FINAL ROAD CONSTRUCTION PLANS

WESTLAND FARM ESTATES

LOTS 3 THRU 14 & OPEN SPACE LOT 15

TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

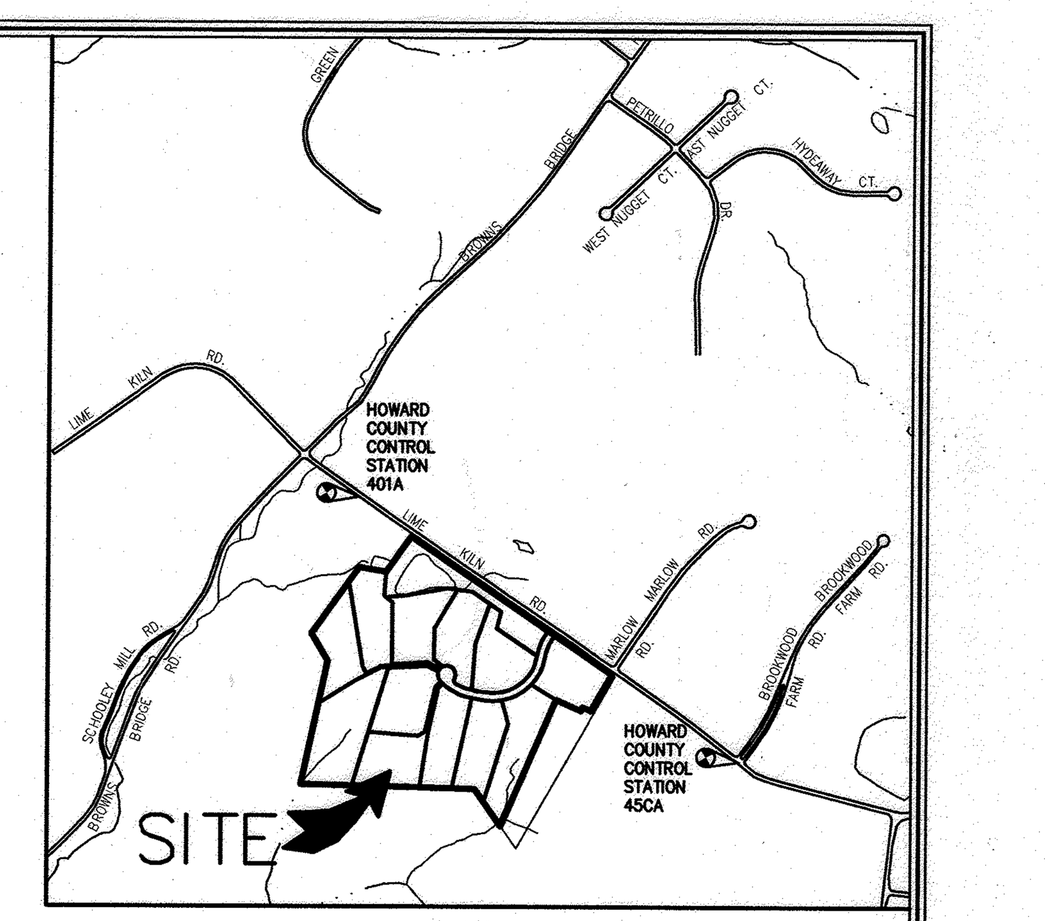
SHEET INDEX

Minimum Lot Size Chart

Lot No.	Gross Area	Pipestem Area	Minimum Lot Size
5	3.039 Ac.±	0.035 Ac.±	3.004 Ac.±
6	3.070 Ac.±	0.057 Ac.±	3.013 Ac.±
7	3.087 Ac.±	0.087 Ac.±	3.000 Ac.±
8	5.132 Ac.±	0.059 Ac.±	5.073 Ac.±
10	3.164 Ac.±	0.152 Ac.±	3.012 Ac.±

SPECIMEN TREE TABLE

KEY	SPECIES	SIZE (DBH)	CRZ (FT RADIUS)	COMMENTS
SP1	BLACK WALNUT	30"	45	TO BE RETAINED
SP2	SYCAMORE	50"	75	TO BE REMOVED
SP3	SYCAMORE	62"	93	TO BE REMOVED
SP4	TULIP POPLAR	30"	45	TO BE REMOVED
SP5	NORWAY MAPLE	30"	45	TO BE RETAINED



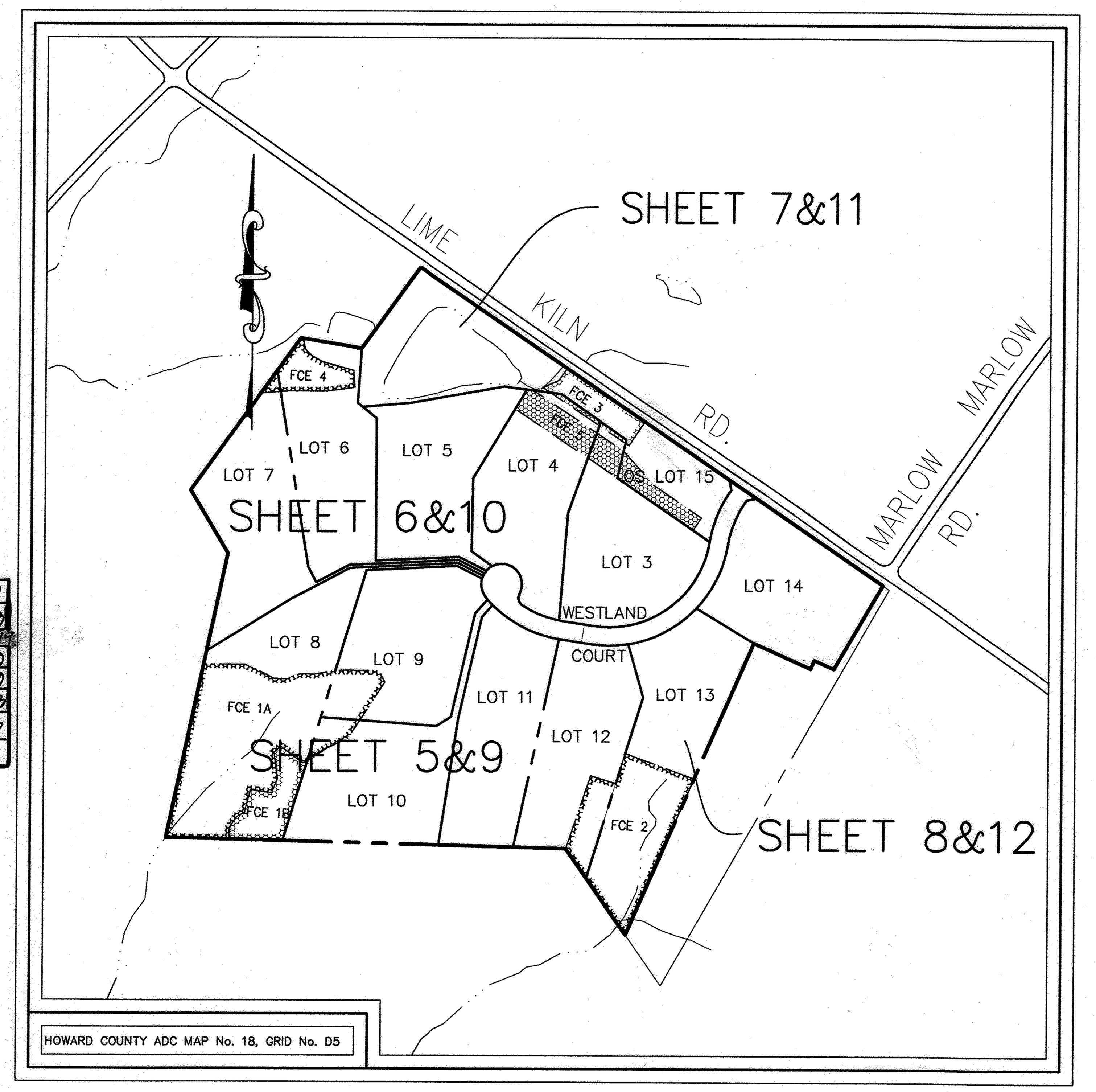
VICINITY MAP
SCALE : 1" = 1200'

STORMWATER MANAGEMENT SUMMARY

AREA ID.	ESDv REQUIRED CU.FT.	ESDv PROVIDED CU.FT.	REMARKS
SITE	17,093	18,761	NON-ROOFTOP DISCONNECTIONS (N-2), DRY WELLS (M-5), MICRO-BIORETENTION (M-6), GRASS SWALE (M-8) & BIORETENTION (F-6)
TOTAL	17,093	18,761	

STORMWATER MANAGEMENT PRACTICES

LOT NO.	DISCONNECTION OF ROOFTOP RUNOFF (N-1) Y/N, NUMBER	DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2) Y/N	DRY WELLS (M-5) Y/N, NUMBER	MICRO-BIORETENTION (M-6) Y/N, NUMBER
3	NO	YES	YES, FOUR (4)	NO
4	NO	YES	YES, FOUR (4)	NO
5	NO	YES	NO	YES, ONE (1)
6	NO	YES	YES, FOUR (4)	NO
7	NO	NO	NO	YES, ONE (1)
8	NO	YES	YES, FOUR (4)	NO
9	NO	YES	YES, FOUR (4)	NO
10	NO	YES	NO	YES, ONE (1)
11	NO	YES	YES, FOUR (4)	NO
12	NO	YES	YES, FOUR (4)	NO
13	NO	YES	YES, FOUR (4)	NO
14	NO	YES	NO	YES, ONE (1)

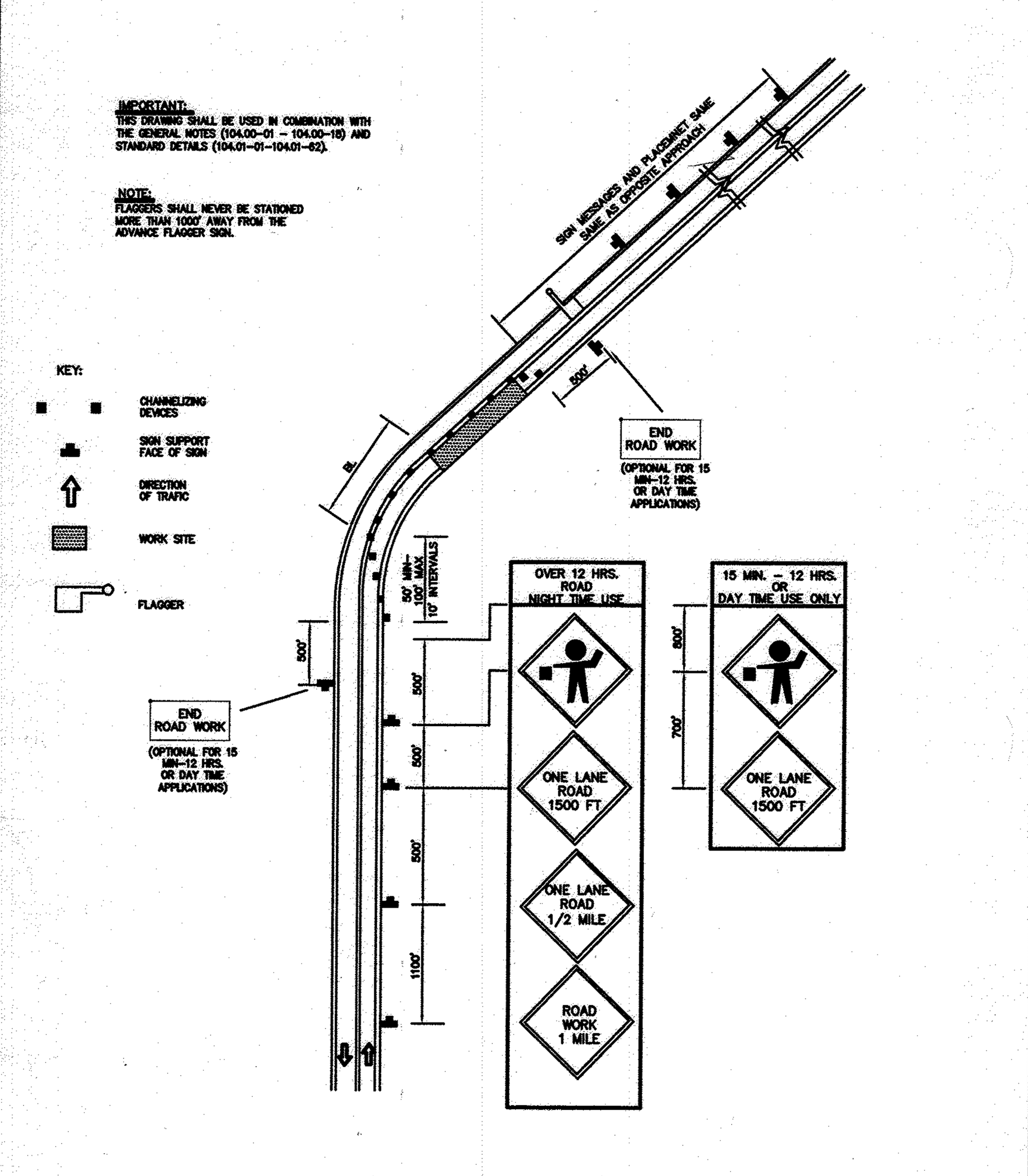


VICINITY MAP
SCALE: 1" = 300'

NO	REVISION	DATE
9	REVISE HSE. & GRD. LOTS 5 & 13, SHEETS 6,8,10,12 & 13	12/17/19
8	ADD INLETS, PIPING, AROUND HOUSE ON LOT 6, SHEETS 6 & 10	11/14/19
7	REVISE HSE SITE LOT 12 – SHTS 5, 9, & 15	5/15/19
6	REVISE HSE. SITE LOT 7, ADD CIRCULAR DRIVEWAY & SED. CONTROL	5/6/19
5	REVISE HSE, DRIVEWAY, GRADING, SED. CONTROL, SEPTIC & DRAINAGE, LOT 7	5/6/19
4	REVISE HSE. & GRD. LOT 8, SHEETS 5,9 & 15	11/7/18
1	REVISE HSE. & GRD. LOT 10, SHEETS 5 & 9	8/3/18

SITE ANALYSIS DATA CHART

A. TOTAL AREA OF THIS SUBMISSION = 45.28 AC.±.
B. LIMIT OF DISTURBED AREA = 16.20 Ac.±
C. PRESENT ZONING DESIGNATION = RR-DEO (PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
D. PROPOSED USE: RESIDENTIAL
E. REQUIRED PARKING: 2.5 SPACES PER LOT X 11 LOTS = 28 SPACES. PROPOSED PARKING: 44 SPACES (4 SPACES PER LOT).
F. TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 3.00 AC.±
G. TOTAL AREA OF SLOPES IN EXCESS OF 15% = 11.15 AC.± (1.96 AC. IS 25% OR GREATER)
H. TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC.
I. TOTAL AREA OF EXISTING FOREST = 8.30 AC.±
J. TOTAL GREEN OPEN AREA = 42.43 AC.±
K. TOTAL IMPERVIOUS AREA = 2.85 AC.±
L. AREA OF ERODIBLE SOILS = 6.34 AC.±
M. AREA OF ROAD DEDICATION = 0.00 AC.
N. AREA OF O.S. (PROVIDED; BUT NOT REQUIRED): 4.331 AC.
O. O.S.FEE-IN-LIEU OF $1,500.00 PER LOT WILL BE PROVIDED.



FLAGGING OPERATION /-LANE, 2-WAY EQUAL/LESS THAN 40 MPH
NO SCALE

SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
BeB	Benevola silt loam, 3 to 8 percent slopes	C	0.43
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.28
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.28
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.43
MaC	Manor loam, 8 to 15 percent slopes	B	0.28
MaD	Manor loam, 15 to 25 percent slopes	B	0.28
MkF	Manor-Brinklow Complex, 25 to 65 percent slopes, very rocky	B	0.32
WhB	Wiltshire silt loam, 3 to 8 percent slopes	C	0.20

GENERAL NOTES

1. SUBJECT PROPERTY IS ZONED RR-DEO PER 10/06/2013 COMPREHENSIVE ZONING PLAN.
2. TOTAL AREA OF PROPERTY: 45.28 AC.
3. NUMBER OF PROPOSED BUILDABLE LOTS: 12
NUMBER OF PROPOSED OPEN SPACE LOTS = 1
TOTAL NUMBER OF LOTS = 13
AREA OF PROPOSED BUILDABLE LOTS = 39.70 AC.
AREA OF PROPOSED OPEN SPACE LOTS = 4.33 AC.
AREA OF PROPOSED ROAD RIGHT OF WAY WIDENING = 0 AC.
AREA OF PROPOSED ROAD (INTERIOR) RIGHT OF WAY = 1.25 AC.
TOTAL AREA OF SUBDIVISION = 45.28 AC
4. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
5. THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL (COMAR 26.04.03). IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT.
6. ALL WELL AND SEPTIC FIELDS WITHIN 100' OF PROPERTY'S BOUNDARY HAVE BEEN SHOWN.
7. ALL PERCOLATION TEST HOLES AND THEIR ELEVATIONS HAVE BEEN FIELD LOCATED BY FISHER, COLLINS & CARTER, INC.
8. PRIVATE WATER AND SEWAGE WILL BE USED WITHIN THIS SITE.
9. ALL WELLS TO BE DRILLED PRIOR TO SUBMITTAL OF THE FINAL PLAT FOR SIGNATURE. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED GOVERNMENT DELAY IF THE WELL DRILLING HOLDS UP THE HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT. ALL EXISTING WELL AND SEPTIC SYSTEMS ASSOCIATED WITH THE EXISTING STRUCTURES IS TO BE ABANDONED PRIOR TO RECORDATION OF THE FINAL PLAT.
10. THE PROJECT IS NOT WITHIN THE METROPOLITAN DISTRICT.
11. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
12. BOUNDARY SURVEY PREPARED BY FISHER, COLLINS & CARTER, INC. ON OR ABOUT OCTOBER 23, 1991.
13. APFO TRAFFIC STUDY WAS PREPARED BY MARS GROUP, DATED NOVEMBER, 2014.
14. FOREST STAND DELINEATION AND FOREST CONSERVATION PLAN PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED DECEMBER, 2008.
15. WETLANDS EVALUATION PREPARED BY ECO-SCIENCE PROFESSIONALS, INC.
16. NO NOISE STUDY IS REQUIRED FOR THIS PROJECT.
17. THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLIS-CARENES DATED FEBRUARY, 2009 AND SUBMITTED WITH SP-09-010. EXCAVATIONS TO DETERMINE DEPTH TO ROCK AND WATER IN THE AREAS AROUND THE MICRO-BIORETENTIONS AND DRYWELLS WERE CONDUCTED ON-SITE IN NOVEMBER, 2014.
18. SOILS INFORMATION BASED ON NRCS WEBSOIL SURVEY AND SOIL MAP NO. 22 SOIL SURVEY, HOWARD COUNTY.
19. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN WETLANDS, STREAMS, FLOODPLAINS, FOREST CONSERVATION EASEMENTS OR THEIR REQUIRED BUFFERS IN ACCORDANCE WITH SECTION 16.116 (C) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, UNLESS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.
20. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED PERIMETER LANDSCAPING WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $13,380.00 (37 SHADE TREES @ $300.00 EACH, 14 EVERGREENS @ 150.00 EACH & 6 SHRUBS @ $30.00 EACH).
21. THERE ARE NO CEMETERIES OR HISTORIC STRUCTURES LOCATED ON THIS SITE TO THE BEST OF OUR KNOWLEDGE.
22. ALL EXISTING DWELLING/STRUCTURES SHALL BE REMOVED ON OR BEFORE
23. THIS PLAT IS IN COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.
24. TOPOGRAPHIC CONTOURS BASED ON HARFORD AERIAL SURVEYS, INC. DATED JANUARY 2006 AND SUPPLEMENTED WITH FIELD RUN TOPOGRAPHY BY FISHER, COLLINS & CARTER, INC ON OR ABOUT APRIL, 2006 AND JANUARY, 2015.
25. THERE ARE AREAS OF STEEP SLOPES (25% OR GREATER) LOCATED ON THIS PROPERTY AS DEFINED BY THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16. 1166.
26. STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND MARYLAND 378 SPECIFICATIONS. STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. NON-STRUCTURAL PRACTICES IN ACCORDANCE WITH CHAPTER 5 AND A BIORETENTION IN ACCORDANCE WITH CHAPTER 3 ARE BEING UTILIZED.
27. 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 THE PIPESTEM LOT DRIVEWAY.
28. NO NOISE STUDY IS REQUIRED FOR THIS PROJECT.
29. PRIOR HOWARD COUNTY DPZ FILE NUMBERS: F-10-103, SP-09-011; WP-10-014; WP-13-076; WP-15-023; ECP-15-028; WP-15-126.
30. 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 REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY ON-SITE RETENTION OF 5.99 ACRES OF FOREST AND AFFORESTATION OF 1.81 ACRES. AFFORESTATION ACREAGE IS ADJUSTED DUE TO CREDIT TAKEN FOR LANDSCAPE PLANTINGS IN FC#1B AND FC#3. SURETY IS NOT REQUIRED FOR RETENTION. SURETY FOR 1.81 ACRES OF AFFORESTATION IN THE AMOUNT OF $39,420.00 (78,843.6 SQ.FT.X $0.50) SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS FINAL PLAN, F-15-038. THE REMAINING OBLIGATION OF 1.22 ACRES OF REFORESTATION AND 0.27 ACRES OF AFFORESTATION FOR A TOTAL OF 1.49 ACRES OF PLANTINGS SHALL BE PROVIDED OFF-SITE UNDER SDP-14-032FC.
31. GROUND WATER APPROPRIATIONS PERMIT SHALL BE OBTAINED FOR THE PROPERTY PRIOR TO FINAL RECORD PLAT SUBMITTAL FOR SIGNATURES.
32. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON HOWARD COUNTY GEODETIC CONTROL STATIONS:
HOWARD COUNTY MONUMENT NO. 401A N 541,725.7807 ✓
E 1,325,316.7971 ✓
HOWARD COUNTY MONUMENT NO. 0079 N 540,070.9730 ✓
E 1,327,702.7218 ✓
33. ON SEPTEMBER 14, 2009, THE PLANNING DIRECTOR APPROVED A REQUEST TO WAIVE SECTION 16.120.(B)(4)(II) REQUIRING LOT DIMENSIONS TO GENERALLY NOT EXCEED 3:1 LOT DEPTH TO LOT WIDTH RATIO (LOTS 11 & 12), SECTION 16.120(B)(4)(III)B REQUIRING THE LOCATIONS OF FLOODPLAINS, WETLANDS, STREAMS AND THEIR BUFFERS AND FOREST CONSERVATION EASEMENTS TO BE LOCATED ON LOTS 10 ACRES OR GREATER IN SIZE AND SECTION 16.132(A)(2)(I) REQUIRING THAT IF LAND IS OWNED ON ONLY ONE SIDE OF A LOCAL OR MINOR COLLECTOR ROAD, THE DEVELOPER SHALL CONSTRUCT ONE SIDE OF THE ROAD UP TO ONE-HALF OF THE FULL DESIGNATED PAVEMENT WIDTH OR CONTRIBUTE TO THE COUNTY FUNDS NECESSARY TO DO CONSTRUCTION, SUBJECT TO THE FOLLOWING CONDITIONS:
(1) A 35' BUILDING RESTRICTION LINE FROM THE STREAM BANK BUFFERS, FLOODPLAIN LIMITS AND FOREST CONSERVATION EASEMENTS SHALL BE DELINEATED AND LABELED ON THE FINAL PLAT.
(2) NO GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED IN THE STREAMS, STREAM BANK BUFFERS, FLOODPLAIN AREA OR FOREST CONSERVATION EASEMENTS.
34. ON JANUARY 8, 2013, THE PLANNING DIRECTOR APPROVED A WAIVER (WP-13-076) TO SECTION 16.144(K) REQUIRING SUBMISSION OF THE FINAL PLANS FOR WESTLAND FARM ESTATES, PHASE II, BETWEEN JULY 1, 2012 TO NOVEMBER 1, 2012 (SP-09-011). A ONE YEAR EXTENSION WAS APPROVED SUBJECT TO THE FOLLOWING CONDITIONS:
(1) THE FINAL PLAN FOR PHASE II MUST BE SUBMITTED BETWEEN JULY 1, 2013 TO NOVEMBER 1, 2013.
(2) SUBMISSION TO THE DEVELOPMENT ENGINEERING DIVISION OF AN ENVIRONMENTAL CONCEPT PLAN (ECP_ BASED ON NEW STORMWATER MANAGEMENT REGULATIONS FOR REVIEW A MINIMUM OF 30 DAYS PRIOR TO JULY 1, 2013 (ON OR BEFORE JUNE 1, 2013).
(3) THE FINAL PLAN FOR PHASE II OF WESTLAND FARM ESTATES (SP-09-011) SHALL BE DESIGNED IN ACCORDANCE WITH THE NEW STORMWATER MANAGEMENT REGULATIONS AND SHALL ADDRESS ALL ECP COMMENTS AS APPLICABLE.
35. ON SEPTEMBER 26, 2014 THE PLANNING DIRECTOR APPROVED A WAIVER (WP-15-023) TO SECTION 16.144(B) TO REACTIVATE SP-09-011 AND SECTION 16.144(K) REQUIRING SUBMISSION OF FINAL PLANS FOR PHASE II BETWEEN JULY 1, 2013 TO NOVEMBER 1, 2013 (SP-09-011) TO EXTEND THE DEADLINE BY SIX MONTHS FROM THE WAIVER PETITION APPROVAL LETTER. APPROVAL TO THE REQUESTED WAIVERS IS SUBJECT TO THE FOLLOWING CONDITIONS:
(1) THE PRELIMINARY EQUIVALENT SKETCH PLAN, SP-09-011, IS REACTIVATED AND A SIX MONTH EXTENSION FROM THE DATE OF THIS WAIVER PETITION APPROVAL LETTER (ON OR BEFORE MARCH 26, 2015) IS GRANTED FOR THE SUBMISSION OF THE FINAL PLAN FOR PHASE II.
(2) SUBMISSION TO THE DEVELOPMENT ENGINEERING DIVISION OF AN ENVIRONMENTAL CONCEPT PLAN (ECP) BASED ON NEW STORMWATER MANAGEMENT REGULATIONS WITHIN 45 DAYS FROM THE DATE OF THE WAIVER PETITION APPROVAL LETTER (ON OR BEFORE NOVEMBER 10, 2014).
(3) THE FINAL PLAN MUST COMPLY WITH ALL CURRENT COUNTY AND STATE REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION (INCLUDING MODERATE INCOME HOUSING UNIT REQUIREMENTS).
(4) THE FINAL PLAN FOR PHASE II OF WESTLAND FARM ESTATES (SP-09-011) SHALL BE DESIGNED IN ACCORDANCE WITH THE NEW STORMWATER MANAGEMENT REGULATIONS AND SHALL ADDRESS ALL ECP COMMENTS AS APPLICABLE.
(5) A NEW APFO TRAFFIC STUDY MAY BE REQUIRED WITH THE FINAL PLAN SUBMISSION. PLEASE VERIFY WITH THE DEVELOPMENT ENGINEERING DIVISION.
36. SECTION 16.121 OF THE SUBDIVISION REGULATIONS REQUIRE A $1,500.00 PER LOT FEE-IN-LIEU OF OPEN SPACE FOR NON-CLUSTER SUBDIVISIONS IN THE RR ZONING DISTRICT. THE DEVELOPER WILL PAY THE FEE-IN-LIEU, BUT IS ALSO CREATING A BONUS OPEN SPACE LOT TO ACCOMMODATE A STORM WATER MANAGEMENT FACILITY FOR THIS SUBDIVISION. A FEE-IN-LIEU IN THE AMOUNT OF $16,500 WILL BE PAID.
37. A FLOODPLAIN STUDY WAS PREPARED BY FISHER, COLLINS AND CARTER INC. DATED SEPTEMBER, 2009 AND APPROVED ON NOVEMBER 4, 2009 WITH SP-09-011.
38. ARTICLES OF INCORPORATION FOR THE WESTLAND FARM ESTATES HOMEOWNERS ASSOCIATION, INC. WILL BE FILED WITH THE MARYLAND STATE DEPARTMENT OF ASSESSMENTS AND TAXATION PRIOR TO THE RECORDATION OF THE FINAL PLAT.
39. OPEN SPACE LOT 15 IS OWNED AND MAINTAINED BY THE WESTLAND FARM ESTATES HOMEOWNERS ASSOCIATION, INC.
40. THIS SUBDIVISION IS WITHIN THE GROWTH TIER III.
41. THE PRIVATE USE-IN-COMMON ACCESS EASEMENT AND MAINTENANCE AGREEMENT FOR SHARED DRIVEWAYS IS RECORDED SIMULTANEOUSLY WITH THE PLAT.
42. DECLARATION OF COVENANTS AND RESTRICTIONS FOR THE HOMEOWNERS ASSOCIATION ARE TO BE RECORDED SIMULTANEOUSLY WITH THE PLAT. THE HOA SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND UPKEEP OF THE EXISTING POND.
43. THE EXISTING UTILITIES ARE BASED ON FIELD LOCATION OF UTILITIES ARE BASED ON AVAILABLE COUNTY RECORDS.
44. THE FOLLOWING SHALL BE NOTED REGARDING TRAFFIC CONTROL SIGNS IN THE COUNTY RIGHT-OF-WAY:
(A) THE R1-1 (STOP) SIGN (STA 0+59.6. O/S 15' LEFT), R2-1 (25 MPH) SPEED SIGN (STA 0+85.6, O/S 15' RIGHT), AND THE STREET NAME SIGN (SNS) ASSEMBLIES 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). ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED (QUICK PUNCH), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) – 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO QUICK PUNCH HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
(D) A PRIVATE RANGE OF ADDRESS SIGN 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.
45. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
46. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
47. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
48. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
49. STANDARD SEDIMENT CONTROL PLAN MAY NOT BE UTILIZED TO OBTAIN GRADING PERMITS FOR THIS PROJECT.
50. DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
a) WIDTH – 12 FEET (16 FEET 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.
51. SECTION 16.121 OF THE SUBDIVISION REGULATIONS REQUIRE A $1,500.00 PER LOT FEE-IN-LIEU OF OPEN SPACE FOR NON-CLUSTER SUBDIVISIONS IN THE RR ZONING DISTRICT. THE DEVELOPER WILL PAY THE FEE-IN-LIEU, BUT IS ALSO CREATING A BONUS OPEN SPACE LOT TO ACCOMMODATE A STORMWATER MANAGEMENT FACILITY FOR THIS SUBDIVISION.
52. BGE HAS REVIEWED AND APPROVED LANDSCAPE PLANTINGS ALONG LIME KILN ROAD.
53. IT WAS DETERMINED THAT THE PREVIOUSLY RECORDED 100' STREAM BANK BUFFER CAN BE REDUCED TO 75' ON PLAT 3 OF 3 ONLY, IN ACCORDANCE WITH THE WATERSHED MAP.
54. ON MAY 5, 2015 THE PLANNING DIRECTOR APPROVED A WAIVER (WP-15-126) TO SECTION 16.1205(a)(7) AND (10) REQUIRING THE RETENTION OF SPECIMEN TREES AS A PRIORITY TO REMOVE 3 OF 5 SPECIMEN TREES. APPROVAL TO THE REQUESTED WAIVERS IS SUBJECT TO THE FOLLOWING CONDITIONS:
(1) APPROVAL IS GIVEN FOR THE REMOVAL OF 3 SPECIMEN TREES IDENTIIFED AS: 50"(SPECIMENT TREE NO. 2) AND 62" (SPECIMEN TREE NO. 3) SYCAMORE TREES AND 30" (SPECIMENT TREE NO. 4) TULIP POPLAR. REMOVAL OF THE THREE (3) SPECIMEN TREES WILL REQUIRE MITIGATION WITH THE PLANTING OF SIX (6) NEW NATIVE SHADE TREES WITH A MINIMUM CALIPER SIZE OF 2.5" TO 3". THE MITIGATED TREES SHALL BE OF SIMILAR SPECIES, BE SHOWN ON THE LANDSCAPE PLAN SHEET OF THE ROAD CONSTRUCTION / SUPPLEMENTAL PLANS AND BONDED WITH THE LANDSCAPE OBLIGATION.

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
412	EXISTING 2' CONTOURS	482	PROPOSED CONTOUR
410	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION
GgB / GgC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE
	EXISTING TREELINE		PROPOSED TREELINE
	15% TO 24.9% STEEP SLOPES		PROPOSED PAVING
	25% AND GREATER STEEP SLOPES	544	BORING (PERC) TEST HOLE
FP	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	SF	SILT FENCE
	STREAM BANK BUFFER	ECM	EROSION CONTROL MATTING
	EXISTING CENTERLINE OF STREAM	SSF	SUPER SILT FENCE
ST1	SPECIMEN TREE	DF	DIVERSION FENCE
	PROPOSED FOREST CONSERVATION EASEMENT		STABILIZES CONSTRUCTION ENTRANCE
TPF	TREE PROTECTIVE FENCING		DRAINAGE AREA DIVIDE

AS BUILT 11/22/20

9/20/18 | 5 | REVISE HOUSE SITING ON LOT 7 – SHEETS 6 & 10

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 2/22/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6-21-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.2.16

OWNERS
LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922
AND
PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER
WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
5485 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410-997-8800

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. 38386, EXPIRATION DATE: 01/12/2016.
Signature Of Professional Engineer — DATE 12/9/15

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

TITLE SHEET
WESTLAND FARM ESTATES
LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 1 OF 19

F-15-038

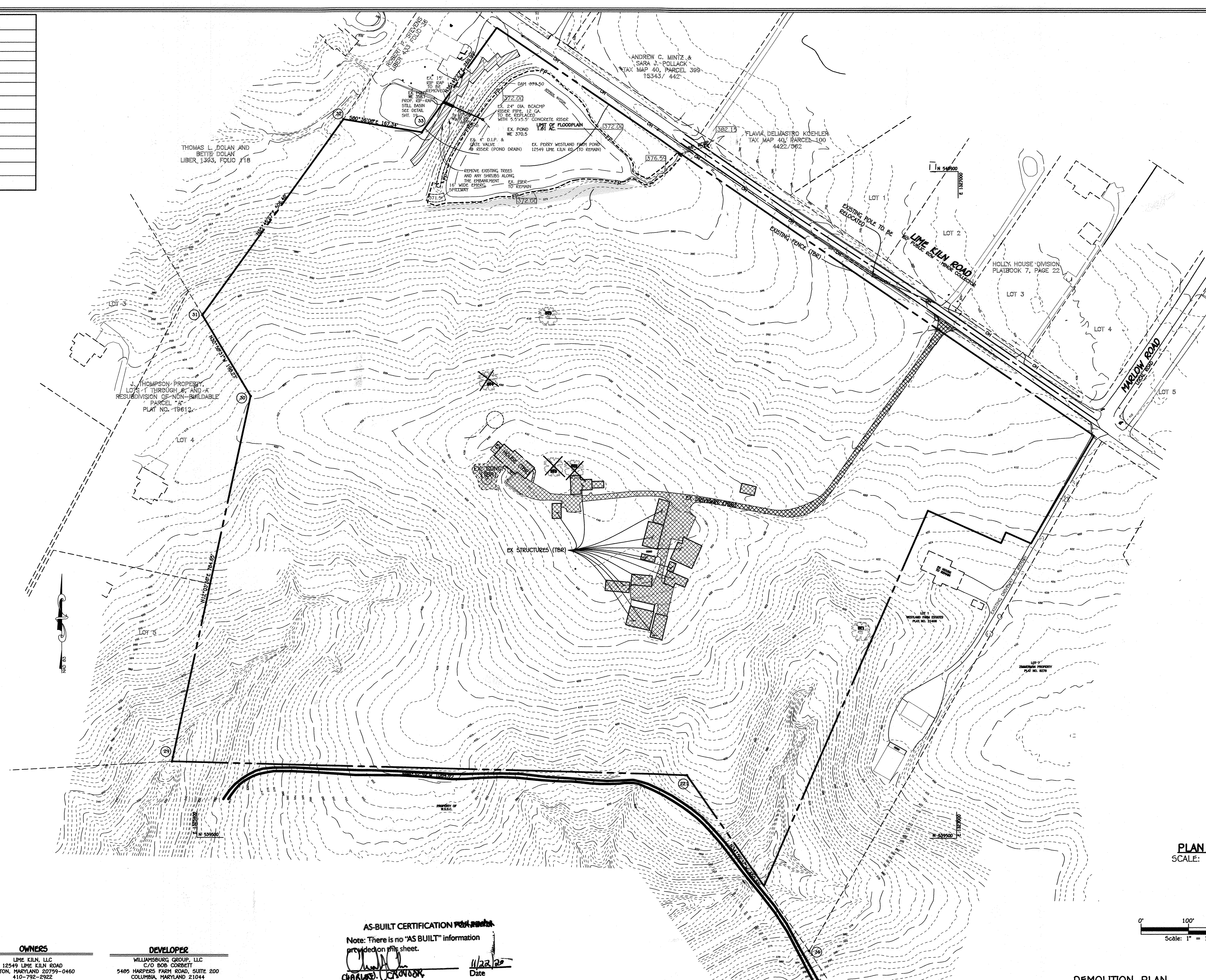
"AS-BUILT"

I:\2005\05062\dwg\Finals\05062 Base Plan new.dwg, 12/9/2015 5:37:44 PM, 1:1

I:\2005\05062\dwg\Finals\05062 Base Plan new.dwg, SHEET 2, 12/2/2015 2:42:45 PM, 1:1

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
412	EXISTING 2' CONTOURS	482	PROPOSED CONTOUR
410	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION
GgB / GgC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE
	EXISTING TREELINE		PROPOSED TREELINE
	15% TO 24.9% STEEP SLOPES		PROPOSED PAVING
	25% AND GREATER STEEP SLOPES	544	BORING (PERC) TEST HOLE
FP	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	SF	SILT FENCE
	STREAM BANK BUFFER	ECM	EROSION CONTROL MATTING
	EXISTING CENTERLINE OF STREAM	SSF	SUPER SILT FENCE
ST1	SPECIMEN TREE	DF	DIVERSION FENCE
	PROPOSED FOREST CONSERVATION EASEMENT		STABILIZES CONSTRUCTION ENTRANCE
	STRUCTURES AND PAVING TO BE REMOVED		DRAINAGE AREA DIVIDE



PLAN VIEW
SCALE: 1"=100'

0' 100' 150' 200'
Scale: 1" = 100'

APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS (signed)	DATE 2/22/2016
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT (signed)	DATE 6.21.16
CHIEF, DEVELOPMENT ENGINEERING DIVISION (signed)	DATE 3.2.16

OWNERS

LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

AND

PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER

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CENTENNIAL SQUARE OFFICE PARK – 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 – 2855

AS-BUILT CERTIFICATION

Note: There is no "AS BUILT" information provided on this sheet.

(signed) CHARLES J. CROWDER P.E. #13204 — Date 11/22/20

PROFESSIONAL CERTIFICATION

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(signed) Signature Of Professional Engineer — DATE 12/2/15

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

DEMOLITION PLAN
WESTLAND FARM ESTATES
LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 2 OF 19

F-15-038

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

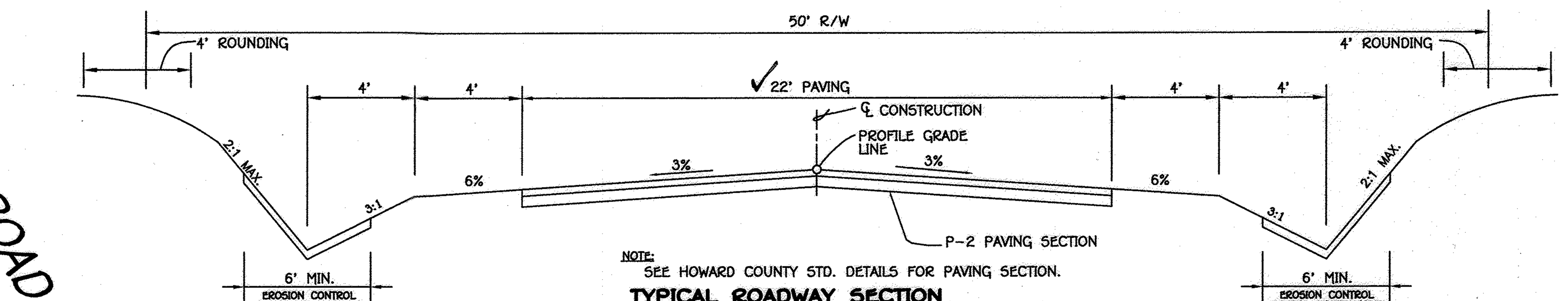
ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS	PAVING SECTION
WESTLAND COURT	PUBLIC ACCESS PLACE	25 M.P.H.	RR-DEO	0+00 TO 8+75.73	P-2

PLAN VIEW
SCALE: 1"=50'

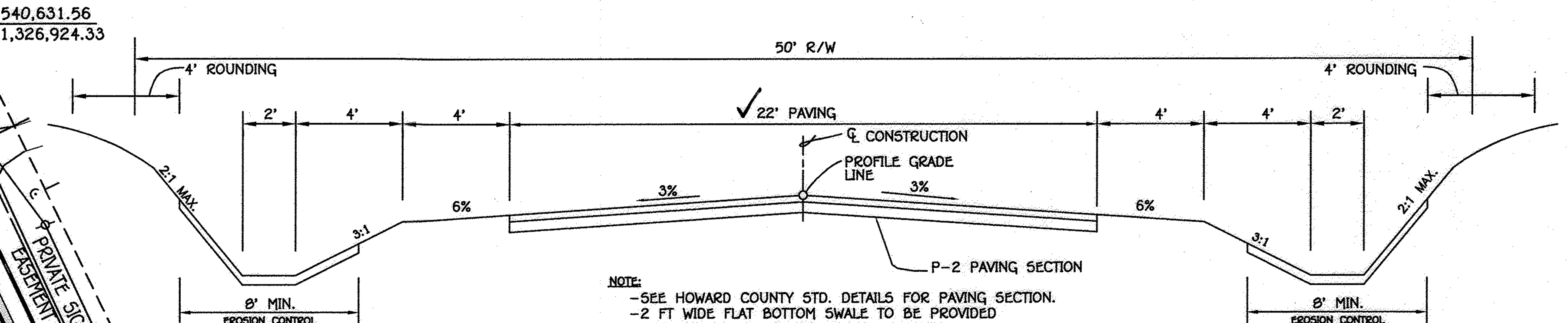
Scale: 1" = 50'

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



NOTE:
SEE HOWARD COUNTY STD. DETAILS FOR PAVING SECTION.

TYPICAL ROADWAY SECTION
(STA 3+25 TO STA 8+75.73)
NO SCALE



NOTE:
-SEE HOWARD COUNTY STD. DETAILS FOR PAVING SECTION.
-2 FT WIDE FLAT BOTTOM SWALE TO BE PROVIDED BETWEEN STA 0+60 AND STA 3+25 ONLY.

TYPICAL ROADWAY SECTION
(STA 0+60 TO STA 3+25)
NO SCALE

STREET LIGHTS TABLE

ROAD NAME	STATION & OFFSET	TYPE
WESTLAND COURT	0+70.9 14' RIGHT	LED 100 COLONIAL POST TOP
WESTLAND COURT	3+75.25 13.5' LEFT	LED 100 COLONIAL POST TOP
WESTLAND COURT	7+44.81 13.5' RIGHT	LED 100 COLONIAL POST TOP
WESTLAND COURT	UP 1+61 2' LEFT	LED 100 COLONIAL POST TOP

CENTERLINE CURVE DATA

ROAD NAME	STA. TO STA.	RADIUS	LENGTH	DELTA
WESTLAND COURT	0+62.99 - 1+94.07	300.00'	131.08'	25°02'03"
WESTLAND COURT	1+94.07 - 6+64.54	300.00'	470.47'	89°51'12"
WESTLAND COURT	7+44.81 - 9+26.54	320.00'	181.73'	32°32'21"

PROFESSIONAL CERTIFICATION

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Signature Of Professional Engineer — 2/8/16 DATE

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

REVISIONS

DATE	DESCRIPTION
11/16/16	ADD STREET LIGHTS & STREET LIGHTS TABLE

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 2/22/2016 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — 6-21-16 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3-2-16 DATE

WESTLAND FARM ESTATES

LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

WESTLAND COURT

PLAN AND PROFILE

OWNERS

LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

AND

PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
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SCALE: AS SHOWN	DATE: DECEMBER, 2015	DWG. NO. 3 OF 18
DES. SJT	DRN. SJT	CHK. -

FISHER, COLLINS & CARTER, INC.
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CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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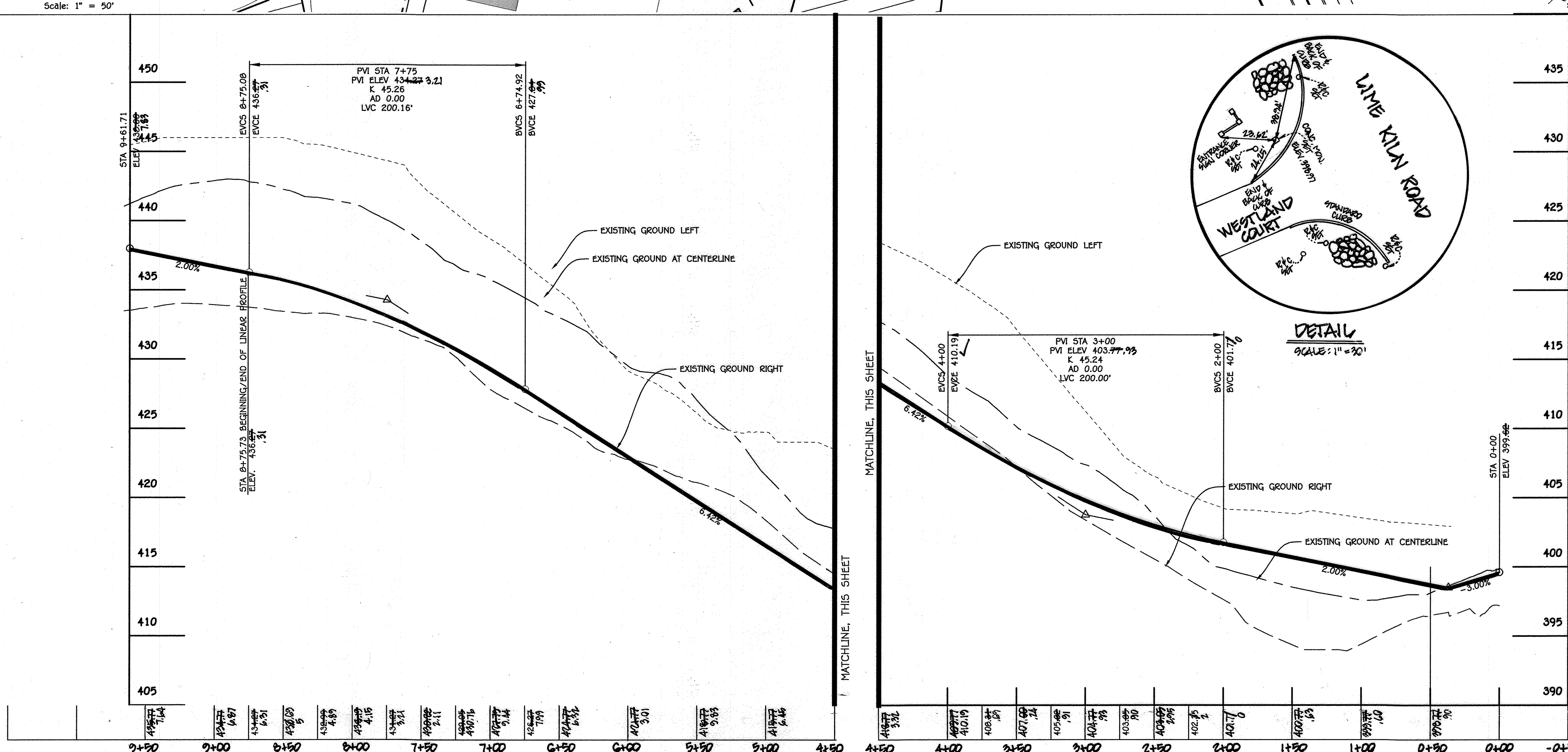


WESTLAND COURT ROAD PROFILE
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

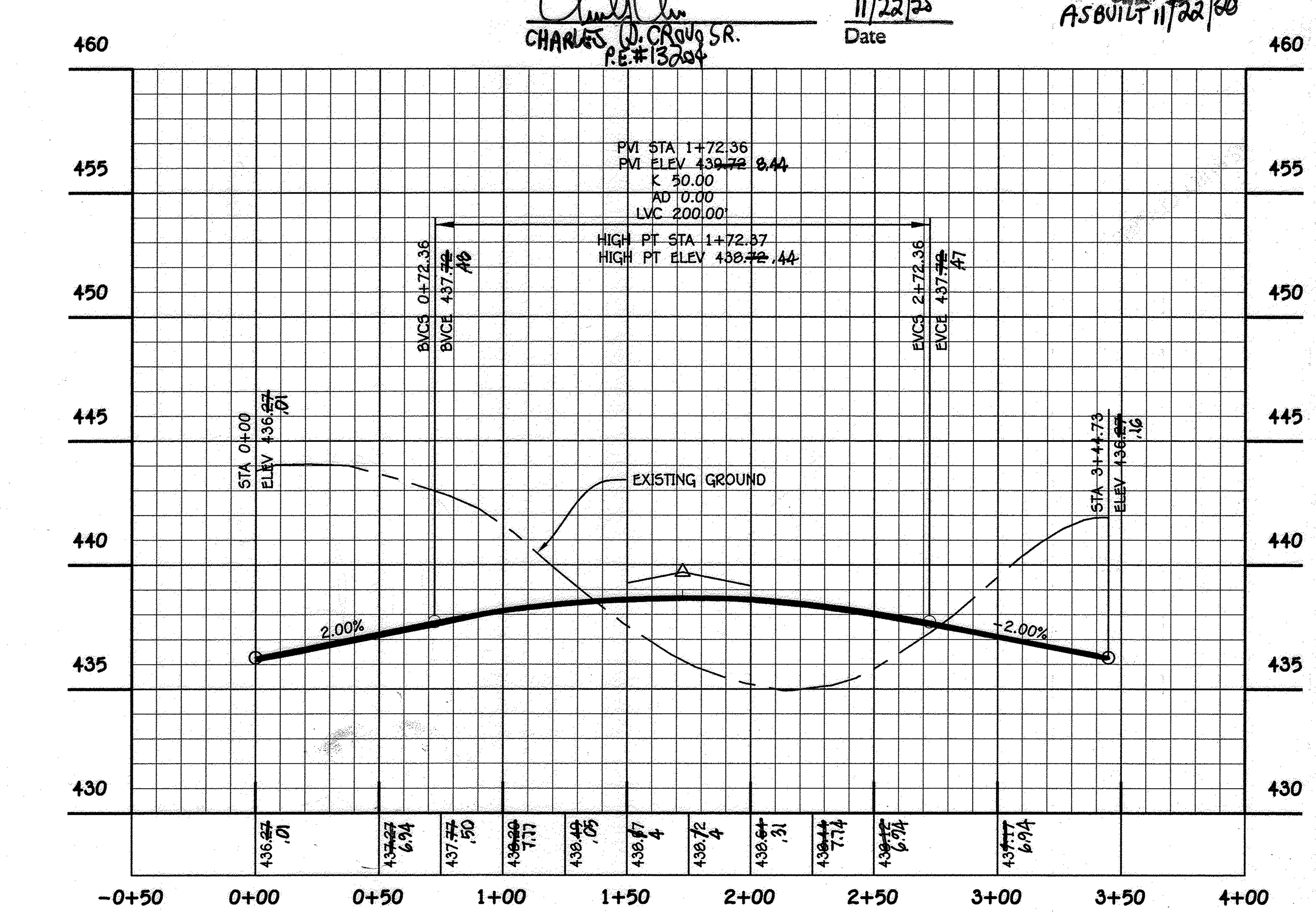
DETAIL
SCALE: 1" = 30'

AS-BUILT CERTIFICATION FOR PSWM

I hereby certify that the facility shown on the plan was constructed as shown on the "AS BUILT" plans and complies with the approved plans and specifications. I have verified that the contributing drainage area is sufficiently stabilized to prevent clogging of the underground SWM Facility.

CHARLES D. CROUG SR. P.E.#13204 — 11/22/20 Date

ASBUILT 11/22/20



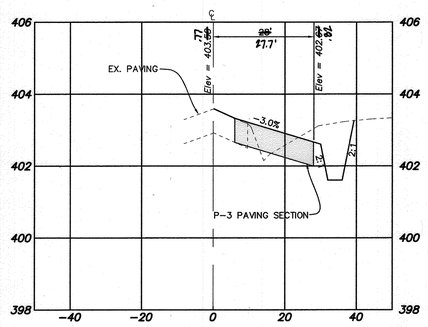
WESTLAND COURT LINEAR PROFILE
SCALE HORZ. 1" = 50'
VERT. 1" = 5'

F-15-038

"AS-BUILT"

I:\2005\05062\dwg\Finals\05062 Base Plan new.dwg, 2/8/2016 4:12:45 PM, 1:1

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-3	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN TO HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SACS: RESIDENTIAL MINOR COLLECTORS: 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)	3.0	3.0	3.0	4.5	3.0	2.0
		GRADED AGGREGATE BASE (GAB)	10.0	6.0	3.0	6.0	6.0	6.0



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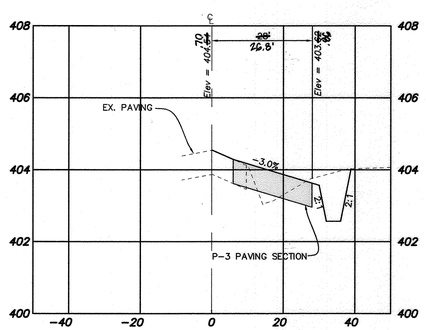

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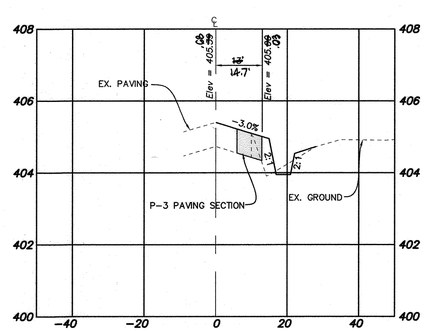

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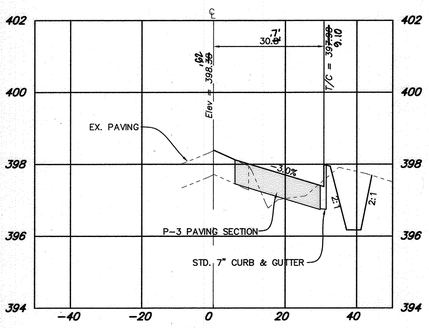

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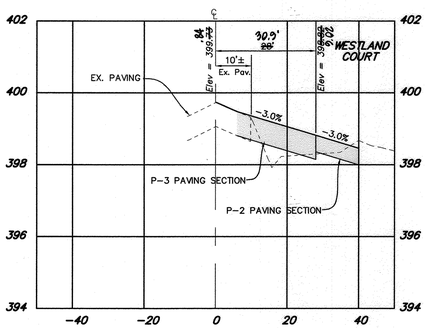

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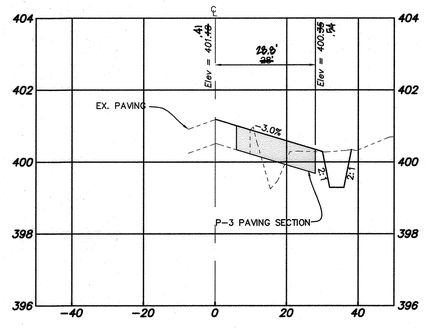

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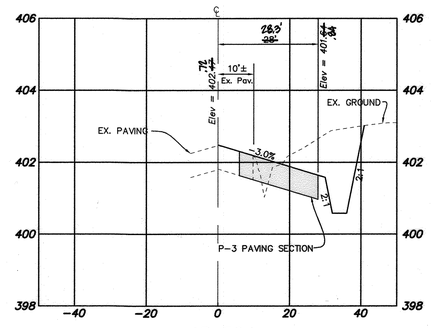

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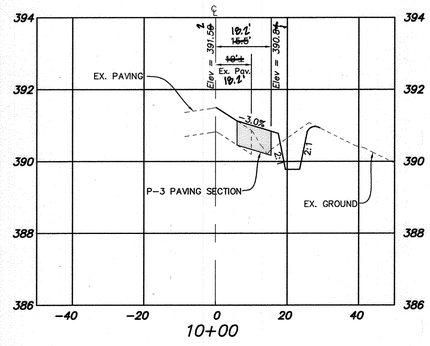

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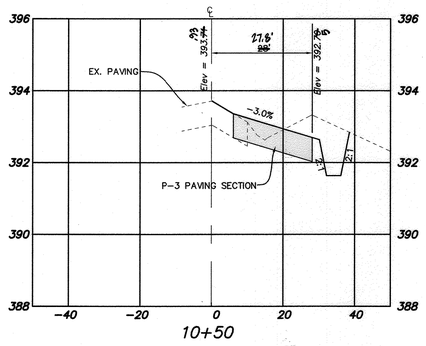

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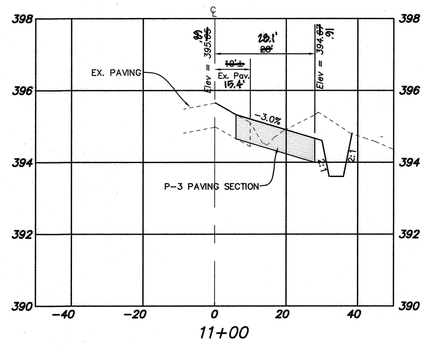

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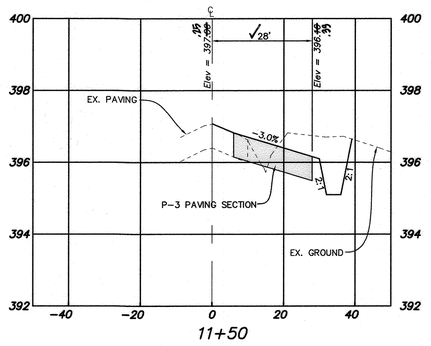
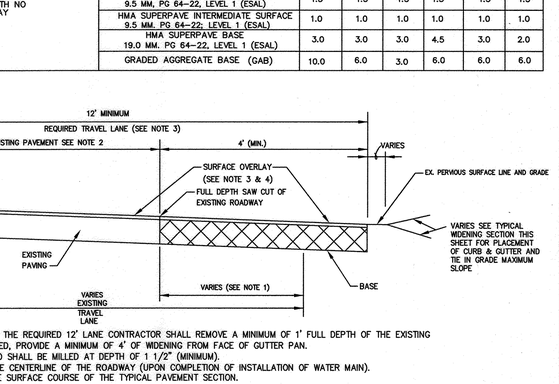


11+50

CROSS SECTIONS

0' 20' 40' 80'

SCALE: 1" = 20'

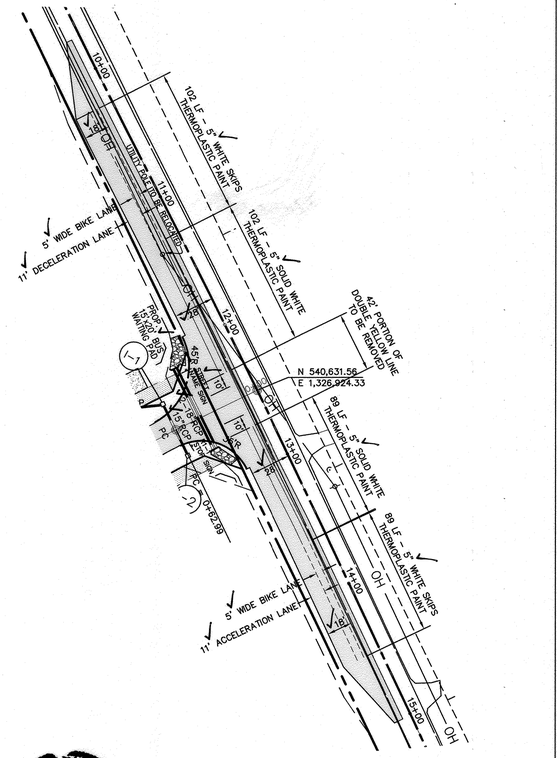


NOTES:

1. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE CONTRACTOR SHALL REMOVE A MINIMUM OF 1' FULL DEPTH OF THE EXISTING ROADWAY. IF CURB AND GUTTER IS INSTALLED, PROVIDE A MINIMUM OF 4' OF WIDENING FROM FACE OF GUTTER PAN.
2. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT DEPTH OF 1 1/2" (MINIMUM).
3. THE RESURFACING SHALL BE PLACED TO THE CENTERLINE OF THE ROADWAY (UPON COMPLETION OF INSTALLATION OF WATER MAIN).
4. RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.

EXISTING ROADWAY WIDENING STRIP (R-1.08)

NO SCALE

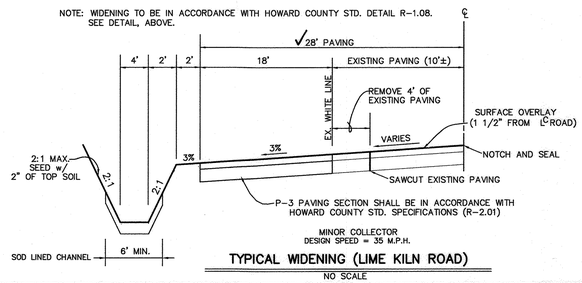


AS BUILT 11/22/16

ACCELERATION / DECELERATION & BIKE LANE STRIPING (LIME KILN ROAD)

SCALE: 1" = 50'

NOTE: WIDENING TO BE IN ACCORDANCE WITH HOWARD COUNTY STD. DETAIL R-1.08. SEE DETAIL, ABOVE.



TYPICAL WIDENING (LIME KILN ROAD)

NO SCALE

OWNERS

LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

AND

PERRY C. WESTLAND, JR.
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APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 2/22/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6-21-16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3-2-16

PROFESSIONAL CERTIFICATION

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Signature of Professional Engineer — DATE 12/9/15

STATE OF MARYLAND · STEPHANIE J. SMITH · No. 38386 · PROFESSIONAL ENGINEER

ACCELERATION/DECELERATION LANE CROSS SECTIONS

WESTLAND FARM ESTATES

LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 4 OF 19

F-15-038

"AS-BUILT"

I:\2005\05062\dwg\Finals\05062 Base Plan new.dwg, 12/9/2015 5:47:12 PM, 1:1

NO.	REVISION	DATE
1	REVISE GRADING OF BERM ON LOTS 3 & 4 AND REVISE PROPOSED TREELINE ON LOTS C & 7	6/9/17
2	REVISE HSE. & GRD. LOT 9, FROM GEN. BOX TO RUTLEDGE	5/11/18
3	REVISE HSE. & GRD. LOT 10, FROM GEN. BOX TO WELLINGTON	8/3/18
4	REVISE HSE. & GRD. LOT 8, FROM GEN. BOX TO RUTLEDGE	11/7/18
5	REVISE HSE. & GRD. LOT 12, FROM GEN. BOX TO RUTLEDGE	5/15/19
6	REVISE LOCATION OF 6 TREES ON LOT 10	12/7/23

LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
412	EXISTING 2' CONTOURS	482	PROPOSED CONTOUR
410	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION
GgB GgC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE
	EXISTING TREELINE		PROPOSED TREELINE
	15% TO 24.9% STEEP SLOPES		PROPOSED PAVING
	25% AND GREATER STEEP SLOPES	544	BORING (PERC) TEST HOLE
FP	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	SF	SILT FENCE
	STREAM BANK BUFFER	ECM	EROSION CONTROL MATTING
	EXISTING CENTERLINE OF STREAM	SSF	SUPER SILT FENCE
ST1	SPECIMEN TREE	DF	DIVERSION FENCE
	PROPOSED FOREST CONSERVATION EASEMENT	SCE	STABILIZES CONSTRUCTION ENTRANCE
TPF	TREE PROTECTIVE FENCING		DRAINAGE AREA DIVIDE

PLAN VIEW
SCALE: 1"=50'

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

AS-BUILT CERTIFICATION

Note: There is no "AS BUILT" information provided on this sheet.

CHARLES J. CRNOSR. P.E.#13204 — 11/22/20 Date

NOTE:
THIS PLAN IS TO BE USED FOR INDIVIDUAL DRIVEWAYS AND HOUSE CONSTRUCTION ALONG WITH ROAD AND STORMWATER MANAGEMENT CONSTRUCTION.

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 2/22/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6-21-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3-2-16

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410-792-2922

AND

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Signature of Professional Engineer — DATE 2/8/16

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

DEVELOPER'S / BUILDER'S CERTIFICATE
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME Bob Corbett — DATE 2-8-16

SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
BeB	Benevola silt loam, 3 to 8 percent slopes	C	0.43
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.28
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.28
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.43
MaC	Manor loam, 8 to 15 percent slopes	B	0.28
MaD	Manor loam, 15 to 25 percent slopes	B	0.28
MkF	Manor-Brinklow Complex, 25 to 65 percent slopes, very rocky	B	0.32
WhB	Wiltshire silt loam, 3 to 8 percent slopes	C	0.20

LANDSCAPE & FOREST CONSERVATION PLAN
WESTLAND FARM ESTATES
LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 5 OF 19

F-15-038

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
412	EXISTING 2' CONTOURS	402	PROPOSED CONTOUR
410	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION
GnB GgC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE
	EXISTING TREELINE		PROPOSED TREELINE
	15% TO 24.9% STEEP SLOPES		PROPOSED PAVING
	25% AND GREATER STEEP SLOPES	544	BORING (PERC) TEST HOLE
FP	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	SF	SILT FENCE
	STREAM BANK BUFFER	ECM	EROSION CONTROL MATTING
	EXISTING CENTERLINE OF STREAM	SSF	SUPER SILT FENCE
ST1	SPECIMEN TREE	DF	DIVERSION FENCE
	PROPOSED FOREST CONSERVATION EASEMENT		STABILIZED CONSTRUCTION ENTRANCE
TPF	TREE PROTECTIVE FENCING		DRAINAGE AREA DIVIDE

SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
BeB	Benevola silt loam, 3 to 8 percent slopes	C	0.43
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.28
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.28
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.43
MaC	Manor loam, 8 to 15 percent slopes	B	0.28
MaD	Manor loam, 15 to 25 percent slopes	B	0.28
MkF	Manor-Brinklow Complex, 25 to 65 percent slopes, very rocky	B	0.32
WhB	Wiltshire silt loam, 3 to 8 percent slopes	C	0.20

THOMAS L. DOLAN AND BETTY DOLAN LIBER 1363, FOLIO 118

ZONED: RR-DEO

J. THOMPSON PROPERTY LOTS 1 THROUGH 6 AND A RESUBDIVISION OF NON-BUILDABLE PARCEL "A" PLAT NO. 19613

LOT 4

ZONED: RR-DEO

LOT 3

MATCH LINE

SEE SHEET 5

SHEET 7

NAD 83

WESTLAND COURT
50' ROW - PUBLIC ACCESS PLACE

PROPOSED 15' NO WOODY VEGETATION ZONE P/O O.S. Lot 15 HOA

FOREST CONSERVATION EASEMENT No. 4 0.44 AC.± (RETENTION)

P/O FOREST CONSERVATION EASEMENT NO. 2 0.77 AC. TOTAL AFFORESTATION

P/O FOREST CONSERVATION EASEMENT NO. 3 0.5 AC. TOTAL AFFORESTATION

CREDIT FOR EX. TREES TO REMAIN - 130' LF

CREDIT FOR EX. TREES TO REMAIN - 190' LF

CREDIT FOR EX. TREES TO REMAIN - 131' LF

S80°36'08"E 167.34'

N35°45'27"E 506.48'

N30°56'31"W 198.27'

35' ENVIRONMENTAL SETBACK

PUBLIC DRAINAGE & UTILITY EASEMENT

20' PRIVATE DRAINAGE & UTILITY EASEMENT AND ACCESS TO POND

Lot 5 5.04 Ac.±

Lot 6 3.07 Ac.±

Lot 7 3.09 Ac.±

Lot 4 3.00 Ac.±

PA to MICRO-BIO 19,150 SQ.FT.

PA to MICRO-BIO 30,700 SQ.FT.

10,109 Sq.Ft.

10,303 Sq.Ft.

10,087 Sq.Ft.

WELLINGTON (Elev. 9)

RUTLEDGE

STOCKPILE

Private Use-In-Common Driveway Access Easement For The Benefit Of Lots 5, 6, 7, and 8

PROPOSED DRIVEWAY

PROP. ADDRESS SIGN

PROVIDE "NO PARKING FIRE LANE" AND "FLOW AWAY" ZONE SIGNAGE WITH IN ACCORDANCE WITH HOWARD COUNTY GUIDANCE FOR FIRE LANES

6'x12' TRASH PAD

10' PUBLIC TREE MAINTENANCE EASEMENT

STREET TREE (TYP.)

PROP. STREET LIGHT

TYP. TURNAROUND

NOTE:
THIS PLAN IS TO BE USED FOR INDIVIDUAL DRIVEWAYS AND HOUSE CONSTRUCTION ALONG WITH ROAD & STORMWATER MANAGEMENT CONSTRUCTION.

OWNERS
LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

AND

PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER
WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
5485 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410-997-8600

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. 38386, EXPIRATION DATE: 01/12/2016.

Signature Of Professional Engineer — DATE 2/8/16

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

DEVELOPER'S / BUILDER'S CERTIFICATE
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME — DATE 2-8-16

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 2/22/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6-21-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.2.16

DATE	REVISION
12/17/19	REVISE HSE. LOCS. & DRIVEWAY LOT 5, TO RUTLEDGE
11/15/19	ADD INLETS, PIPING, AND LAND HOUSE, LOT 6
5/6/19	REVISE HSE. SITE LOT 7, ADD CIRCULAR DRIVEWAY, SWM BMP CONTROL & DRAINAGE AREA TO BIO
9/20/18	REVISE HOUSE, DRIVEWAY, GRADING, SEDIMENT CONTROLS & DRAINAGE AREAS - LOT 7
5/8/18	REVISE HSE. & LOD FROM LOT 8 TO WELLINGTON, PLANELS & ADD ADDITIONAL LOT 6
6/6/17	REVISED GRADING OF BERM ON LOT 4 & REVISED PROPOSED TREELINE ON LOTS 5 & 6
11/16/16	ADD PROPOSED GRADING FOR A BERM ON LOT 4 & ADD STREET LIGHTS

PLAN VIEW
SCALE: 1" = 50'

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

AS-BUILT CERTIFICATION ~~FOR REVISED~~
Note: There is no "~~AS BUILT~~" information provided on this sheet.

CHARLES L. CRAIG JR. P.E. # 13084 — 11/22/20 Date

LANDSCAPE & FOREST CONSERVATION PLAN
WESTLAND FARM ESTATES
LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 6 OF 19

F-15-038

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

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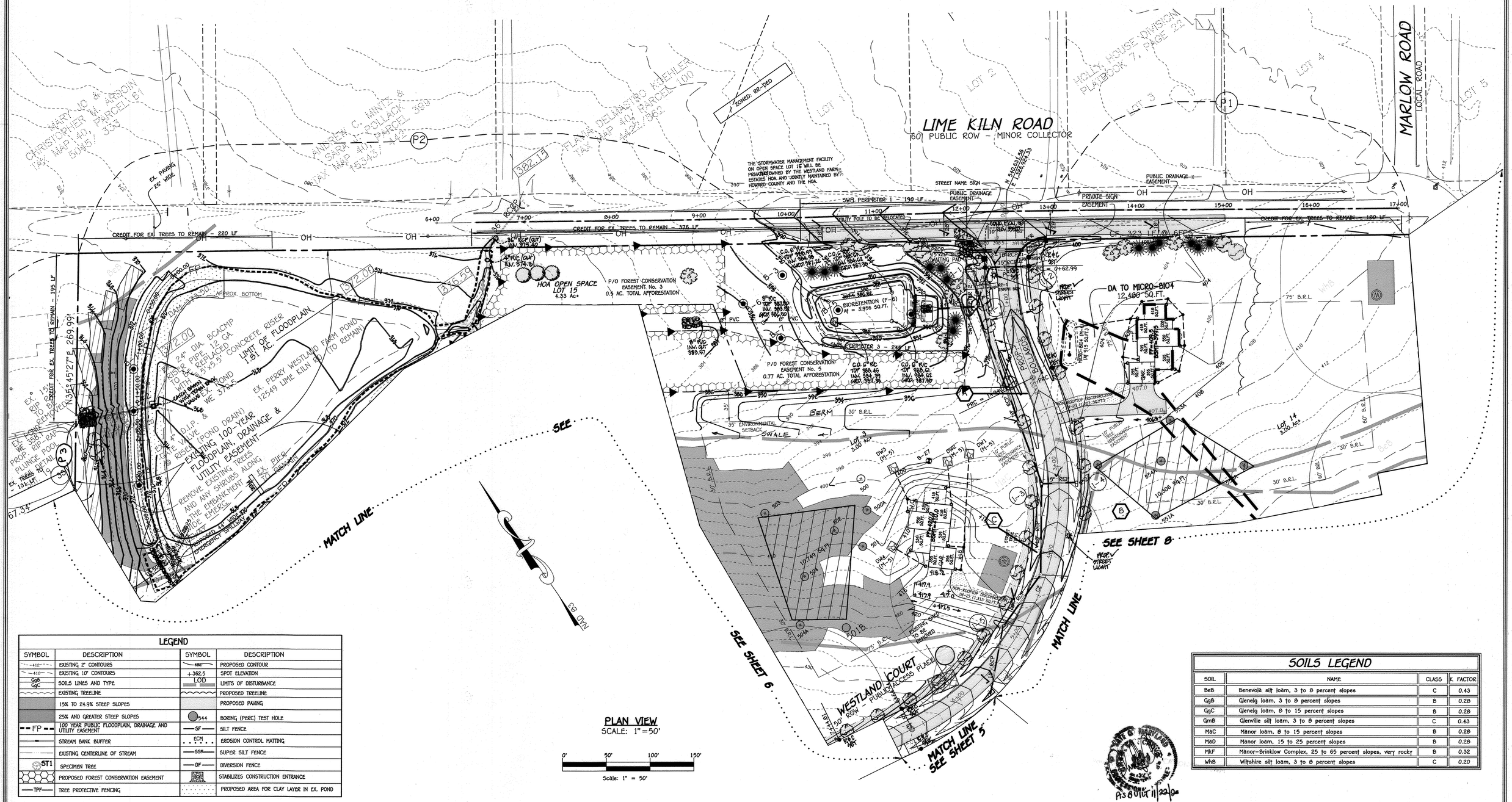

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
412	EXISTING 2' CONTOURS	402	PROPOSED CONTOUR
410	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION
SgB GgC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE
	EXISTING TREELINE		PROPOSED TREELINE
	15% TO 24.9% STEEP SLOPES		PROPOSED PAVING
	25% AND GREATER STEEP SLOPES	B-44	BORING (PERC) TEST HOLE
FP	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	SF	SILT FENCE
	STREAM BANK BUFFER	ECM	EROSION CONTROL MATTING
	EXISTING CENTERLINE OF STREAM	SSF	SUPER SILT FENCE
ST1	SPECIMEN TREE	DF	DIVERSION FENCE
	PROPOSED FOREST CONSERVATION EASEMENT		STABILIZES CONSTRUCTION ENTRANCE
TPF	TREE PROTECTIVE FENCING		PROPOSED AREA FOR CLAY LAYER IN EX. POND

PLAN VIEW

SCALE: 1"=50'

0' 50' 100' 150'

Scale: 1" = 50'

SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
BeB	Benevola silt loam, 3 to 8 percent slopes	C	0.43
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.28
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.28
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.43
MaC	Manor loam, 8 to 15 percent slopes	B	0.28
MaD	Manor loam, 15 to 25 percent slopes	B	0.28
MkF	Manor-Brinklow Complex, 25 to 65 percent slopes, very rocky	B	0.32
WhB	Wiltshire silt loam, 3 to 8 percent slopes	C	0.20

AS BUILT 11/22/16

NOTE:
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OWNERS

LIME KILN, LLC
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FULTON, MARYLAND 20759-0460
410-792-2922

AND

PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER

WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
5405 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
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CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 2/22/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6.21.16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.2.16

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. 38386, EXPIRATION DATE: 01/12/2016.

Signature Of Professional Engineer — DATE 2/8/16

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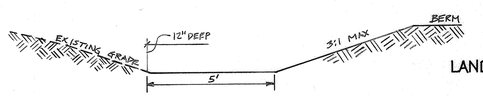
NAME — DATE 2-8-16



SWALE ALONG PROPOSED BERM
NOT TO SCALE

DATE	REVISION
9/6/17	REVISED GRADING OF BERM AT REAR OF LOT 9
11/16/16	ADD PROPOSED GRADING FOR A BERM ON LOT 9 & ADD STREET LIGHTS

LANDSCAPE & FOREST CONSERVATION PLAN
WESTLAND FARM ESTATES
LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 7 OF 19

F-15-038

"AS-BUILT"

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SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
BeB	Benevola silt loam, 3 to 8 percent slopes	C	0.43
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.28
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.28
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.43
MaC	Manor loam, 8 to 15 percent slopes	B	0.28
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PLAN VIEW
SCALE: 1"=50'

0' 50' 100' 150'

Scale: 1" = 50'

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
412	EXISTING 2' CONTOURS	412	PROPOSED CONTOUR
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GgB GgC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE
	EXISTING TREELINE		PROPOSED TREELINE
	15% TO 24.9% STEEP SLOPES		PROPOSED PAVING
	25% AND GREATER STEEP SLOPES	544	BORING (PERC) TEST HOLE
FP	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	SF	SILT FENCE
	STREAM BANK BUFFER	ECM	EROSION CONTROL MATTING
	EXISTING CENTERLINE OF STREAM	SSF	SUPER SILT FENCE
ST1	SPECIMEN TREE	DF	DIVERSION FENCE
	PROPOSED FOREST CONSERVATION EASEMENT		STABILIZED CONSTRUCTION ENTRANCE
TPF	TREE PROTECTIVE FENCING		

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 2/22/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6.21.16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.2.16

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FULTON, MARYLAND 20759-0460
410-792-2922

AND

PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
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CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

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Signature of Professional Engineer — DATE 12/2/15

STATE OF MARYLAND · STEPHANIE J. SUTER · No. 38386 · PROFESSIONAL ENGINEER

DEVELOPER'S / BUILDER'S CERTIFICATE

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

NAME — DATE 1-4-16

AS-BUILT CERTIFICATION ~~REVISION~~

Note: There is no "AS BUILT" information provided on this sheet.

CHARLES J. CRAIG, SR. P.E. #13004 — Date 11/22/20

DATE	REVISION
12/17/19	REVISE TREE, CREDITING & DRIVEWAY, LOT 13

LANDSCAPE & FOREST CONSERVATION PLAN

WESTLAND FARM ESTATES

LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 8 OF 19

F-15-038

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

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LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
412	EXISTING 2' CONTOURS	482	PROPOSED CONTOUR
410	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION
GgB / GgC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE
	EXISTING TREELINE		PROPOSED TREELINE
	15% TO 24.9% STEEP SLOPES		PROPOSED PAVING
	25% AND GREATER STEEP SLOPES	544	BORING (PERC) TEST HOLE
FP	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	SF	SILT FENCE
	STREAM BANK BUFFER	ECM	EROSION CONTROL MATTING
	EXISTING CENTERLINE OF STREAM	SSF	SUPER SILT FENCE
ST1	SPECIMEN TREE	DF	DIVERSION FENCE
	PROPOSED FOREST CONSERVATION EASEMENT	SCE	STABILIZES CONSTRUCTION ENTRANCE
TPF	TREE PROTECTIVE FENCING		DRAINAGE AREA DIVIDE

SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
BeB	Benevola silt loam, 3 to 8 percent slopes	C	0.43
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.28
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.28
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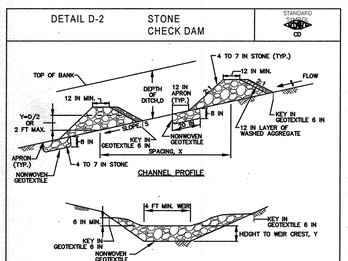
MkF	Manor–Brinklow Complex, 25 to 65 percent slopes, very rocky	B	0.32
WhB	Wiltshire silt loam, 3 to 8 percent slopes	C	0.20

DETAIL D-2 STONE CHECK DAM

STANDARD NO. CD

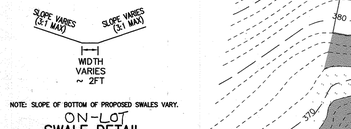


CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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



NOTE: SLOPE OF BOTTOM OF PROPOSED SWALES VARY.

ON-LOT SWALE DETAIL
NOT TO SCALE

DATE	REVISION
5/13/16	REVISE HSE. & GRD. LOT 13, FROM GEN. BOX TO RUTLEDGE
11/7/16	REVISE HSE. & GRD. LOT 8, FROM GEN. BOX TO RUTLEDGE
8/5/16	REVISE HSE. & GRD. LOT 10, FROM GEN. BOX TO WELLINGTON
9/11/16	REVISE HSE. & GRD. LOT 9, FROM GEN. BOX TO RUTLEDGE
6/6/17	REVISED GRADING OF BERM ON LOTS 3 & 4 AND REVISED PROPOSED TREELINE ON LOTS 6 & 7

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED:
John L. Robertson — HOWARD SOIL CONSERVATION DISTRICT — 12/10/15 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 2/22/2016 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — 6.21.16 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3.2.16 DATE

OWNERS
LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922
AND
PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
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DEVELOPER
WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
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ELLICOTT CITY, MARYLAND 21042
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PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 38386, EXPIRATION DATE: 01/12/2016.
Signature Of Professional Engineer — 12/9/15 DATE

STATE OF MARYLAND — STEPHANIE LYNN SMITH — No. 38386 — PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE
"I/WE 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 — 12/9/15 DATE

NOTE:
THIS PLAN IS TO BE USED FOR INDIVIDUAL DRIVEWAYS AND HOUSE CONSTRUCTION ALONG WITH ROAD & STORMWATER MANAGEMENT CONSTRUCTION.

STANDARD FENCING IS TO BE REPLACED BY "SUPER" SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

DRAINAGE AREA TO TEMPORARY STONE OUTLET STRUCTURE (TSOS)
0.37 ACRES
737 CY STORAGE
TOP = 410 (687 SQ.FT.)
BOTTOM = 408 (199 SQ.FT.)

BUILDER/DEVELOPER'S CERTIFICATE
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, FOR SEDIMENT AND EROSION CONTROL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
SIGNATURE OF DEVELOPER — 1-4-16 DATE

PLAN VIEW
SCALE: 1"=50'

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

AS-BUILT CERTIFICATION ~~NOT REQUIRED~~
Note: There is no "AS BUILT" information provided on this sheet.
CHARLES L. CROUSE, P.E. # 13704 — 11/22/16 Date

GRADING AND EROSION & SEDIMENT CONTROL PLAN
WESTLAND FARM ESTATES
LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 9 OF 19

F-15-038

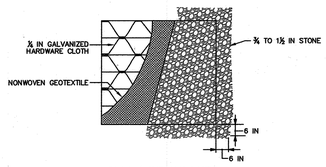
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

I:\2005\05062\dwg\Final\05062 Base Plan new.dwg, 12/9/2015 3:25:06 PM, 1:1

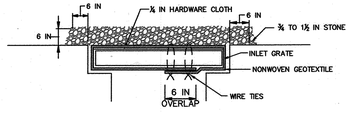
DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL: AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE



PLAN / CUT AWAY VIEW



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DATE	REVISION
10/21/19	REVISE HSE. LOC. & DRIVEWAY, LOT 5, TO RECEDE
11/18/19	ADD INLETS, PIPING, AROUND HOUSE, LOT 6
8/6/19	REVISE HSE. & GRADING, ADD CIRCULAR DRIVEWAY, TREATMENT CONTROL & DRAINAGE AREA MAP, LOT 7
11/5/18	"EXPAND LOD WEST OF PROP. HOUSE ON LOT 7
9/20/18	REVISE HOUSE, DRIVEWAY, GRADING, + SEDIMENT CONTROLS - LOT 7
5/4/18	REVISE HSE. & ADD. HIGH DRIVEWAY, TO WELLINGTON & MOD. CONTROL, LOT 6
6/6/17	REVISED GRADING OF BERM ON LOT 4 & REVISED LOD ON LOTS 6 & 7
11/16/16	ADD PROPOSED GRADING, ADD A BERM ON LOT 5, STOCKPILE ON LOT 4, AND REVISE NUMBER OF LOTS FROM 14 TO 15

BUILDER/DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, FOR SEDIMENT AND EROSION CONTROL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE: 2-1-16

ENGINEER'S CERTIFICATE

"I/WE 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: 1/29/16

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED: HOWARD SOIL CONSERVATION DISTRICT — DATE: 2/2/16

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE: 2/22/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 6.21.16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 3.2.16

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
412	EXISTING 2' CONTOURS	412	PROPOSED CONTOUR
410	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION
GgB GgC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE
	EXISTING TREELINE		PROPOSED TREELINE
	15% TO 24.9% STEEP SLOPES		PROPOSED PAVING
	25% AND GREATER STEEP SLOPES	544	BORING (PERC) TEST HOLE
FP	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	SF	SILT FENCE
	STREAM BANK BUFFER	ECM	EROSION CONTROL MATTING
	EXISTING CENTERLINE OF STREAM	SSF	SUPER SILT FENCE
ST1	SPECIMEN TREE	DF	DIVERSION FENCE
	PROPOSED FOREST CONSERVATION EASEMENT		STABILIZED CONSTRUCTION ENTRANCE
TPF	TREE PROTECTIVE FENCING		DRAINAGE AREA DIVIDE

SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
BeB	Benevola silt loam, 3 to 8 percent slopes	C	0.43
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.28
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.28
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.43
MaC	Manor loam, 8 to 15 percent slopes	B	0.28
MaD	Manor loam, 15 to 25 percent slopes	B	0.28
MkF	Manor-Brinklow Complex, 25 to 65 percent slopes, very rocky	B	0.32
WhB	Wiltshire silt loam, 3 to 8 percent slopes	C	0.20

DRAINAGE AREA TO TEMPORARY STONE OUTLET STRUCTURE (TSOS)
0.50 ACRES
923 CY STORAGE
TOP = 409 (125 SQ.FT.)
BOTTOM = 412 (520 SQ.FT.)

DRAINAGE AREA TO TEMPORARY STONE OUTLET STRUCTURE (TSOS)
0.80 ACRES
912 CY STORAGE
TOP = 402.75 (880 SQ.FT.)
BOTTOM = 402.75 (570 SQ.FT.)

THOMAS L. DOLAN AND BETTY DOLAN
LIBER 1383, FOLIO 418
ZONED: RR-DEO

J. THOMPSON PROPERTY
LOTS 1 THROUGH 6 AND A RESUBDIVISION OF NON-BUILDABLE PARCEL "B"
PLAT NO. 1961
ZONED: RR-DEO

FOREST CONSERVATION EASEMENT No. 4
0.44 AC.± (RETENTION)

FOREST CONSERVATION EASEMENT No. 3
0.77 AC. TOTAL AFFORESTATION

P/O FOREST CONSERVATION EASEMENT No. 3
0.5 AC. TOTAL REFORESTATION

20' PRIVATE DRAINAGE & UTILITY EASEMENT AND ACCESS TO POND

PUBLIC DRAINAGE & UTILITY EASEMENT

35' ENVIRONMENTAL SETBACK

Lot 4 3.00 Ac.±
Lot 5 3.04 Ac.±
Lot 6 3.07 Ac.±
Lot 7 3.09 Ac.±

10,109 Sq.Ft.
10,303 Sq.Ft.
10,087 Sq.Ft.

WELLINGTON (ELEV. 9)
RUTLEDGE
PROPOSED DRIVEWAY
Private Use-in-Common Driveway Access Easement For The Benefit Of Lots 5, 6, 7, and 8
PROP. ADDRESS SIGN
STOCKPILE
CLAY STOCKPILE
6'x12' TRASH PAD
10' PUBLIC TREE MAINTENANCE EASEMENT
PROP. STREET LIGHT
PROVIDE "NO PARKING FIRE LANE AND TOW ZONE" SIGNAGE IN ACCORDANCE WITH HOWARD COUNTY GUIDANCE FOR FIRE LANES
FIRE TRUCK TURNAROUND

N35°51'27"E 506.48'
N30°56'31"W 196.27'
S80°36'00"E 167.34'

MATCH LINE
SEE SHEET 9
SHEET 11
50' WESTLAND COURT
ROW - PUBLIC ACCESS PLACE

PLAN VIEW
SCALE: 1"=50'

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

NAD 83

NOTE:
THIS PLAN IS TO BE USED FOR INDIVIDUAL DRIVEWAYS AND HOUSE CONSTRUCTION ALONG WITH ROAD & STORMWATER MANAGEMENT CONSTRUCTION.

STANDARD FENCING IS TO BE REPLACED BY "SUPER" SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

*PAVING SHALL BEGIN AT CUL-DE-SAC END OF WESTLAND COURT AND WORK TOWARD LIME KILN ROAD.

OWNERS
LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922
AND
PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER
WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
5405 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410-997-8600

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. 38386, EXPIRATION DATE 01/12/2018.

Signature Of Professional Engineer — DATE: 1/29/16

STATE OF MARYLAND — STEPHANIE J. SMITH — 38386 — PROFESSIONAL ENGINEER

AS-BUILT CERTIFICATION (NOT APPLICABLE)
Note: There is no "AS BUILT" information provided on this sheet.
CHARLES J. CARROLL SR. P.E. # 13204 — Date 11/30/20

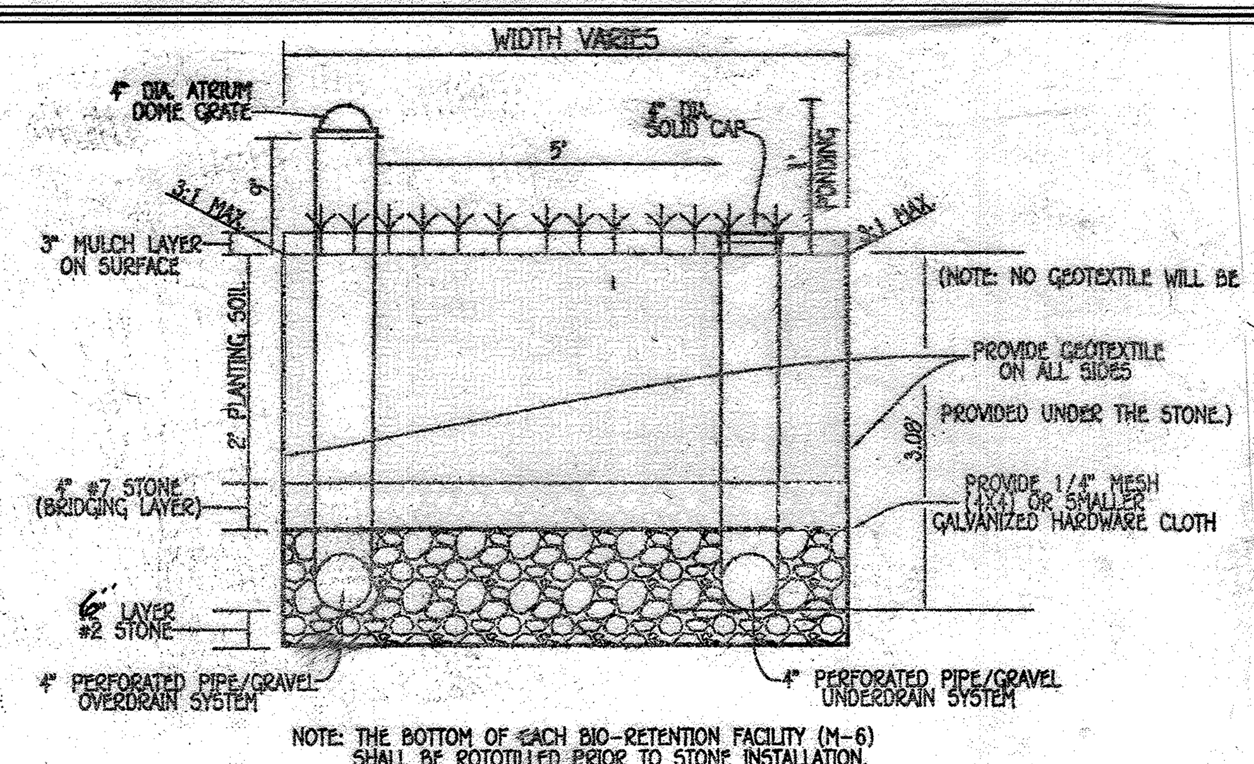
GRADING AND EROSION & SEDIMENT CONTROL PLAN

WESTLAND FARM ESTATES

LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 10 OF 19

F-15-038

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET



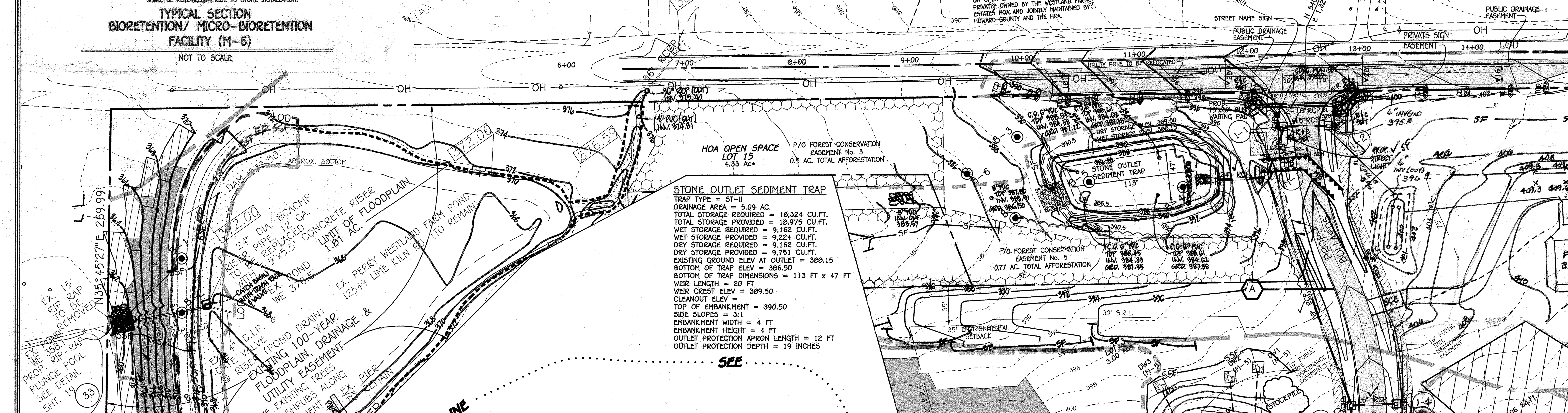
NOTE: THE BOTTOM OF EACH BIO-RETENTION FACILITY (M-6) SHALL BE ROTOTILLED PRIOR TO STONE INSTALLATION.

TYPICAL SECTION
BIORETENTION/ MICRO-BIORETENTION FACILITY (M-6)

NOT TO SCALE

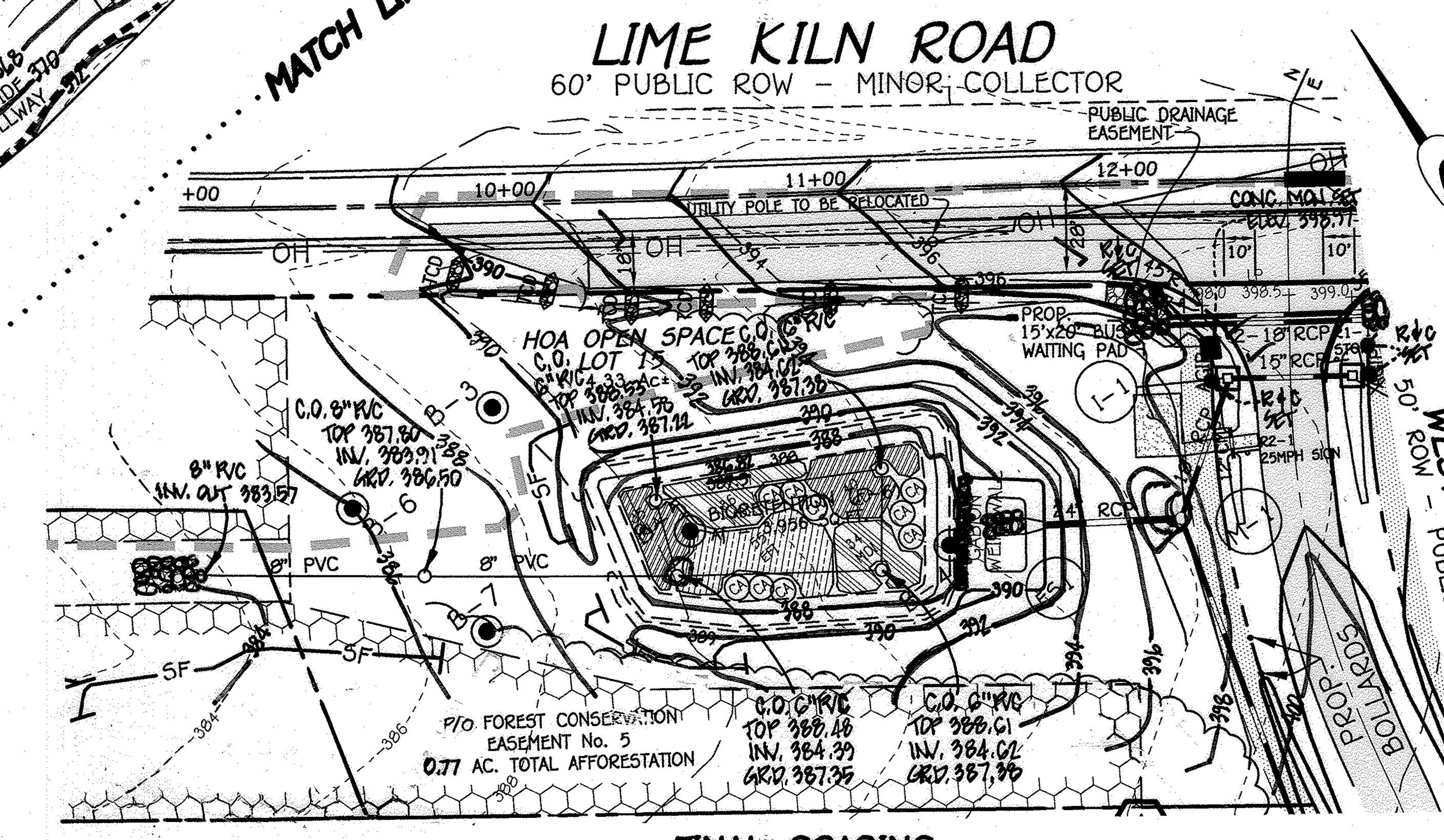
STORMWATER MANAGEMENT PRACTICES

AREA ID	LOCATION	ADDRESS	DRAINAGE AREA SF.	% IMPERVIOUS	ESDv REQUIRED CuFt.	ESDv PROVIDED CuFt.	MICRO BIO-RETENTION M-6 (Y/N)
MB #1	LOT 14	12505 WESTLAND CT	20,576	14%	870	1162	Y



STONE OUTLET SEDIMENT TRAP

TRAP TYPE = ST-II
DRAINAGE AREA = 5.09 AC.
TOTAL STORAGE REQUIRED = 18,324 CU.FT.
TOTAL STORAGE PROVIDED = 18,975 CU.FT.
WET STORAGE REQUIRED = 9,162 CU.FT.
WET STORAGE PROVIDED = 9,224 CU.FT.
DRY STORAGE REQUIRED = 9,162 CU.FT.
DRY STORAGE PROVIDED = 9,751 CU.FT.
EXISTING GROUND ELEV AT OUTLET = 388.15
BOTTOM OF TRAP ELEV = 386.50
BOTTOM OF TRAP DIMENSIONS = 113 FT x 47 FT
WEIR LENGTH = 20 FT
WEIR CREST ELEV = 389.50
CLEANOUT ELEV =
TOP OF EMBANKMENT = 390.50
SIDE SLOPES = 3:1
EMBANKMENT WIDTH = 4 FT
EMBANKMENT HEIGHT = 4 FT
OUTLET PROTECTION APRON LENGTH = 12 FT
OUTLET PROTECTION DEPTH = 19 INCHES



FINAL GRADING
IN AREA OF SEDIMENT TRAP FOR CONSTRUCTION OF BIORETENTION

SCALE: 1"=50'

NOTE:
STANDARD FENCING IS TO BE REPLACED BY "SUPER" SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

PLAN VIEW
SCALE: 1"=50'

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

DATE	REVISION
6/29/22	REVISED LOT 14 LAYOUT
6/6/17	REVISED GRADING OF BERM AT REAR OF LOT 3
11/16/16	ADD PROPOSED GRADING FOR A BERM ON LOT 3 & ADD STREET LIGHTS

BUILDER/DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, FOR SEDIMENT AND EROSION CONTROL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 2-1-16

ENGINEER'S CERTIFICATE

"I/WE 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."

Stephanie Tuite — SIGNATURE OF ENGINEER — DATE 1/29/16

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED: John R. Robertson — HOWARD SOIL CONSERVATION DISTRICT — DATE 2/2/16

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 2/22/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6-21-16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3-2-16

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE — P.E. NO. 13204 — DATE: 11/22/20

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER, PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

OWNERS

LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

AND

PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER

WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
5485 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410-997-8800

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

SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
BeB	Benevola silt loam, 3 to 8 percent slopes	C	0.43
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.28
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.28
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.43
MaC	Manor loam, 8 to 15 percent slopes	B	0.28
MaD	Manor loam, 15 to 25 percent slopes	B	0.28
MkF	Manor-Brinklow Complex, 25 to 65 percent slopes, very rocky	B	0.32
WhB	Wiltshire silt loam, 3 to 8 percent slopes	C	0.20

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. 38386, EXPIRATION DATE: 01/12/2016.

Signature Of Professional Engineer — DATE 1/29/16

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

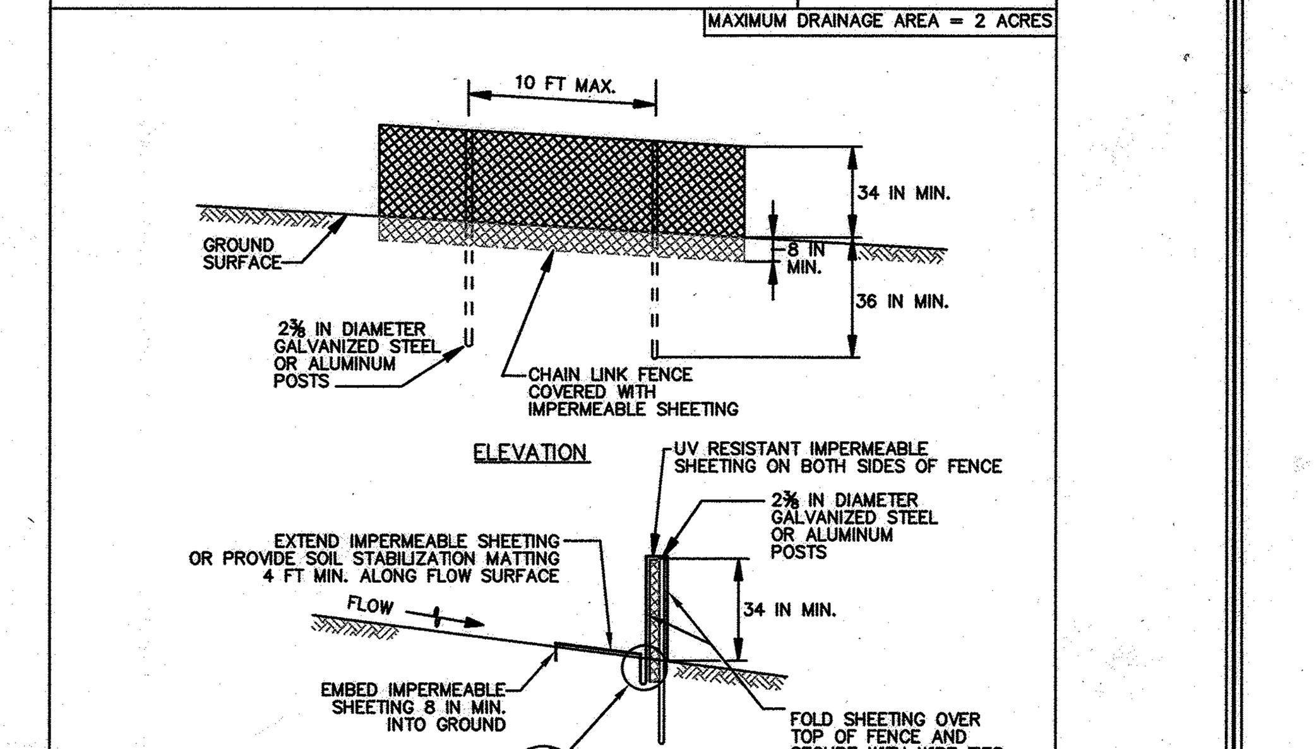
NOTE:
THIS PLAN IS TO BE USED FOR INDIVIDUAL DRIVEWAYS AND HOUSE CONSTRUCTION ALONG WITH ROAD & STORMWATER MANAGEMENT CONSTRUCTION.

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
412	EXISTING 2' CONTOURS	402	PROPOSED CONTOUR
410	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION
GgB / GgC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE
	EXISTING TREELINE		PROPOSED TREELINE
	15% TO 24.9% STEEP SLOPES		PROPOSED PAVING
	25% AND GREATER STEEP SLOPES	544	BORING (PERC) TEST HOLE
FP	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	SF	SILT FENCE
	STREAM BANK BUFFER	ECM	EROSION CONTROL MATTING
	EXISTING CENTERLINE OF STREAM	SSF	SUPER SILT FENCE
ST1	SPECIMEN TREE	DF	DIVERSION FENCE
	PROPOSED FOREST CONSERVATION EASEMENT	SCE	STABILIZES CONSTRUCTION ENTRANCE
TPF	TREE PROTECTIVE FENCING		DRAINAGE AREA DIVIDE

DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL: DF
MAXIMUM DRAINAGE AREA = 2 ACRES



CONSTRUCTION SPECIFICATIONS

1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING 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

AS-BUILT 11/22/20

GRADING AND EROSION & SEDIMENT CONTROL PLAN
WESTLAND FARM ESTATES

LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 11 OF 19

F-15-038

"AS-BUILT"

NOTE:
1. THIS PLAN IS TO BE USED FOR INDIVIDUAL DRIVEWAYS AND HOUSE CONSTRUCTION ALONG WITH ROAD & STORMWATER MANAGEMENT CONSTRUCTION.

2. STANDARD FENCING IS TO BE REPLACED BY "SUPER" SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
BeB	Benevola silt loam, 3 to 8 percent slopes	C	0.43
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.28
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.28
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.43
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SIGNATURE OF DEVELOPER — DATE 12-4-16

ENGINEER'S CERTIFICATE

"I/WE 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 12/9/15

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED:
HOWARD SOIL CONSERVATION DISTRICT — DATE 12/10/15

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 2/22/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6.21.16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.2.16

OWNERS
LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922
AND
PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER
WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
5485 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
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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. 38386, EXPIRATION DATE: 01/12/2016.

Signature of Professional Engineer — DATE 12/9/15

STATE OF MARYLAND · STEPHANIE T. FISHER · No. 38386 · PROFESSIONAL ENGINEER

DATE	REVISION
12/17/19	REVISE HSE. LOCD & DRIVEWAY, LOT 13
6/6/17	REVISE NOTES.

PLAN VIEW
SCALE: 1"=50'

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

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
412	EXISTING 2' CONTOURS	482	PROPOSED CONTOUR
410	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION
GgB / GgC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE
	EXISTING TREELINE		PROPOSED TREELINE
	15% TO 24.9% STEEP SLOPES		PROPOSED PAVING
	25% AND GREATER STEEP SLOPES	544	BORING (PERC) TEST HOLE
FP	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	SF	SILT FENCE
	STREAM BANK BUFFER	ECM	EROSION CONTROL MATTING
	EXISTING CENTERLINE OF STREAM	SSF	SUPER SILT FENCE
ST1	SPECIMEN TREE	DF	DIVERSION FENCE
	PROPOSED FOREST CONSERVATION EASEMENT		STABILIZES CONSTRUCTION ENTRANCE
TPF	TREE PROTECTIVE FENCING		DRAINAGE AREA DIVIDE

AS-BUILT CERTIFICATION

Note: There is no "AS BUILT" information provided on this sheet.

CHARLES J. CARNOCK P.E. #13201 — Date 11/22/20

GRADING AND EROSION & SEDIMENT CONTROL PLAN

WESTLAND FARM ESTATES

LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 12 OF 19

F-15-038

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THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

INLET DRAINAGE AREA INFORMATION				
DRAINAGE AREA	INLET #	Tc	C	AREA
A	I-1	10 MIN.	0.87	0.19 AC.
B	I-2	10 MIN.	0.34	1.38 AC.
C	I-3	10 MIN.	0.73	0.13 AC.
D	I-4	10 MIN.	0.38	0.79 AC.
E	I-5	10 MIN.	0.69	0.49 AC.
F	I-6	10 MIN.	0.38	1.62 AC.

LIME KILN ROAD

60' PUBLIC ROW - MINOR COLLECTOR

THE STORMWATER MANAGEMENT FACILITY ON OPEN SPACE LOT 15 WILL BE PRIVATELY OWNED BY THE WESTLAND FARM ESTATES HOA AND JOINTLY MAINTAINED BY HOWARD COUNTY AND THE HOA.

HOA OPEN SPACE LOT 15 4.33 Ac±

P/O FOREST CONSERVATION EASEMENT No. 3 0.5 AC. TOTAL AFFORESTATION

P/O FOREST CONSERVATION EASEMENT No. 5 0.77 AC. TOTAL AFFORESTATION

20' PRIVATE DRAINAGE & UTILITY EASEMENT AND ACCESS TO POND

LIMIT OF FLOODPLAIN 1.81 AC.

EX. PERRY WESTLAND FARM POND 12549 LIME KILN RD TO REMAIN DRAINAGE AREA = 67 AC.

EXISTING 100-YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT

REMOVE EXISTING TREES AND ANY SHRUBS ALONG THE EMBANKMENT

EX. PIPE TO REMAIN

PROPOSED 44' WIDE EMERGENCY SPILLWAY

24" DIA. BCAMP RISER PIPE, 12 GA. REPLACED WITH 5'X5.5' CONCRETE RISER

EX. 4" D.I.P. GATE VALVE & RISER (POND DRAIN)

EX. RIP-RAP TO BE REMOVED

EX. 15" RCP TO BE REMOVED

EX. RIP-RAP - BASIN DETAIL SHT. 15

PUBLIC DRAINAGE & UTILITY EASEMENT

35' ENVIRONMENTAL SETBACK

30' B.R.L.

60' B.R.L.

75' B.R.L.

PUBLIC DRAINAGE EASEMENT

PRIVATE SIGN EASEMENT

UTILITY POLE TO BE RELOCATED

CF 323 LF @ 6PC's

PROP. 15'x26' BUS WAITING PAD

BIORETENTION (F-6) A = 3,956 SQ.FT.

MICRO-BIO-1 (M-O) (SF 1,055 SQ.FT.)

KLITSBERG (M-O) (SF 1,191 SQ.FT.)

WESTLAND COURT 50' ROW - PUBLIC ACCESS PLACE

10' PUBLIC WATER MAINTENANCE EASEMENT

EX HOUSE TO REMAIN

WESTLAND FARM ESTATES PLAN NO. 21406

LOT 1

LOT 2

LOT 3 3.00 Ac±

LOT 4 3.00 Ac±

LOT 5 3.04 Ac±

LOT 6 3.07 Ac±

LOT 10 3.88 Ac±

LOT 11 5.00 Ac±

LOT 12 3.09 Ac±

LOT 14 3.00 Ac±

OWNERS	DEVELOPER
LIME KILN, LLC 12549 LIME KILN ROAD FULTON, MARYLAND 20759-0460 410-792-2922 AND PERRY C. WESTLAND, JR. 12549 LIME KILN ROAD FULTON, MARYLAND 20759-0460 410-792-2922	WILLIAMSBURG GROUP, LLC C/O BOB CORBETT 5405 HARFORD FARM ROAD, SUITE 200 COLUMBIA, MARYLAND 21044 410-997-8600

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

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 2/22/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6-21-16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.2.16

PROFESSIONAL CERTIFICATION

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Signature Of Professional Engineer — DATE 12/2/15

STATE OF MARYLAND · STEPHANIE T. FISHER · No. 36386 · PROFESSIONAL ENGINEER

DATE	REVISION
12/17/19	REVISE HYD. MOD. & DRIVEWAY, LOTS 5 & 19
5/6/19	REMOVE LOT 7
4/6/17	REVISED GRADING OF BERM ON LOTS 5 & 6 AND REVISED PROPOSED GRADING ON LOT 7
11/10/16	ADD PROPOSED GRADING FOR A BERM ON LOTS 3, 4 & ADD STREET LIGHTS

STORM DRAIN DRAINAGE AREA MAP

WESTLAND FARM ESTATES

LOTS 3 THRU 14 AND OPEN SPACE LOT 15

ZONED RR-DEO

TAX MAP No. 45 GRID No. 5 PARCEL No. 28

FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1" = 50' DATE: DECEMBER, 2015

SHEET 13 OF 19

F-15-038

"AS-BUILT"

AS BUILT 11/28/06

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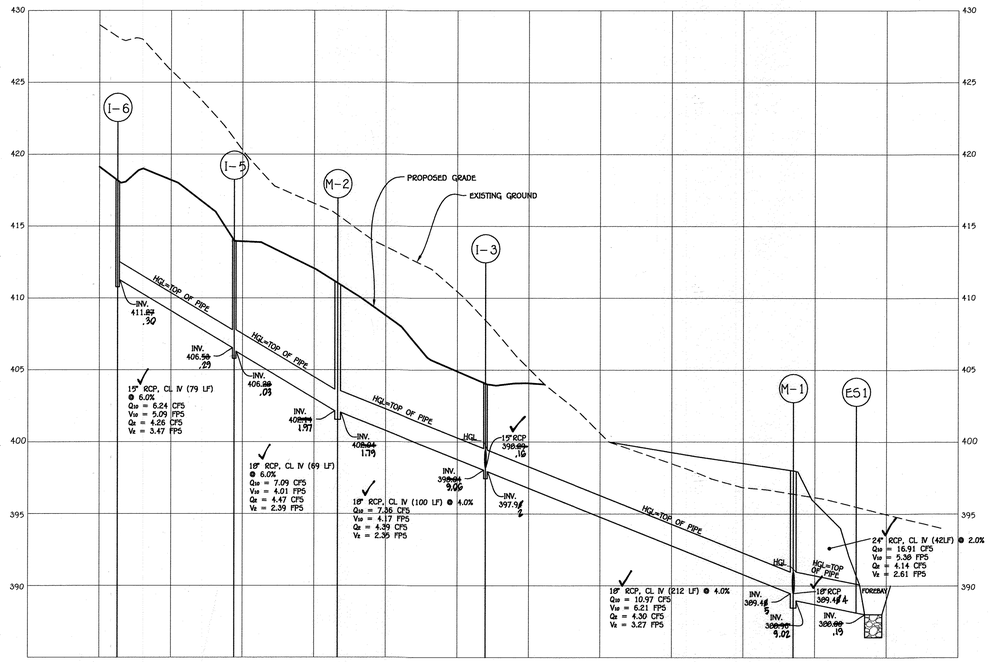
PIPE SCHEDULE - WESTLAND COURT		
TYPE	SIZE	QUANTITY
RCP, CL IV	15"	154 LF
RCP, CL IV	18"	549 LF
RCP, CL IV	24"	42 LF

PIPE SCHEDULE - BIORETENTION 5		
TYPE	SIZE	QUANTITY
PVC, SCHEDULE 40, PERFORATED	6"	180 LF
PVC, SCHEDULE 40, SOLID	8"	147 LF

STRUCTURE SCHEDULE

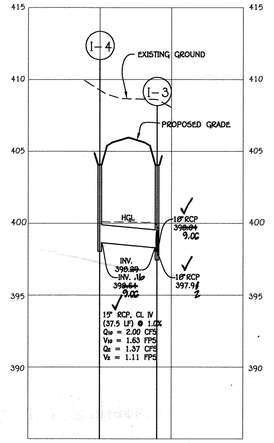
STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	LOCATION	TYPE	REMARKS
I-6	418.~~22~~.10	-----	411.~~87~~.30	WESTLAND CT STA 5+72.22~~,1~~ ~~19~~' LT 19.5'	YARD ✓	D-4.14
I-5	413.90.~~66~~	406.~~50~~.~~19~~	406.~~29~~.03	WESTLAND CT STA ~~5+00.21~~ ~~19~~' RT 19.5'	YARD ✓	D-4.14
I-4	~~411.10~~ 409.70	-----	398.~~64~~ 9.06	WESTLAND CT STA 3+18.~~27~~ ~~29~~' LT 20.1'	YARD ✓	D-4.14
I-3	403.~~66~~.77	398.~~89~~.16 / 398.~~64~~ 9.06	397.9~~1~~2	WESTLAND CT STA 3+18.~~23~~ ~~20~~' LT 20.7'	YARD ✓	D-4.14
I-2	397.15~~6~~	-----	390.5~~8~~6	WESTLAND CT STA 0+63.~~36~~ ~~29~~' LT 19.7'	YARD ✓	D-4.14
I-1	397.~~15~~.51	390.~~45~~.08	~~389.90~~ 390.05	WESTLAND CT STA 0+63.~~36~~ ~~29~~' RT 20.4'	YARD ✓	D-4.14
M-2	411.~~19~~.70	402.~~11~~ 1.97	402.~~04~~ 1.79	WESTLAND CT STA 4+26.76, ~~6~~' RT 9.0'	MANHOLE ✓	G-5.12
M-1	398.0~~8~~7	389.~~16~~ 4 / 389.~~48~~ 5	388.~~96~~ 9.02	WESTLAND CT STA 1+02, 38.~~8~~' RT 38.4'	MANHOLE ✓	G-5.12
E51 (PRIVATELY OWNED & MAINTAINED)	-----	-----	~~390.00~~ 388.19	WESTLAND CT STA 0+99.54, ~~28.5~~' RT 5.5'	24" RCP END SECTION ✓	D-5.51
H2	TW 399.~~30~~.91	.~~47~~ 396.~~30~~ .~~43~~	-----	WESTLAND CT STA 0+~~40.52~~ 7.~~20~~ .16 / 7.~~20~~ 23.~~39~~' LT	TYPE "A" HEADWALL (DOUBLE WIDTH TO ACCOMMODATE DUAL PIPES) ✓	D-5.11
H1	TW 398.~~40~~.~~62~~	-----	~~398.40~~.61	WESTLAND CT STA 0+~~42.65~~ 7.~~20~~ 32.~~80~~' RT	TYPE "A" HEADWALL (DOUBLE WIDTH TO ACCOMMODATE DUAL PIPES) ✓	D-5.11

NOTE: LOCATION OF YARD INLETS AND MANHOLES IS TO CENTER OF STRUCTURE. LOCATION OF END SECTION IS TO JUNCTION WITH PIPE. LOCATION OF HEADWALL IS TO MIDDLE OF WALL BETWEEN DUAL PIPES AT JUNCTION WITH PIPE.



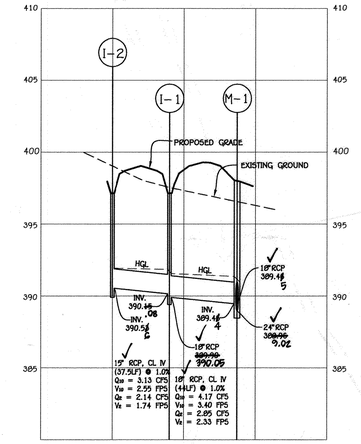
STORM DRAIN PROFILE FROM I-6 TO E51

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'



STORM DRAIN PROFILE FROM I-4 TO I-3

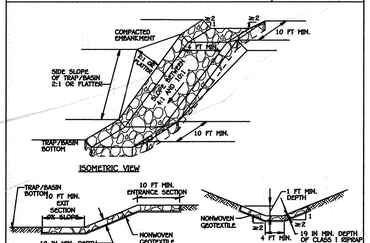
VERTICAL SCALE: 1"=5'



STORM DRAIN PROFILE FROM I-2 TO M-1

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

DETAIL D-3-1 RIPRAP INFLOW PROTECTION — STANDARD SYMBOL: RIP

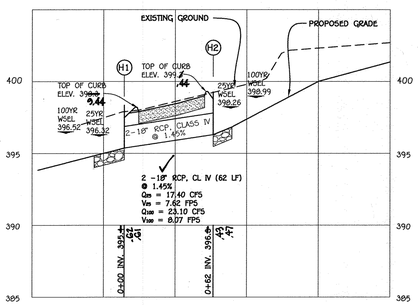


CONSTRUCTION SPECIFICATIONS

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 ($D \times D_{50}$) 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



CULVERT

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
Approved: Howard SCD
2/17/16

APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS	2/22/2016 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT	6.21.16 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	3.2.16 DATE

OWNERS

LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

AND

PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER

WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
5405 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410-997-8800

FISHER, COLLINS & CARTER, INC.
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ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

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Stephanie Smith 12/2/15
Signature Of Professional Engineer — DATE

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

AS BUILT 11/20/20

STORM DRAIN PROFILES

WESTLAND FARM ESTATES

LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 14 OF 19

F-15-038

"AS-BUILT"

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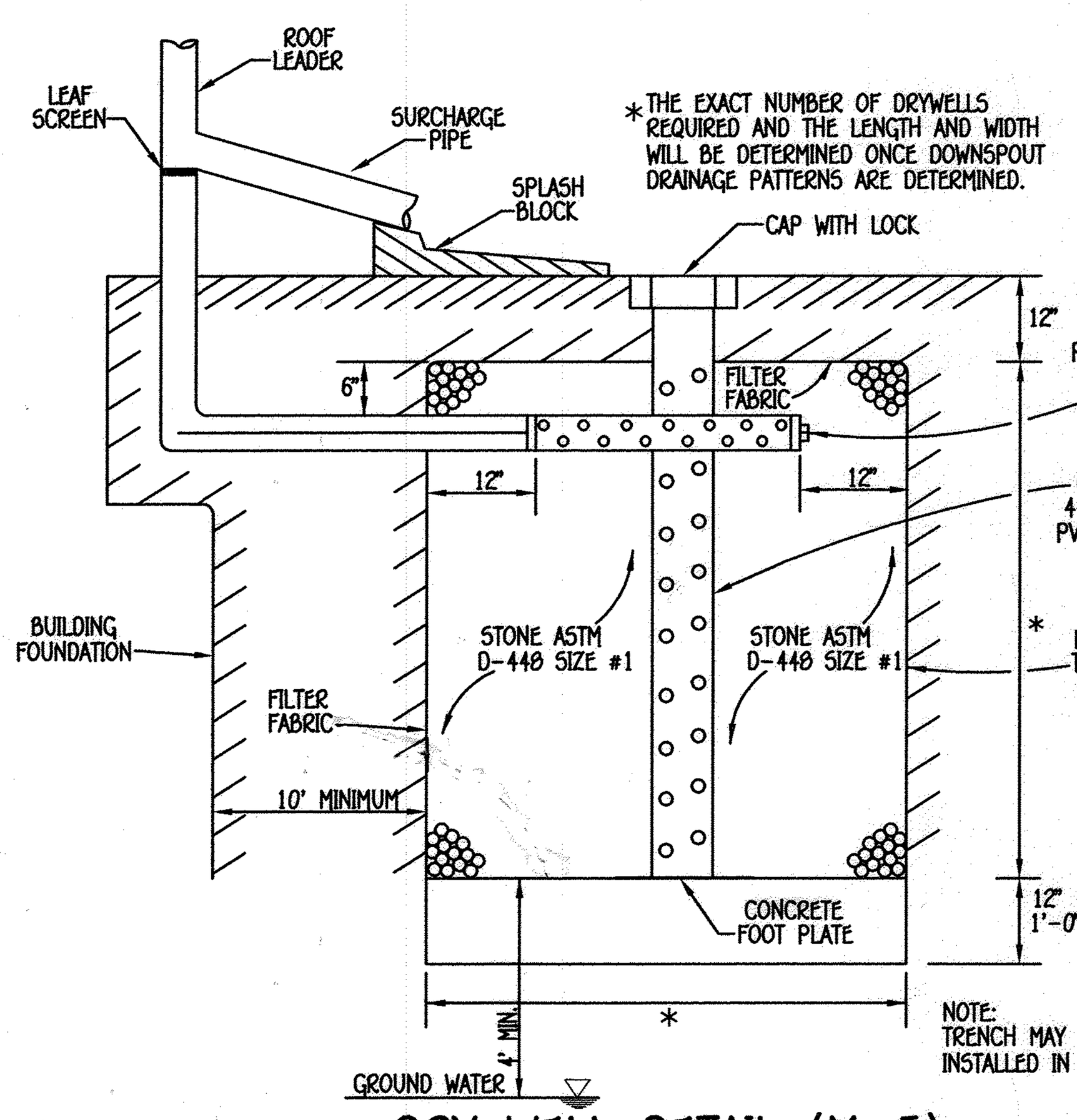
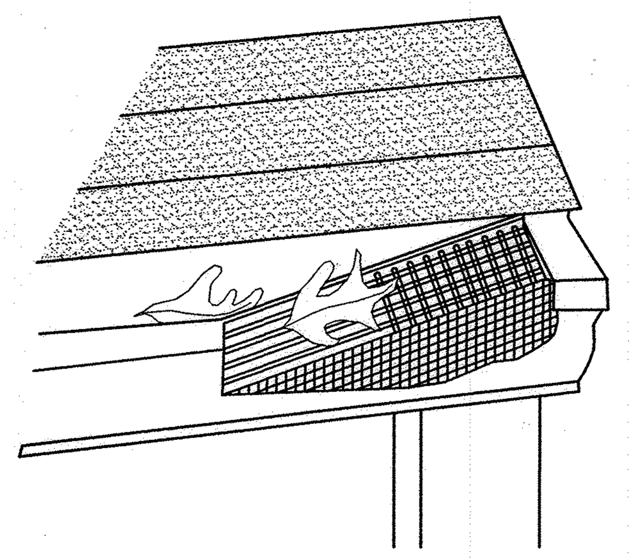
Table B.4. Materials Specifications for Micro-Bioretention, Rain Gardens & Landscape Infiltration

Material	Specification	Size	Notes
Plantings	see Appendix A; Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand 60-65% compost 35-40% or sandy loam 30% coarse sand 30% compost 40%		USDA soil types loamy sand or sandy loam; clay content <5%
Organic Content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum
Pea gravel diaphragm	pea gravel: ASTM-D-448	No. 8 or No. 9 (1/8" to 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	No. 57 or No. Aggregate (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4 inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f = 3500 psi at 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n.a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.



DRY WELL DETAIL (M-5)
NOT TO SCALE



GUTTER DRAIN FILTER DETAIL
NOT TO SCALE

STORMWATER MANAGEMENT NOTES

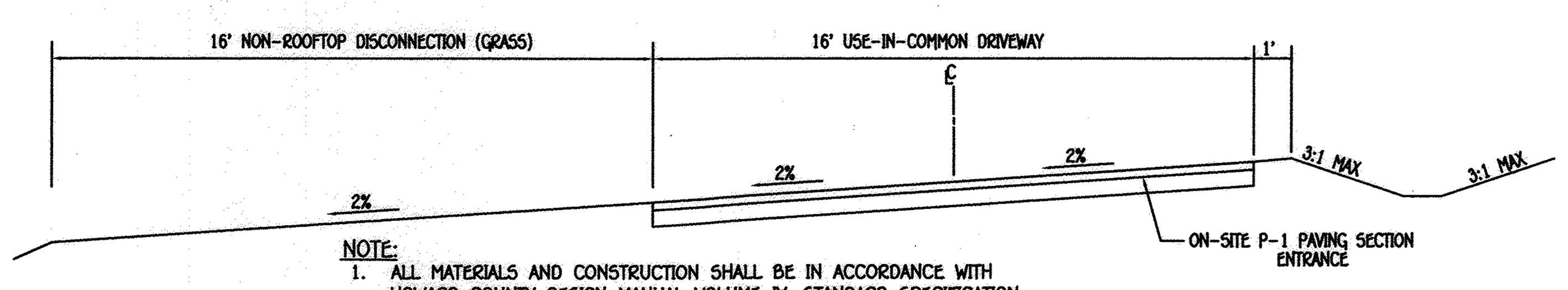
1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
2. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 1,000 SQ. FT. OR LESS.
3. DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET.
4. FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

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

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

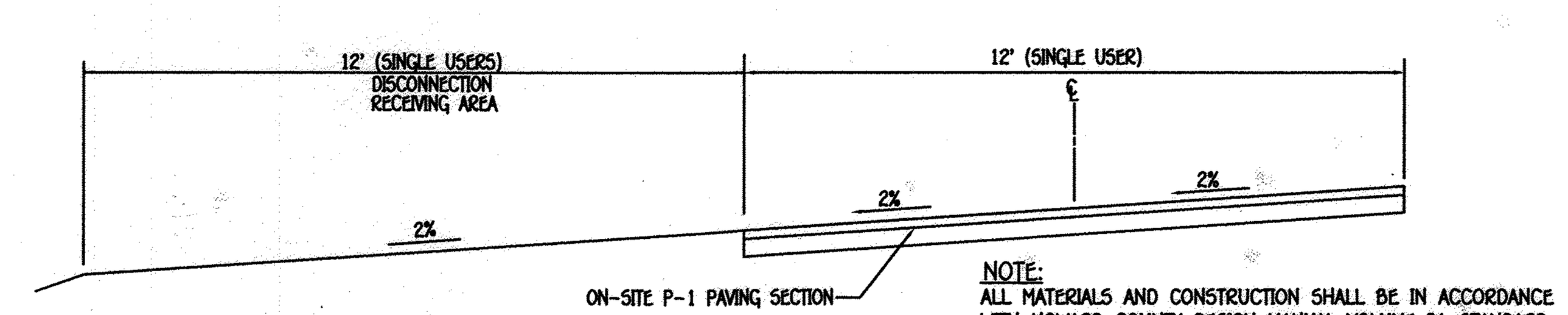
OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED, DISCONNECTION OF ROOFTOP RUNOFF (N-1) DISCONNECTION OF NONROOFTOP RUNOFF (N-2)

1. MAINTENANCE OF AREAS RECEIVING DISCONNECTION RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.



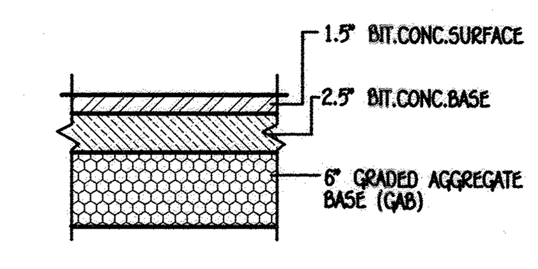
NOTE:
1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.
2. SWALES ARE FOR CONVEYANCE OF RUNOFF AND NOT UTILIZED FOR TREATMENT CREDIT.

16' USE-IN-COMMON DRIVEWAY CROSS SLOPE SECTION
NOT TO SCALE



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

TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION
NOT TO SCALE



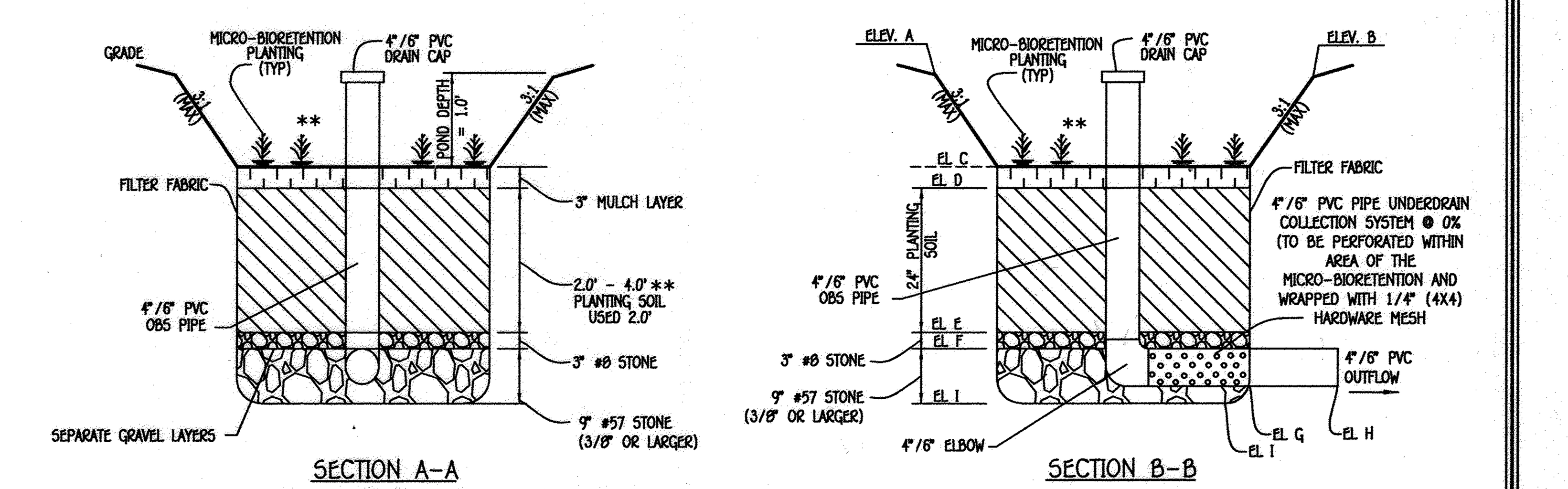
P-1 DRIVEWAY PAVING SECTION
NOT TO SCALE

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

A. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
B. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS AND REPLACE ALL DEFICIENT STAKES AND WIRES.
C. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

MICRO-BIORETENTION									
BIORETENTION FILTER	A	B	C	D	E	F	G	H	I
1	394.00	394.00	393.00	392.75	390.75	390.50	390.00	389.00	389.75
2	400.00	400.00	399.00	398.75	396.75	396.50	396.00	395.00	395.75
3	400.00	400.00	399.00	398.75	396.75	396.50	396.00	395.00	395.75
4	403.50	403.50	403.25	403.00	401.00	400.75	400.25	399.80	400.00
5	408.00	408.00	407.00	406.75	404.75	404.50	404.00	403.83	403.25

MICRO-BIORETENTION PLANT MATERIAL					
MICRO-BIO 1 QUANTITY	MICRO-BIO 2 QUANTITY	MICRO-BIO 3 QUANTITY	MICRO-BIO 4 QUANTITY	NAME	MAXIMUM SPACING (FT.)
60	60	55	50	MIXED PERENNIALS	1.5 TO 3.0 FT.
3	3	1	1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION



MICRO-BIORETENTION DETAIL (M-6)
NOT TO SCALE

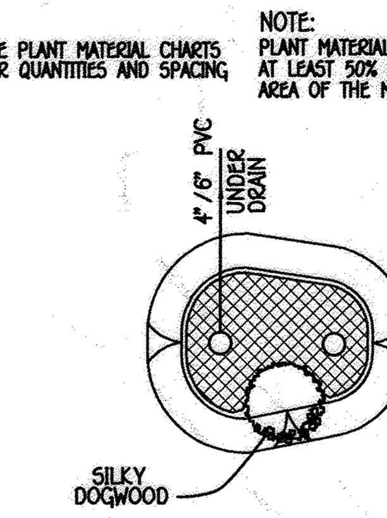
NOTE: 4" PVC TO BE UTILIZED FOR ON-LOT MICRO-BIORETENTION FACILITIES. 6" PVC TO BE UTILIZED FOR BIORETENTION FACILITY LOCATED ON OPEN SPACE LOT 15.

*MIXED PERENNIALS
CUT-LEAF CONEFLOWER (2' SP.)
BEEBALM (2' SP.)
JOE-PYE-WEED (3' SP.)

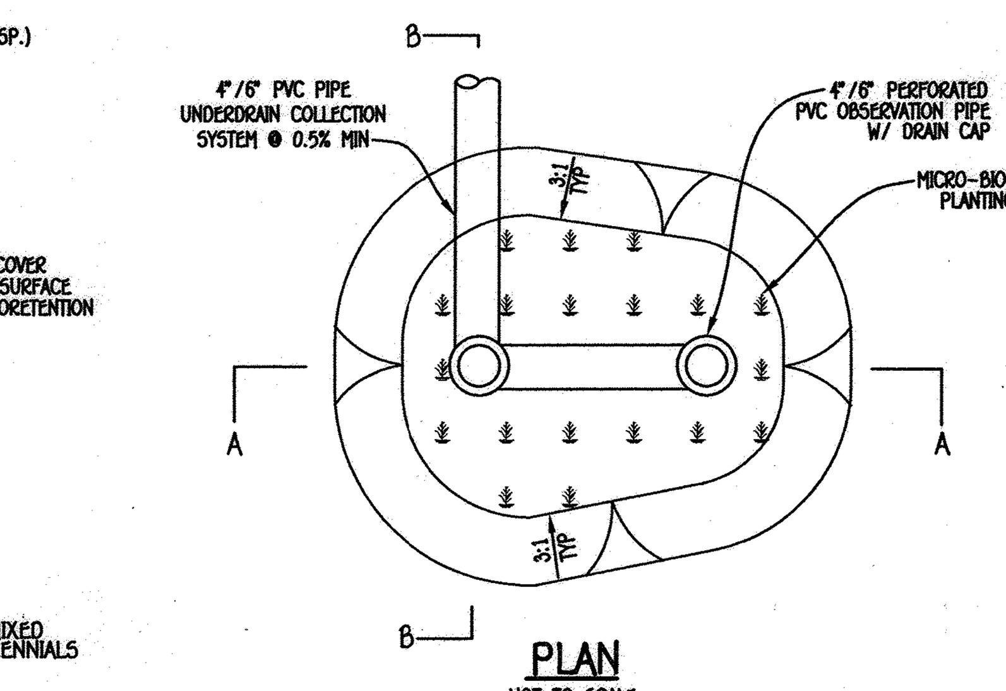
SILKY DOGWOOD

* SEE PLANT MATERIAL CHARTS FOR QUANTITIES AND SPACING

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



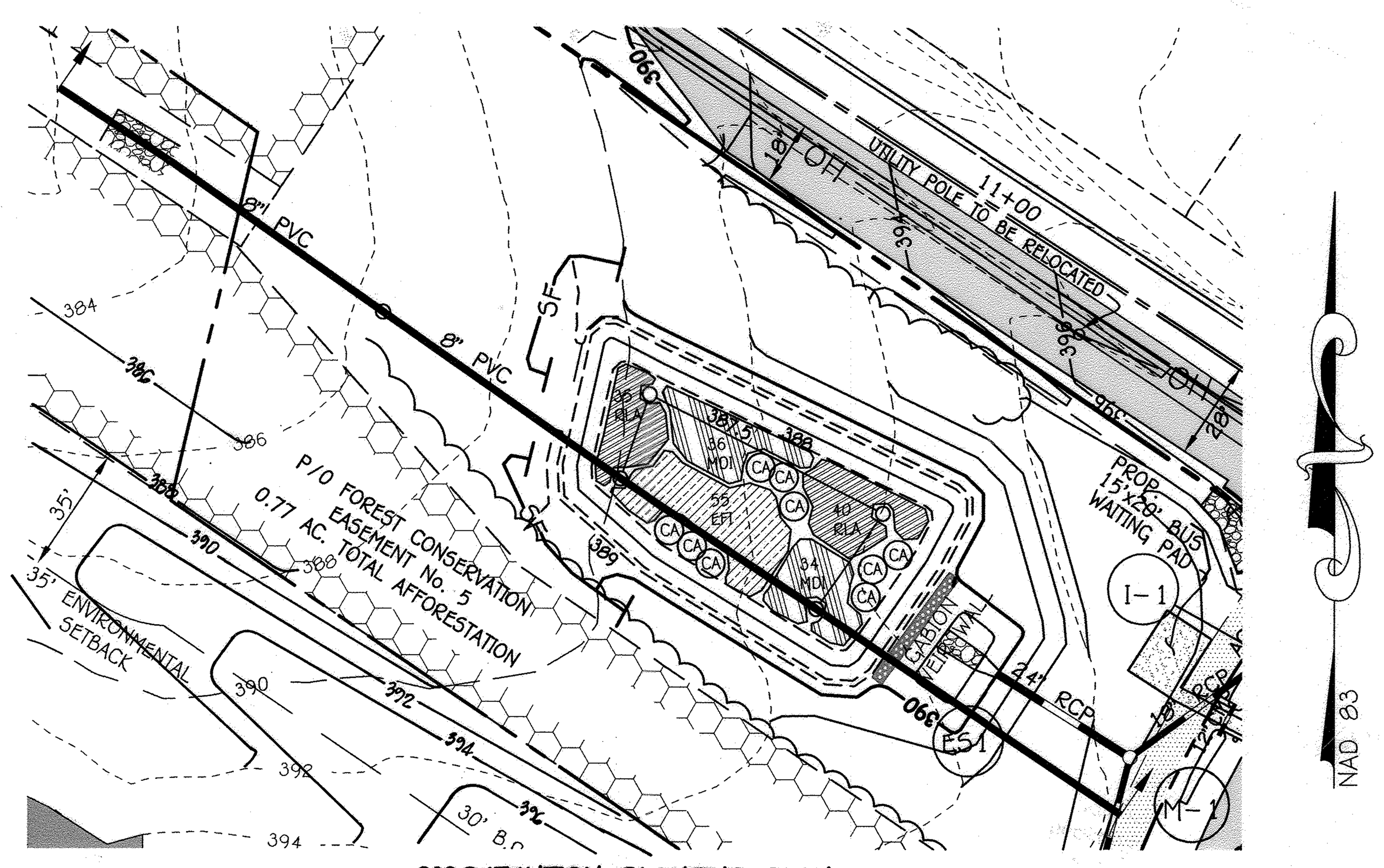
MICRO-BIORETENTION PLANTING DETAIL
NOT TO SCALE



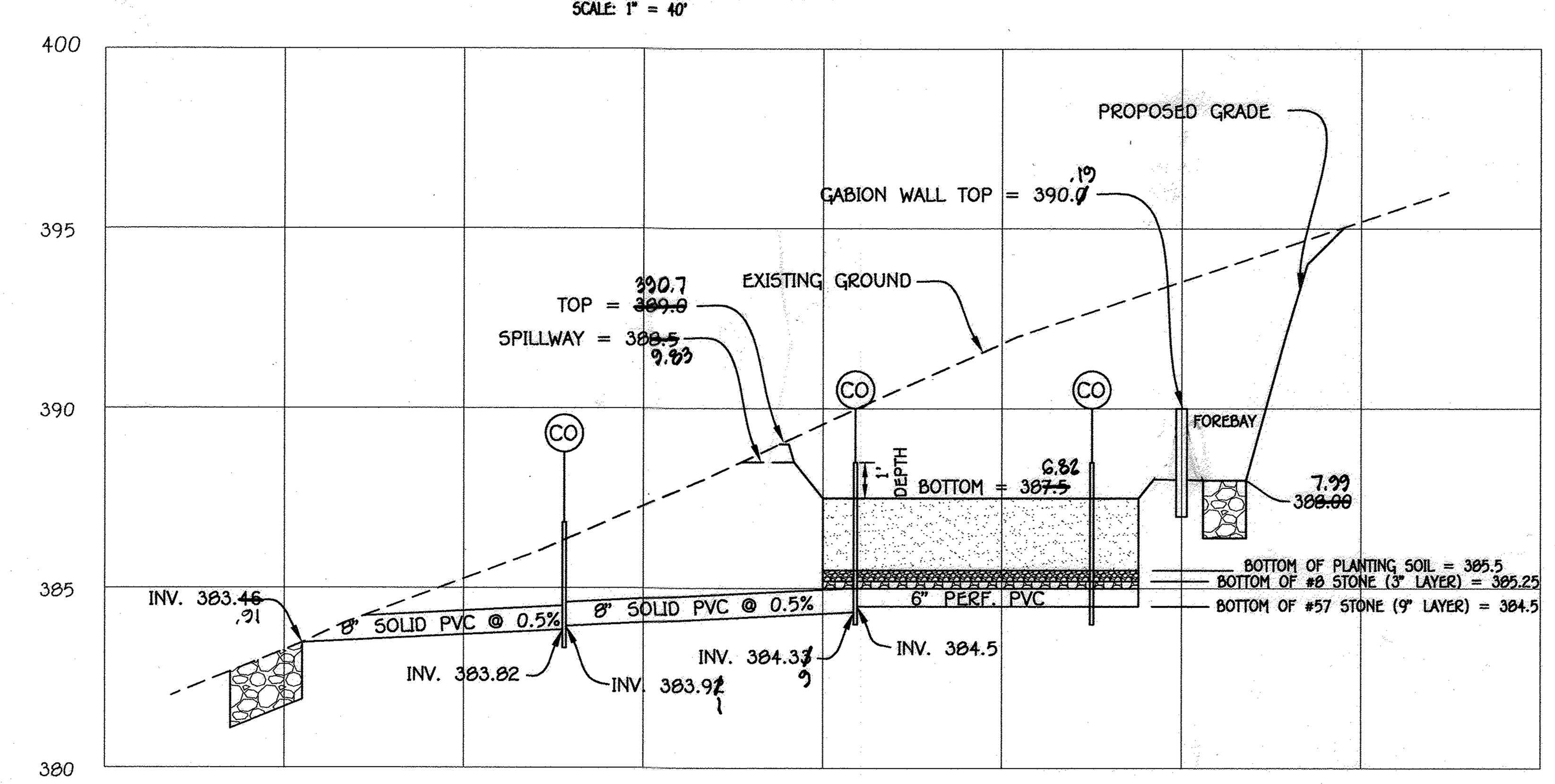
PLAN
NOT TO SCALE

DRY WELL CHART					
DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L W D
DW1	894 SQ. FT.	72 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW2	836 SQ. FT.	71 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW3	778 SQ. FT.	67 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW4	890 SQ. FT.	71 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW5	710 SQ. FT.	57 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW6	957 SQ. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW7	646 SQ. FT.	52 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW8	1,085 SQ. FT.	86 C.F.	102 C.F.	100%*	8' x 8' x 4'
DW9	957 SQ. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW10	646 SQ. FT.	52 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW11	1,085 SQ. FT.	86 C.F.	102 C.F.	100%*	8' x 8' x 4'
DW12	710 SQ. FT.	57 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW13	906 SQ. FT.	72 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW14	1,078 SQ. FT.	86 C.F.	87 C.F.	100%*	8' x 8' x 3'
DW15	952 SQ. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW16	1,012 SQ. FT.	81 C.F.	87 C.F.	100%*	8' x 8' x 3'
DW17	957 SQ. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW18	646 SQ. FT.	52 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW19	1,085 SQ. FT.	86 C.F.	102 C.F.	100%*	8' x 8' x 4'
DW20	710 SQ. FT.	57 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW21	710 SQ. FT.	57 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW22	1,085 SQ. FT.	86 C.F.	102 C.F.	100%*	8' x 8' x 4'
DW23	646 SQ. FT.	52 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW24	957 SQ. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW25	361 SQ. FT.	29 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW26	952 SQ. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW27	572 SQ. FT.	46 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW27A	585 SQ. FT.	47 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW28	867 SQ. FT.	69 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW28A	769 SQ. FT.	61 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW29	710 SQ. FT.	57 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW30	1085 SQ. FT.	86 C.F.	102 C.F.	100%*	8' x 8' x 4'
DW31	646 SQ. FT.	52 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW32	957 SQ. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'

* AREA OF TREATMENT EXCEEDS THAT REQUIRED.



BIORETENTION PLANTING PLAN
SCALE: 1" = 40'



SECTION THRU BIORETENTION (F-6) FACILITY
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

NOTE: CLEANOUTS WITHIN THE FACILITY TO HAVE DRAIN CAPS.

AS-BUILT CERTIFICATION FOR PSWM
I hereby certify that the facility shown on the plan was constructed as shown on the "AS BUILT" plans and complies with the approved plans and specifications. I have verified that the contributing drainage area is sufficiently stabilized to prevent clogging of the underground SWM Facility.

CHARLES J. CROSS SR. P.E. #13204 — 11/22/20
Date

AS BUILT 11/22/20

BIORETENTION PLANT LIST				
SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE	SPACING
EFI	55	EUTROCHIUM FISTULOSUM 'ATROPURPUREA' JOE-PYE-WEED	BARE ROOT OR PLUG	3' SPACING
MDI	70	MONARDA DIDYMA BEEBALM	BARE ROOT OR PLUG	2' SPACING
RLA	75	RUDBECKIA LACINIATA CUTLEAF CONEFLOWER	BARE ROOT OR PLUG	2' SPACING
CA	9	CORNUS AMOMUM SILKY DOGWOOD	B&B OR CONT.	6' -8' SPACING

DATE	REVISION
11/7/18	REVISE DRY WELL CHART (DW13 THRU DW16)
5/2/18	REVISE MICRO-BIORETENTION CHART
11/16/16	ADD PROPOSED GRADING FOR A BERM ON LOT 3

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 2/22/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6.21.16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.2.16

OWNERS
LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

AND

PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER
WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
5485 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410-997-8800

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. 38386, EXPIRATION DATE: 01/12/2016.

Signature of Professional Engineer — DATE 12/4/15

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

STORMWATER MANAGEMENT NOTES & DETAILS
WESTLAND FARM ESTATES
LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 15 OF 19

F-15-038

"AS-BUILT"

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.

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.

DEVELOPER'S / BUILDER'S CERTIFICATE

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

[signature] 1-4-16
NAME DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
[signature] 2/22/2016
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[signature] 6-21-16
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
[signature] 3-2-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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.

FOREST CONSERVATION WORKSHEET
VERSION 1.0

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	45.28
B. DEDUCTIONS (AREA WITHIN 100 YEAR FLOODPLAIN)	1.62
C. NET TRACT AREA	43.66
LAND USE CATEGORY: MEDIUM DENSITY RESIDENTIAL	
D. AFFORESTATION THRESHOLD (NET TRACT AREA [C] x 20%)	8.73
E. CONSERVATION THRESHOLD (NET TRACT AREA [C] x 25%)	10.92
EXISTING FOREST COVER	
F. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	6.60
G AREA OF FOREST ABOVE CONSERVATION TRESHOLD	0
BREAKEVEN POINT	
H. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	0
BREAKEVEN POINT	0
I. CLEARING PERMITTED WITHOUT MITIGATION	0
PROPOSED FOREST CLEARING	
J. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE	0.61
K. TOTAL AREA OF FOREST TO BE RETAINED	5.99
PLANTING REQUIREMENTS	
L. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION TRESHOLD	0
M. REFORESTATION FOR CLEARING BELOW THE CONSERVATION TRESHOLD	1.22
N. CREDIT FOR RETENTION ABOVE THE CONSERVATION TRESHOLD	0
P. TOTAL REFORESTATION REQUIRED	1.22
Q. TOTAL AFFORESTATION REQUIRED	2.13
R. TOTAL PLANTING REQUIREMENT	3.35

NOTE: CREDIT TAKEN FOR LANDSCAPE PLANTINGS (7 TREES). SURETY TO BE BASED ON 1.53 ACRES DUE TO LANDSCAPE CREDIT. REMAINING 1.75 ACRES OF REQUIRED REFORESTATION TO BE SATISFIED BY USE OF A FOREST BANK, SDP-14-032FC, CHELSEA KNOLLS.

LANDSCAPING PLANT LIST

QTY.	KEY	NAME	SIZE
9	[symbol]	ACER RUBRUM 'RED SUNSET' (RED SUNSET RED MAPLE)	2.5"-3" CAL. FULL CROWN, B&B
12	[symbol]	TILIA CODATA 'GREENSPIRE' (GREENSPIRE LITTLELEAF LINDEN)	2.5"-3" CAL. FULL CROWN, B&B
10	[symbol]	QUERCUS ALBA (WHITE OAK)	2.5"-3" CAL. FULL CROWN, B&B
6	[symbol]	PLATANUS x ACERIFOLIA "BLOODGOOD" (BLOODGOOD LONDON PLANE)	2.5"-3" CAL. FULL CROWN, B&B
14	[symbol]	THUJA PLICATA (GIANT ARBORVITAE 'GREEN GIANT')	5' - 6' HT. B&B
6	○	TAXUS MEDIA 'HICKSII' (HICKS YEW)	2.5' - 3' HT. CONT./B&B

TOTAL: 37 SHADE TREES, 14 EVERGREENS, 6 SHRUBS

SPECIMEN TREE CHART

TREE No.	SIZE & DESCRIPTION	CONDITION	REMARKS
1	30" BLACK WALNUT	GOOD	TO REMAIN
2	50" SYCAMORE	GOOD	TO BE REMOVED
3	62" SYCAMORE	GOOD	TO BE REMOVED
4	30" TULIP POPLAR	GOOD	TO BE REMOVED
5	30" NORWAY MAPLE	GOOD	TO REMAIN

OWNERS
LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922
AND
PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER
WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
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FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

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.

FCE # 1B - 0.60 acres

PLANTING REQUIRED: 120 = 420 UNITS
PLANTING PROVIDED: 114 = 399 + 21 UNITS (LANDSCAPE CREDIT)

Qty	Species	Size (Spacing)
18	Acer rubrum - Red maple	1"cal. (15'o.c.)
14	Carya tomentosa - Mockernut Hickory	1"cal. (15'o.c.)
18	Carya glabra - Pignut Hickory	1"cal. (15'o.c.)
14	Cornus florida - Flowering Dogwood	1"cal. (15'o.c.)
14	Populus grandidentata - Bigtooth Aspen	1"cal. (15'o.c.)
18	Quercus alba - White oak	1"cal. (15'o.c.)
9	Quercus prinus - Chestnut Oak	1"cal. (15'o.c.)
9	Quercus rubra - Red Oak	1"cal. (15'o.c.)
5	Viburnum prunifolium - Blackhaw	2 gal.
5	Viburnum dentatum - Arrowwood Viburnum	2 gal.

114 trees & 10 shrubs

* Note: (1) SIZE PROPOSED TO BE UTILIZED AND PLANTED AT 200 TREES PER ACRE (200 TREES/ACRE X 060 ACRES = 120 TREES). SHRUBS (VIBURNUMS) NOT INCLUDED IN TOTAL QUANTITY.
(2) PLANTING UNITS:
3.5 UNITS = 1 - 1" CAL. TREE
7 UNITS = 1 - 2" CAL. TREE
(3) CREDIT TAKEN FOR LANDSCAPE PLANTINGS - 3 TREES = 21 PLANTING UNITS
(4) SURETY TO BE BASE ON 0.57 ACRES DUE TO LANDSCAPE CREDIT.

FCE # 3 - 0.50 acres

PLANTING REQUIRED: 50 = 350 UNITS
PLANTING PROVIDED: 46 = 322 + 28 UNITS (LANDSCAPE CREDIT)

Qty	Species	Size (Spacing)
8	Acer rubrum - Red maple	2"cal. (20'o.c.)
5	Carya tomentosa - Mockernut Hickory	2"cal. (20'o.c.)
8	Carya glabra - Pignut Hickory	2"cal. (20'o.c.)
5	Cornus florida - Flowering Dogwood	2"cal. (20'o.c.)
5	Populus grandidentata - Bigtooth Aspen	2"cal. (20'o.c.)
8	Quercus alba - White oak	2"cal. (20'o.c.)
3	Quercus prinus - Chestnut Oak	2"cal. (20'o.c.)
4	Quercus rubra - Red Oak	2"cal. (20'o.c.)
2	Viburnum prunifolium - Blackhaw	2 gal.
3	Viburnum dentatum - Arrowwood Viburnum	2 gal.

46 trees & 5 shrubs

* Note: (1) SIZE PROPOSED TO BE UTILIZED AND PLANTED AT 100 TREES PER ACRE (100 TREES/ACRE X 0.50 ACRES = 50 TREES). SHRUBS (VIBURNUMS) NOT INCLUDED IN TOTAL QUANTITY.
(1) PLANTING UNITS:
7 UNITS = 1 - 2" CAL. TREE
(2) CREDIT TAKEN FOR LANDSCAPE PLANTINGS (4 TREES) = 28 PLANTING UNITS
(3) SURETY TO BE BASED ON 0.46 ACRES DUE TO LANDSCAPE CREDIT.

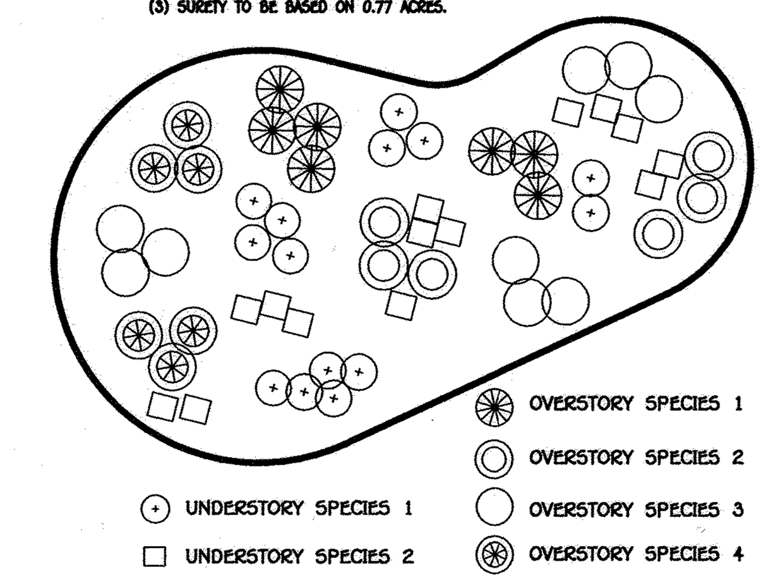
FCE # 5 - 0.77 acres

PLANTING REQUIRED: 154 = 539 UNITS
PLANTING PROVIDED: 154 = 539 UNITS

Qty	Species	Size (Spacing)
24	Acer rubrum - Red maple	1"cal. (15'o.c.)
18	Carya tomentosa - Mockernut Hickory	1"cal. (15'o.c.)
24	Carya glabra - Pignut Hickory	1"cal. (15'o.c.)
16	Cornus florida - Flowering Dogwood	1"cal. (15'o.c.)
18	Populus grandidentata - Bigtooth Aspen	1"cal. (15'o.c.)
24	Quercus alba - White oak	1"cal. (15'o.c.)
12	Quercus prinus - Chestnut Oak	1"cal. (15'o.c.)
18	Quercus rubra - Red Oak	1"cal. (15'o.c.)
2	Viburnum prunifolium - Blackhaw	2 gal.
3	Viburnum dentatum - Arrowwood Viburnum	2 gal.

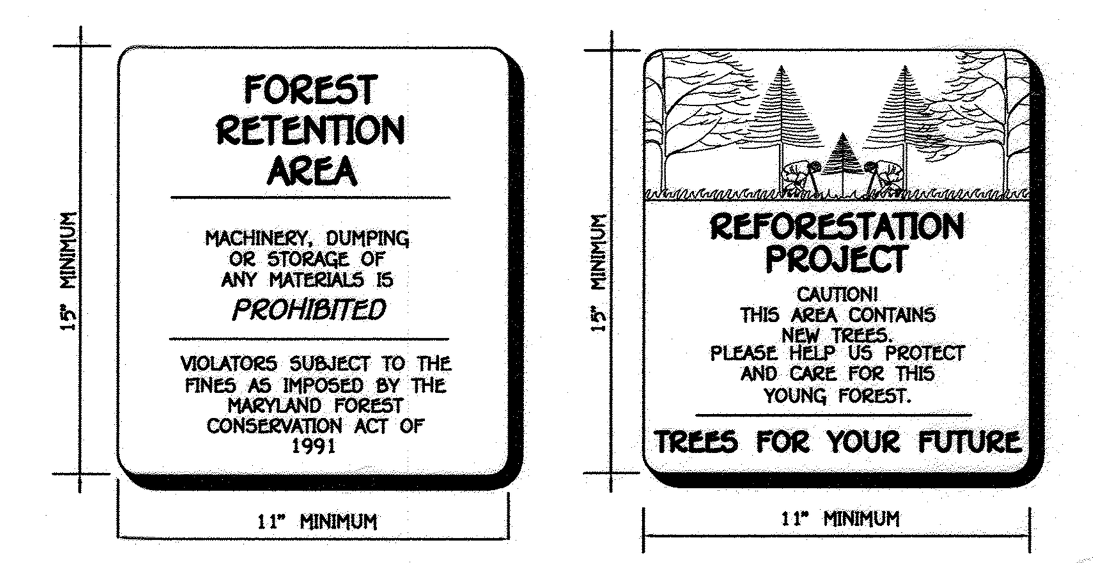
154 trees & 5 shrubs

* Note: (1) SIZE PROPOSED TO BE UTILIZED AND PLANTED AT 200 TREES PER ACRE (200 TREES/ACRE X 0.77 ACRES = 154 TREES). SHRUBS (VIBURNUMS) NOT INCLUDED IN TOTAL QUANTITY.
(2) PLANTING UNITS:
3.5 UNITS = 1 - 1" CAL. TREE
(3) SURETY TO BE BASED ON 0.77 ACRES.



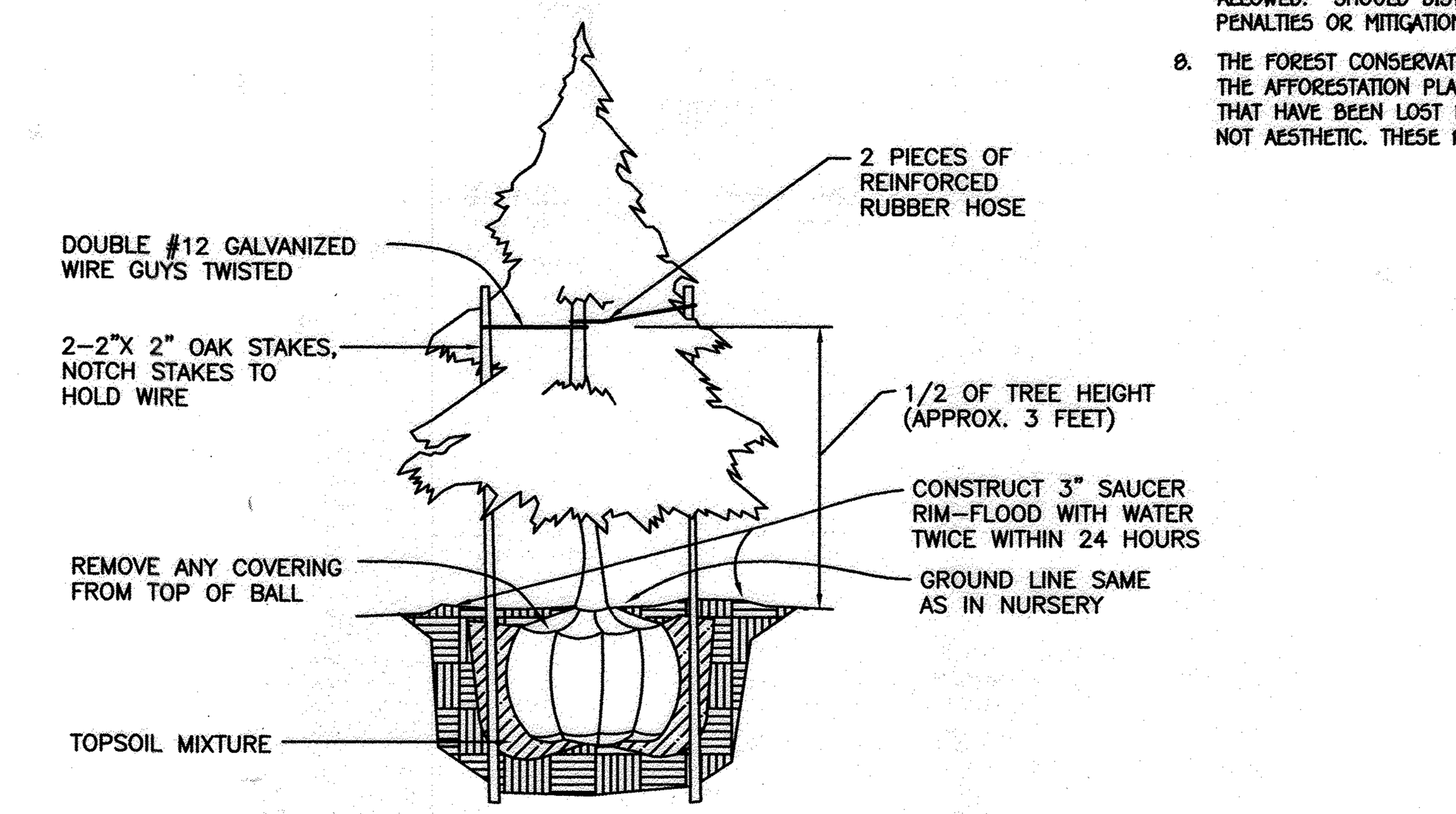
NOTE: ALL TREE & SHRUB SPECIES TO BE DISTRIBUTED RANDOMLY IN SMALL GROUPINGS. SHRUBS TO BE EVENLY DISTRIBUTED THROUGHOUT PLANTING AREA.

RANDOM PLANTING DISTRIBUTION PLAN
NOT TO SCALE

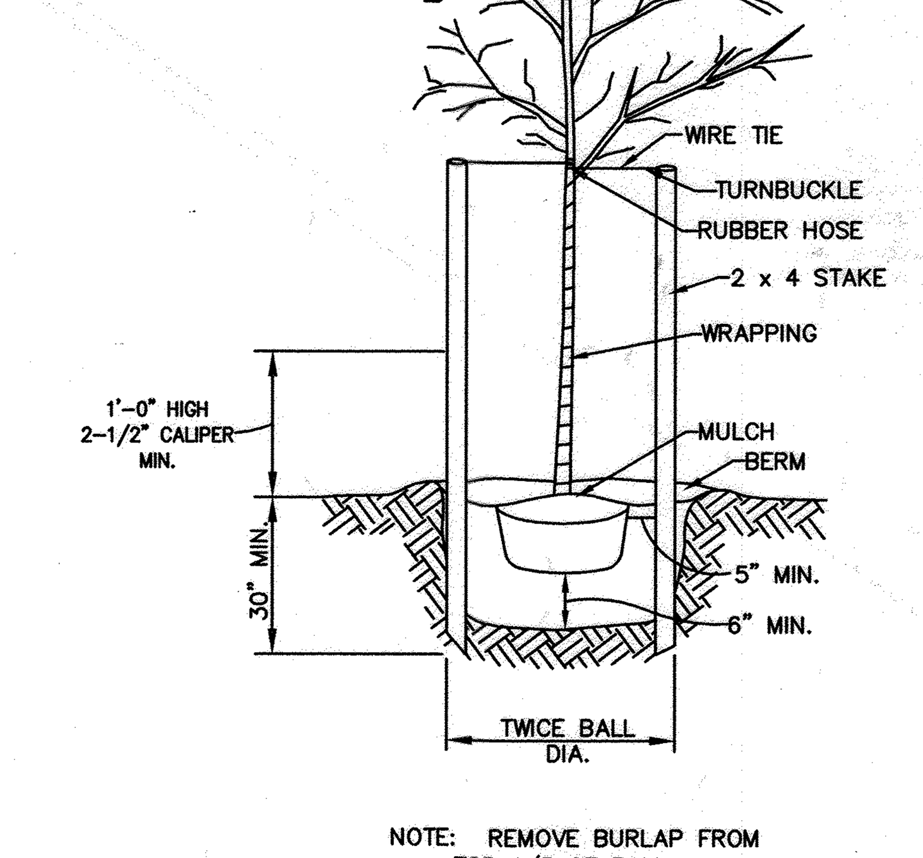


NOTE: THE PROTECTIVE SIGNAGE SHALL BE IN PLACE FOR PERPETUITY.

FOREST CONSERVATION SIGN DETAIL
NOT TO SCALE

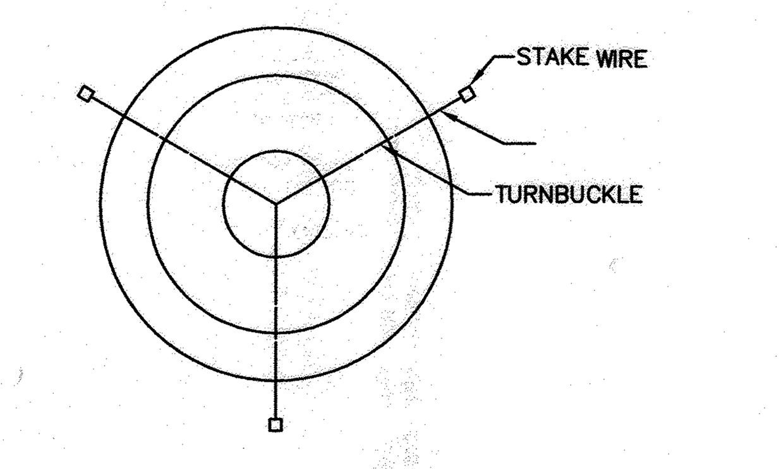


EVERGREEN PLANTING DETAIL
NOT TO SCALE

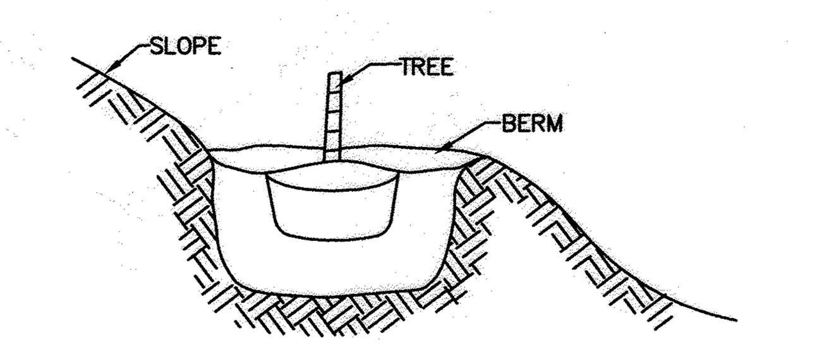


NOTE: REMOVE BURLAP FROM TOP 1/3 OF BALL

DECIDUOUS TREE PLANTING
NOT TO SCALE



STAKING DETAIL
NOT TO SCALE



GRADING FOR PLANTING ON SLOPES
NOT TO SCALE

NOTES

1. 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 REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY ON-SITE RETENTION OF 5.99 ACRES OF FOREST AND AFFORESTATION OF 1.81 ACRES. AFFORESTATION ACREAGE IS ADJUSTED DUE TO CREDIT TAKEN FOR LANDSCAPE PLANTINGS IN FC#1B AND FC#3. SURETY IS NOT REQUIRED FOR RETENTION. SURETY FOR 1.81 ACRES OF AFFORESTATION IN THE AMOUNT OF $39,420.00 (78,843.6 SQ.FT.X $0.50) SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS FINAL PLAN, F-15-038. THE REMAINING OBLIGATION OF 1.22 ACRES OF REFORESTATION AND 0.27 ACRES OF AFFORESTATION FOR A TOTAL OF 1.49 ACRES OF PLANTINGS SHALL BE PROVIDED OFF-SITE UNDER SDP-14-032FC.
2. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED PERIMETER LANDSCAPING, STORMWATER MANAGEMENT, SPECIMEN TREE REPLACEMENT, AND TRASH PAD SCREENING WILL BE POSTED AS PART OF THE DEVELOPERS AGREEMENT FOR THIS FINAL PLAN, F-15-038, IN THE AMOUNT OF $13,380.00 (37 SHADE TREES @ $300.00 EACH, 14 EVERGREENS @ 150.00 EACH & 6 SHRUBS @ $30.00 EACH).
3. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY 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.
4. 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.
5. SEE THE RECORD PLAT FOR THE BEARING AND DISTANCE DESCRIPTIONS OF THE FOREST CONSERVATION EASEMENTS.
6. NO GRADING OR 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.
7. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. SHOULD DISTURBANCE OCCUR IN THE FOREST CONSERVATION EASEMENT AREAS DURING OR AFTER CONSTRUCTION, CIVIL PENALTIES OR MITIGATION MAY BE IMPOSED.
8. THE FOREST CONSERVATION REFORESTATION EASEMENT PLANTINGS ARE NOT TO BE CONSIDERED LANDSCAPING, AS IT IS USUALLY PRACTICED. THE AFFORESTATION PLANTINGS ARE TO CREATE NEW FOREST COMMUNITIES THAT WILL REPLACE TO SOME DEGREE THE FOREST RESOURCES THAT HAVE BEEN LOST DURING RECENT DECADES OF FARMING AND LAND DEVELOPMENT. THEIR PRIMARY PURPOSE IS ENVIRONMENTAL AND NOT AESTHETIC. THESE REFORESTATION STANDS WILL REQUIRE SPECIAL MANAGEMENT AND INITIALLY MAY NOT LOOK ATTRACTIVE.

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	SWM-1 : 190'	SWM-2 : 125'	SWM-3 : 257'	TOTAL
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO	NO	YES, 100%	
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	NO	NO	
NUMBER OF TREES REQUIRED: SHADE TREES EVERGREEN TREES	 4 5	 3 3	 0 0	 7 8
NUMBER OF TREES PROVIDED: SHADE TREES EVERGREEN TREES	 4 5	 3 3	 0 0	 7 8

STREET TREE SCHEDULE

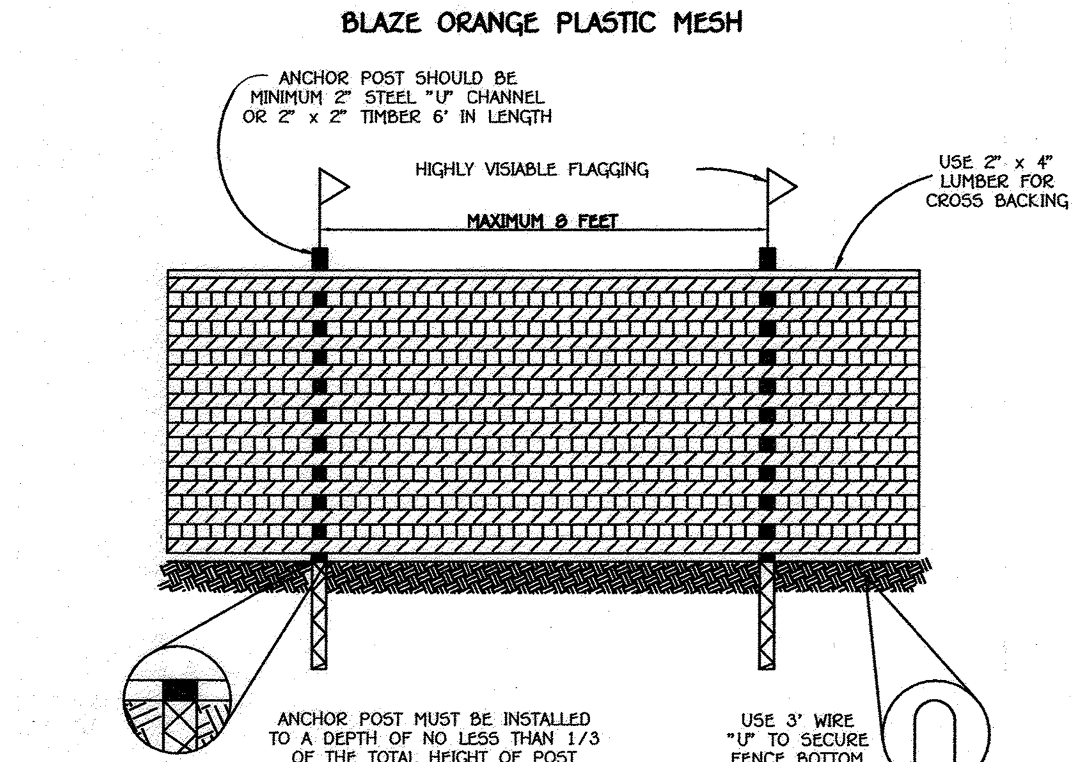
SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
[symbol]	975.73 x 2 /40 = 48.78 49 TREES	TILIA CODATA 'GREENSPIRE' (GREENSPIRE LITTLELEAF LINDEN)	2.5"-3" CAL.	40' APART ON PUBLIC R/W

NOTE: STREET TREE TYPES ARE ONLY A RECOMMENDATION AND MAY BE SUBSTITUTED WITH A COUNTY ACCEPTED EQUIVALENT FROM THE HOWARD COUNTY LANDSCAPE MANUAL.

SCHEDULE A - PERIMETER LANDSCAPE EDGE

PERIMETER	1	2	3	4	5	6	7	8			TOTAL
CATEGORY	ADJACENT TO ROADWAY	OPEN SPACE ADJACENT TO ROADWAY	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	TRASH PAD	SPECIMEN TREE REPLACEMENTS	
LANDSCAPE TYPE	B	A	A	A	A	A	A	A			
LINEAR FEET OF PERIMETER	416 L.F.	739 L.F.	437 L.F.	506 L.F.	198 L.F.	785 L.F.	1,085 L.F.	284 L.F.			
CREDIT FOR EXISTING VEGETATION LINEAR FEET (LF) OF CREDIT REMAINING PERIMETER (LF)	180 LF OF EX. TREES 236 LF REMAINING	510 LF OF EX. TREES 229 LF REMAINING	326 LF OF EX. TREES 111 LF REMAINING	340 LF OF EX. TREES 166 LF REMAINING	198 LF OF EX. TREES 0 LF REMAINING	785 LF OF EX. TREES 0 LF REMAINING	515 LF OF EX. TREES 570 LF REMAINING	284 LF OF EX. TREES 0 LF REMAINING			
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	5/6 (236'/50' = 4.7 OR 5) (236'/40' = 5.9 OR 6) 0	4 (229'/60' = 3.8 OR 4) 0 0	2 (111'/60' = 1.9 OR 2) 0 0	3 (166'/60' = 2.8 OR 3) 0 0	 0 0 0	 0 0 0	10 (570'/60' = 9.5 OR 10) 0 0	 0 0 0	 0 0 6	 6 0 0	 30 6 6
CREDIT FOR EXISTING VEGETATION SHADE TREES EVERGREEN TREES SHRUBS	 0 0 0	 0 0 0	 0 0 0	 0 0 0	 0 0 0	 0 0 0	 0 0 0	 0 0 0	 0 0 0	 0 0 0	 0 0 0
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SHRUBS	 5 6 6	 4 0 0	 2 0 0	 3 0 0	 0 0 0	 0 0 0	 10 0 0	 0 0 0	 0 0 6	 6 0 0	 30 6 6

BLAZE ORANGE PLASTIC MESH



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

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. 38386, EXPIRATION DATE: 01/12/2016.

[signature] 12/2/15
Signature Of Professional Engineer DATE

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

AS-BUILT CERTIFICATION
Note: There is no "AS BUILT" information provided on this sheet.
[signature] 11/22/20
CHARLES J. CRAIG SR. Date

LANDSCAPE & FOREST CONSERVATION NOTES & DETAILS
WESTLAND FARM ESTATES
LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015

F-15-038

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

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.

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 and Lime Specifications)

1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.

2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.

3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.

4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.

5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

BUILDER/DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

SIGNATURE OF DEVELOPER — 2-1-16 — DATE

ENGINEER'S CERTIFICATE

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

SIGNATURE OF ENGINEER — 1/29/16 — DATE

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

HOWARD SOIL CONSERVATION DISTRICT — 2/12/16 — DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 2/22/2016 — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 6-21-16 — DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3-2-16 — DATE

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

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

A. Seeding
1. Specifications
a. All seed must meet the 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 keepinoculant as cook as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

2. Application
a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with 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 O (phosphorus), 200 pounds per acre; K O (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 weeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
iv. WCFM material must not contain elements or compounds at concentration levels that will 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 of the area and erosion hazard:
i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4-15 feet wide and 300 to 3,000 feet long.

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.

Notes: Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line

c. Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a) Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)

d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 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 fo ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
d. Sod must not be harvested or transplanted when moisture content (excessively dry 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 ⅓ of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS

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.

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:

Total Area of Site:	45.28	Acres
Area Disturbed:	19.13	Acres
Area to be roofed or paved:	2.85	Acres
Area to be vegetatively stabilized:	16.28	Acres
Total Cut:	97,000	Cu. Yds.
Total Fill:	97,000	Cu. Yds.
Offsite waste/borrow area location:	N/A	

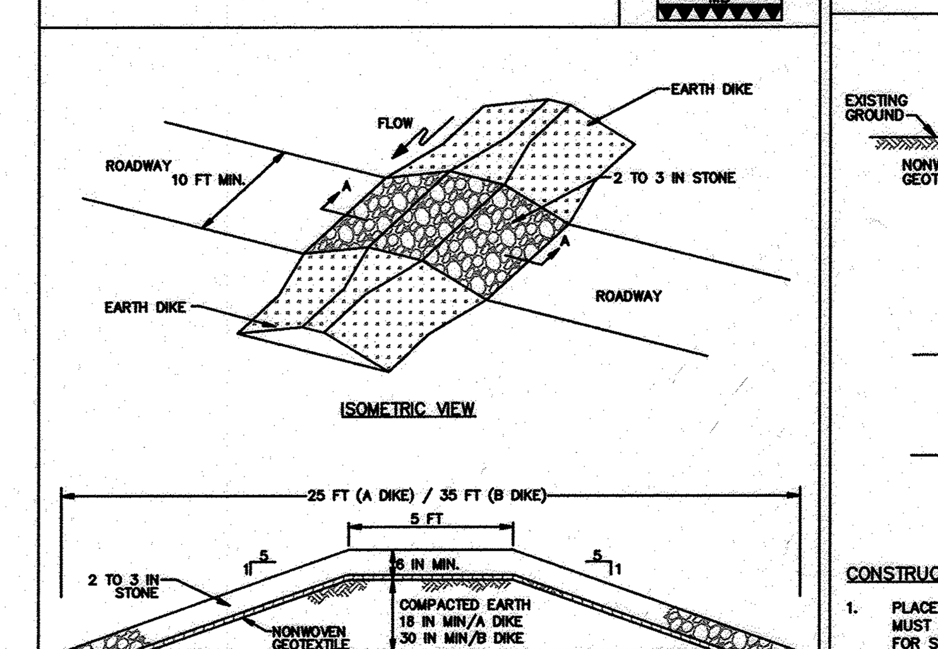
7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
8. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and 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.

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

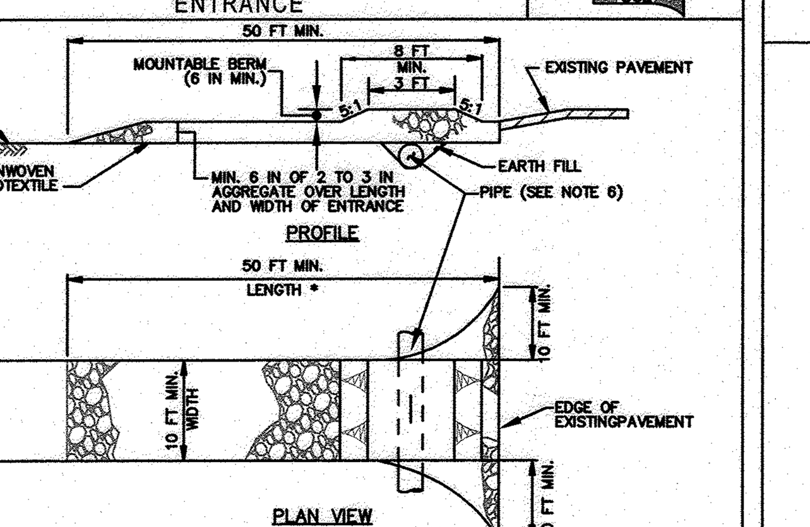
SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT AND HOLD PRE-CONSTRUCTION MEETING WITH COUNTY INSPECTOR. (2 WEEKS)
2. NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY DEPT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION AT 410-313-1855 AT LEAST 48 HOURS BEFORE STARTING WORK.
3. INSTALL SILT FENCE, SUPER-SILT FENCE, AND DIVERSION FENCE (EXCEPT THAT SHOWN ON LOT 5 AND 14) UTILIZING EXISTING DRIVEWAY ENTRANCE. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR TREES MAY BE CUT PRIOR TO INSTALLATION OF FENCING AS LONG AS ROOTBALL IS NOT REMOVED PRIOR TO INSTALLATION OF FENCING. (3 DAYS)
4. EXISTING POND TO BE UPGRADED IN ACCORDANCE WITH PLANS AT ANY POINT DURING CONSTRUCTION ASSOCIATED WITH OTHER IMPROVEMENTS SHOWN ON THIS PLAN. (30 DAYS)
5. INSTALL TWIN 18" CULVERT PIPES UNDER PROPOSED WESTLAND COURT, GRADE ASSOCIATED SWALES DOWNSTREAM OF CULVERTS & STABILIZE SWALES WITH SOD PRIOR TO GRADING OF EXISTING ROADSIDE DITCH ALONG LIME KILN ROAD TO INSTALL ACCEL/DECEL LANES. UPON COMPLETION OF SWALE STABILIZATION, INSTALL STABILIZED CONSTRUCTION ENTRANCE, UPSTREAM SWALE INCLUDING STABILIZING WITH SOD AND INSTALL SEDIMENT TRAP. UPON STABILIZATION OF BOTH SWALE AREAS INSTALL DIVERSION FENCE ON LOT 14. INSTALL MOUNTABLE BERM TO DIVERT PROPOSED ROAD DRAINAGE TO SEDIMENT TRAP.
6. REMOVE NECESSARY TREES / ROOTBALLS, REMOVE EXISTING DRIVEWAY, ROUGH GRADE SITE, INSTALL STORM DRAIN SYSTEM AND INLET PROTECTION, TEMPORARY STONE OUTLET STRUCTURES (TSOS), AND INSTALL EROSION CONTROL MATTING IN SWALES AS SHOWN ON THE PLANS, AND TEMPORARY SEED DISTURBED AREAS AS NECESSARY. UPON COMPLETION OF STORM DRAIN SYSTEM, REMOVE MOUNTABLE BERM. (21 DAYS)
7. CONSTRUCT CURB & GUTTER, ROAD BASE PAVING, AND ACCELERATION / DECELERATION LANES. (4 WEEKS)
8. INSTALL PERMANENT SEEDING. (3 DAYS)
9. ROUGH GRADE ON INDIVIDUAL LOTS. AT TIME OF INDIVIDUAL LOT CONSTRUCTION UNDER AN INDIVIDUAL LOT GRADING PLAN, INSTALL STORMWATER MANAGEMENT FACILITIES/DEVICES ON THAT LOT. ON LOT 5, DIVERSION FENCING SHALL BE INSTALLED PRIOR TO CONSTRUCTION OF MICRO-BIORETENTION FACILITY TO LIMIT RUNOFF TO THAT AREA. (24 MONTHS)
10. UPON COMPLETION OF ALL ROUGH GRADING WITHIN THE CONTRIBUTING AREA TO THE SEDIMENT TRAP AND APPROVAL OF SEDIMENT CONTROL INSPECTOR, CONVERT AND MUCK OUT SEDIMENT TRAP THEN CONVERT TO BIORETENTION FACILITY THEN INSTALL REQUIRED PLANTINGS WITHIN THE FACILITY. (1 YEAR)
11. MILL AND OVERLAY OF EXISTING PAVEMENT AND INSTALL SURFACE PAVING AS SHOWN ON THE PLANS. (3 DAYS)
12. ALL FINAL GRADES AND STABILIZATION SHOULD BE COMPLETED BEFORE ANY REMOVAL OF CONTROLS. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES (TRAP) HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE SEDIMENT CONTROL DEVICES NOT REQUIRED TO REMAIN FOR LOT CONSTRUCTION MAY BE REMOVED. (3 DAYS)
13. CONSTRUCT HOUSES AND DRIVEWAYS. CONVERT MOUNTABLE BERM TO TEMPORARY ASPHALT MOUNTABLE BERM ON LOT 1 DRIVEWAY. INSTALL SEPTIC SYSTEMS. (6 MONTHS PER LOT) THIS STEP MAY BEGIN BEFORE #10 ABOVE.
14. INSTALL ROOF LEADERS & DRYWELLS UPON CONSTRUCTION OF HOUSES. FINE GRADE LOT. (1 WEEK PER LOT)
15. INSTALL PERMANENT SEEDING WITH CONSTRUCTION ON EACH LOT. (1 DAY PER LOT)
16. UPON COMPLETION OF GRADING WITHIN DRAINAGE AREA, INSTALL MICRO-BIORETENTION ON LOTS WHERE SHOWN ON THE PLANS (1 WEEK)
17. ALL FINAL GRADES AND STABILIZATION SHOULD BE COMPLETED BEFORE ANY REMOVAL OF CONTROLS. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE SEDIMENT CONTROL DEVICES MAY BE REMOVED. (3 DAYS)

NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE EACH RAINFALL AND ON A DAILY BASIS.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

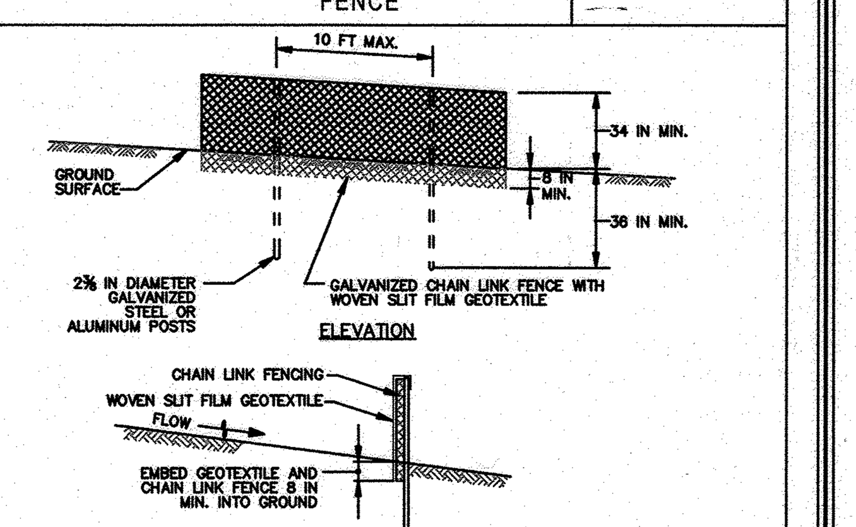
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING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

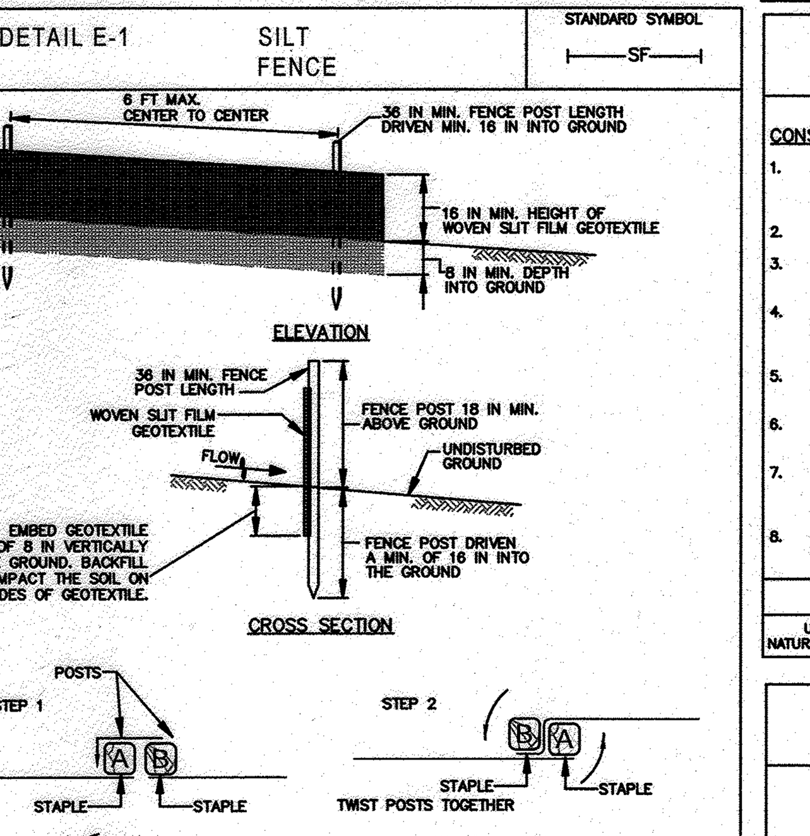
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY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

STANDARD SYMBOL: SF



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

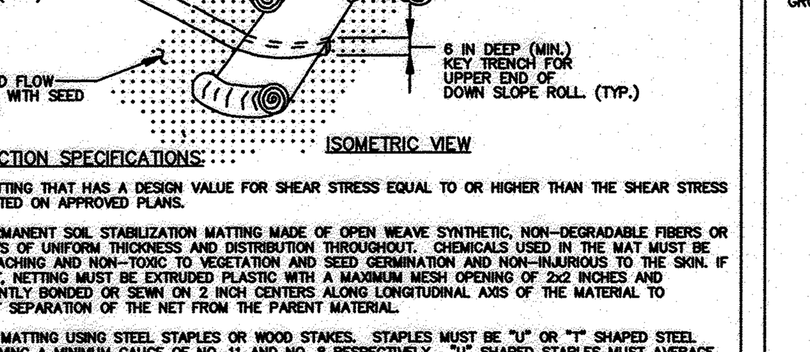
1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
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 B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL: PSSMC - 0.4 - *1.4 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

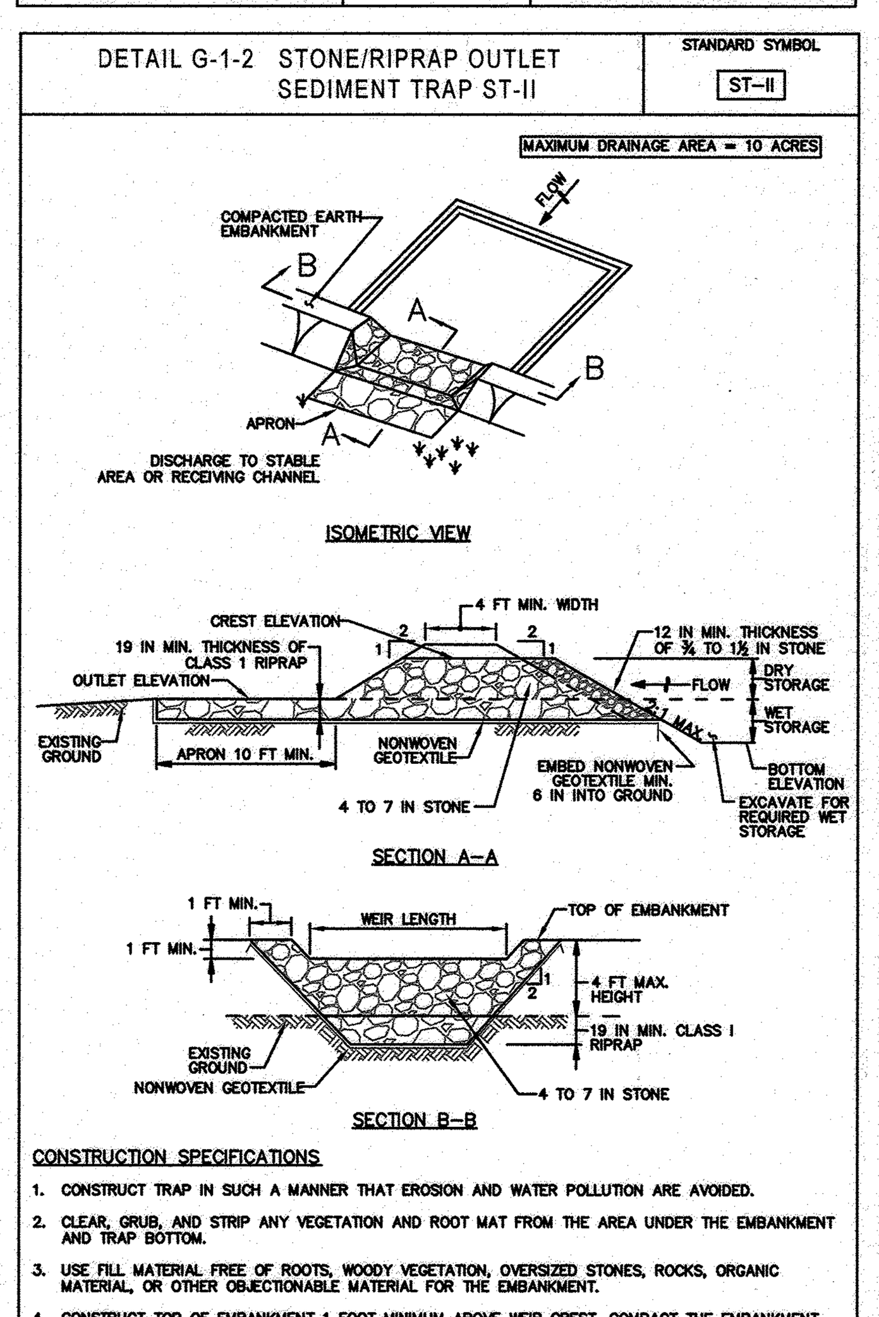
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SHEAR STRESS FOR ECM LOTS 4 & 13 = 62.4 LBS/FT³ X 0.10 FT X 0.13 = 0.8 LBS/FT²
SHEAR STRESS FOR ECM LOTS 5,7,10,12 = 62.4 LBS/FT³ X 0.15 X 0.09 = 0.8 LBS/FT²
SHEAR STRESS FOR ECM LOTS 6 & 8 = 62.4 LBS/FT³ X 0.14 FT X 0.16 = 1.4 LBS/FT²
SHEAR STRESS FOR ECM LOT 14 = 62.4 LBS/FT³ X 0.19 FT X 0.03 = 0.4 LBS/FT²

DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

STANDARD SYMBOL: ST-II

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

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

OWNERS

LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

AND

PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER

WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
5485 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410-997-8800

NOTE: THIS PLAN IS TO BE USED BY WILLIAMSBURG GROUP, LLC ONLY

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. 38386, EXPIRATION DATE: 01/12/2016.

Signature Of Professional Engineer — 1/29/16 — DATE

DATE	REVISION
6/6/17	REVISE SITE ANALYSIS
11/16/16	REVISE SITE. ANALYSIS & ADD NOTE BELOW SEQUENCE OF CONSTRUCTION

AS-BUILT CERTIFICATION

Note: There is no "AS BUILT" information provided on this sheet.

CHARLES J. CROWO SR. P.E. #13404 — 11/20/20 — Date

SEDIMENT CONTROL NOTES & DETAILS

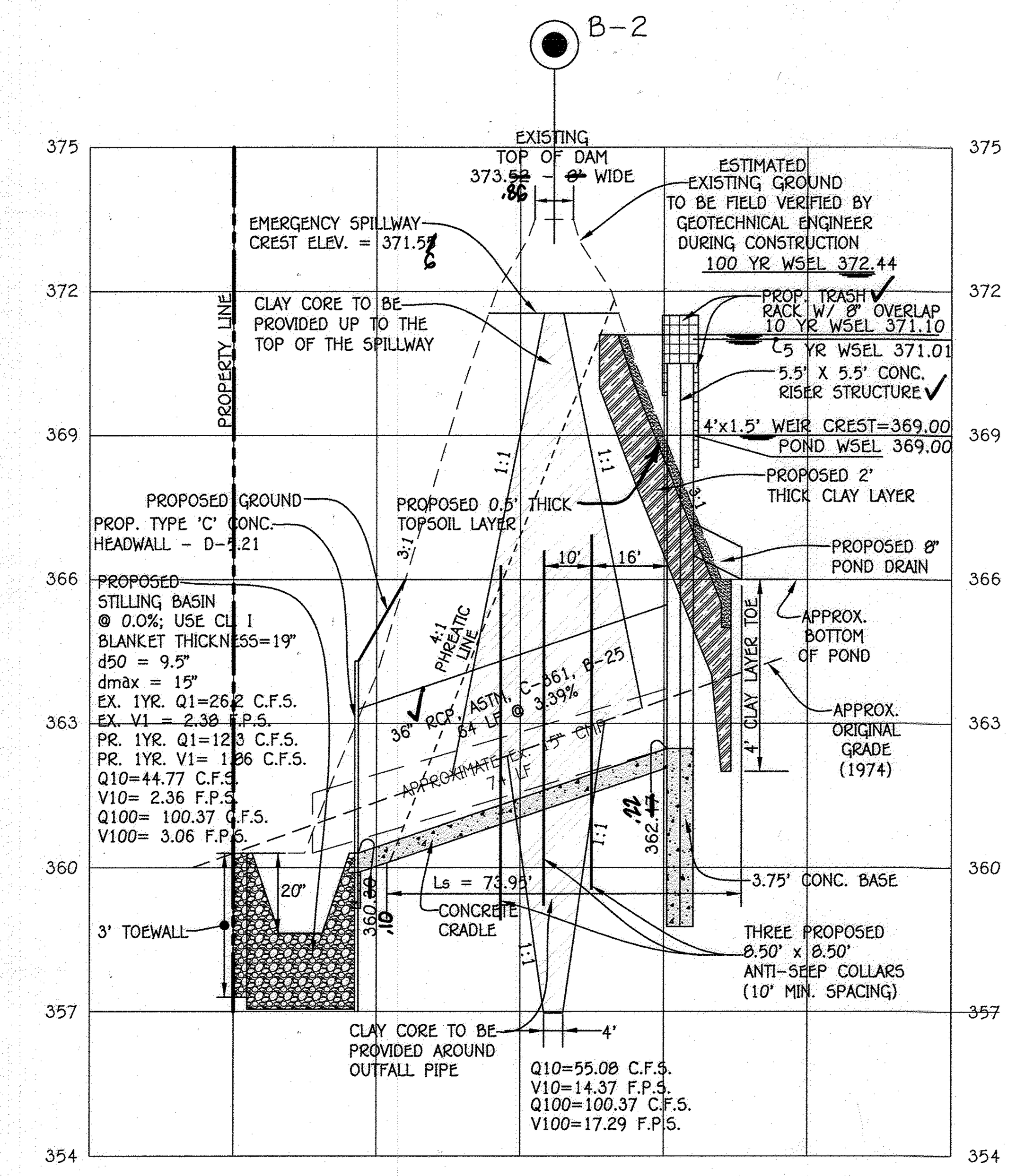
WESTLAND FARM ESTATES

LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER, 2015
SHEET 17 OF 19

F-15-038

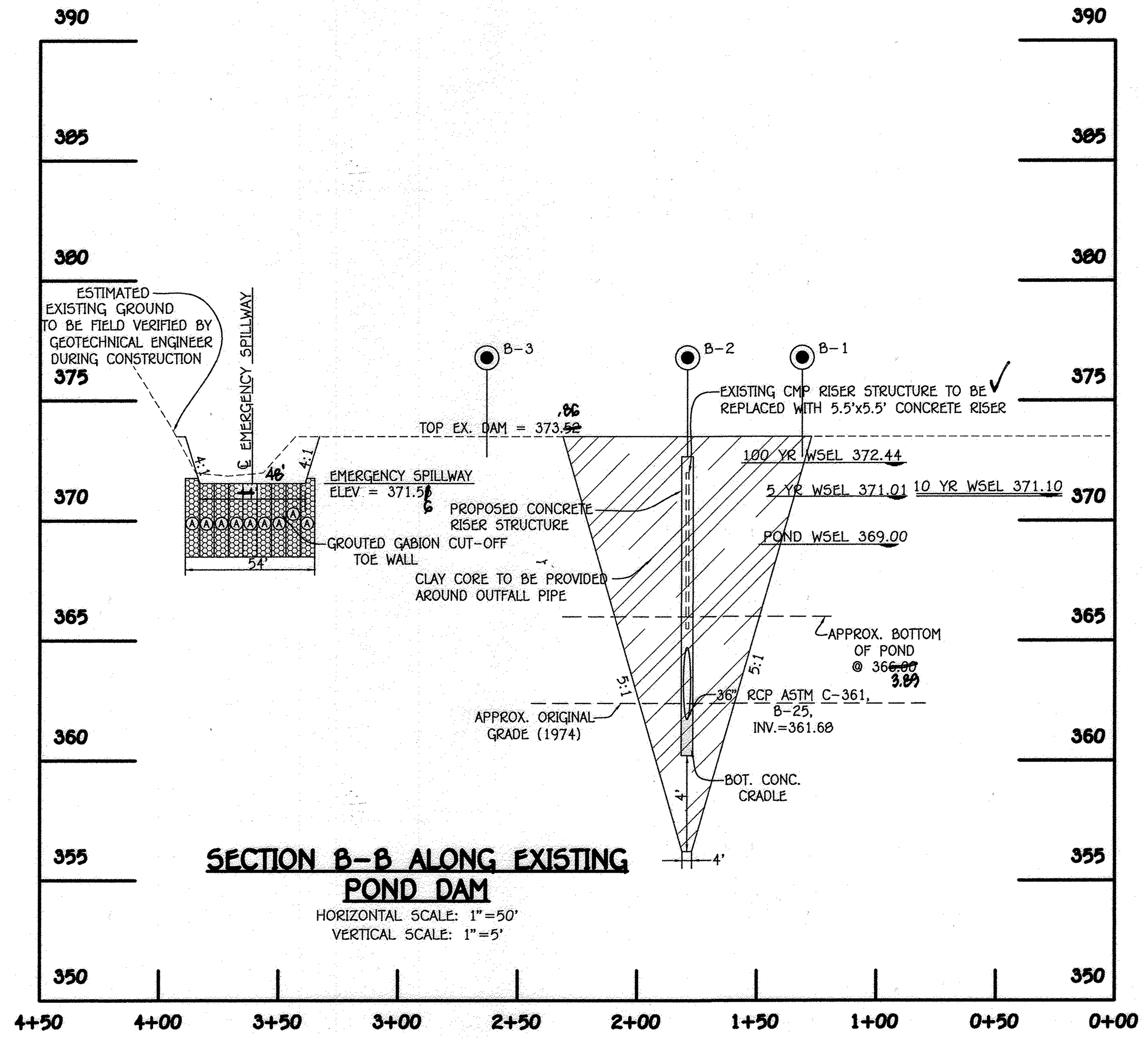
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

I:\2005\05062\dwg\Finals\Redline 2\05062 road plan redline2 S17 FOR PLOTTING.dwg, SHEET 17, 7/24/2017 8:29:36 AM, 1:1



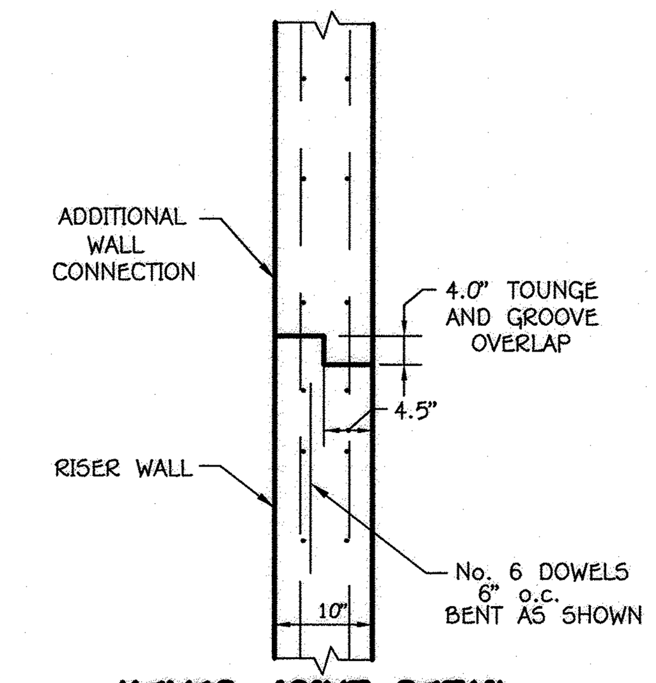
SECTION A-A THRU EXISTING POND DAM

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=3'



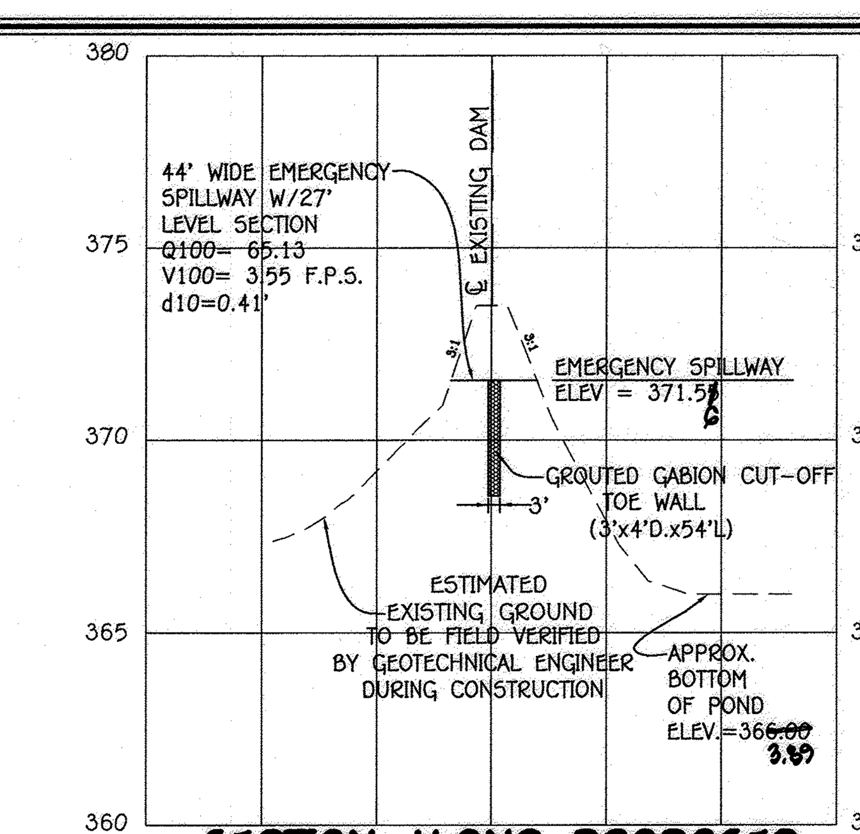
SECTION B-B ALONG EXISTING POND DAM

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'



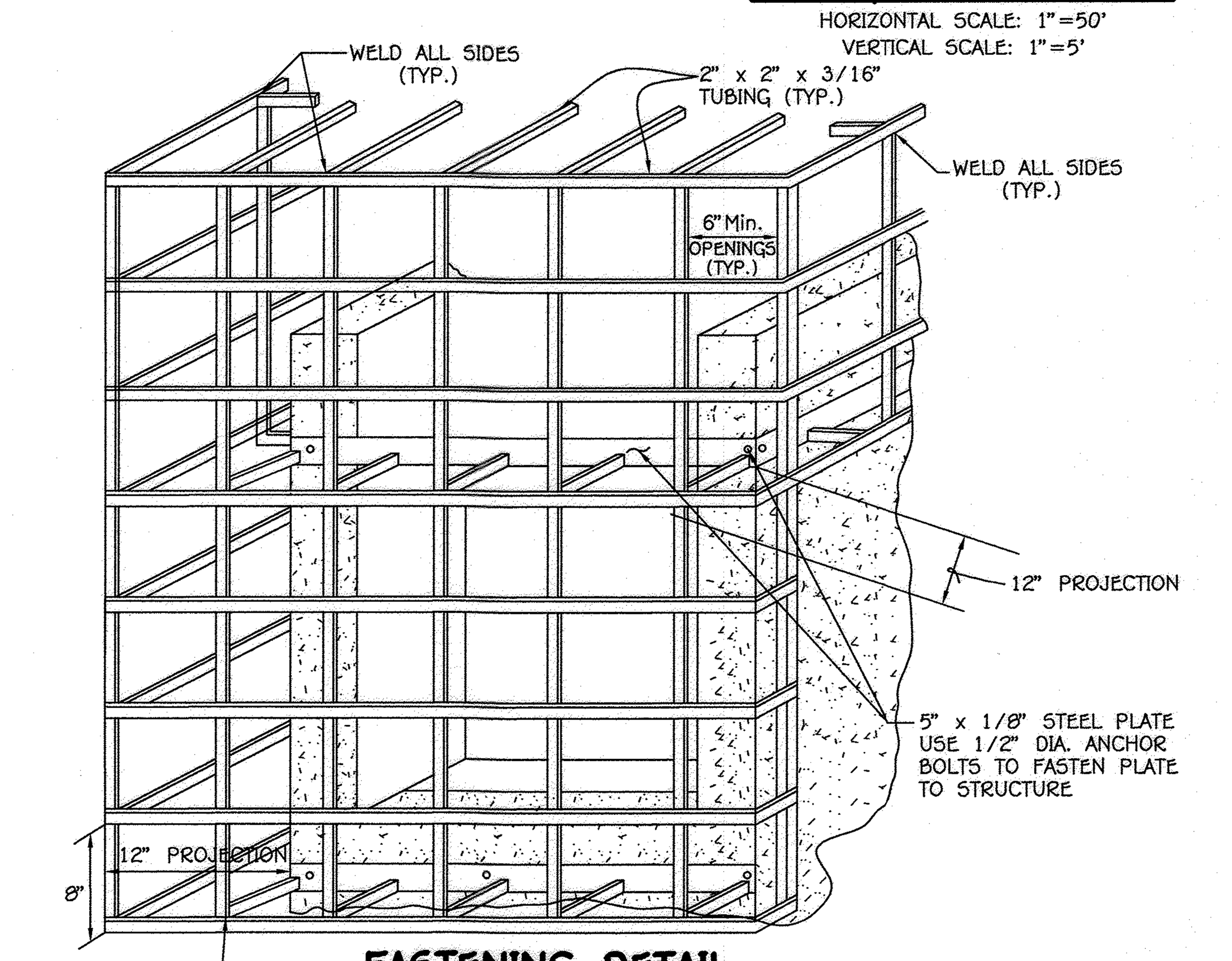
KEYED JOINT DETAIL WALL SECTION TO WALL SECTION

(NO SCALE)



SECTION ALONG PROPOSED EMERGENCY SPILLWAY

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

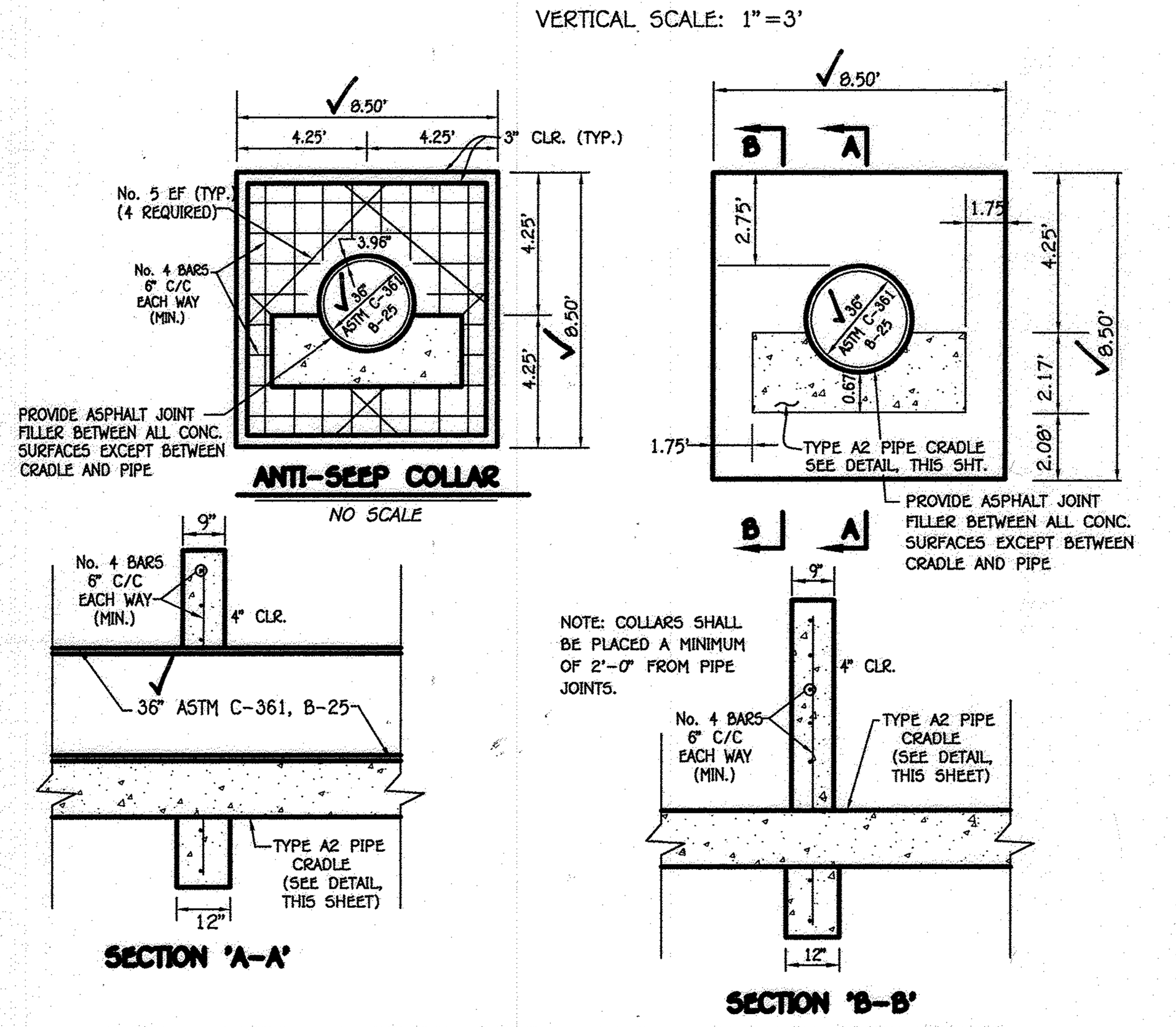


FASTENING DETAIL

NO SCALE

NOTE: CONTRACTOR SHALL

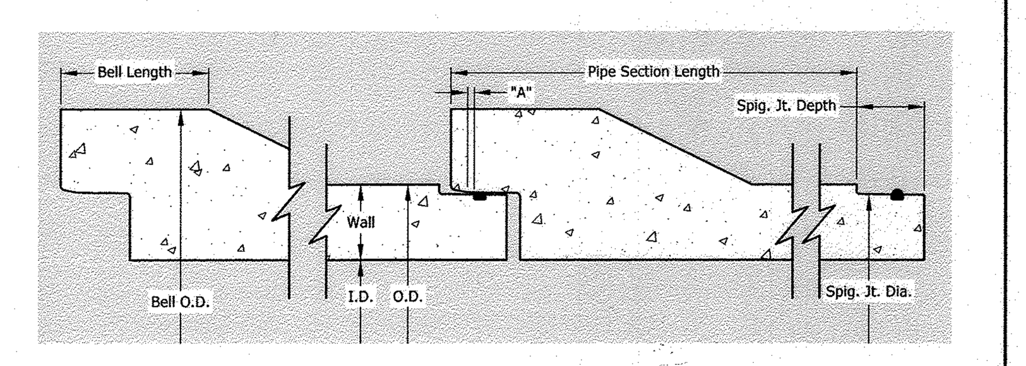
1. FIELD MEASURE THE STRUCTURE DIMENSIONS FOR EXACT FITTING OF TRASH RACK.
2. GALVANIZE ENTIRE TRASH RACK.
3. ALL NUTS AND BOLTS SHALL BE GALVANIZED.



TYPICAL SECTION THROUGH BARREL, CRADLE AND ANTI-SEEP COLLAR

NO SCALE

Reinforced Concrete Pipe



Section View

Basic Dimensions									
I.D. Pipe (in.)	Pipe Section Length (Ft.)	Nominal O.D. (in.)	Nominal Wall Thickness (in.)	Spig. Jt. Dia. (in.)	Spig. Jt. Depth (in.)	"A" Dim. (in.)	Bell O.D. (in.)	Bell Lgth. (in.)	Approx. Wt / Ft (Lbs)
15	8	20 1/4	2 5/8	19 1/8	3 3/4	1 1/4	24 1/8	5 1/4	170
18	8	23 1/2	2 3/4	22 3/8	3 3/4	1 1/4	27 5/8	5 1/4	210
21	8	27	3	25 7/8	3 3/4	1 1/4	31 5/8	5 3/8	270
24	8	31 1/2	3 3/4	29 3/8	3 7/8	1 3/8	35 5/8	5 3/4	370
27	8	35	4	32 7/8	3 7/8	1 3/8	39 5/8	5 7/8	450
30	8	38 1/2	4 1/4	35 15/16	3 7/8	1 3/8	43 1/8	6 1/8	520
36	8	45 1/2	4 3/4	42 15/16	3 7/8	1 3/8	51 3/16	6 3/8	690
42	8	51 1/4	4 5/8	50	4 5/8	1 1/2	58 1/2	7 1/8	820
48	8	58 1/4	5 1/8	57	4 3/4	1 5/8	66 1/4	7 1/4	1030

Notes:

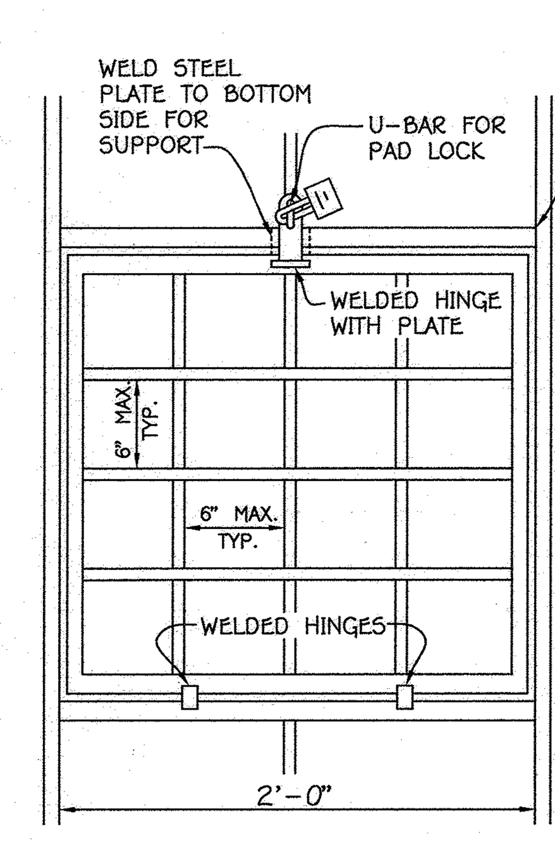
1) Meets ASTM C361, Classification A-25, B-25, C-25, or D-25 as required.
2) "A" dimension is based on joint fully seated.
3) Joints and gaskets meet the requirements of ASTM C361.

-No Scale-
All dimensions subject to allowable specification tolerances.

UID: 20151015HJG02	Date: 10-15-2015	Dwg: RCP-ORC361F.15-48

CP&P CONCRETE PIPE & PRECAST, LLC

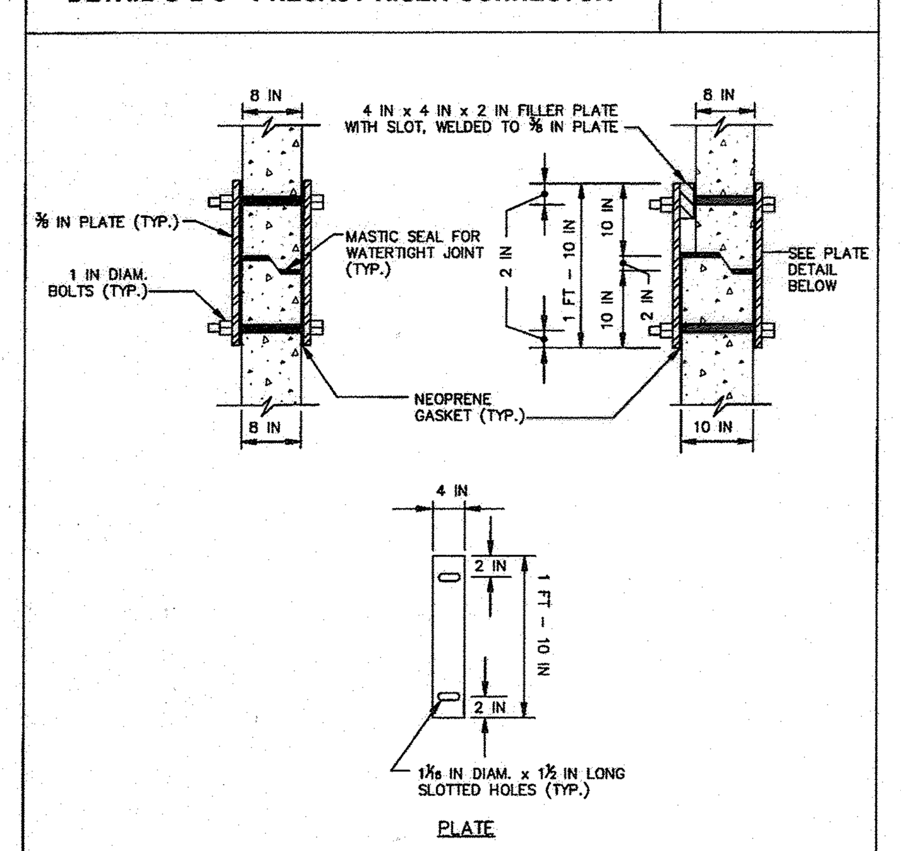
RCP - C361 "O" Ring Joint 15" to 48" Dia.



OPENING DETAIL

NO SCALE

DETAIL G-2-8 PRECAST RISER CONNECTOR — STANDARD SYMBOL



CONSTRUCTION SPECIFICATIONS

1. FABRICATE PLATE CONNECTORS FROM STAINLESS STEEL CONFORMING TO ASTM A666-72, GRADE A OR B.
2. USE TYPE 304 STAINLESS STEEL FOR BOLTS.
3. PROVIDE CONNECTORS AT CENTERLINE OF EACH PRECAST BOX FACE. FOR MANHOLES PROVIDE FOUR PLATES SPACED AT 90°.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
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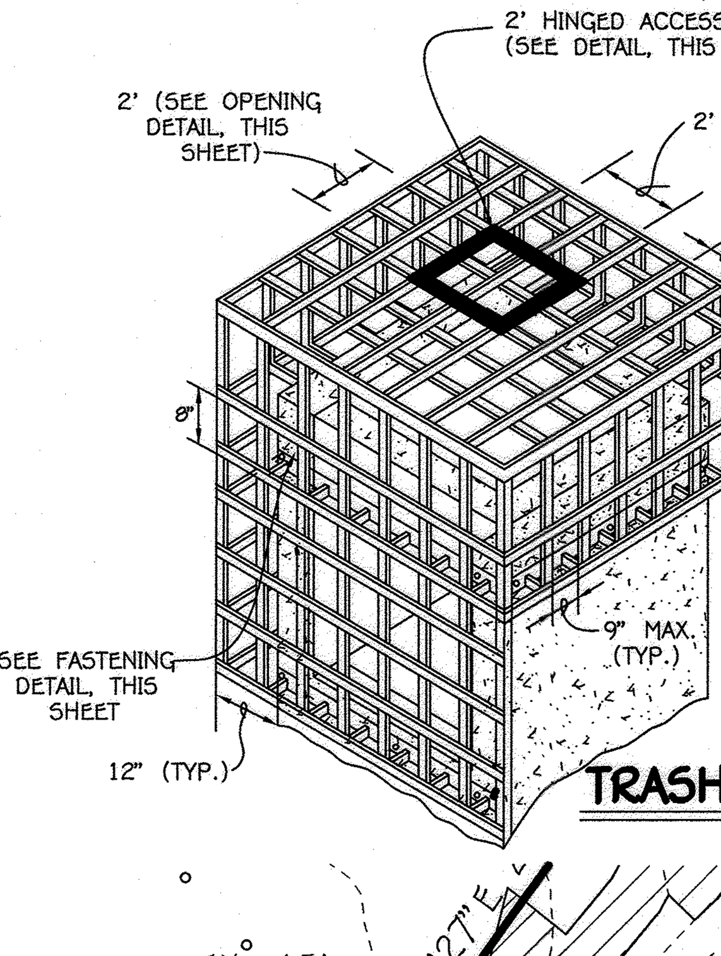
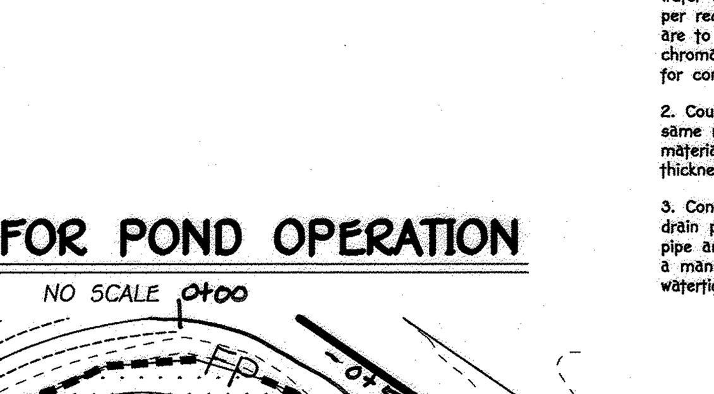
G.50



TRASH RACK FOR POND OPERATION

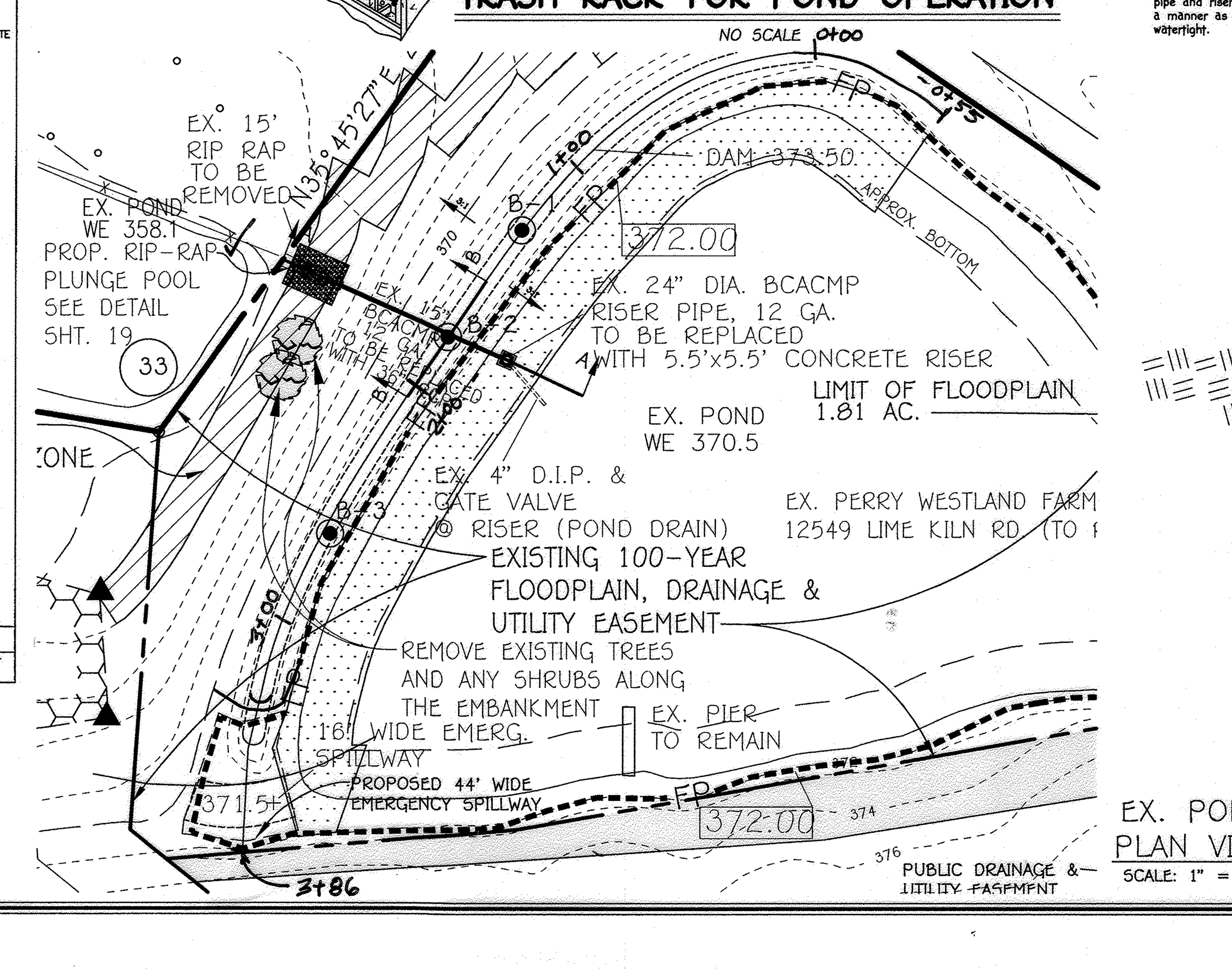
NO SCALE



A2 CRADLE

NO SCALE

NOTE:
CONC. CRADLE TO BE POURED DIRECTLY AGAINST EARTH BANKS. IF BOTTOM OF TRENCH IS WIDER THAN THE CRADLE, SLOPING SIDES (FRAMED) SHALL BE USED.



EX. POND PLAN VIEW
SCALE: 1" = 50'

STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

EARTH FILL

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8-inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ±2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to the specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

1. Materials - (Polymer Coated steel pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Stel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling banks or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections- All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24-inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, prepunched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2-inch greater than the corrugation depth. Pipes 24-inches in diameter and larger shall be connected by a 24-inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12-inches on the end of each pipe. Flanged joints with 3/8-inch closed cell gaskets the full width of the flange is also acceptable.

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

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

5. Backfilling shall conform to "Structure Backfill".

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

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Stucture Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

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

Plastic Pipe

The following criteria shall apply for plastic pipe:

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

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

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

4. Backfilling shall conform to "Structure Backfill".

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

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete

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

Rock Riprap

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

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

Care of Water during Construction

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

Stabilization

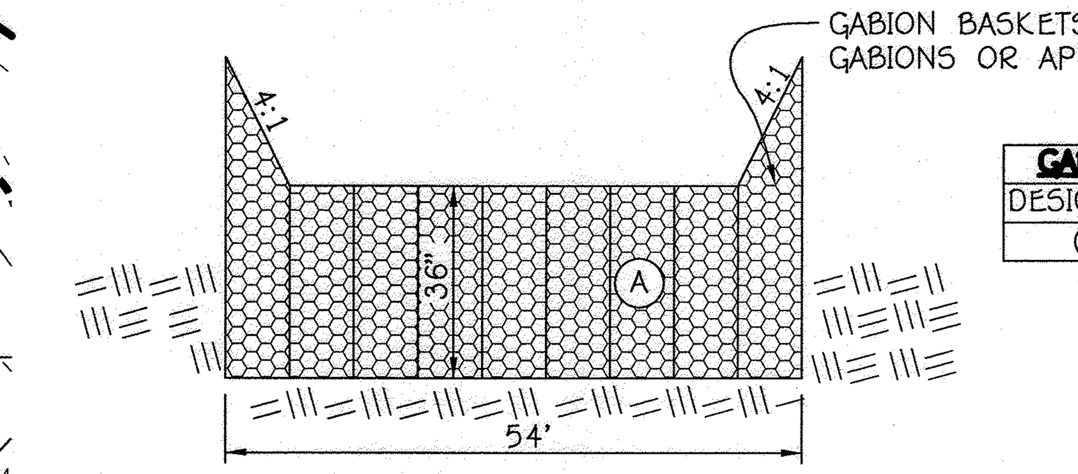
All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

OPERATION AND MAINTENANCE

An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance and major repairs needs to be retained in a file. The issuance of a Maintenance and Repair Permit for any repairs or maintenance that involves the modification of the dam or spillway from its original design and specifications is required. A permit is also required for any repairs or reconstruction that involve a substantial portion of the structure. All indicated repairs are to be made as soon as practical.



GABION BASKET SIZING	
DESIGNATION	DIMENSIONS
(A)	6'W x 3'H x 3'D

GABION BASKET DETAIL FOR EMERGENCY SPILLWAY TOE WALL

SCALE: NOT TO SCALE

BUILDER/DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

[signature] 5-26-16
SIGNATURE OF DEVELOPER — DATE

ENGINEER'S CERTIFICATE

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

[signature] 5/26/16
SIGNATURE OF ENGINEER — DATE

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

[signature] 5/26/16
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
[signature] 6·21·16
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[signature] 6·21·16
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 6·1·16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

*REV. Prior to signature by D.E.D.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

[signature] — SIGNATURE
13204 — PE NO.
DATE: 11/22/20

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER, PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

AS BUILT 11/22/20

OWNERS

LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

AND

PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER

WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
5485 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410-997-8800

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. 38386, EXPIRATION DATE: 01/12/2016.

[signature] 5/26/16
Signature Of Professional Engineer — DATE

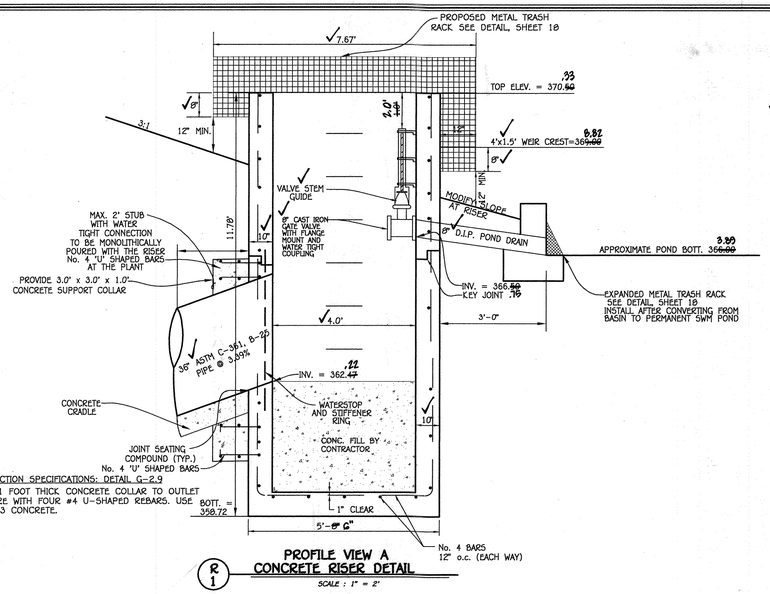
STATE OF MARYLAND — STEPHANIE J. TUITE — No. 38386 — PROFESSIONAL ENGINEER

POND UPGRADE DETAILS & SPECIFICATIONS
WESTLAND FARM ESTATES
LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY, 2016
SHEET 18 OF 19

F-15-038

"AS-BUILT"

I:\2005\05062\dwg\Finals\05062 Base Plan new.dwg, SHEET 18, 5/26/2016 12:16:04 PM, 1:1



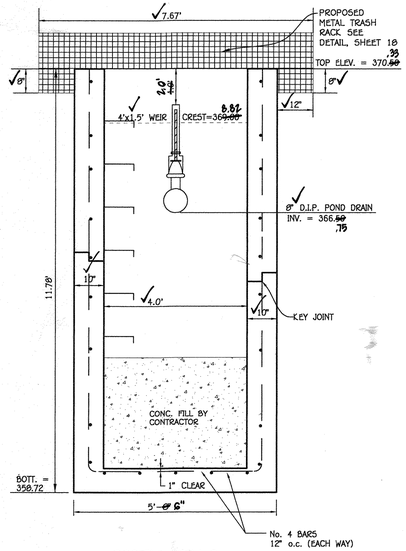
CONSTRUCTION SPECIFICATIONS: DETAIL G-2.9

1. CAST 1 FOOT THICK CONCRETE COLLAR TO OUTLET STRUCTURE WITH FOUR #4 U-SHAPED REBARS. USE BOTT. = 358.72 MIX NO. 3 CONCRETE.

R 1

PROFILE VIEW A
CONCRETE RISER DETAIL

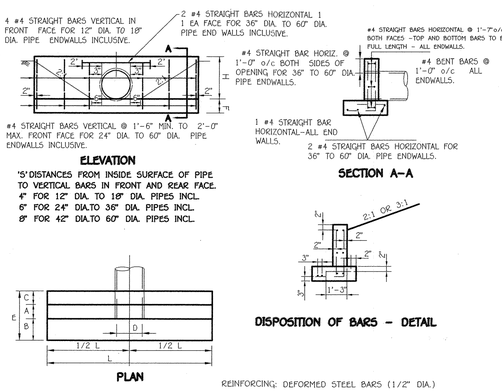
SCALE : 1" = 2'



R 1

PROFILE VIEW B
CONCRETE RISER DETAIL

SCALE : 1" = 2'

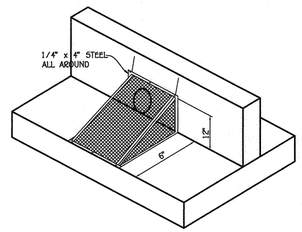


OPENINGS		DIMENSIONS							VOLUME	STEEL
D IN.	AREA SQ.FT.	A	B	C	E	F	H	L	CONC. C.Y.	LBS.
36"	7.07	12"	16"	10"	3'-2"	12"	4'-0"	16'-8"	4.16	182

REINFORCING: DEFORMED STEEL BARS (1/2" DIA.)
CHAMFER: ALL EXPOSED EDGES 1"x 1" OR AS DIRECTED.
CONC. SHALL BE S.H.A. A. MIX No. 2.

MODIFIED TYPE 'C' ENDWALL

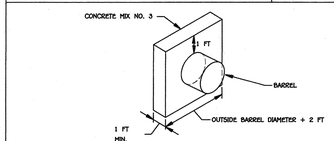
NO SCALE



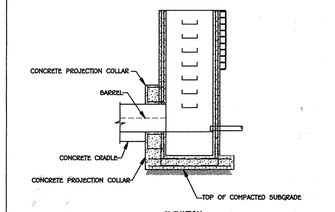
EXPANDED METAL TRASH RACK

NOT TO SCALE

DETAIL G-2-9 PROJECTION COLLAR — STANDARD SYMBOL



CONCRETE COLLAR DETAIL



ELEVATION

CONSTRUCTION SPECIFICATIONS

1. CAST 1 FOOT THICK CONCRETE COLLAR TO OUTLET STRUCTURE WITH FOUR #4 U-SHAPED REBARS.

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

EXISTING POND OPERATION AND MAINTENANCE NOTES:

ROUTINE MAINTENANCE

1. Facility shall be inspected annually and after major storms. Inspections shall be preformed during wet weather to determine if the pond is functioning properly.
2. Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes and maintenance access should be mowed as needed.
3. Debris and litter shall be removed during regular mowing operations and as needed.
4. Visible signs of erosion in the pond as well as the rip-rap or gabion outlet area shall be repaired as soon as it is noticed.

NON-ROUTINE MAINTENANCE

1. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
2. Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond or forebay, is half full of sediment, or, when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE — 13894 PE NO. — DATE: 11/22/16

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER, PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

AS BUILT 11/22/16

BUILDER/DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

SIGNATURE OF DEVELOPER — 5-26-16 DATE

ENGINEER'S CERTIFICATE

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

SIGNATURE OF ENGINEER — 5/26/16 DATE

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

HOWARD SOIL CONSERVATION DISTRICT — 5/26/16 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 6.21.16 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 6-21-16 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 6.1.16 DATE

4 REV. PRIOR TO SIGNATURE BY D.E.D.

Geotech's Embankment Construction:

The following procedures should be utilized to prepare the subgrade for the placement of any newly required embankment materials.

After stripping operations have been completed, the exposed subgrade materials should be proofrolled with a loaded dump truck or similar equipment in the presence of a geotechnical engineer or his representative. For areas that are not accessible to a dump truck, the exposed materials should be observed and tested by a geotechnical engineer or his representative utilizing a Dynamic Cone Penetrometer. Any excessively soft or loose materials identified by proofrolling or penetrometer testing should be executed to suitable firm soil, and then grades re-established by backfilling with suitable soil.

Any water infiltration resulting from a shallow interception of the groundwater table, surface run-off, or perched water, if not too extensive, should be able to be controlled by means of sump pit and pump, or by gravity ditching procedures provided that the groundwater level must only be lowered by a depth of 1± ft to 2± ft, or if lesser amounts of water cannot be sufficiently lowered by pumping, then the use of a more extensive dewatering system such as deep wells or well points will be required.

FILL MATERIAL SUITABILITY:

All materials to be used as fill in the embankment should be inspected, tested and approved by the Geotechnical Engineer. Based on our evaluation of the soils encountered borings conducted on the site, it appears that the on-site soils that are free from organics and other deleterious materials can be selectively used for construction of the embankment. Moisture conditioning (that is, wetting or drying) of the materials may be required in order to achieve proper compaction depending on the season of the year. The moisture contents of the soils should be properly controlled to avoid extensive construction delays. Additional laboratory tests should be performed on the borrow materials prior to their use in the compacted fill.

Imported fill materials should be of equal or greater quality than the on-site materials and should be approved for use by the Geotechnical Engineer.

FILL PLACEMENT AND COMPACTION:

All fill materials must be placed and compacted in accordance with NRCS-MD Code No. 378 specifications. In particular, fill materials should be placed in relatively horizontal loose lifts of 8-inch maximum thickness and should be compacted to dry densities of at least 95 percent of the Standard Proctor maximum dry density (ASTM D-698). Moisture contents should be maintained within +2 percent of optimum moisture content, and preferably between optimum moisture content and +2 percent of optimum moisture content. All engineered fill materials should be properly benched into existing slopes.

An experienced soils technician under the direction of a Geotechnical Engineer should perform field density tests on the embankment fill, as necessary, to verify that adequate compaction is achieved. If any compaction problems are encountered during construction, the Geotechnical Engineer should be contacted for advice, as modifications to the compaction procedures may be appropriate.

CORE/CORE TRENCH CONSTRUCTION:

In areas where a new core or core trench is to be provided, a representative of the Geotechnical Engineer should be present to monitor placement and compaction of fill for the embankment and cut-off trench. In accordance with NRCS-MD Code No. 378 Pond Standards/Specifications, soils considered suitable for the center of embankment and cut-off trench shall conform to Unified Soil Classification GC, SC, CH or CL and must have at least 30% passing the #200 sieve.

It is our professional opinion that in addition to the soil materials described above a fine-grained soil, including Silt (ML) with a plasticity index of 10 or more can be utilized for the center of the embankment and core trench.

OWNERS

LIME KILN, LLC
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

AND

PERRY C. WESTLAND, JR.
12549 LIME KILN ROAD
FULTON, MARYLAND 20759-0460
410-792-2922

DEVELOPER

WILLIAMSBURG GROUP, LLC
C/O BOB CORBETT
5485 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410-997-8800

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. 38386, EXPIRATION DATE: 01/12/2016.

Signature Of Professional Engineer — 5/26/16 DATE

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

Pond MD-378-24

APPENDIX A

DAM INSPECTION CHECKLIST

To help the dam owner perform periodic safety inspections of the structure, a checklist is provided. Each item of the checklist should be completed. Repair is required when obvious problems are observed. Monitoring is recommended if there is potential for a problem to occur in the future. Investigation is necessary if the reason for the observed problem is not obvious.

A brief description should be made of any noted irregularities, needed maintenance, or problems. Abbreviations and short descriptions are recommended. Space at the bottom of the form should be used for any items not listed.

DAM WESTLAND FARM — DATE 4 AUG 15 (RD 8/24/15)
OWNER — WEATHER SUNNY
INSPECTED BY M. JOHNSON — POOL LEVEL

Item	Comments	Y	NO	NOT APPLICABLE	REQUIRES MAINTENANCE	REQUIRES REPAIR	REQUIRES MONITORING
1. CREST							
a. Visual settlement?			N				
b. Misalignment?			N				
c. Cracking?			N				
2. UPSTREAM SLOPE							
a. Erosion?	AROUND INLET	Y					
b. Ground cover in good condition?		Y					
c. Trees, shrubs, or other woody vegetation?			N				
d. Longitudinal/Vertical cracks?			N				
e. Adequate riprap protection?			N				
f. Stone deterioration?			N				
g. Settlements, depressions, or bulges?			N				
3. DOWNSTREAM SLOPE							
a. Erosion?			N				
b. Ground cover in good condition?		Y					
c. Trees, shrubs, or other woody vegetation?	AT TOE, NEAR OUTLET	Y					
d. Longitudinal/Vertical cracks?			N				
e. Riprap protection adequate?		Y					
f. Settlements, depressions, or bulges?			N				
g. Soft spots or boggy areas?			N				
h. Movement at or beyond toe?			N				
i. Boils at toe?			N				
4. DRAINAGE-SEEPAGE CONTROL							
a. Internal drains flowing?	Est. Left ____ gpm Est. Right ____ gpm	Y					
b. Seepage at toe?	Estimated ____ gpm		N				
c. Does seepage contain fines?			N				

Pond MD-378-25

INSPECTION CHECKLIST - PAGE 2

INSPECTED BY M. JOHNSON — DATE 4 AUG 15 RDJ 30 SEP 15

Item	Comments						
5. ABUTMENT CONTACTS							
a. Erosion?		N					
b. Differential movement?		N					
c. Cracks?		N					
d. Seepage?	Estimated ____ gpm	N					
e. Adequate erosion protection for ditches?		N					
6. INLET STRUCTURE	Concrete or Metal Pipe (circle one)						
a. Seepage into structure?		N					
b. Debris or obstruction?		N					
c. If concrete, do surfaces show:							
1. Spalling?		N					
2. Cracking?		N					
3. Erosion?		N					
4. Scaling?		N					
5. Exposed reinforcement?		N					
6. Other?		N					
d. If metal, do surfaces show:							
1. Corrosion?		Y					
2. Protective Coating deficient?		Y					
3. Misalignment or split seams?		Y					
e. Do the joints show:							
1. Displacement or offset?		Y					
2. Loss of joint material?	CAN'T ACCESS TO SEE						✓
3. Leakage?	CAN'T ACCESS TO SEE						✓
f. Are the trash racks:							
1. Broken or bent?		N					
2. Corroded or rusted?		N					
3. Obstructed?		N					
4. Operational?		N					
g. Stufes/drain gates:							
1. Broken or bent?		N					
2. Corroded or rusted?		N					
3. Leaking?		N					
4. Not seated correctly?		N					
5. Operational?		N					

Pond MD-378-26

INSPECTION CHECKLIST - PAGE 3

INSPECTED BY M. JOHNSON — DATE 4 AUG 15 RDJ 30 SEP 15

Item	Comments	Y	NO	NOT APPLICABLE	REQUIRES MAINTENANCE	REQUIRES REPAIR	REQUIRES MONITORING
7. PRINCIPAL SPILLWAY PIPE	Concrete or Metal Pipe (circle one)						
a. Seepage into conduit	UNABLE TO ACCESS						✓
b. Debris present?							✓
c. Do concrete surfaces show:							
1. Spalling?							✓
2. Cracking?							✓
3. Erosion?							✓
4. Scaling?							✓
5. Exposed reinforcement?							✓
6. Other?							✓
d. Do the joints show:							
1. Displacement or offset?							✓
2. Loss of joint material?							✓
3. Leakage?							✓
8. STILLING BASIN/POOL	Riprap or Concrete (circle one)						
a. If concrete, condition of surfaces?			N				
b. Deterioration or displacement of joints?			N				
c. Outlet channel obstructed?			N				
d. Is released water:							
1. Undercutting the outlet?			N				
2. Eroding the embankment?			N				
3. Displacing riprap?			N				
4. Scouring the plunge pool?			N				
e. Tailwater elevation and flow condition:			N				
9. EMERGENCY SPILLWAY							
a. Is the channel:							
1. Eroding or backcutting?			N				
2. Obstructed?			N				
b. Trees or shrubs in the channel?			N				
c. Seepage present?			N				
d. Soft spots or boggy areas?			N				
e. Channel slopes eroding or sloughing?			N				
10. RESERVOIR							
a. High water marks?		Y					
b. Erosion/Slides into pool area?			N				
c. Sediment accumulation?							✓
d. Floating debris present?			N				
e. Adequate riprap protection for dikes?			N				

WESTLAND FARM POND RECONSTRUCTION SUMMARY

As part of the Westland Farm development project we were required to address the Howard Soil Conservation District's requirement that all existing Farm Ponds within any developed property be either removed and the stream restored to pre-existing conditions or upgrade the Pond to meet today's current MDE-378 Pond Specifications (Year 2000). This requirement is also a product of the MDE Dam Safety Division program to help upgrade older failing ponds for safety concerns.

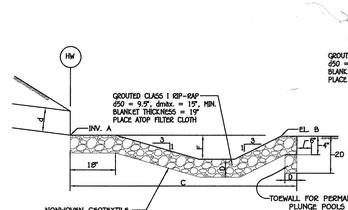
Consideration was given to the removal of the dam embankment however this would have resulted in an increase of stream flow runoff on the downstream properties not seen since the original farm pond was constructed in the 1970's. The Developer opted for reconstruction of the pond. For consistency, the height of the dam embankment and volume of water being stored were kept the same from the existing pond to this new embankment design. This design approach will allow for similar release rates as best can be obtained using the current MD-378 Pond Specifications.

MD-378 Table #1 Hydraulic Criteria for Ponds:
Class "A" Structure, Drainage Area < 100 acres, Height < 15', Water Surface Area <12 acres in size
Principal Spillway Capacity (per Note#5 and SCS) for Urban Pond is the 5-year storm event.
Emergency Spillway Capacity is the 100-year storm event with one-foot of freeboard. The 5-year storm must be routed thru the Principal Spillway.

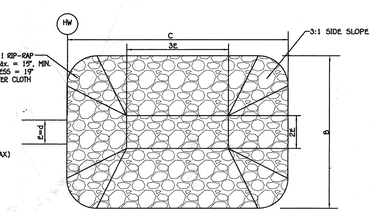
MD-378 Table #2:
For Height of Dam between 11-feet and 14-feet use a minimum top of dam width = 8-feet

MD-378 SUMMARY TABLE:
Existing Condition: 5-Year Storm Event: Inflow=85.38 c.f.s.; Outflow=53.7 c.f.s. @ elev.371.94.
100-Year Storm Event: Inflow=237.18 c.f.s.; Outflow=185.50 @ elev.373.23.
Proposed Condition: 5-Year Storm Event: Inflow=85.38 c.f.s.; Outflow=36.76 c.f.s. @ elev.371.01.
100-Year Storm Event: Inflow=237.18 c.f.s.; Outflow=173.68 @ elev.372.44.

Summary:
In summary, the reconstruction of the Dam Embankment was designed to maintain the existing height and storage volume of the old original dam while meeting the current design standards of the MD-378 Pond Specifications. In addition to the 5-year and 10-year design storm events other storms were evaluated for water surface storage elevations and relationships to various weir elevations. The smaller 1 and 2-year storm events were evaluated since they are more common and found to match the existing discharge and storage volumes very well. The design criteria used is the best available method that protects downstream properties and also keeps the pond in compliance with the MD-378 regulations.



PROFILE



PLAN

TYP. TYPE 1 STILLING BASIN OUTFALL DETAIL

NO SCALE

STILLING BASIN DATA								
STRUCTURE NO.	INV. A	EL. B	C	D	3E	F	B	d
HW-1	360.30	360.30	20.00'	19"	9.00'	1.67'	16.00'	3.00'

CONSTRUCTION SPECIFICATIONS:

1. RIP-RAP SHALL CONSIST OF RIP-RAP CLASS I, AS SPECIFIED IN SECTION 311 MATERIALS, AND PROTECT FROM PLACING, CUTTING OR TEARING. REPAIR ANY DAMAGE CAUSE THEM AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR ADJACENT PIECES OF GEOTEXTILE.
2. PREPARE THE FOUNDATION FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES, CONTRACT ANY FILL REQUIRED IN THE FOUNDATION TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
3. SPREAD THE GEOTEXTILE DIRECTLY ON A SMOOTH AND GRADED THE QUESTIONABLE 4 INCHES OF A ROUNDED SURFACE TO THE DEPTH OF THE RIP-RAP.
4. PLACE THE RIP-RAP TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. THE RIP-RAP SHALL BE PLACED IN SUCH A MANNER AS TO AVOID SEGREGATION OF THE DIFFERENT SIZES. CARE SHALL BE TAKEN NOT TO DISTURB THE UNDERLYING GEOTEXTILE DURING PLACEMENT OF THE RIP-RAP. THE RIP-RAP SHALL BE PLACED IN SUCH A MANNER THAT IT IS ESSENTIALLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
5. AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GROUND.
6. AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GROUND. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIP-RAP. REPAIRS MUST BE MADE IMMEDIATELY. ACCUMULATED SEDIMENT AND DEBRIS MUST BE REMOVED.

MAINTENANCE:

1. INSPECTIONS SHOULD BE CARRIED OUT ON A REGULAR BASIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIP-RAP. REPAIRS MUST BE MADE IMMEDIATELY. ACCUMULATED SEDIMENT AND DEBRIS MUST BE REMOVED.

POND UPGRADE DETAILS & SPECIFICATIONS

WESTLAND FARM ESTATES

LOTS 3 THRU 14 AND OPEN SPACE LOT 15
ZONED RR-DEO
TAX MAP No. 45 GRID No. 5 PARCEL No. 28
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY, 2016
SHEET 19 OF 19

F-15-038

"AS-BUILT"

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