERIMETER LANDSCAPING



REVISIONS		
NO.	DESCRIPTION	DATE
2	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENT	10/9/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 7/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

0' 50' 100' 200'

SCALE: 1" = 50'

STREET TREE AND LANDSCAPE PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 46 OF 58

F-15-110

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(410)-531-5017

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 5' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×360.2	SPOT ELEVATION
	PROPOSED STORM DRAIN PIPE
	PROPOSED SEWER
	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	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 SWALE
	NON ROOFTOP DISCONNECTION (N-2)
DS	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING ROAD EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	PERIMETER LANDSCAPING

REVISIONS		
NO.	DESCRIPTION	DATE
1	RENTON REFORESTATION EASEMENT	10/9/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/3/16

Approved: Howard County Department Of Public Works

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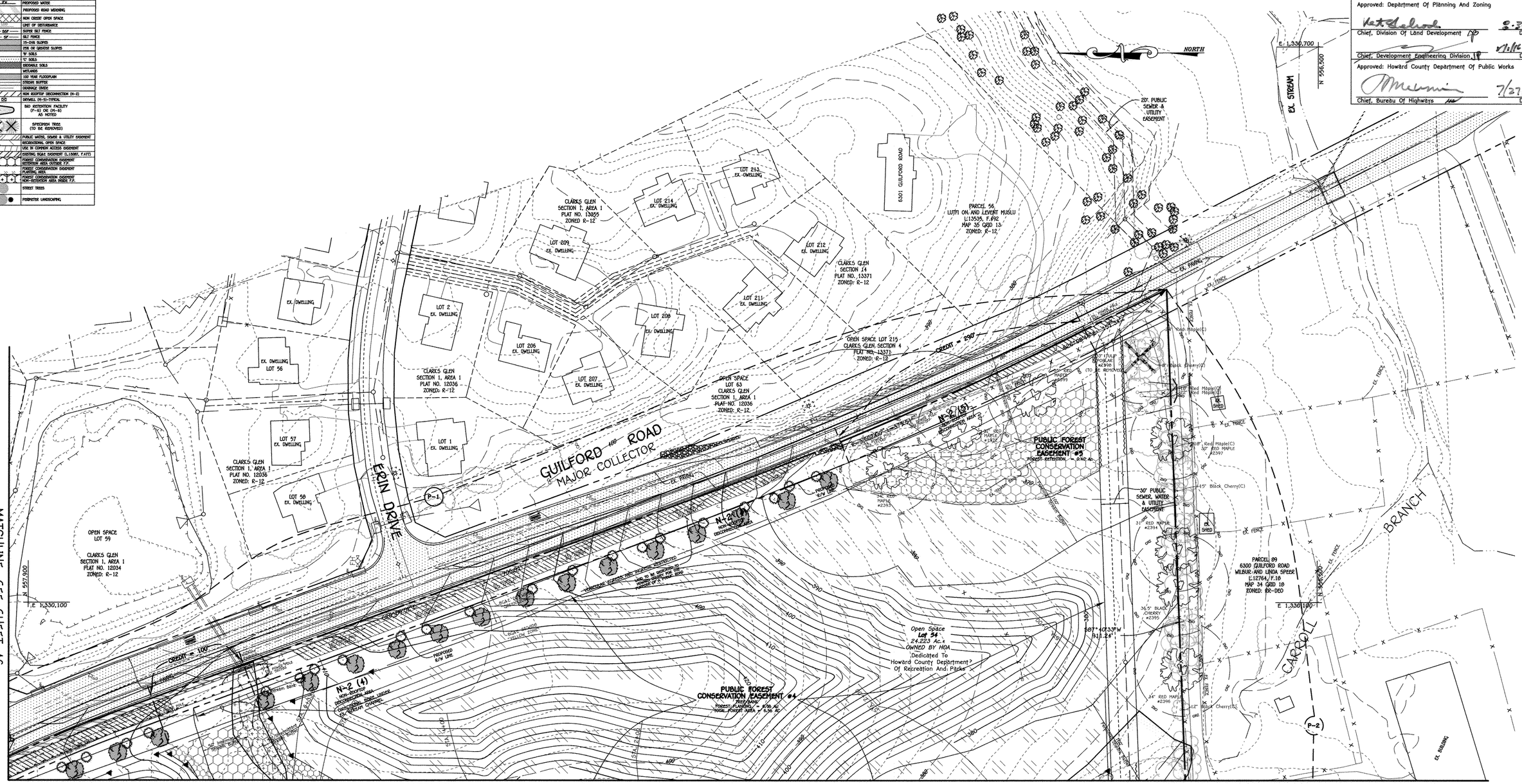

MATCHLINE: SEE SHEET 46

MATCHLINE: SEE SHEET 45

0' 50' 100' 200'

SCALE: 1" = 50'

STREET TREE AND LANDSCAPE PLAN

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LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

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FRANK MANALANSAN II — Date 6/23/16

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LEGEND	
SYMBOL	DESCRIPTION
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	STREAM BUFFER
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	NON ROOFTOP DISCONNECTION (N-2)
	DRYWELL (M-5)-TYPICAL
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	PUBLIC WATER, SEWER & UTILITY EASEMENT
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	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	PERIMETER LANDSCAPING

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 $76,710.00 BASED ON (185) SHADE TREES @ $300/SHADE TREE, 139 EVERGREEN TREES @ $150/EVERGREEN TREE, AND 12 SHRUBS @ $30/SHRUB SHALL BE BONDED AS PART OF THE DPW DEVELOPERS AGREEMENT. THE LANDSCAPING REQUIRED FOR THE SCREENING OF THE USE-IN-COMMON DRIVEWAY FROM THE ADJOINING LOTS WILL BE COMPLETED AS PART OF THE SDP REQUIREMENT.
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.
4. FOR ANY TREE DESIGNATED FOR PRESERVATION, FOR WHICH CREDIT IS GIVEN, BE REMOVED OR DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR IF THE TREE IS LISTED AS A PROHIBITED OR INVASIVE SPECIES ON THE DPZ TREE LIST IT SHOULD BE REPLACED WITH A RECOMMENDED TREE SPECIES WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE LANDSCAPE MANUAL."

STREET TREE SCHEDULE: PHASE I

QTY.	SIZE	COMMENTS
ROW LENGTH = 1,529.3' 1,529.3/40 = 38.23 39 TREES	2 1/2-3" CAL.	40' APART ON PUBLIC R/W (Vincents Way) (Provided 78 Trees)
ROW LENGTH = 631.6' 631.6/40 = 15.79 16 TREES	2 1/2-3" CAL.	40' APART ON PUBLIC R/W (Flutie Lane) (Provided 32 Trees)
ROW LENGTH = 37.87' 37.87/40 = .95 1 TREE	2 1/2-3" CAL.	40' APART ON PUBLIC R/W (Northrop Way) (Provided 2 Trees)
ROW LENGTH = 1030' 1030/40 = 25.8 26 TREES	2 1/2-3" CAL.	40' APART ON PUBLIC R/W (Guilford Road one side only) (Provided 26 Trees)

NOTES

1. WHEN THE DISTANCE BETWEEN THE CURB AND THE SIDEWALK IS LESS THAN 6 FEET, AND WHERE TREES ARE PLANTED CLOSER THAN 3 FEET TO THE SIDEWALK, A BIOLOGIC ROOT INHIBITOR BARRIER OR PHYSICAL CONTAINER BARRIER SHALL BE REQUIRED.
2. TREES SHALL BE PLACED A MINIMUM OF 30 FEET FROM ALL SIGNS AND INTERSECTIONS WHEN PLANTED BETWEEN SIDEWALK AND CURB, AND BE LOCATED WITH CONSIDERATION OF UNDERGROUND UTILITIES AND STRUCTURES. STREET TREES MAY NOT BE PLANTED WITHIN 5 FEET OF AN OPEN SPACE ACCESS STRIP, OR 10 FEET OF A DRIVEWAY."

STREET TREE PLANT LIST

QTY.	KEY	NAME	SIZE
138		TILIA CODATA 'GREENSPIRE' (GREENSPIRE LITTLELEAF LINDEN)	2.5"-3" CAL. FULL CROWN, B&B

PRIVATE REFUSE PAD LANDSCAPING

4' x 8' PAD NUMBER AT USE-IN-COMMON DRIVES:	LOTS 4-9	LOTS 31-36
NUMBER OF TREES REQUIRED:		
SHADE TREES	---	---
EVERGREEN TREES	---	---
SHRUBS	6	6
NUMBER OF TREES PROVIDED:		
SHADE TREES	---	---
EVERGREEN TREES	---	---
SHRUBS - (AZALEA 'BLAAW'S PINK'/ BLAAW'S PINK AZALEA PLANTED 18"-24" APART)	6	6

SCHEDULE A PERIMETER LANDSCAPE EDGE

PERIMETER	P-1	P-2	P-3	P-4	P-5	P-6		TOTAL
LANDSCAPE TYPE	B	A	B	A	B	A		
LINEAR FEET OR ROADWAY FRONTAGE/PERIMETER	3515.46	2642.76	1632.90	710	769.04	173.03		
CREDIT FOR EXISTING VEGETATION (YES, NO LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES 390'	YES 32 EXISTING TREES	NO	NO	NO	NO		
CREDIT FOR WALL, FENCE OR BERM (YES, NO LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO		
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	63 78 -	45 0 -	33 41 -	12 0 -	15 20 -	3 0 -		171 139
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SHRUBS	63 78 -	13 PROPOSED 0 -	33 41 -	12 0 -	15 20 -	3 0 -		139 139

PER CONDITION #1 OF WP-15-069 FOURTEEN 3"-4" CALIPER TREES ARE REQUIRED TO BE PLANTED AS MITIGATION FOR THE REMOVAL OF 14 SPECIMEN TREES

PERIMETER LANDSCAPE PLANT LIST

QTY.	KEY	NAME	SIZE
114		ACER RUBRUM 'ARMSTRONG' (ARMSTRONG COLUMNAR RED MAPLE)	2.5"-3" CAL. FULL CROWN, B&B
25		GLEDITSIA TRIACANTHOS INERMIS 'IMPERIAL' (IMPERIAL THORNLESS HONEYLOCUST)	2.5"-3" CAL. FULL CROWN, B&B
93		ILEX X 'NELLIE R. STEVENS' (NELLIE STEVENS HOLLY)	5'-6' HT, B&B
46		THUJA STANDISHII X PLICATA (GREEN GIANT ARBORVITAE)	5'-6' HT, B&B
12(3)		AZALEA 'BLAAW'S PINK'/ BLAAW'S PINK AZALEA	18"-24" SPREAD
14(2)		FAGUS SYLVATICA EUROPEAN BEECH	3"-4" CAL. FULL CROWN, B&B

1) TOTAL: 153 SHADE TREES, 139 EVERGREEN TREES AND 12 SHRUBS
2) PER CONDITION #1 OF WP-15-069 FOURTEEN 3"-4" CALIPER TREES ARE REQUIRED TO BE PLANTED AS MITIGATION FOR THE REMOVAL OF 14 SPECIMEN TREES
3) SEE TRASH RECYCLE PAD DETAILS FOR LANDSCAPE REQUIREMENTS - SHEET 43

PLANTING SPECIFICATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

REVISIONS		
NO.	DESCRIPTION	DATE

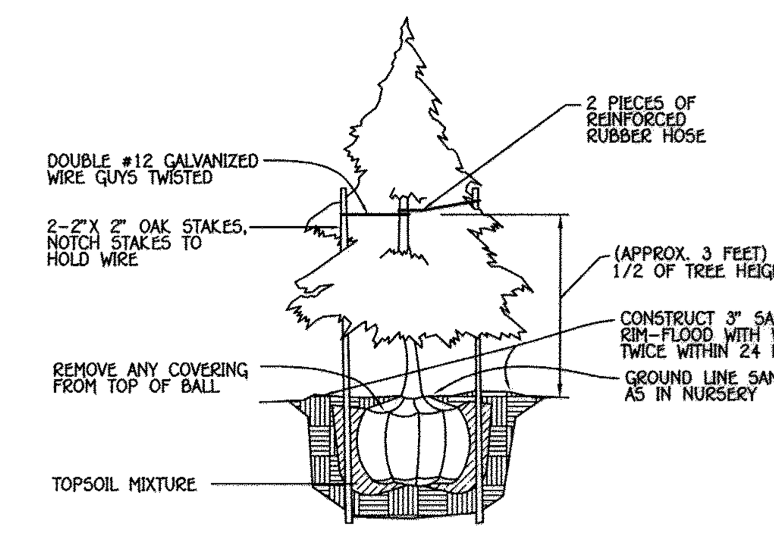
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 8-3-16

Chief, Development Engineering Division — Date: 8/1/16

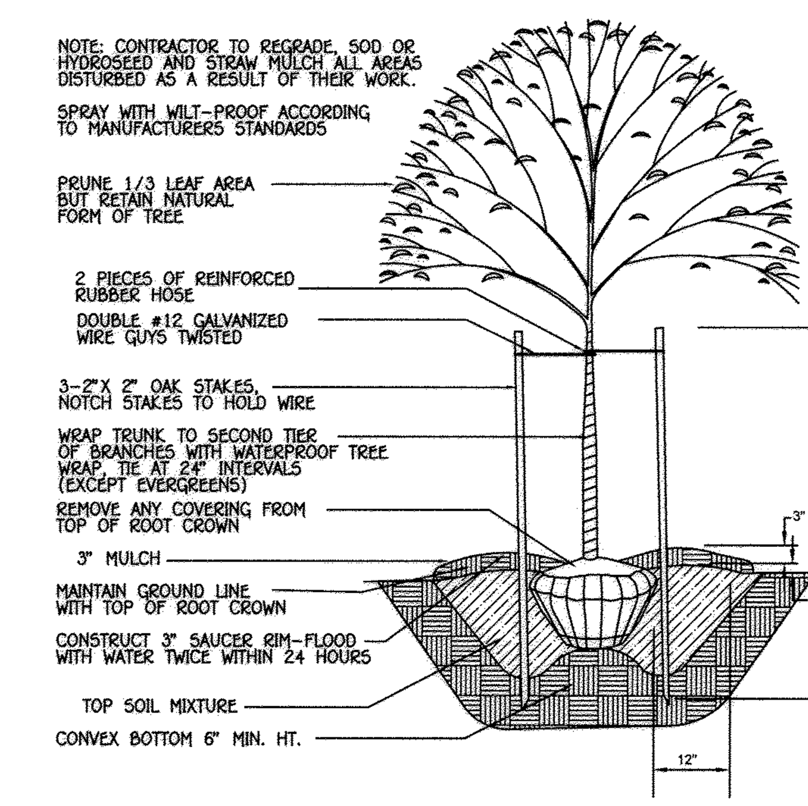
Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7/27/2016



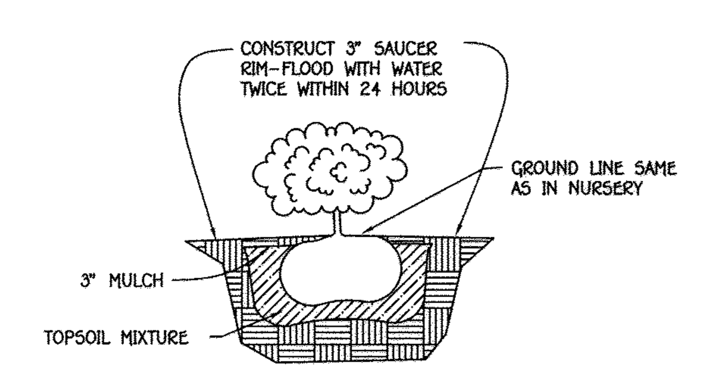
EVERGREEN TREE PLANTING DETAIL

NO SCALE



SHADE TREE PLANTING DETAIL

NO SCALE



SHRUB PLANTING DETAIL

NO SCALE

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

Name — Date: 6-29-16

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

PROFESSIONAL CERTIFICATION

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

FRANK MANALANSAN II. — Date: 6/29/16

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

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

HODDINOTT LLC
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

0' 50' 100' 200'

SCALE: 1" = 50'

STREET TREE AND LANDSCAPE PLAN, NOTES AND DETAILS

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18

PARCEL NOS.: 88 & 97

FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: JUNE 24, 2016

F-15-110

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 CREDIT 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 BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA EXTERIOR F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FCE #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

REVISIONS		
NO.	DESCRIPTION	DATE
2	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS	10/9/16

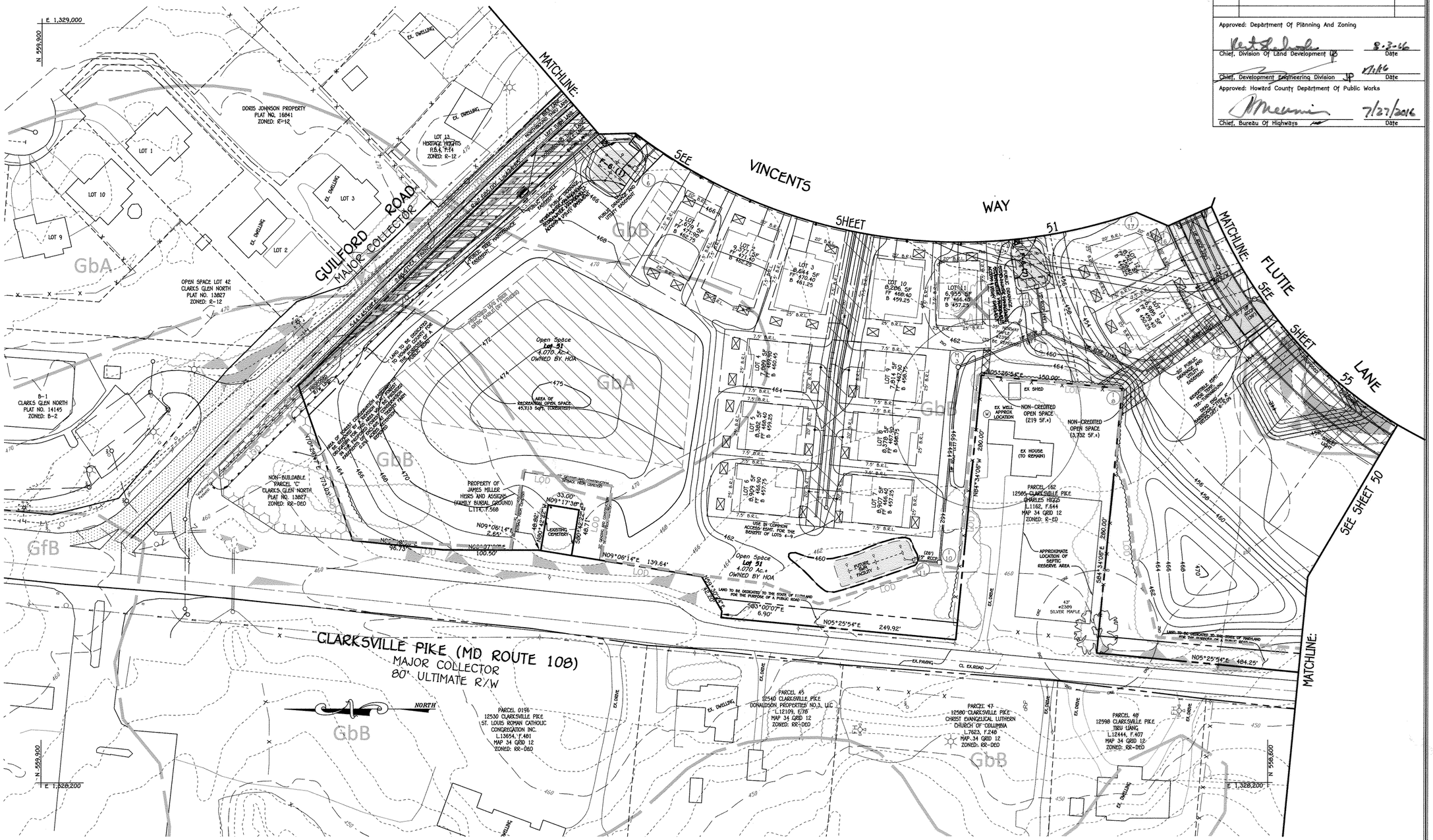
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 7.1.16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016



PLAN

SCALE: 1" = 50'

FOREST CONSERVATION PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 00 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 49 OF 58

F-15-110

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' 50' 100' 150'

SCALE: 1" = 50'

STATE OF MARYLAND — STEPHANIE JENENE TUITE — No. 3038 — LANDSCAPE ARCHITECT

MD DNR QUALIFIED PROFESSIONAL

STEPHANIE J. TUITE RLA — DATE 7/11/16

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

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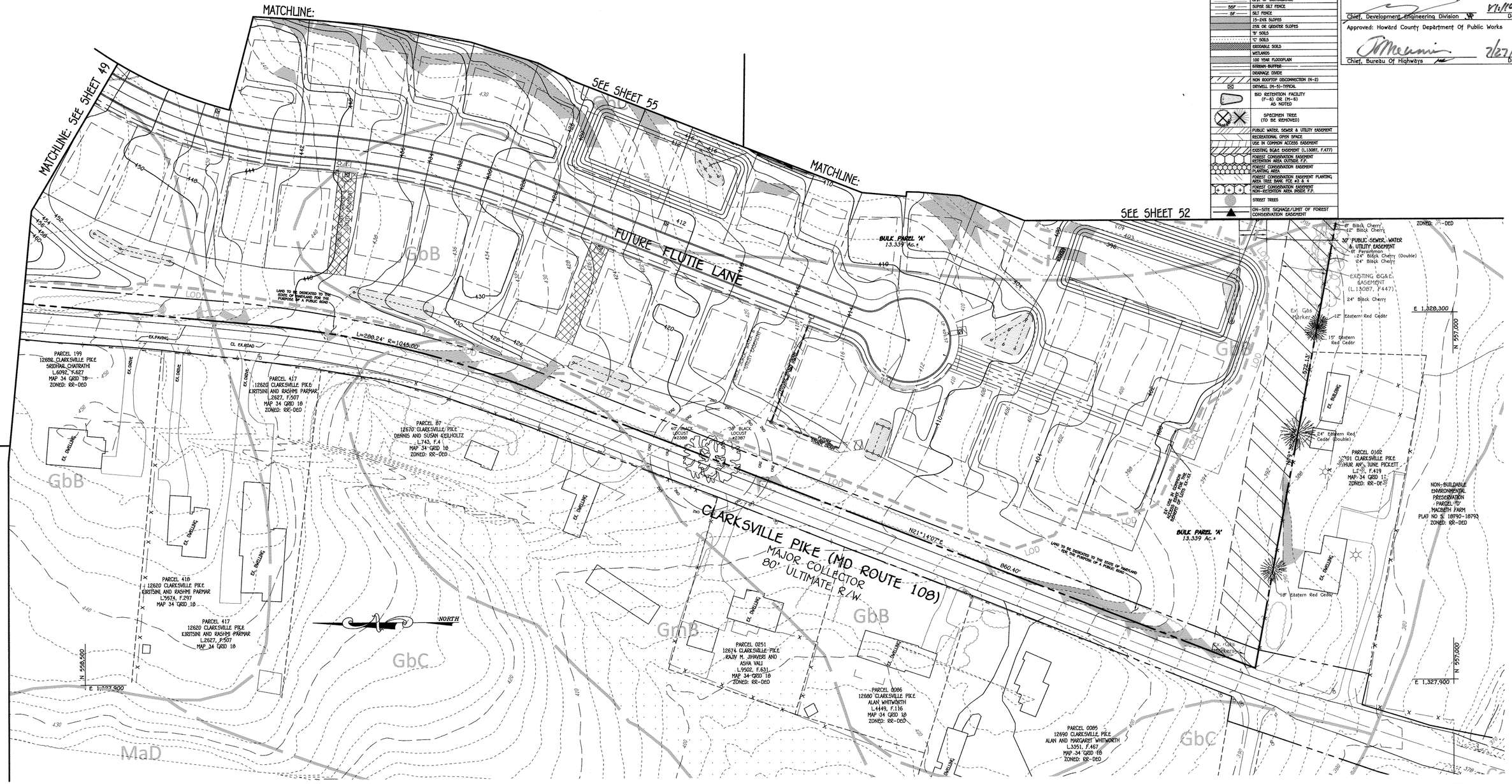
JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017



PLAN

SCALE: 1" = 50'

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×362.2	SPOT ELEVATION
12"SDCP	PROPOSED STORM DRAIN PIPE
S	PROPOSED SEWER
W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	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-5) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT (L.13087, F.447)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FCA #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

REVISIONS

NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 7/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

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' 50' 100' 150'

SCALE: 1" = 50'

STATE OF MARYLAND — STEPHANIE JENEVE TUITE — No. 3038 — LANDSCAPE ARCHITECT

MD DNR QUALIFIED PROFESSIONAL

STEPHANIE J. TUITE RLA — DATE 7/11/16

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8310 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

HODDINOTT LLC
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ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

FOREST CONSERVATION PLAN

ENCLAVE AT TIERNEY FARM
PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 50 OF 58

F-15-110

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 CREDIT 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)
DW	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREES (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FOR #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

REVISIONS

NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS	10/3/16

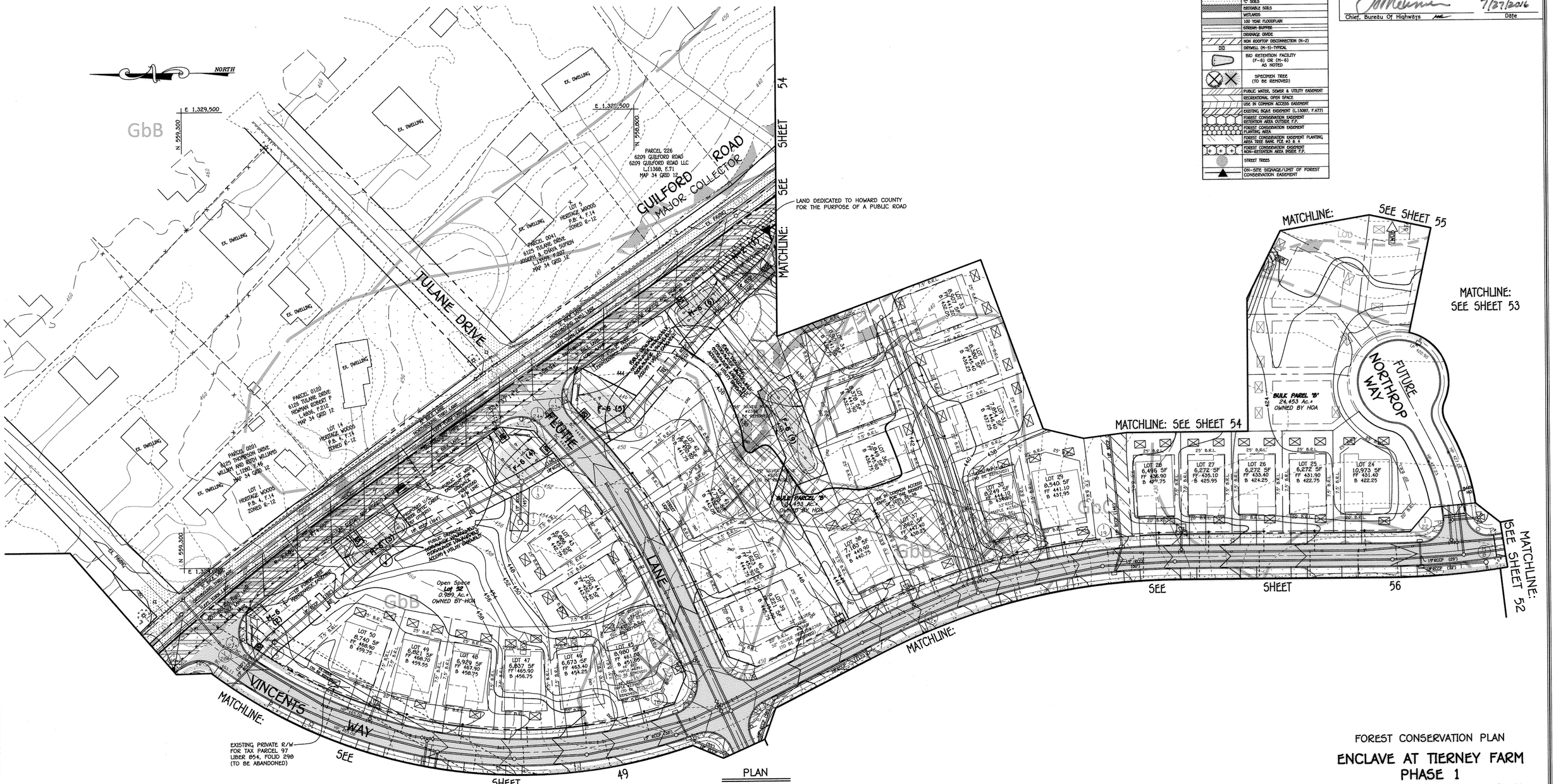
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016



PLAN

SCALE: 1" = 50'

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

STATE OF MARYLAND — STEPHANIE JENENE TUITE — No. 3033 — LANDSCAPE ARCHITECT

MD DNR QUALIFIED PROFESSIONAL

STEPHANIE J. TUITE RLA — DATE 7/11/16

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

HOODINOTT LLC
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

FOREST CONSERVATION PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 51 OF 58

F-15-110

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENT	10/3/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

PLAN

SCALE: 1" = 50'

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
X362.2	SPOT ELEVATION
12"RCP	PROPOSED STORM DRAIN PIPE
PS	PROPOSED SEWER
PW	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	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)
DD	DRYWELL (M-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FOR #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

FOREST CONSERVATION PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 80 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 52 OF 58

F-15-110

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' 50' 100' 150'
SCALE: 1" = 50'

STATE OF MARYLAND — STEPHANIE JENNEMANN TUITE — No. 3038 — LANDSCAPE ARCHITECT

MD DNR QUALIFIED PROFESSIONAL
STEPHANIE J. TUITE RLA — DATE 7/14/16

DEVELOPER

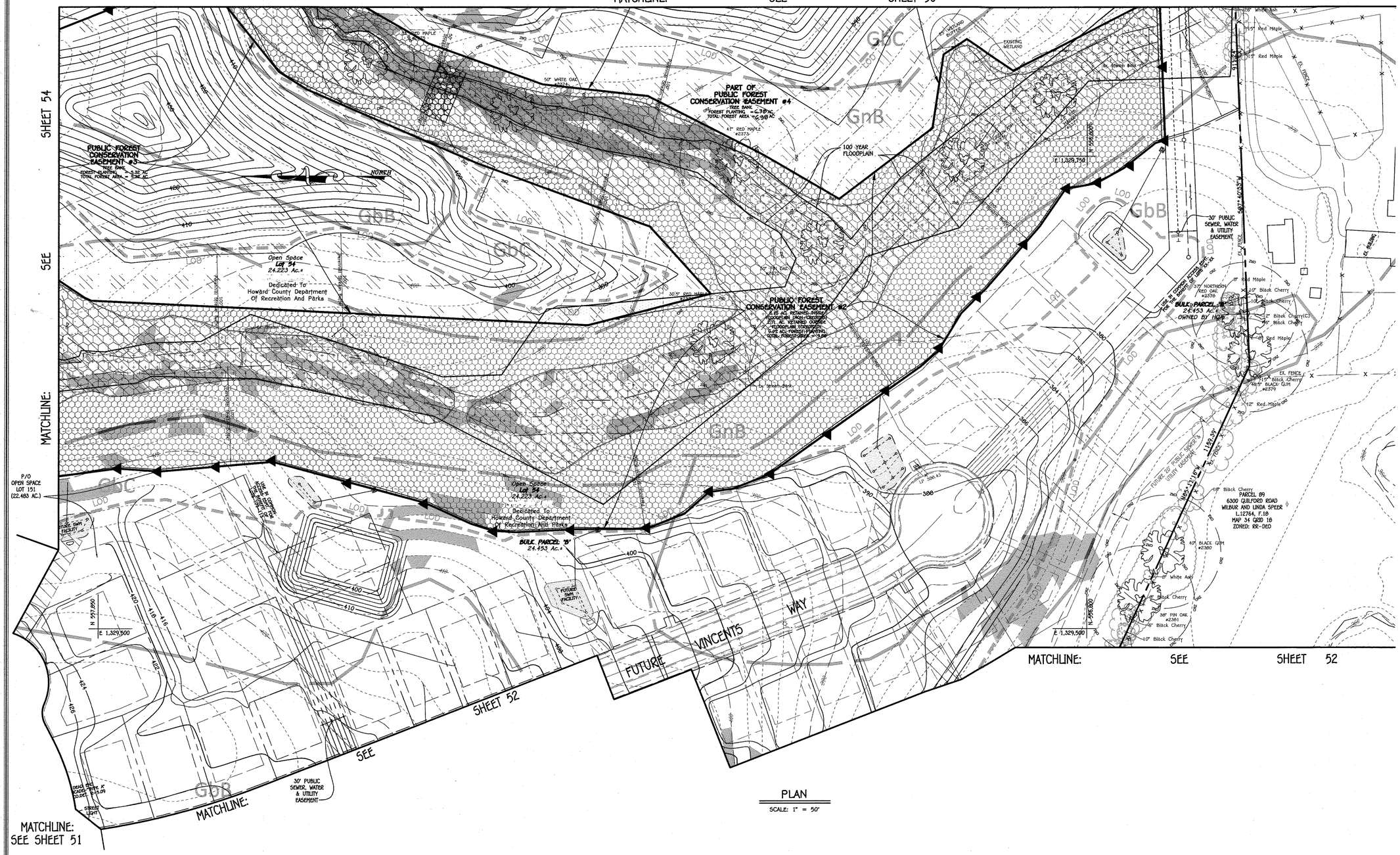
LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

HODDINOTT LLC
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

MATCHLINE: SEE SHEET 56



PLAN

SCALE: 1" = 50'

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE REFORESTATION EASEMENT	10/9/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 7.1.16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

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"DCP	PROPOSED STORM DRAIN PIPE
4"S	PROPOSED SEWER
4"W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT 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)
DW	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
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	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING ROAD EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE T.F.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK TCE #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE T.F.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

FOREST CONSERVATION PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 80 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 53 OF 58

F-15-110

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

0' 50' 100' 150'
SCALE: 1" = 50'

STATE OF MARYLAND — STEPHANIE JENSEN TUITE — No. 3038 — LANDSCAPE ARCHITECT

MD DNR QUALIFIED PROFESSIONAL

STEPHANIE J. TUITE RLA — DATE 7/11/16

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REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS	10/3/16
2	REVISE EASEMENT INFORMATION	10/3/16

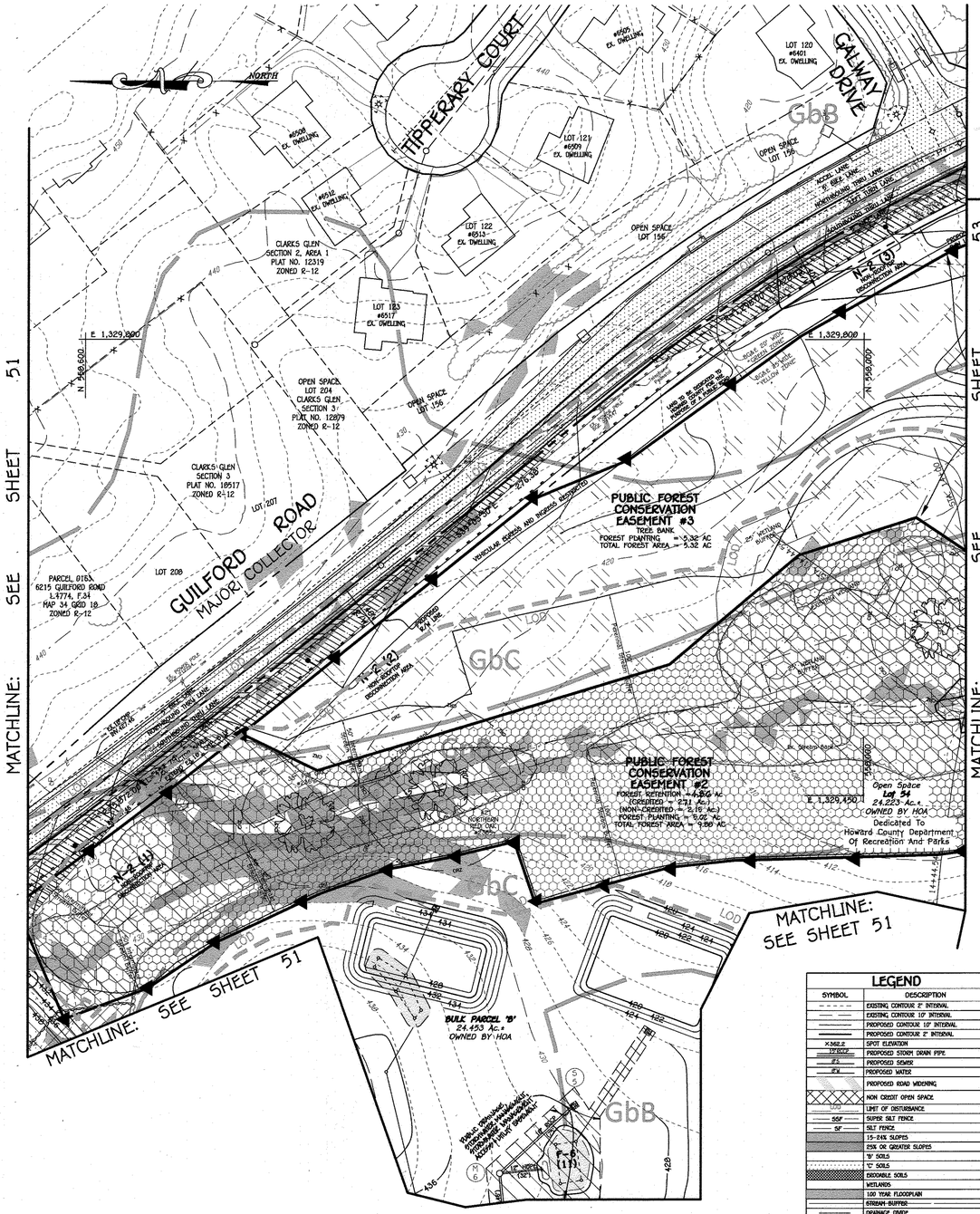
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 8.3.16

Chief, Development Engineering Division — Date: 8/1/16

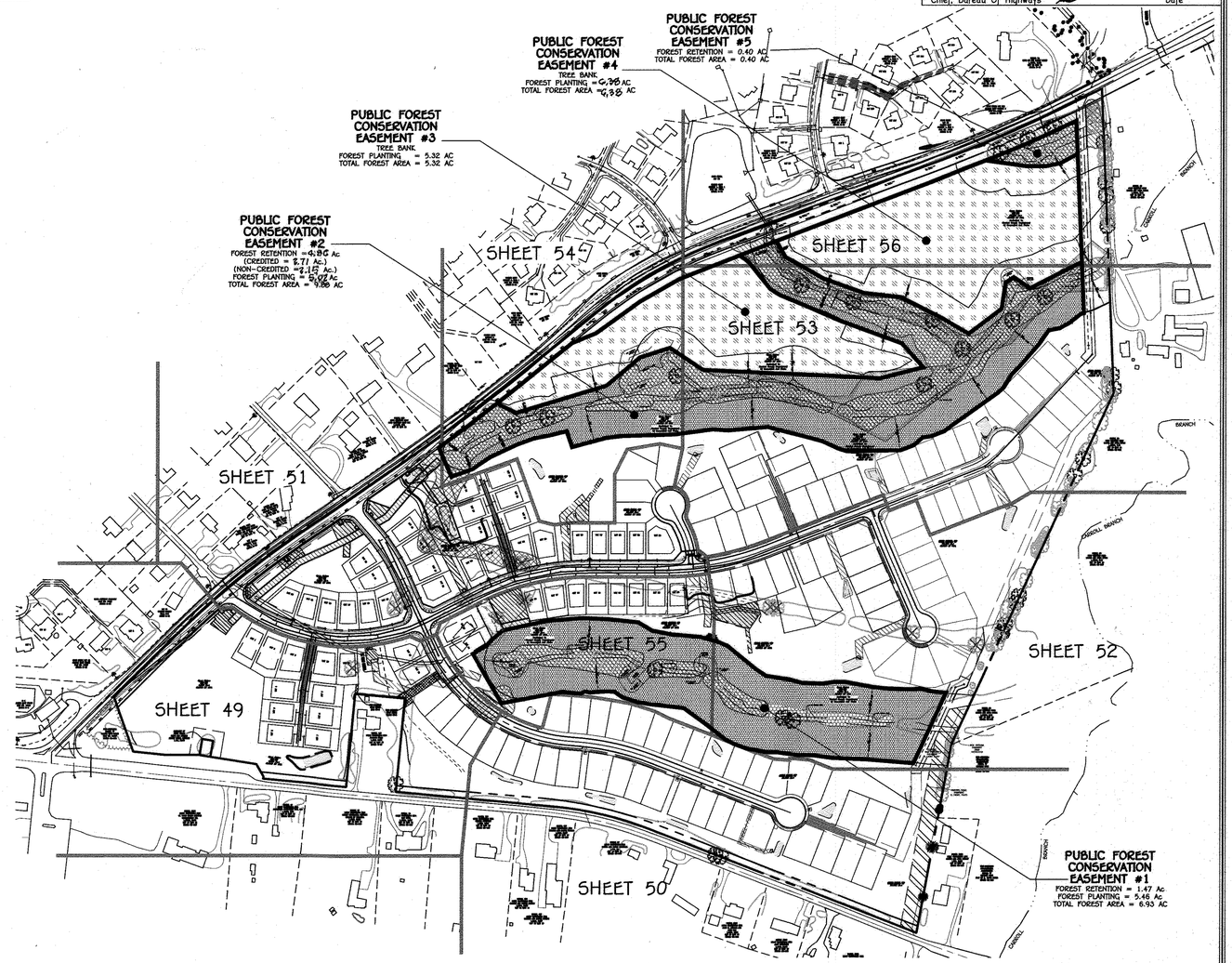
Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7/27/2016



PLAN

SCALE: 1" = 50'



FOREST CONSERVATION SHEET KEY PLAN

SCALE: 1" = 200'

0' 200' 400' 800'

SCALE: 1" = 200'

0' 50' 100' 150'

SCALE: 1" = 50'

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
X362.2	SPOT ELEVATION
12"RCP	PROPOSED STORM DRAIN PIPE
#S	PROPOSED SEWER
#W	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
LOD	LIMIT OF DISTURBANCE
SSF	SUPER SILT FENCE
SF	SILT FENCE
	15-24% SLOPES
	25% OR GREATER SLOPES
	"B" SOILS
	"C" SOILS
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	WETLANDS
	100 YEAR FLOODPLAIN
	STREAM-BUFFER
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
D	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (N-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	10'ø IN COMMON ACCESS EASEMENT
	EXISTING BG&E EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FOR #3 & 4
+ + +	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INDEX F.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

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MD DNR QUALIFIED PROFESSIONAL

STEPHANIE J. TUITE RLA — DATE 7/11/16

STATE OF MARYLAND — STEPHANIE JENNE TUITE — No. 3038 — LANDSCAPE ARCHITECT

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FOREST CONSERVATION PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 54 OF 58

F-15-110

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 CREDIT 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-BUFFERS
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
	DRYWELL (N-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (N-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING INGRESS EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT RETENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FCE #3 & 4
	FOREST CONSERVATION EASEMENT NON-RETENTION AREA INSIDE F.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD PUBLIC DRAINAGE AND STORMWATER MANAGEMENT EASEMENTS	10/5/16

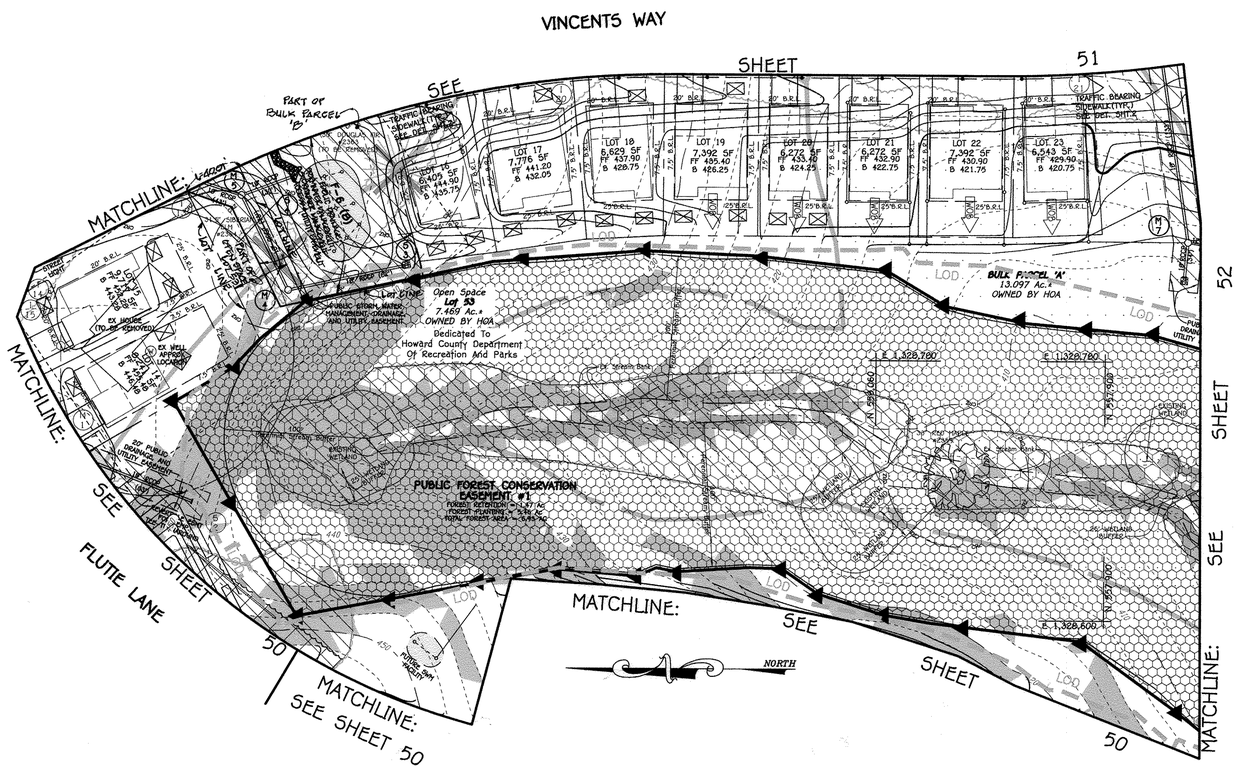
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 8/1/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016



PLAN

SCALE: 1" = 50'

FOREST CONSERVATION PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES: ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18

PARCEL NOS.: 80 & 97

FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: JUNE 24, 2016

SHEET 55 OF 58

F-15-110

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' 50' 100' 150'

SCALE: 1" = 50'

STATE OF MARYLAND — STEPHANIE JENENE TUITE — NO. 3038 — LANDSCAPE ARCHITECT

MD DNR QUALIFIED PROFESSIONAL

STEPHANIE J. TUITE RLA — DATE 7/11/16

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

HODDINOTT LLC
8318 FORREST STREET-SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)-531-5017

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×368.8	SPOT ELEVATION
12"RCP	PROPOSED STORM DRAIN PIPE
PS	PROPOSED SEWER
PW	PROPOSED WATER
	PROPOSED ROAD WIDENING
	NON CREDIT OPEN SPACE
	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 BUFFERS
	DRAINAGE DIVIDE
	NON ROOFTOP DISCONNECTION (N-2)
	DRYWELL (M-5)-TYPICAL
	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
	SPECIMEN TREE (TO BE REMOVED)
	PUBLIC WATER, SEWER & UTILITY EASEMENT
	RECREATIONAL OPEN SPACE
	USE IN COMMON ACCESS EASEMENT
	EXISTING BGE EASEMENT (L.13087, F.477)
	FOREST CONSERVATION EASEMENT EXTENTION AREA OUTSIDE F.P.
	FOREST CONSERVATION EASEMENT PLANTING AREA
	FOREST CONSERVATION EASEMENT PLANTING AREA TREE BANK FCE #3 & 4
	FOREST CONSERVATION EASEMENT NON-EXTENTION AREA INSIDE F.P.
	STREET TREES
	ON-SITE SIGNAGE/LIMIT OF FOREST CONSERVATION EASEMENT

REVISIONS		
NO.	DESCRIPTION	DATE
1	PRIVATE REFORESTATION INFORMATION	10/3/16

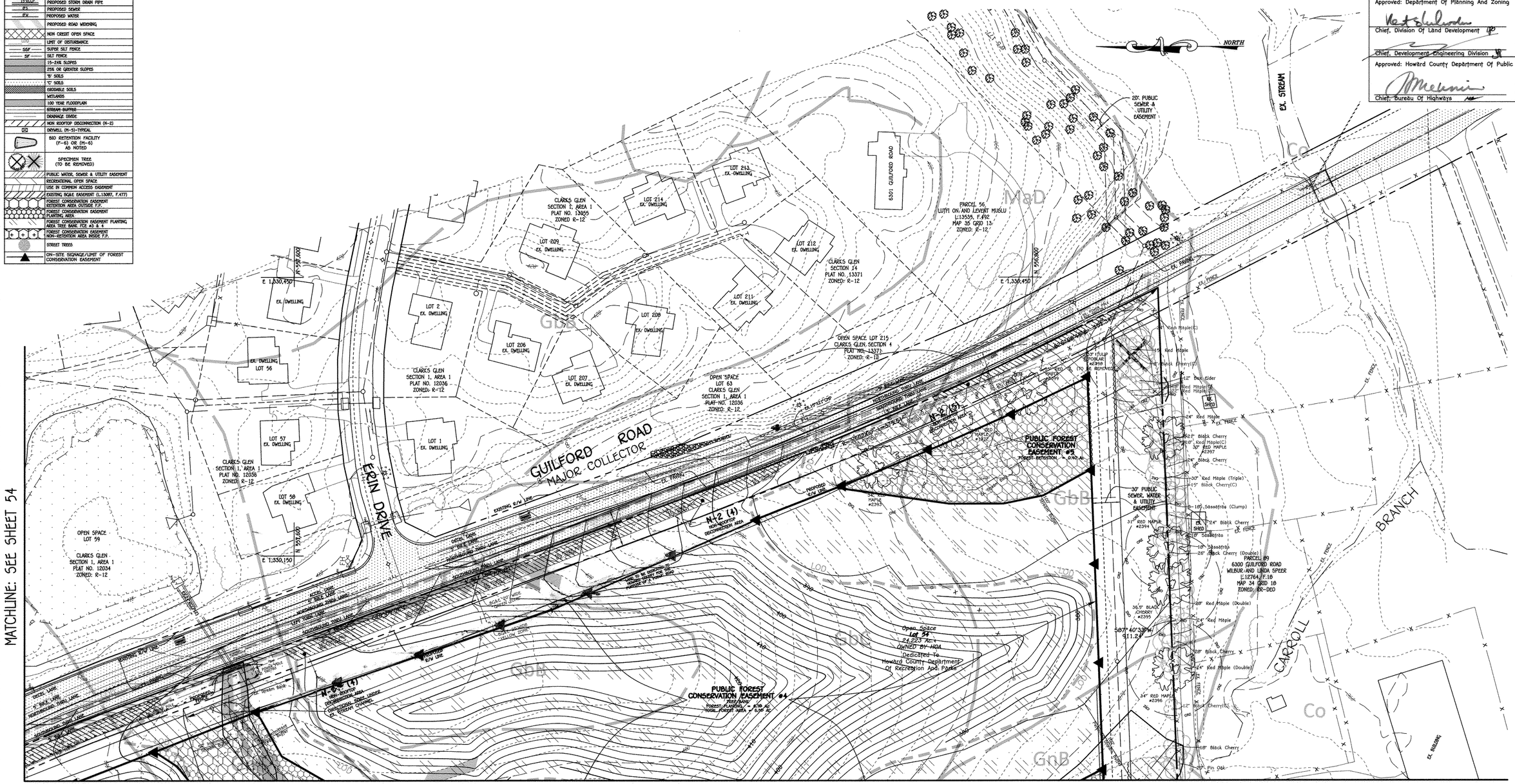
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-3-16

Chief, Development Engineering Division — Date 07/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016



FOREST CONSERVATION PLAN

ENCLAVE AT TIERNEY FARM PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006

ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 56 OF 58

F-15-110

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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0' 50' 100' 150'
SCALE: 1" = 50'

STATE OF MARYLAND — STEPHANIE JENENE TUITE — No. 3038 — LANDSCAPE ARCHITECT

MD DNR QUALIFIED PROFESSIONAL

STEPHANIE J. TUITE RLA — DATE 7/11/16

DEVELOPER
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8310 FORREST STREET-SUITE 200
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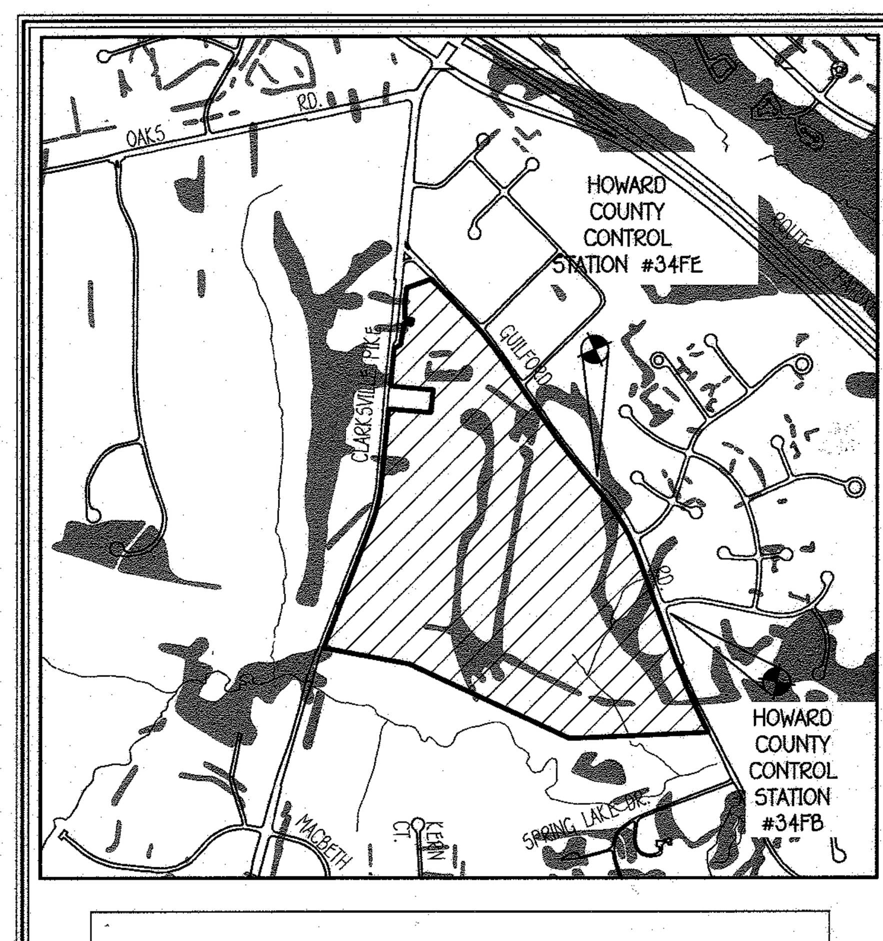

Specimen Tree List

	TAG #	COMMON NAME	SCIENTIFIC NAME	DBH*	VIGOR**	NOTES
(1)	2355	Black Cherry	*Prunus serotina*	33"	Fair	Broken branches
(1)	2356	Black Cherry	*Prunus serotina*	41"	Good	
(1)	2357	Black Cherry	*Prunus serotina*	44"	Fair	Dieback @ 6'
(1)	2358	Black Cherry	*Prunus serotina*	31"	Good	
	2359	Red Maple	*Acer rubrum*	33"	Good	
	2360	Northern Red Oak	*Quercus rubra*	30"	Fair	Many vines
	2361	Pin Oak	*Quercus palustris*	31"	Good	
(1)	2362	Red Maple	*Acer rubrum*	33"	Good	Dieback @ 6'
(1)	2363	Douglas Fir	*Pseudotsuga menziesii*	30"	Good	
(1)	2364	Siberian Elm	*Ulmus pumila*	31.5"	Good	
	2365	Northern Red Oak	*Quercus rubra*	42"	Fair	Trunk rot
(1)	2366	Silver Maple	*Acer saccharinum*	56"	Fair	Double @ 13'
(1)	2367	Silver Maple	*Acer saccharinum*	39"	Fair	Triple @ 5'
(1)	2368	Silver Maple	*Acer saccharinum*	32"	Good	
	2369	Pin Oak	*Quercus palustris*	33"	Good	
	2370	Red Maple	*Acer rubrum*	37"	Good	
	2371	Red Maple	*Acer rubrum*	30.5"	Fair	Trunk rot
	2372	Pin Oak	*Quercus palustris*	30"	Good	
	2373	Red Maple	*Acer rubrum*	41"	Fair	Partially dead
	2374	White Oak	*Quercus alba*	50"	Poor	90% dead
	2375	Red Maple	*Acer rubrum*	33"	Good	
	2376	Green Ash	*Fraxinus pennsylvanica*	31"	Good	triple
	2377	Red Maple	*Acer rubrum*	31"	Good	Double @ 6'
	2378	Northern Red Oak	*Quercus rubra*	37"	Good	
	2379	Black Gum	*Nyssa sylvatica*	40.5"	Fair	Trunk rot
	2380	Black Gum	*Nyssa sylvatica*	40"	Good	
	2381	Pin Oak	*Quercus palustris*	38"	Good	
	2382	Green Ash	*Fraxinus pennsylvanica*	38"	Good	
	2383	Black Cherry	*Prunus serotina*	35.5"	Good	
	2384	Black Cherry	*Prunus serotina*	31"	Good	
	2385	Tulip Poplar	*Liriodendron tulipifera*	32"	Poor	Dieback
	2386	Tulip Poplar	*Liriodendron tulipifera*	32"	Poor	Split/Mostly dead
	2387	Black Locust	*Robinia pseudoacacia*	38"	Poor	Many vines/Heavy pruning
	2388	Black Locust	*Robinia pseudoacacia*	40"	Poor	Many vines/Heavy pruning
	2389	Silver Maple	*Acer saccharinum*	43"	Good	
(1)	2390	Norway Maple	*Acer platanoides*	35"	Fair	Many Vines
(1)	2391	Red Maple	*Acer rubrum*	46"	Good	
(1)	2392	Red Maple	*Acer rubrum*	52"	Good	
	2393	Red Maple	*Acer rubrum*	34"	Good	
	2394	Red Maple	*Acer rubrum*	31"	Good	
	2395	Black Cherry	*Prunus serotina*	36.5"	Good	Double @ 6'
	2396	Red Maple	*Acer rubrum*	34"	Good	
	2397	Red Maple	*Acer rubrum*	30"	Good	
(1)	2398	Tulip Poplar	*Liriodendron tulipifera*	33"	Good	
	2399	Red Maple	*Acer rubrum*	35"	Good	
	1972	Red Maple	*Acer rubrum*	31"	Good	

NOTES: (1) INDICATES SPECIMEN TREE TO BE REMOVED

FOREST CONSERVATION WORKSHEET

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	88.90
B. DEDUCTIONS (AREA WITHIN 100 YEAR FLOODPLAIN)	3.05
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00
D. NET TRACT AREA	85.85
LAND USE CATEGORY: HIGH DENSITY RESIDENTIAL	
E. AFFORESTATION THRESHOLD (NET TRACT AREA [C] x 15%)	12.88
F. CONSERVATION THRESHOLD (NET TRACT AREA [C] x 20%)	17.17
EXISTING FOREST COVER	
G. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	6.09
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	0.0
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	0.0
BREAKEVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	0.0
BREAKEVEN POINT	
K. CLEARING PERMITTED WITHOUT MITIGATION	0.0
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE	1.51
M. TOTAL AREA OF FOREST TO BE RETAINED	4.58
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION THRESHOLD	0.0
P. REFORESTATION FOR CLEARING BELOW THE CONSERVATION THRESHOLD	3.02
Q. CREDIT FOR RETENTION ABOVE THE CONSERVATION THRESHOLD	0.00
R. TOTAL REFORESTATION REQUIRED	3.02
S. TOTAL AFFORESTATION REQUIRED	
T. TOTAL PLANTING REQUIREMENT	9.81

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(410) 461 – 2855

FCE#1 Planting Area – 5.46 acres

Planting units required: 3,822
Planting units provided: 3,830 (1,215 whips and 400 trees)

Qty	Species	Size	Spacing	Total FCA Units
200	Acer rubrum – Red maple	1" cal.	15' o.c.	
200	Quercus alba – White oak	1" cal.	15' o.c.	
400 Total 1" caliper trees (3.5 planting units per tree) = 1,400 Total FCA unit credit				
200	Acer rubrum – Red maple	2–3' whip	11' o.c.	
200	Liriodendron tulipifera – Tulip poplar	2–3' whip	11' o.c.	
200	Prunus serotina – Black cherry	2–3' whip	11' o.c.	
380	Quercus alba – White oak	2–3' whip	11' o.c.	
115	Cornus florida – Flowering dogwood	2–3' whip	11' o.c.	
120	Cercis canadensis – Redbud	2–3' whip	11' o.c.	
100	Viburnum prunifolium – Blackhaw	2–3' whip	11' o.c.	
1,215 Total whip plantings (2 planting units per tree) = 2,430 Total FCA unit credit				
Total Unit Credit		(2,430 + 1,400)		3,830

1" CAL. TREES = 200/ACRE (400 TREES/200 = 2 AC.) = 1,400 Planting Units
WHIPS w/shelters = 350/ACRE = 350 x 3.46 AC. = 1,211 WHIPS (2,422 Planting Units)
3.5 Planting units = 1 – 1" Cal. Tree
2 Planting units = 1 Whip

FCE#2 Planting Area – 5.02 acres

Planting units required: 3,486
Planting units provided: 3,500 (1,050 whips and 400 trees)

Qty	Species	Size	Spacing	Total FCA Units
200	Acer rubrum – Red maple	1" cal.	15' o.c.	
200	Quercus alba – White oak	1" cal.	15' o.c.	
400 Total 1" caliper trees (3.5 planting units per tree) = 1,400 Total FCA unit credit				
200	Acer rubrum – Red maple	2–3' whip	11' o.c.	
200	Liriodendron tulipifera – Tulip poplar	2–3' whip	11' o.c.	
200	Prunus serotina – Black cherry	2–3' whip	11' o.c.	
250	Quercus alba – White oak	2–3' whip	11' o.c.	
100	Cornus florida – Flowering dogwood	2–3' whip	11' o.c.	
100	Cercis canadensis – Redbud	2–3' whip	11' o.c.	
100	Viburnum prunifolium – Blackhaw	2–3' whip	11' o.c.	
1,050 Total whip plantings (2 planting units per tree) = 2,100 Total FCA unit credit				
Total Unit Credit		(2,100 + 1,400)		3,500

1" CAL. TREES = 200/ACRE (400 TREES/200 = 2 AC.) = 1,400 Planting Units
WHIPS w/shelters = 350/ACRE = 350 x 2.98 AC. = 1,043 WHIPS (2,086 Planting Units)
3.5 Planting units = 1 – 1" Cal. Tree
2 Planting units = 1 Whip

FCE#3 Planting Area – 5.32 acres

Planting units required: 3,724
Planting units provided: 3,740 (1,170 whips and 400 trees)

Qty	Species	Size	Spacing	Total FCA Units
200	Acer rubrum – Red maple	1" cal.	15' o.c.	
200	Quercus alba – White oak	1" cal.	15' o.c.	
400 Total 1" caliper trees (3.5 planting units per tree) = 1,400 Total FCA unit credit				
190	Acer rubrum – Red maple	2–3' whip	11' o.c.	
190	Liriodendron tulipifera – Tulip poplar	2–3' whip	11' o.c.	
190	Prunus serotina – Black cherry	2–3' whip	11' o.c.	
340	Quercus alba – White oak	2–3' whip	11' o.c.	
130	Cornus florida – Flowering dogwood	2–3' whip	11' o.c.	
130	Cercis canadensis – Redbud	2–3' whip	11' o.c.	
100	Viburnum prunifolium – Blackhaw	2–3' whip	11' o.c.	
1,170 Total whip plantings (2 planting units per tree) = 2,340 Total FCA unit credit				
Total Unit Credit		(2,340 + 1,400)		3,740

1" CAL. TREES = 200/ACRE (400 TREES/200 = 2 AC.) = 1,400 Planting Units
WHIPS w/shelters = 350/ACRE = 350 x 3.32 AC. = 1,162 WHIPS (2,324 Planting Units)
3.5 Planting units = 1 – 1" Cal. Tree
2 Planting units = 1 Whip

FCE#4 Planting Area – 6.38 acres

Planting units required: 4,466
Planting units provided: 4,470 (1,535 whips and 400 trees)

Qty	Species	Size	Spacing	Total FCA Units
200	Acer rubrum – Red maple	1" cal.	15' o.c.	
200	Quercus alba – White oak	1" cal.	15' o.c.	
400 Total 1" caliper trees (3.5 planting units per tree) = 1,400 Total FCA unit credit				
300	Acer rubrum – Red maple	2–3' whip	11' o.c.	
300	Liriodendron tulipifera – Tulip poplar	2–3' whip	11' o.c.	
300	Prunus serotina – Black cherry	2–3' whip	11' o.c.	
235	Quercus alba – White oak	2–3' whip	11' o.c.	
140	Cornus florida – Flowering dogwood	2–3' whip	11' o.c.	
160	Cercis canadensis – Redbud	2–3' whip	11' o.c.	
100	Viburnum prunifolium – Blackhaw	2–3' whip	11' o.c.	
1,535 Total whip plantings (2 planting units per tree) = 3,070 Total FCA unit credit				
Total Unit Credit		(3,070 + 1,400)		4,470

1" CAL. TREES = 200/ACRE (400 TREES/200 = 2 AC.) = 1,400 Planting Units
WHIPS w/shelters = 350/ACRE = 350 x 4.38 AC. = 1,533 WHIPS (3,066 Planting Units)
3.5 Planting units = 1 – 1" Cal. Tree
2 Planting units = 1 Whip

FOREST BANK TRACKING CHART – FCE NO. 3 (5.32 ACRES)			
DPZ FILE NUMBER	PROJECT NAME	FOREST CONSERVATION BANKED	REMAINING BANK AREA

FOREST BANK TRACKING CHART – FCE NO. 4 (6.38 ACRES)			
DPZ FILE NUMBER	PROJECT NAME	FOREST CONSERVATION BANKED	REMAINING BANK AREA

MD DNR QUALIFIED
PROFESSIONAL
STEPHANIE J. TUITE RLA 7/11/16
DATE

STATE OF MARYLAND
STEPHANIE JENENE TUITE
LANDSCAPE ARCHITECT
No. 3038

PLANTING / SOIL SPECIFICATIONS

1. Planting Of Nursery Stock Shall Take Place Between March 15th And April 30th Or September 15th And November 15th.
2. A Twelve (12) Inch Layer Of Topsoil Shall Be Spread Over All Reforestation Areas Impacted By Site Grading To Assure A Suitable Planting Area, If Applicable. Disturbed Areas Shall Be Seeded And Stabilized In Accordance With The Sediment & Erosion Control Plan For This Project. Planting Areas Not Impacted By Site Grading Shall Have No Additional Topsoil Installed.
3. All Bare Rood Planting Stock Shall Have Their Root System Dipped Into An Anti–Desiccant Gel Prior To Planting.
4. Plants Shall Be Installed So That The Top Of The Root Mass Is Level With The Top Of Existing Grade. BackFill In The Planting Pits Shall Consist of 3 Parts Existing Soil to 1 Part Pine Fines Or Equivalent.
5. Fertilizer Shall Consist Of Agriform 22–8–2, Or Equivalent, Applied As Per Manufacturer's Specifications.
6. A Two (2) Inch Layer Of Hardwood Mulch Shall Be Placed Over The Root Area Of All Plantings. See Planting Detail.
7. Plant Material Shall Be Transported To The Site In A Tarped Or Covered Truck. Plants Shall Be Kept Moist Prior To Planting.
8. All Non–Organic Debris Associated With The Planting Operation Shall Be Removed From The Site By The Contractor.

SEQUENCE OF CONSTRUCTION FOR REFORESTATION AREAS

1. Sediment Controls And Tree Protective Devices Shall Be Installed In Accordance With Sediment & Erosion Control Plans For This Site, If Applicable. Site Shall Be Graded In Accordance With The Plans. (2 Days)
2. Proposed Reforestation Areas Impacted By The Site Grading Shall Be Topsoiled And Stabilized As Per Note 2 Of The "Planting / Soil Specifications". (1 Day)
3. Plants Shall Be Installed And Maintained As Per Notes And Specifications For This Project. (1 Week)
4. Upon Completion Of The Plantings, Signage Shall Be Installed As Per The Signage Detail. (1 Week)
5. Plantings Shall Be Guaranteed and Maintained In Accordance With The "Guarantee Requirements" And "Maintenance Of Plantings" Associated With This Project. (2 Years)

MAINTENANCE OF PLANTINGS

1. Maintenance Of Plantings Shall Last For A Period Of 26 Months.
2. All Plant Material Shall Be Generally Watered Twice A Month During The 1st Growing Season. Watering May Be More Or Less Frequent Depending On Weather Conditions.
3. During The 2nd Growing Season, Plant Material Shall Be Watered Once A Month From May To September, As Needed.
4. Invasive Exotics And Noxious Weeds Shall Be Removed From The Reforestation Area(s). Old Field Successional Species Shall Be Retained.
5. Plants Shall Be Examined A Minimum Of Two (2) Times During The Growing Season For Serious Plant Pests And Diseases With The Appropriate Agent.
6. Dead Branched Shall Be Pruned From The Plantings.

GUARANTEE REQUIREMENTS

A 75% Survival Rate For The Reforestation Plantings Is Required At The End Of The 24 Month Maintenance Period. All Plant Material Below The 75% Threshold Is Required To Be Replaced At The Beginning Of The Next Growing Season.

MULTIFLORA ROSE CONTROL NOTE:

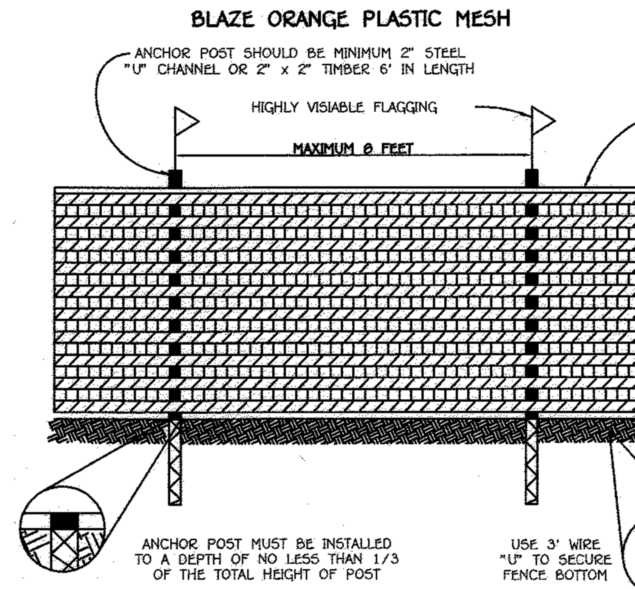
PRIOR TO PLANTING ALL MULTIFLORA ROSE WITHIN PLANTING AREAS SHALL BE REMOVED. Removal Of The Multiflora Rose May Be Performed With Mowing And Herbicide Treatments. Physical Removal Of All Top Growth Followed By A Periodic Herbicide Treatment Of Stump Sprouts Is Recommended. Native Tree And Shrub Species Occurring Within The Rose Thickets Should Be Retained Wherever Possible. Herbicide Treatments Shall Occur On Two (2) Month Intervals During The First Growing Seaseon And Once In The Spring And Once In the Fall For Subsequent Years. Herbicide Used Shall Be Made Specifically To Address Woody Plant Material And Shall Be Applied As Per Manufacturers Specifications. Care Should Be Taken Not To Spray Planted Trees Or Naturally Occurring Native Tree And Shrub Seedlings. It Is Recommended That Initiation Of Rose Removal Begin At Least Six Months Prior To Planting So That New Growth OF Roses Is Able To Be More Successfully Managed.

PRE–CONSTRUCTION MEETING

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

CONSTRUCTION MONITORING

1. THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB INJURY, OR STRESS CAUSED BY FLOODING OR DROUGHT CONDITIONS.
2. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.
3. THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.



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

TREE PROTECTION DETAIL

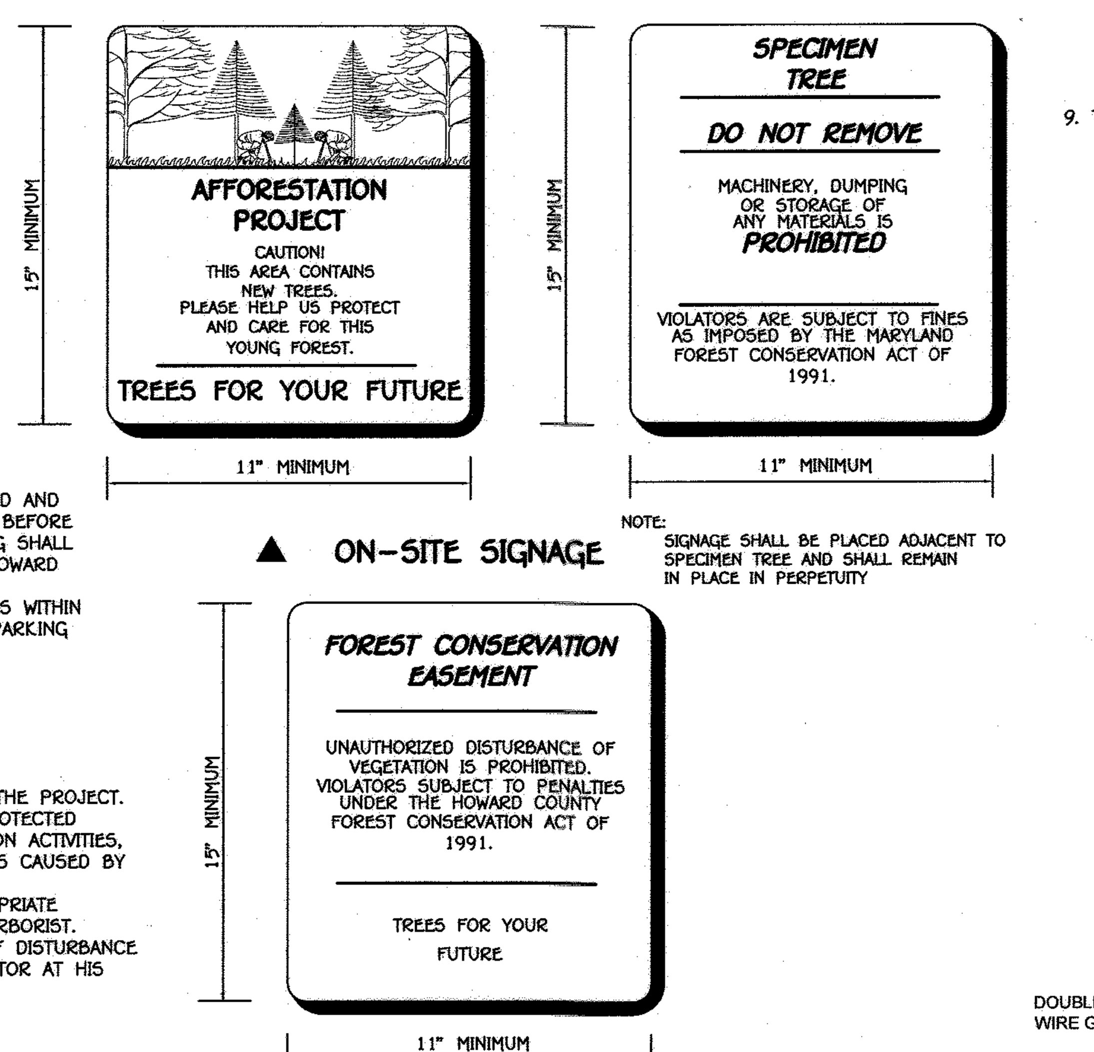
NOT TO SCALE

FOREST PROTECTION GENERAL NOTES

1. ALL FOREST RETENTION AREAS SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED BLAZE ORANGE PLASTIC MESH FENCING, AS NECESSARY, AND SIGNAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
2. THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES, UNLESS ROOT PRUNING IS PROPOSED.
3. ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION, INCLUDING SILT FENCE BEING USED AS PROTECTIVE FENCING. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
4. ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THESE PROTECTED AREAS.
5. INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE–WATERING OPERATIONS, OFF–SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
6. THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS.
7. REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
8. THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS.
9. ROOT PRUNING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL PRESERVATION AREAS, AS NECESSARY.

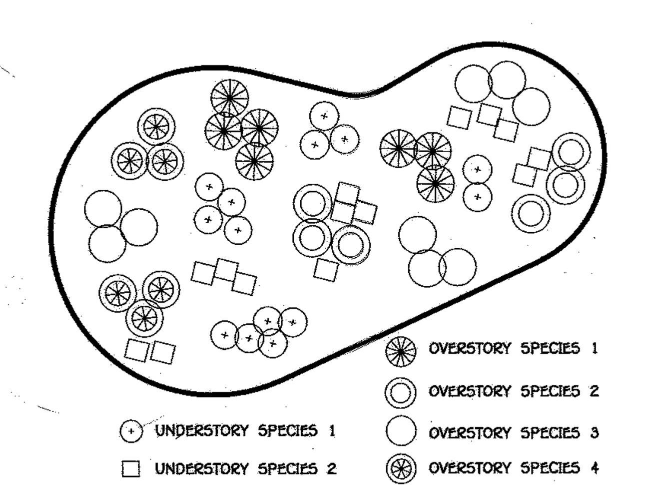
REFORESTATION PLANTING NOTES

1. Plants, Related Material, And Operations Shall Meet The Detailed Description As Given On The Plans And As Described Herein.
2. Plant Material, Unless Otherwise Specified, Shall Be Nursery Grown, Uniformly Branched And Have A Vigorous Root System. Plant Material Shall Be Healthy, Vigorous Plants Free From Defects, Decay, Disfiguring Roots, Sunscald Injuries, Abrasions Of The Bark, Plant Disease, Insect Pest Eggs, Boxers, Infestations Or Objectionable Disfigurements. Plant Material That Is Weak Or Which Has Been Cut Back From Larger Grades To Meet Specified Requirements Will Be Rejected. Trees With Forked Leaders Will Not Be Accepted. Plants Shall Be Freshly Dug; No Heeled–in Plants Or Plants From Cold Storage Will Be Accepted.
3. Unless Otherwise Specified, Plant Material Shall Conform To "American Standard For Nursery Stock" ANSI Z60.1–1990, Published By The American Association Of Nurserymen, Including All Addenda.
4. Contractor Will Be Required to Guarantee Plant Material For A Period of Two (2) Years After The Date Of Acceptance And Maintain A 75% Survivability At The End of The Two (2) Years.
5. To Lessen The Chance Of Loss, The Plantings Should Be Checked From Time To Time To Insure That They Are Receiving Sufficient Water. See "Maintenance Of Plantings" For Guidelines.
6. The Location And Orientation Of All Plant Material Shall Be Randomly Planted In Designated Reforestation Areas By the Contractor. Contractor Shall Be Responsible For Moving Any Plant Material Installed Without Approval.
7. Mowing And Applying Herbicides To The Reforestation Area Is Prohibited At Any An All Stages Of The Planting Process In Order To Encourage The Existing Saplings To Grow.
8. Contractor Is Responsible For Installing And Pruning Plant Material In The Proper Planting Season For Each Plant Type. See Tree Planting & Maintenance Calendar.
9. Upon Completion Of Installation, Signage Shall Be Installed As Shown.



▲ ON–SITE SIGNAGE

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



NOTE: ALL TREE & SHRUB SPECIES TO BE DISTRIBUTED RANDOMLY IN SMALL GROUPINGS. SHRUBS TO BE EVENLY DISTRIBUTED THROUGHOUT PLANTING AREA.

RANDOM PLANTING DISTRIBUTION PLAN

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
8318 FORREST STREET–SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)–992–4600

OWNERS

HODDINOTT LLC
8318 FORREST STREET–SUITE 200
ELLICOTT CITY, MARYLAND 21043
(410)–992–4600

JEANNE C. HODDINOTT
P.O. BOX 166
CLARKSVILLE, MARYLAND 21029
(410)–531–5017

FOREST CONSERVATION DATA

EASEMENT NO.	TOTAL RETENTION AREA	RETENTION OUTSIDE FLOODPLAIN	RETENTION INSIDE FLOODPLAIN	PLANTING	TOTAL EASEMENT
1	1.47 AC.	1.47 AC.	0.00 AC.	5.46 AC.	6.93 AC.
2	4.86 AC.	2.71 AC.	2.15 AC.	5.02 AC.*	9.88 AC.*
3	0.00 AC.	0.00 AC.	0.00 AC.	5.32 AC.	5.32 AC.
4	0.00 AC.	0.00 AC.	0.00 AC.	6.38 AC.	6.38 AC.
5	0.40 AC.	0.40 AC.	0.00 AC.	0.00 AC.	0.40 AC.
TOTAL	6.73 AC.	4.58 AC.	2.15 AC.	22.18 AC.	28.91 AC.

* ADDITIONAL FOREST CONSERVATION PLANTING IN THE AMOUNT OF 0.29 ACRES IS PROVIDED WITH THIS SUBDIVISION IN FCE #2 FOR THE ABANDONMENT OF 0.29 ACRES OF FOREST CONSERVATION EASEMENT 'C' AS SHOWN ON THE ADJOINING CLARKS GLEN NORTH PARCEL 'C' (PLAT NO. 13827).

* ADDITIONAL FOREST CONSERVATION PLANTING IN THE AMOUNT OF 0.37 ACRES IS PROVIDED WITH THIS SUBDIVISION IN FCE #2 TO SUPPORT THE OFF–SITE SEWER MAIN INSTALLATION; CONTRACT #34–4818–D, WHICH REQUIRED THE ABANDONMENT OF 0.37 ACRES OF EXISTING FOREST CONSERVATION EASEMENT WITHIN OPEN SPACE LOT 62, CLARKS GLEN SUBDIVISION, PLAT NOS. 12033 THRU 12039

* ADDITIONAL FOREST CONSERVATION PLANTING IN THE AMOUNT OF .01 ACRES IS PROVIDED WITH THE SUBDIVISION IN FCE #2 TO SUPPORT THE OFF–SITE SEWER MAIN INSTALLATION; CONTRACT #34–4818–D WHICH PROVIDED THE ABANDONMENT OF 21 SQUARE FEET OR 0.01 ACRES OF EXISTING FOREST CONSERVATION EASEMENT WITHIN THE OPEN SPACE LOT 25, RETTGER PROPERTY, PLAT NOS. 12257 THRU 12259

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. 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.
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 EASEMENT AREAS WITHIN THIS SUBDIVISION 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. THE FOREST CONSERVATION ACT REQUIREMENTS FOR THE ENCLAVE AT TIERNEY FARM SUBDIVISION WILL BE MET THROUGH THE ON–SITE RETENTION OF 6.73 (4.58 CREDITED) ACRES OF FOREST, AND ON–SITE PLANTING OF 10.48 ACRES IN COMBINED FCE#1 AND FCE#2. THE ADDITIONAL 11.70 ACRES OF ON–SITE PLANTING (FCE#3 & #4) WILL BE A FOREST BANK. NO SURETY IS REQUIRED FOR ON–SITE RETENTION. A SEPARATE DEVELOPERS AGREEMENT FOR THE ENCLAVE AT TIERNEY FARM (F–15–110) IS PROVIDED FOR THE TOTAL AREA OF FCE #1 AND FCE #2 REQUIRING A SURETY IN THE AMOUNT OF $ 228,255.00 (BASED ON 10.48 ACRES X 43,560 SQ. FT./ACRE X $0.50/SQ. FT.). A SEPARATE DEVELOPERS AGREEMENT FOR THE TREE BANK IS PROVIDED FOR THE TOTAL AREA OF FCE #3 AND FCE #4 REQUIRING A SURETY IN THE AMOUNT OF $254,826.00 (BASED ON 11.70 ACRES X 43,560 SQ. FT./ACRE X $0.50/SQ. FT.)
9. THE FOREST CONSERVATION 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."

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE FOREST CONSERVATION INFORMATION & FCP NOTES	10/3/16

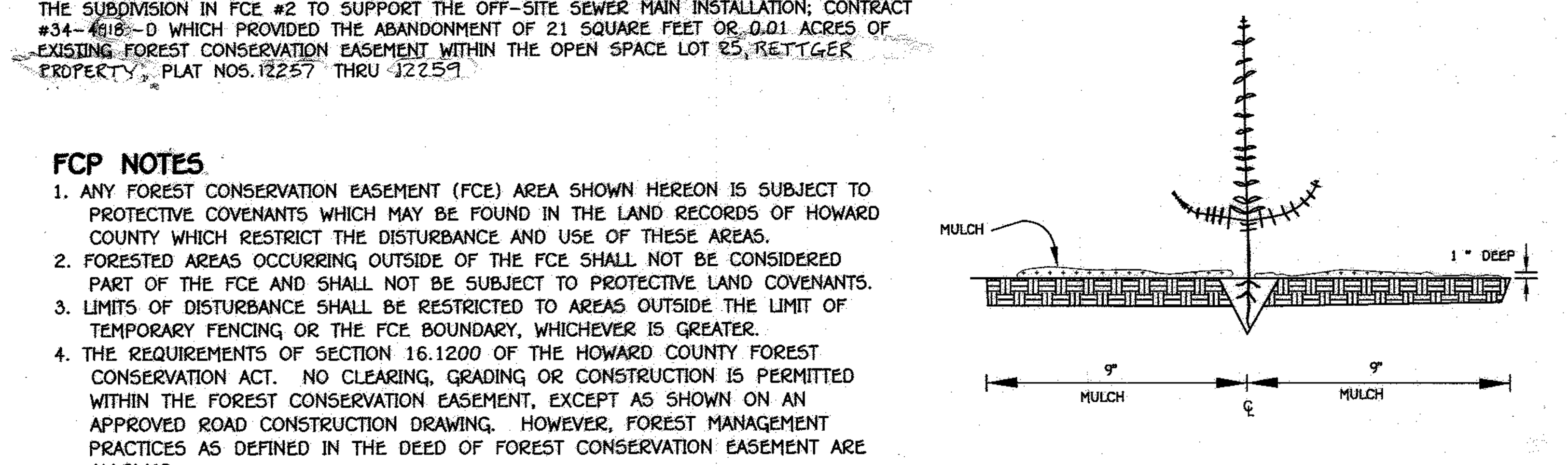
Approved: Department Of Planning And Zoning

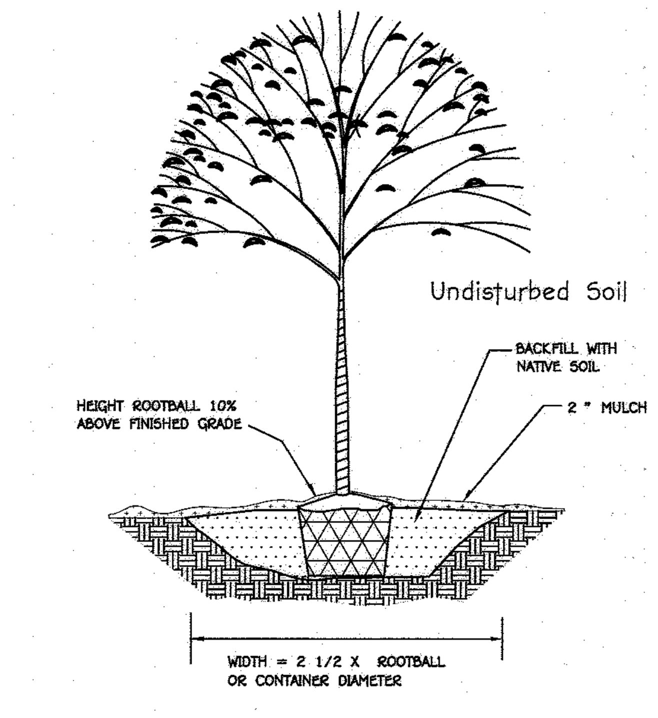
Chief, Division Of Land Development — Date 8-3-16

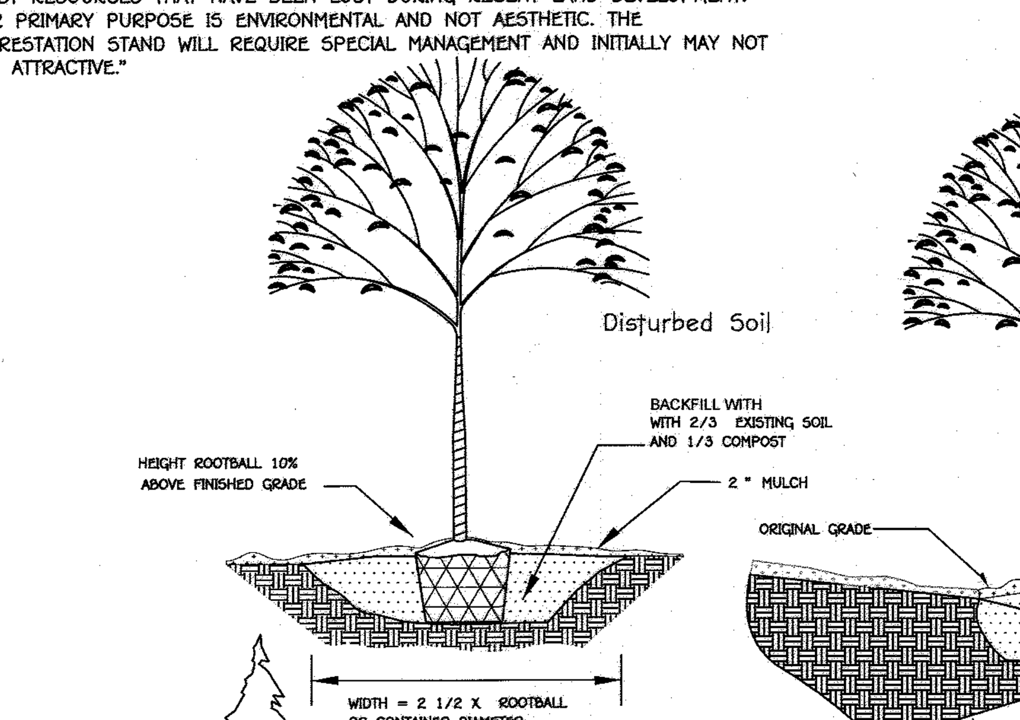
Chief, Development Engineering Division — Date 8/1/16

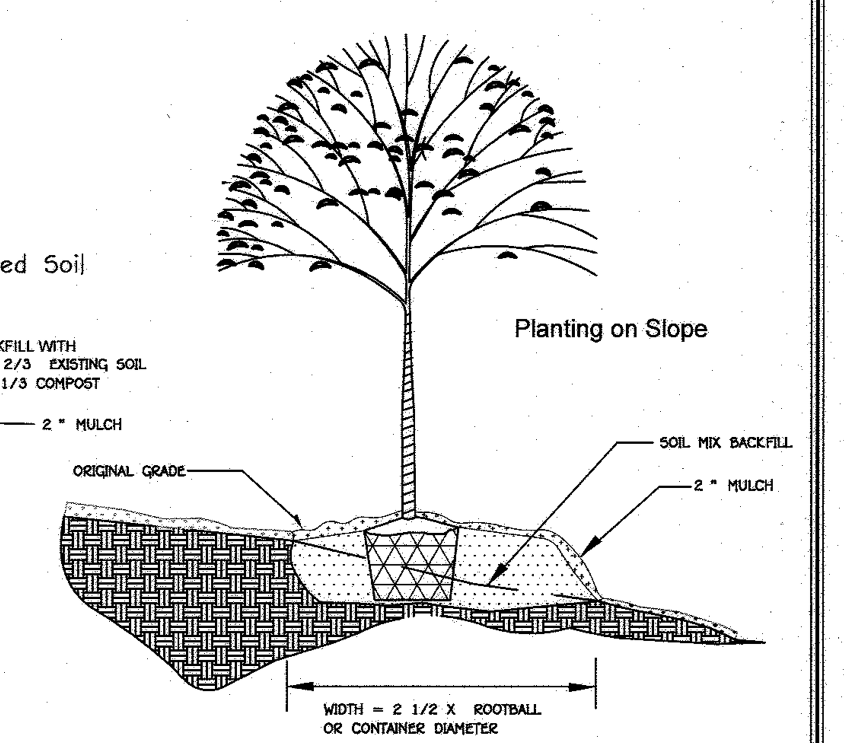
Approved: Howard County Department Of Public Works

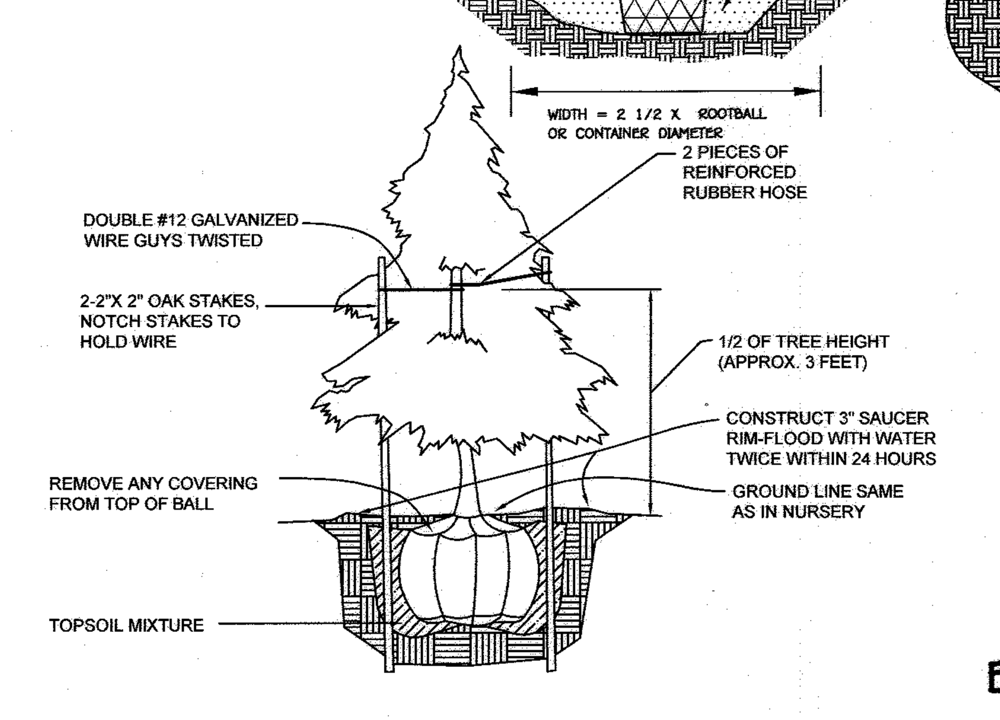
Chief, Bureau Of Highways — Date 7/27/2016











EVERGREEN PLANTING DETAIL

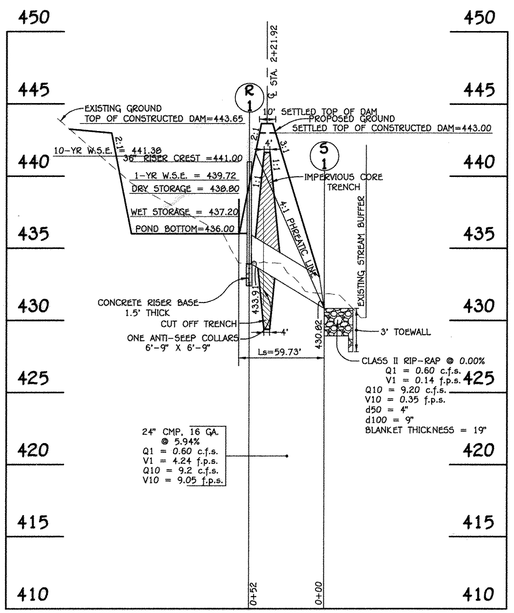
NOT TO SCALE

Seeding and Whip Planting Specification

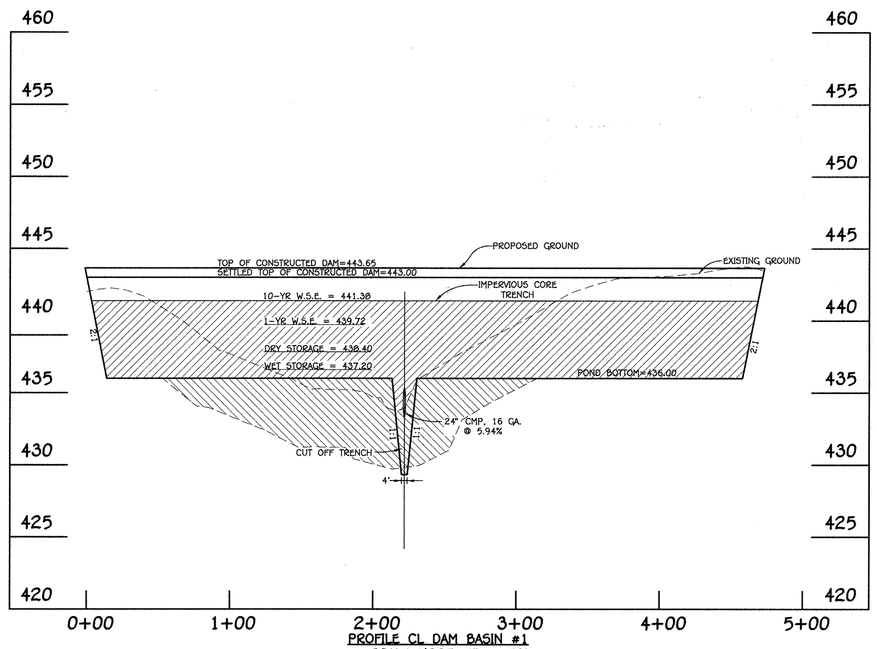
FOREST CONSERVATION
NOTES AND DETAILS

ENCLAVE AT TIERNEY FARM PHASE 1

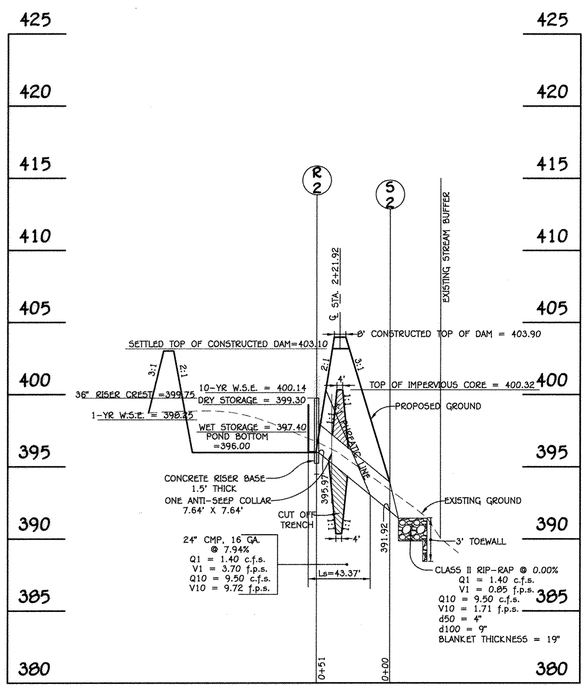
LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK
PREVIOUS HOWARD COUNTY FILES:
ECP–15–005, PB#409, SP–05–006
ZONED R–ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 57 OF 58 F–15–110



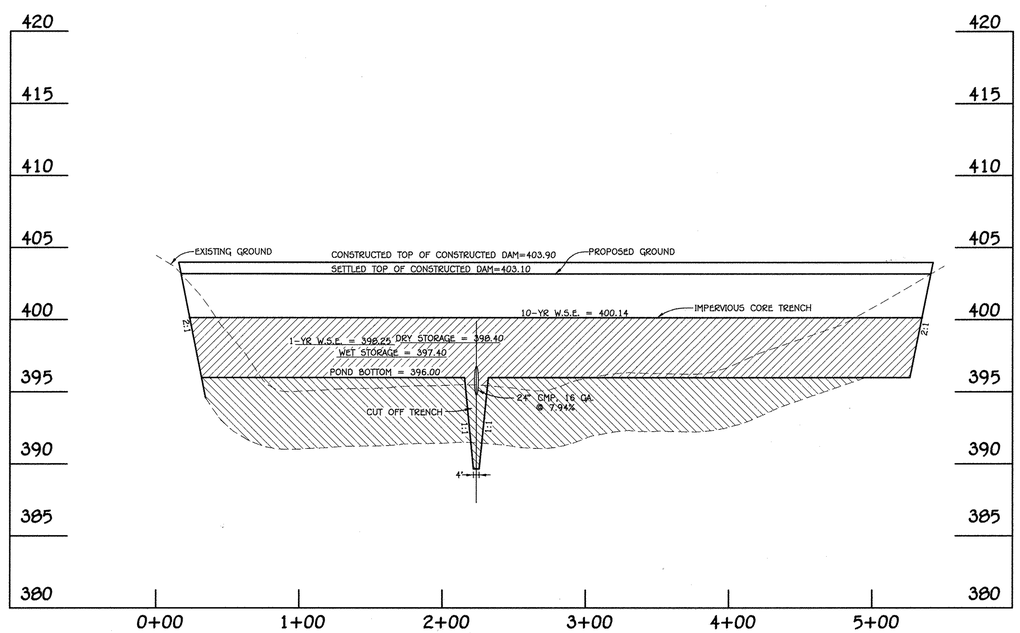
PROFILE CL OUTFALL PIPE - BASIN #1
SCALE HORZ. 1" = 50'
VERT. 1" = 5'



PROFILE CL DAM BASIN #1
SCALE HORZ. 1" = 50'
VERT. 1" = 5'



PROFILE CL OUTFALL PIPE - BASIN #2
SCALE HORZ. 1" = 50'
VERT. 1" = 5'



PROFILE CL DAM - BASIN #2
SCALE HORZ. 1" = 50'

REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8-2-16

Chief, Development Engineering Division — Date 8/2/16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 7/27/2016

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 Conditions And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature Of Engineer — Date 7/1/16

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 — Date 6/29/16

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

Howard Soil Conservation District — Date 7/19/16

NOTE:
1. NO GRADING MAY BEGIN IN THE AREAS OF THE SEDIMENT BASINS UNTIL THE PIPE MATERIALS (ANTI-SEEP COLLARS, CONCRETE, CMP, ETC ARE ON SITE AND ARE INSTALLED.
2. ALL SEDIMENT CONTROLS INTERUPTED BY STORM DRAIN INSTALLATION ARE TO BE REPAIRED IMMEDIATELY.

BASIN PROFILES FOR TSWM
ENCLAVE AT TIERNEY FARM
PHASE 1

LOTS 1 THRU 50, OPEN SPACE LOTS 51 THRU 54 AND BULK PARCELS 'A' AND 'B' AND FOREST TREE BANK

PREVIOUS HOWARD COUNTY FILES:
ECP-15-005, PB#409, SP-05-006
ZONED R-ED TAX MAP NOs.: 34 GRID NO.: 18
PARCEL NOS.: 88 & 97
FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 24, 2016
SHEET 58 OF 58

F-15-110

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' 50' 100' 200'
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 ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 20748, EXPIRATION DATE: 2/22/17.

ALDO M. VITUCCI P.E. — DATE 7/1/16

DEVELOPER

LAND DESIGN & DEVELOPMENT, INC.
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ELLICOTT CITY, MARYLAND 21043
(410)-992-4600

OWNERS

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(410)-531-5017