SHEET INDEX

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLAN

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One, Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS MK — DATE 10/19/2020

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/2/20

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/22/20

REVISIONS

NO.	DESCRIPTION	DATE
1	To show hse type grading and SWM details	8/5/21

STORMWATER MANAGEMENT PRACTICES

LOT No.	MICRO BIO-RETENTION (M-6)	DRY WELL (M-5)	ROOFTOP DISCONNECTION (N-1)	NON-ROOFTOP DISCONNECTION (N-2)
24	-	3	-	-
25	-	3	-	-
26	-	3	-	YES
27	-	2	-	YES
28	-	2	-	YES
29	-	3	-	YES
30	-	3	-	-
31	-	3	-	YES
32	-	3	-	YES
33	-	3	-	YES
34	-	3	-	YES
35	-	3	-	YES
36	-	3	-	YES
37	-	2	-	YES
38	-	2	-	YES
39	-	2	-	YES
40	-	2	-	YES
41	-	2	-	YES
42	-	4	-	YES
43	-	2	YES	YES
44	-	2	YES	YES

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	POSTED SPEED LIMIT	R/W WIDTH
KIMBERLYS WAY	PRIVATE USE-IN-COMMON	25 M.P.H.	---	36' EASE.
HERITAGE RIDGE ROAD	PUBLIC ACCESS STREET	30 M.P.H.	25 M.P.H.	50'

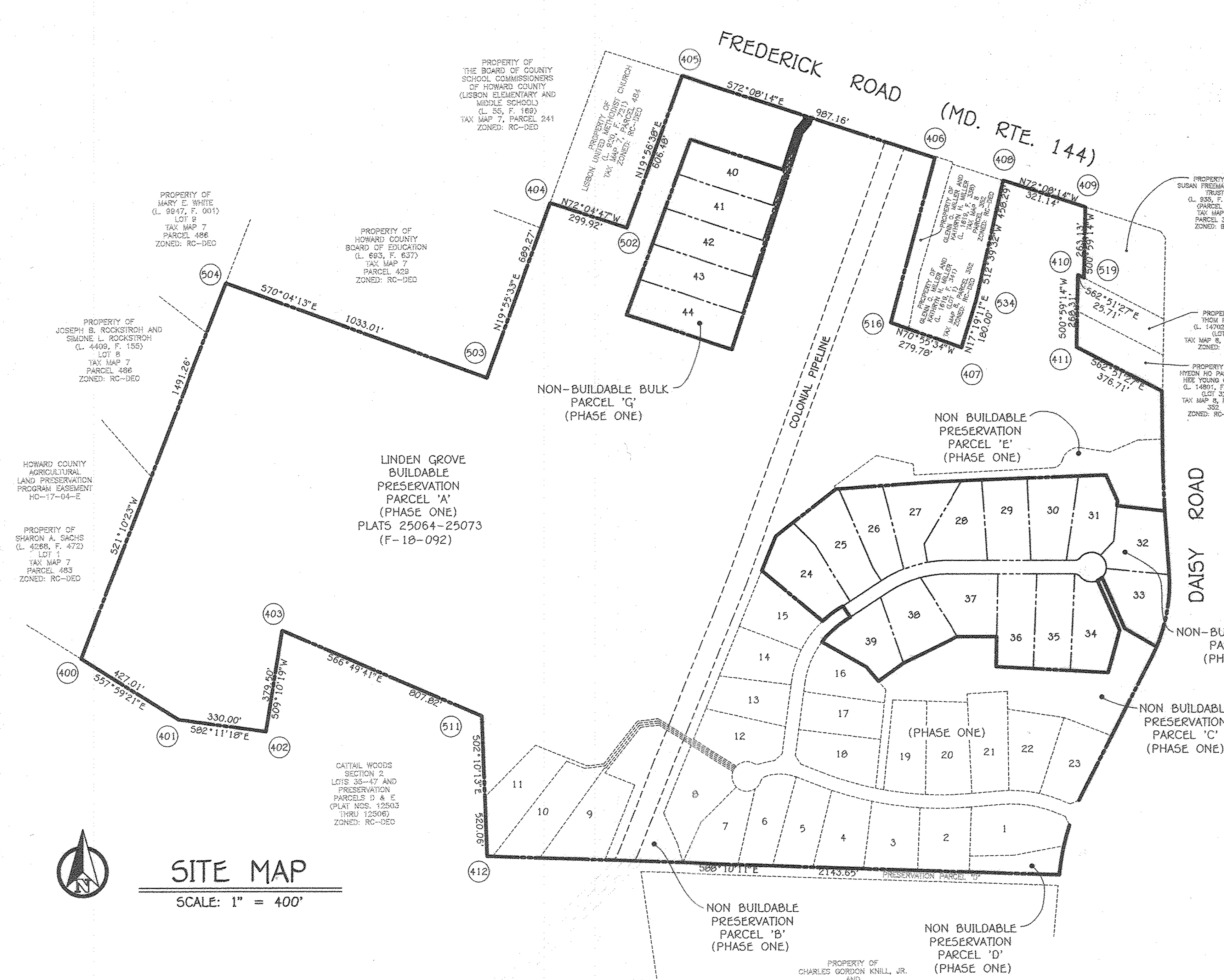
TRAFFIC CONTROL SIGNS

ROAD NAME	CENTERLINE STA.	OFFSET	POSTED SIGN	SIGN CODE
KIMBERLYS WAY	0+20	13'L	STOP	R1-1

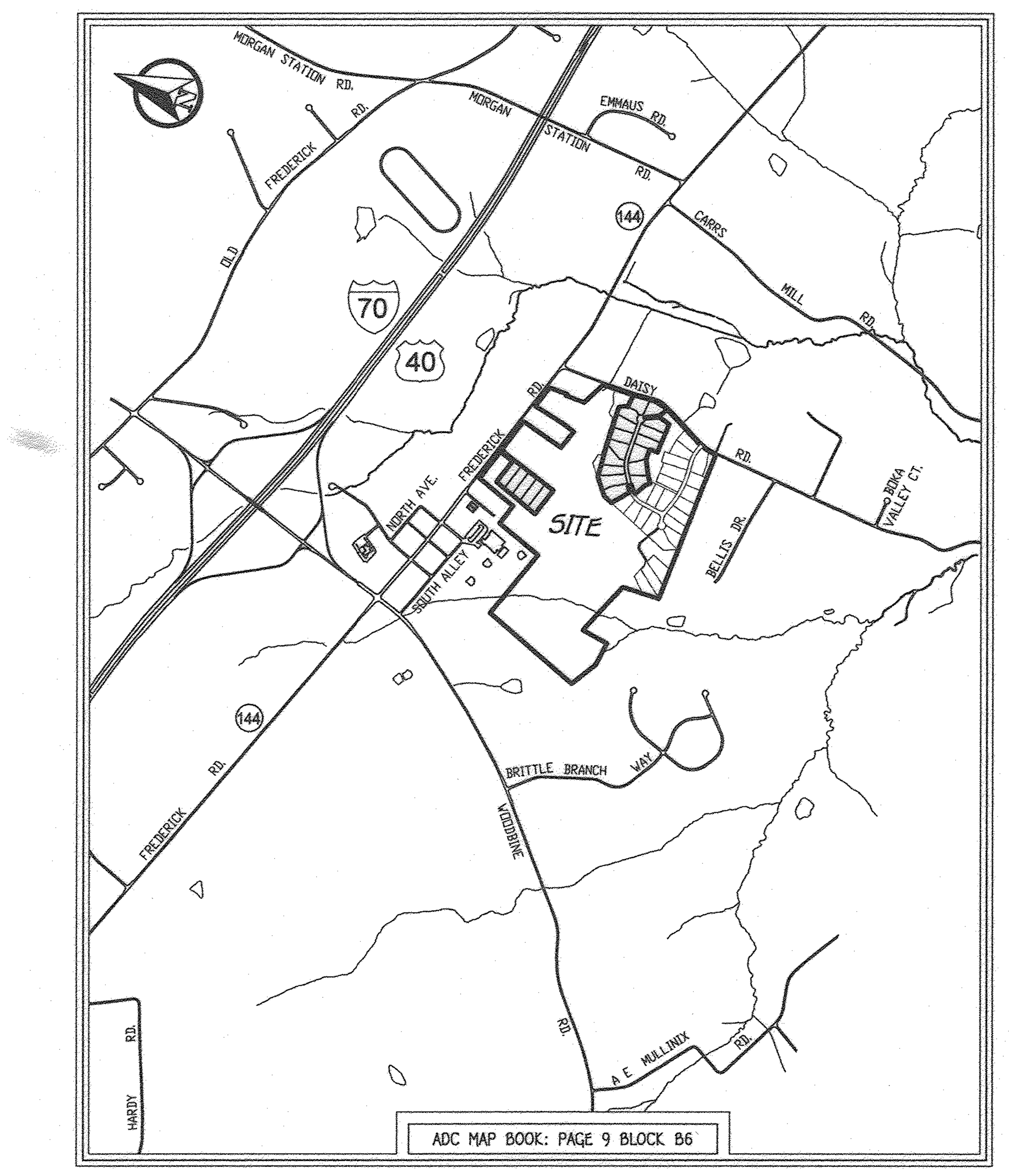
NOTE: SEE SHEET 2 FOR "NO PARKING" SIGN LOCATIONS ALONG HERITAGE RIDGE.
5 TOTAL (R7-1) & 4 TOTAL (R7-1(1))

AS-BUILT SURVEY NOTE:

THE INSTRUMENTS USED IN PERFORMING AS-BUILT SURVEY: 10 SECOND ROBOTIC TOTAL STATION & PRISM



SITE MAP
SCALE: 1" = 400'



VICINITY MAP
SCALE: 1" = 2000'

ADC MAP BOOK: PAGE 9 BLOCK B6

4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DENSITY TABULATION (PHASE ONE & TWO)

1. TRACT AREA = 176.680 ACRES
2. FLOODPLAIN AREA = 6.204 ACRES
3. STEEP SLOPES AREA = 0.60 ACRES
4. NET TRACT AREA = 169.876 ACRES (176.680 AC - 6.204 AC. - 0.60 AC.)
5. DENSITY ALLOWED BY MATTER OF RIGHT: 176.680 ACRES X 1 DWELLING UNIT/4.25 ACRES = 41.57 or 41 SINGLE FAMILY DETACHED UNITS.
6. DENSITY ALLOWED WITH DENSITY EXCHANGE OPTION = 84 SINGLE FAMILY UNITS (1 DWELLING UNIT /2 NET ACRES x 169.876 NET ACRES)
7. TOTAL NUMBER OF PROPOSED DWELLING UNITS = 45 UNITS (23 UNITS IN PHASE ONE) (44 CLUSTER LOTS + 1 BUILDABLE PRESERVATION PARCEL)
8. DEVELOPMENT RIGHTS WILL BE TRANSFERRED TO THIS SUBDIVISION PURSUANT TO THE DENSITY TRANSFER PROVISION OF SECTION 106.0 OF THE ZONING REGULATIONS FOR THIS PROPERTIES UNDERLYING RC ZONING DISTRICT. (45 PROPOSED DWELLING UNITS - 41 BASE DENSITY / RIGHT = 4 DEVELOPMENT RIGHTS ARE REQUIRED TO BE TRANSFERRED WITH THIS PHASE TWO SUBMISSION.

AS-BUILT SURVEY NOTE:
THE INSTRUMENTS USED IN PERFORMING AS-BUILT SURVEY: 10 SECOND ROBOTIC TOTAL STATION & PRISM

0' 2000' 4000'
Scale: 1" = 2000'

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

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

AS-BUILT CERTIFICATION
... "AS-BUILT" information ... sheet.
5/31/22
Date

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. 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.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. TRAFFIC CONTROL DEVICES:
   a. THE RI-1 (STOP) SIGN AND THE STREET SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
   b. THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
   c. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MdMUTCD).
   d. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
5. 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:
   ✓CONTROL STATION NO. 08 DA N 606,934.18 E 1,295,730.52 ELEV. 554.836
   ✓CONTROL STATION NO. 08 GB N 603,764.82 E 1,294,891.90 ELEV. 570.387 } AS-BUILT
6. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY MARS GROUP DATED APRIL 19, 2016 AND WAS APPROVED UNDER SP-17-003.
7. BACKGROUND INFORMATION:
   A. SUBDIVISION NAME: LINDEN GROVE
   B. TAX MAP NO.: 8
   C. PARCEL NO.: 5
   D. ZONING: RC-DEO
   E. ELECTION DISTRICT: FOURTH
   F. TOTAL TRACT AREA: 176.680 AC.± (PHASE ONE & TWO)
   G. PHASE TWO AREA = 26.155 AC.± (BULK PARCELS 'F' & 'G')
   H. AREA OF STEEP SLOPES 25% AND GREATER = 0.00 AC.± (PHASE TWO)
   I. NO. OF BUILDABLE LOTS: 21 (PHASE TWO)
   J. NO. OF BUILDABLE PRESERVATION PARCELS: 0 (PHASE TWO)
   K. NO. OF NON-BUILDABLE PRESERVATION PARCELS: 0 (PHASE TWO)
   L. NO. OF NON-BUILDABLE BULK PARCELS: 0
   M. AREA OF BUILDABLE LOTS: 24.901 AC.± (PHASE TWO)
   N. AREA OF BUILDABLE PRESERVATION PARCELS: 0.00 AC.± (PHASE TWO)
   O. AREA OF NON-BUILDABLE PRESERVATION PARCELS: 0.00 AC.± (PHASE TWO)
   P. AREA OF NON-BUILDABLE BULK PARCELS: 0.00 AC.±
   Q TOTAL AREA OF ROADWAY TO BE DEDICATED: 1.254 AC.± (PHASE TWO)
   R. PREVIOUS FILE NOS.: ECP-17-019, SP-17-003, F-18-092, PB CASE NO.432, WP-18-001
   S. AREA OF FLOODPLAIN: 0.00 AC.± (PHASE TWO)
8. TO THE BEST OF OUR KNOWLEDGE, NO CEMETERIES EXIST ON THE SUBJECT PROPERTY BASED ON A VISUAL OBSERVATION OR LISTED IN AVAILABLE HOWARD COUNTY CEMETERY INVENTORY MAP.
9. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
10. PROPERTY ZONED RC-DEO PER 10/6/13 COMPREHENSIVE ZONING PLAN.
11. IN ACCORDANCE WITH SECTION 104.0.F OF THE ZONING REGULATIONS AT LEAST 10% OF THE DWELLINGS IN EACH RC DEVELOPMENT SHALL BE MODERATE INCOME HOUSING UNITS.
12. SOILS INFORMATION TAKEN FROM NRCS WEB SOIL SURVEY.
13. FOREST STAND & WETLAND DELINEATION REPORT DATED DECEMBER, 2016 WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. AND WAS APPROVED UNDER SP-17-003.
14. THERE ARE STEEP SLOPES OF 25% OR GREATER ON SITE OF 0.60 ACRES FROM PHASE I. NO STEEP SLOPES OR WETLAND AREAS FROM PHASE I WILL BE DISTURBED WITH THIS F-PLAN.
15. A BARN WITH ACCESSORY STRUCTURES EXIST ON-SITE AND ARE PLANNED TO REMAIN.
16. SITE IS ADJACENT TO TWO SCENIC ROADS (DAISY ROAD & FREDERICK ROAD. A SCENIC ROADS REPORT HAS BEEN PROVIDED BY FISHER, COLLINS & CARTER, INC. DATED 10/24/16.
17. PRIVATE RANGE OF ADDRESS SIGN ASSEMBLIES SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE FOR THE TWO (2) USE-IN-COMMON DRIVEWAYS. ONE LOCATED AT THE CUL-DE-SAC OF ROAD 'A' AND ONE LOCATED OFF FREDERICK ROAD. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
18. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT TO THE PIPESTEM LOT DRIVEWAY.
19. ARTICLES OF INCORPORATION FOR THE LINDEN GROVE HOMEOWNERS ASSOCIATION, INC. WILL BE FILED WITH THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION PRIOR TO RECORDATION OF THE FINAL PLAT.
20. ALL EXISTING WELL AND SEPTIC SYSTEMS WHICH ARE NOT UTILIZED IN THE LOT DESIGN WILL BE ABANDONED PRIOR TO RECORDATION OF THE FINAL PLAT.
21. [hatched symbol] THIS AREA DESIGNATES A PRIVATE SEWERAGE AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE AREAS 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 SEWERAGE AREA. RECORDATION OF A MODIFIED AREA SHALL NOT BE NECESSARY.
22. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
23. ANY CHANGES TO THE PRIVATE SEWERAGE AREA SHALL REQUIRE A REVISED PERC CERTIFICATION PLAN.
24. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S), OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
25. THE 100 YEAR FLOODPLAIN DELINEATED ON THIS PLAN HAS BEEN DETERMINED TO BE "NOT CRITICAL" BASED ON A REPORT PREPARED BY FISHER, COLLINS AND CARTER, INC. ON JANUARY 6, 2017.
26. A PRE-SUBMISSION COMMUNITY MEETING WAS HELD AT THE GLENWOOD LIBRARY FOR THIS PROJECT ON 2/23/17 ASSOCIATED WITH SP-17-003.
27. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST ACT. NO, CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION HAVE BEEN FULFILLED UNDER PHASE ONE (F-18-009).
28. PERIMETER LANDSCAPING FOR THIS DEVELOPMENT SHALL BE IN ACCORDANCE WITH SECTION 16.124 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF $18,150.00 FOR 101 SHADE TREES, 9 EVERGREEN TREES & 10 SHRUBS HAVE BEEN PROVIDED AS PART OF THE DEVELOPER'S AGREEMENT.
29. STREET TREES ALONG PUBLIC ROADS HAVE BEEN PROVIDED AND WILL BE ADDRESSED IN THE DED's COST ESTIMATE FOR PUBLIC ROAD IMPROVEMENTS. THE SURETY FOR THE REQUIRED 50 STREET TREES IN THE AMOUNT OF $15,000.00 (50 x $300) HAS BEEN POSTED WITH THE DEVELOPER'S AGREEMENT.
30. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
31. THE EXISTING TOPOGRAPHY INFORMATION SHOWN IS BASED ON HOWARD COUNTY AERIAL CONTOURS AND SUPPLEMENTED WITH A FIELD RUN TOPOGRAPHIC SURVEY PERFORMED ON OR ABOUT 7/21/16 BY FISHER, COLLINS & CARTER, INC.
32. BOUNDARY INFORMATION IS BASED ON A SURVEY PERFORMED ON OR ABOUT 11/11/14 BY FISHER, COLLINS & CARTER, INC.
33. THIS PROPERTY IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT. PRIVATE WELL AND SEPTIC WILL BE UTILIZED FOR THIS PROJECT
34. STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. STORMWATER MANAGEMENT IS BEING PROVIDED BY THE USE OF (N-1) ROOFTOP DISCONNECTION CREDITS, (N-2) NON-ROOFTOP DISCONNECTION CREDIT, (M-5) DRYWELLS, (M-6) MICRO BIO-RETENTION FACILITIES AND (F-6) BIO-RETENTION FACILITIES TO MEET AND EXCEED THE REQUIRED ESD VOLUME. SWM FACILITIES THAT ARE CONSTRUCTED ON LOT ARE NOT INCLUDED IN THIS AS-BUILT, AS-BUILT INFORMATION FOR LOT SWM FACILITIES ARE INCLUDED IN A SEPARATE SUBMISSION AS PART OF THE GRADING U & O ACCEPTANCE PROCEDURES.
35. STORM WATER MANAGEMENT DEVICES LOCATED ON INDIVIDUAL LOTS WILL BE OWNED AND MAINTAINED BY THAT PARTICULAR LOT OWNER AND SUBJECT TO THE REQUIREMENTS OF A RECORDED DECLARATION OF COVENANT, SWM DEVICES LOCATED WITHIN THE PUBLIC R/W WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED, AND SWM DEVICES LOCATED ON PARCELS WILL BE OWNED AND MAINTAINED BY THE H.O.A., SWM FACILITIES SERVING PUBLIC ROADS, BUT LOCATED ON PRIVATE LOTS WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED.
36. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
37. ALL WELLS MUST BE DRILLED PRIOR TO HOWARD COUNTY HEALTH DEPARTMENT SIGNATURE OF THE FINAL PLAT.
38. A GROUNDWATER APPROPRIATIONS PERMIT MUST BE OBTAINED FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT PRIOR TO HOWARD COUNTY HEALTH DEPARTMENT SIGNATURE OF THE FINAL PLAT. STATE WATER APPROPRIATION AND USE PERMIT No. HO2017G002(01).
39. DRIVEWAY (S) 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
   C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 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 DRIVEWAY SURFACE
   F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
   G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
40. THIS F-PLAN CANNOT BE USED FOR THE CONSTRUCTION OF HOUSES SINCE THE ACTUAL HOUSE TYPE AND THE REQUIRED SEDIMENT CONTROL HAS NOT BEEN ESTABLISHED.
41. THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE 10-06-13 ZONING REGULATIONS PER COUNCIL BILL NO. 32-2013. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACKS AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF A BUILDING OR GRADING PERMIT APPLICATION.
42. THE CONCRETE PADS FOR REFUSE AND RECYCLING COLLECTION LOCATED WITHIN THE USE-IN-COMMON DRIVEWAY EASEMENTS FOR LOTS 40-44 WILL BE MAINTAINED BY THE OWNERS OF THOSE LOTS PURSUANT TO THE DECLARATION OF RIGHT OF ACCESS AND MAINTENANCE OBLIGATION RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY ALONG WITH THE RECORDING OF THE PLAT.
43. IN ACCORDANCE WITH SECTION 104.0.F OF THE ZONING REGULATIONS AT LEAST 10% OF THE DWELLINGS IN EACH RC DEVELOPMENT SHALL BE MODERATE INCOME HOUSING UNITS. THIS PROJECT HAS ELECTED TO SATISFY THE M.I.H.U. REQUIREMENTS BY A FEE-IN-LIEU PAYMENT. THE EXECUTED M.I.H.U. AGREEMENT WILL BE RECORDED SIMULTANEOUSLY WITH THIS PLAT.
44. SUBDIVISION IS SUBJECT TO 104.0.F. OF THE ZONING REGULATIONS. AT LEAST 10% OF THE DWELLING UNITS SHALL BE MODERATE INCOME HOUSING UNITS (M.I.H.U.) OR AN ALTERNATIVE COMPLIANCE WILL BE PROVIDED. THE DEVELOPER SHALL EXECUTE A M.I.H.U. AGREEMENT WITH THE DEPARTMENT OF HOUSING TO INDICATE HOW THE M.I.H.U. REQUIREMENT WILL BE MET. THE M.I.H.U AGREEMENT AND COVENANTS WILL BE RECORDED SIMULTANEOUSLY WITH THE ASSOCIATED PLAT IN THE LAND RECORDS OF HOWARD COUNTY, MARYLAND. THIS DEVELOPMENT WILL MEET M.I.H.U. ALTERNATIVE COMPLIANCE BY A PAYMENT OF A FEE-IN-LIEU TO THE DEPARTMENT OF HOUSING FOR EACH REQUIRED UNIT.
   MODERATE INCOME HOUSING UNIT (M.I.H.U.) TABULATION:
   A. TOTAL M.I.H.U. REQUIRED = FOR PHASE ONE + PHASE TWO = 5 UNITS.
      (23 LOTS + 1 BUILDABLE PARCEL) + (21 LOTS) X 10%
   B. M.I.H.U. REQUIRED FOR PHASE TWO = 2 UNITS.
      (TOTAL M.I.H.U. - PHASE ONE M.I.H.U.)
      (5 UNITS - 3 UNITS = 2 UNITS)
   C. M.I.H.U. PROPOSED = DEVELOPER WILL PURSUE ALTERNATIVE COMPLIANCE BY PAYING A FEE-IN-LIEU TO HOWARD COUNTY HOUSING DEPARTMENT FOR THE UNITS REQUIRED BY THE DEVELOPMENT.
   D. AN EXECUTED M.I.H.U. AGREEMENT WITH THE HOWARD COUNTY HOUSING DEPARTMENT HAS BEEN COMPLETED.
45. THIS PROPERTY IS DESIGNATED AS TIER III PROPERTY PER THE SUSTAINABLE GROWTH AND AGRICULTURE ACT OF 2012, MAP 6-3, AS APPROVED BY THE HOWARD COUNTY COUNCIL AS PART OF PLAN HOWARD 2030.
46. THIS PLAN IS SUBJECT TO AN ALTERNATIVE COMPLIANCE (WP-18-001) FROM SECTION 16.116.F.3 - ACCESS RESTRICTIONS, RESTRICTING TWO POINTS OF ACCESS FROM A MINOR ARTERIAL ROADWAY. THE PURPOSE OF THE TWO ACCESSES IS TO SEPARATE THE USE-IN-COMMON RESIDENTIAL DRIVEWAY FROM THE EXISTING FARM USE DRIVEWAY. THIS ALTERNATIVE COMPLIANCE WAS APPROVED BY THE HOWARD COUNTY PLANNING BOARD ON JANUARY 18, 2018 WITH THE FOLLOWING CONDITION:
   1) THE APPLICANT SHALL COORDINATE THE DESIGN OF THE DRIVEWAYS FOR FUTURE LOTS 40-44 WITH THE FIRE DEPARTMENT TO ENSURE ADEQUATE VEHICLE TURNAROUND AND ANY NECESSARY PULLOVER AREAS AND WITH THE DEVELOPMENT ENGINEERING DIVISION AND STATE HIGHWAY ADMINISTRATION TO ENSURE ADEQUATE SITE DISTANCE. THE PROPOSED ACCESS MUST MEET ALL SHA ACCESS AND SIGHT DISTANCE REQUIREMENTS.
47. THE PROPOSED 4' WIDE NATURE TRAIL LOCATED ON BUILDABLE PRESERVATION PARCEL 'A' WITH THE EXISTING FOREST CONSERVATION EASEMENT BEHIND LOTS 40-44 SHALL BE MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.

Aldo M. Vitucci, P.E. — 9-10-2020 Date

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

LINDEN GROVE
PHASE TWO
LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO
TAX MAP No. 8 GRID No. 7 PARCEL No. 5
4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 16, 2020

"AS-BUILT" F-20-019

CENTERLINE LINE TABLE		
Line #	Length	Direction
L6	202.93'	N56° 47' 38"E
L7	534.14'	S89° 59' 07"W

CENTERLINE CURVE TABLE					
Curve #	Delta	Arc Length	Radius	Chord Bearing	Chord Length
C5	033.1914	246.20'	425.00'	S73° 23' 23"W	242.77'

NOTE:
SEE SHEET 12 FOR MICRO BIO-RETENTION (M-6) DETAIL PLANS.

AS-BUILT CERTIFICATION

I hereby certify, by my seal, that the facilities shown on the plan was constructed as shown on this "AS-BUILT" plan meet the approved plans and specifications.

5/31/22
Date

NO.	DESCRIPTION	DATE

REVISIONS

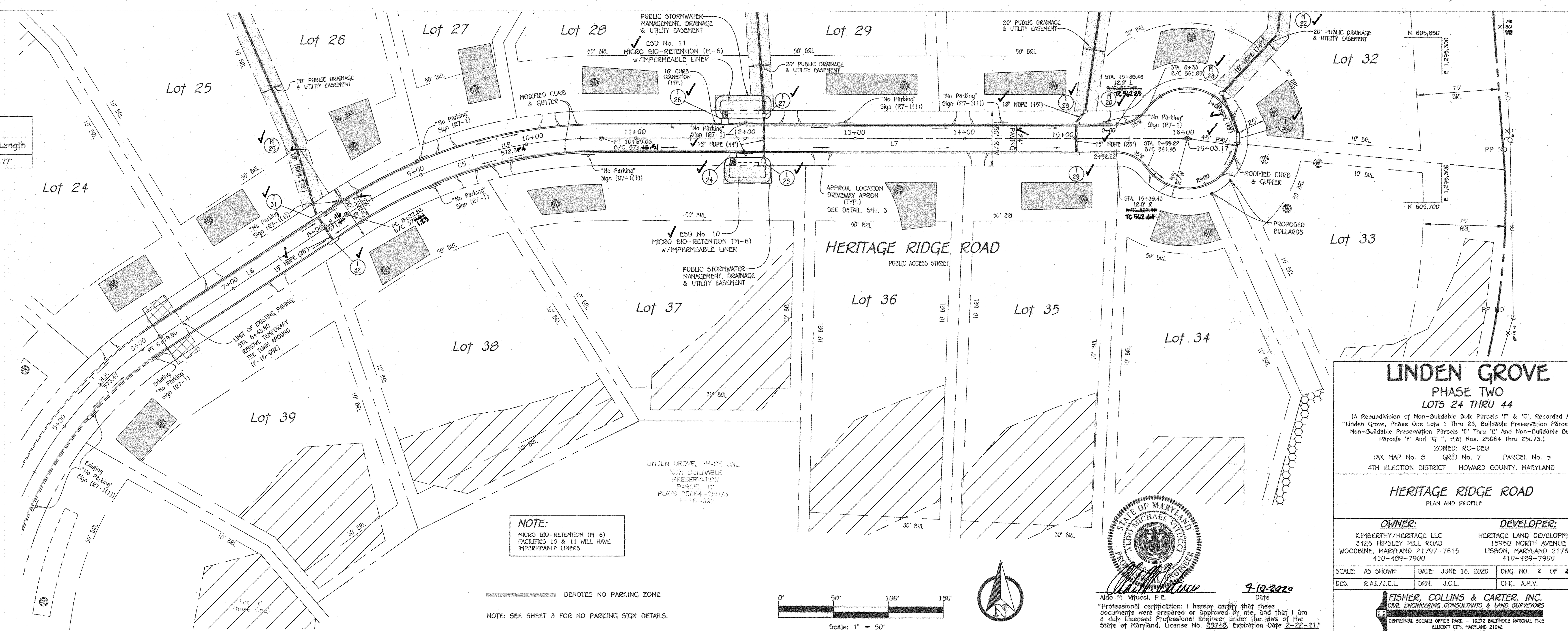
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/2/20

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/22/20

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS MK — DATE 10/19/2020



NOTE:
MICRO BIO-RETENTION (M-6) FACILITIES 10 & 11 WILL HAVE IMPERMEABLE LINERS.

DENOTES NO PARKING ZONE

NOTE: SEE SHEET 3 FOR NO PARKING SIGN DETAILS.

Scale: 1" = 50'

Aldo M. Vitucci, P.E. — Date 9-10-2020

"Professional certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

LINDEN GROVE
PHASE TWO
LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO
TAX MAP No. 8 GRID No. 7 PARCEL No. 5
4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

HERITAGE RIDGE ROAD
PLAN AND PROFILE

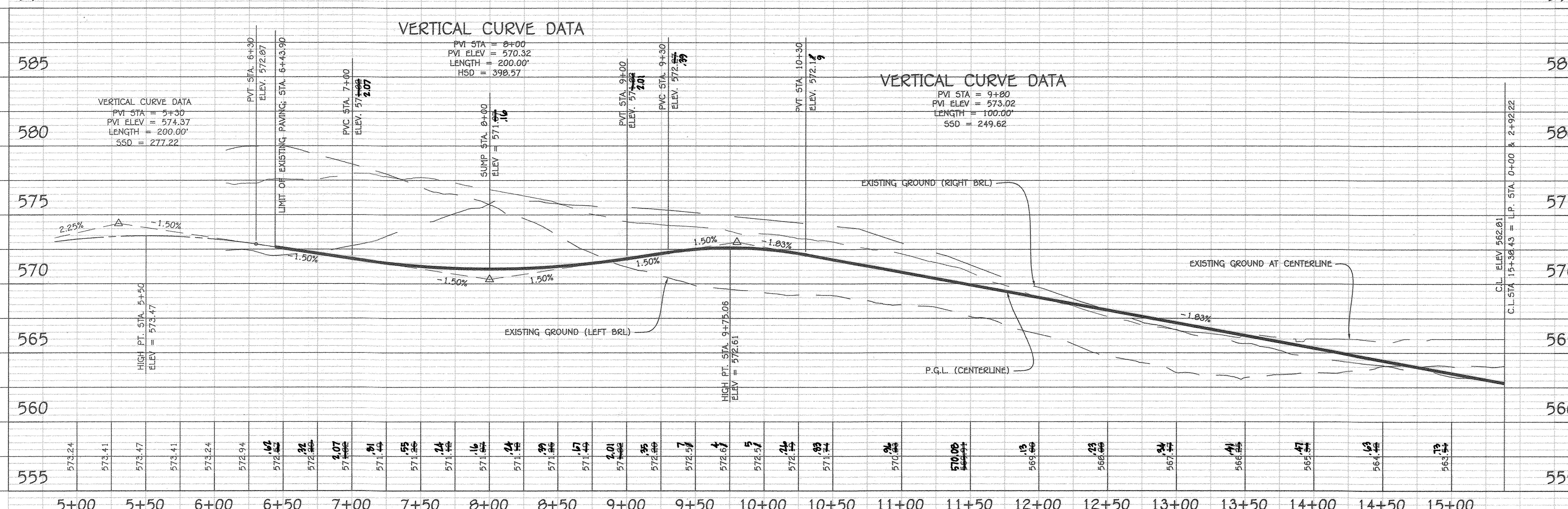
OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

SCALE: AS SHOWN	DATE: JUNE 16, 2020	DWG. NO. 2 OF 24
DES. R.A.I./J.C.L.	DRN. J.C.L.	CHK. A.M.V.

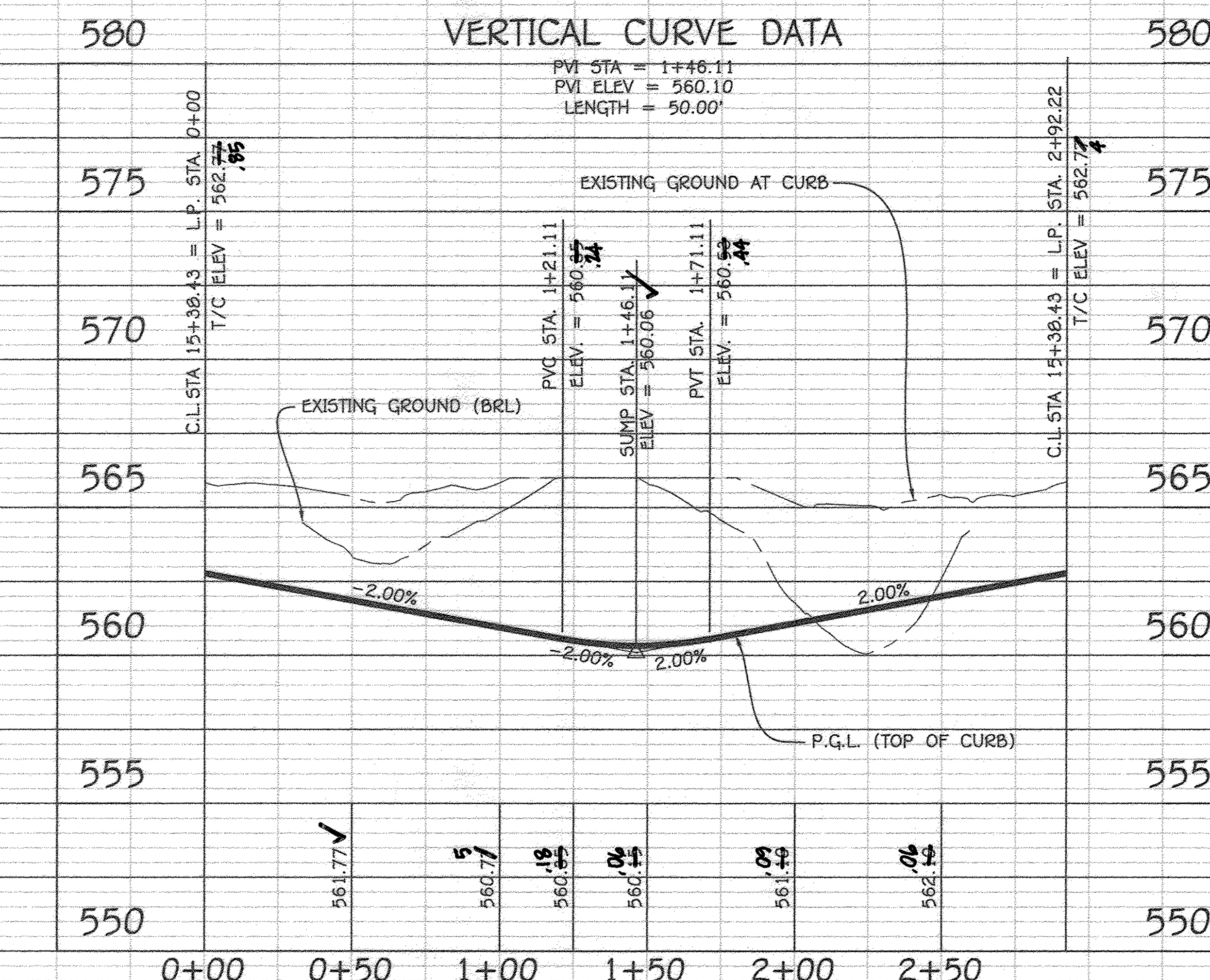
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

HERITAGE RIDGE ROAD
PUBLIC ACCESS STREET



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

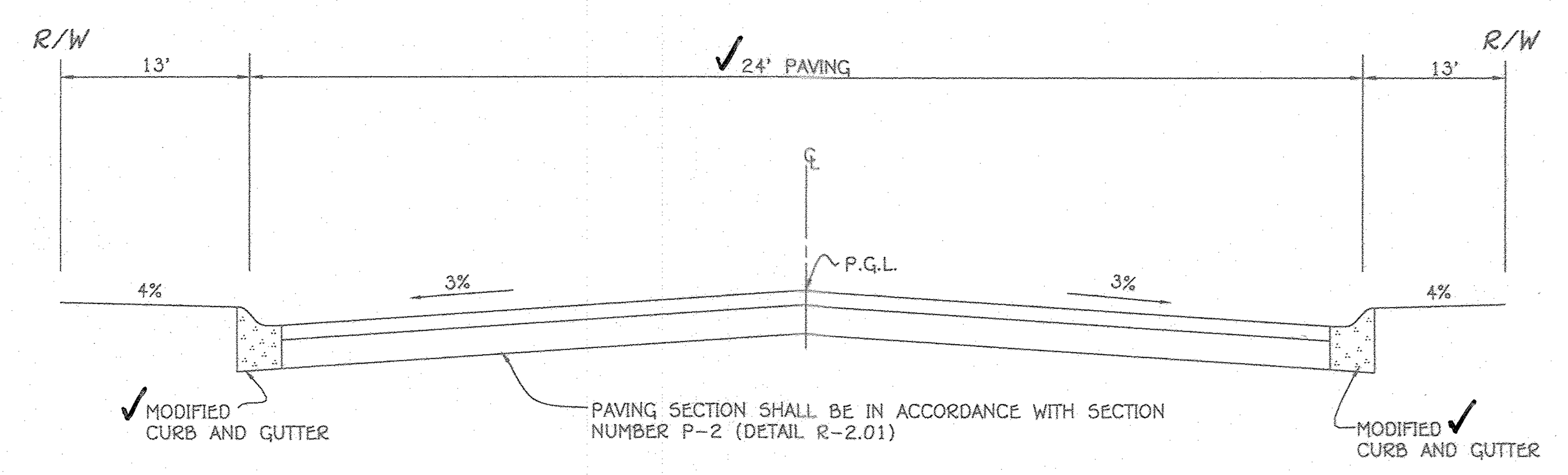
HERITAGE RIDGE ROAD



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

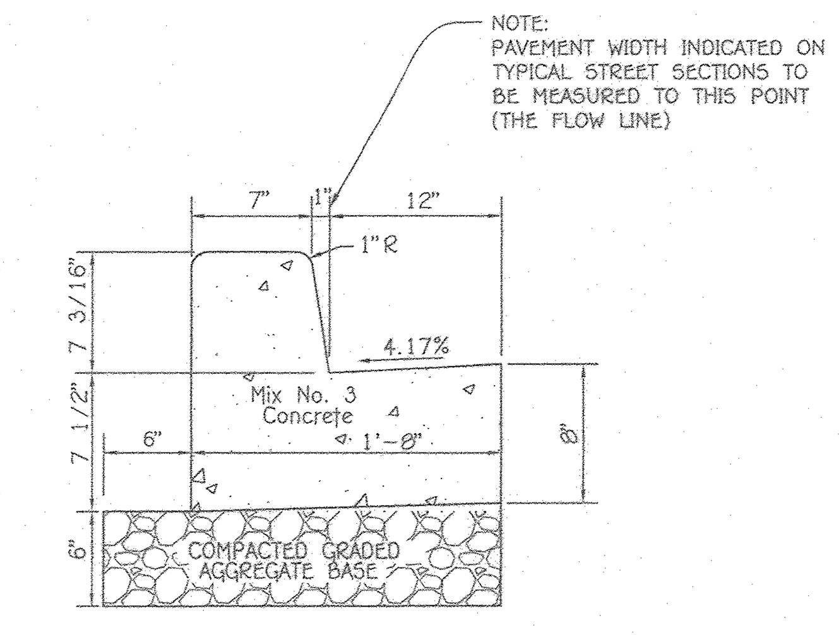
"AS-BUILT" F-20-019

I:\2012\12026\dwg\Finals\Phase II Finals\12026 Sheet 2 Road Plan and profiles.dwg, C-02_F-20-019 Sheet 2, 1:1



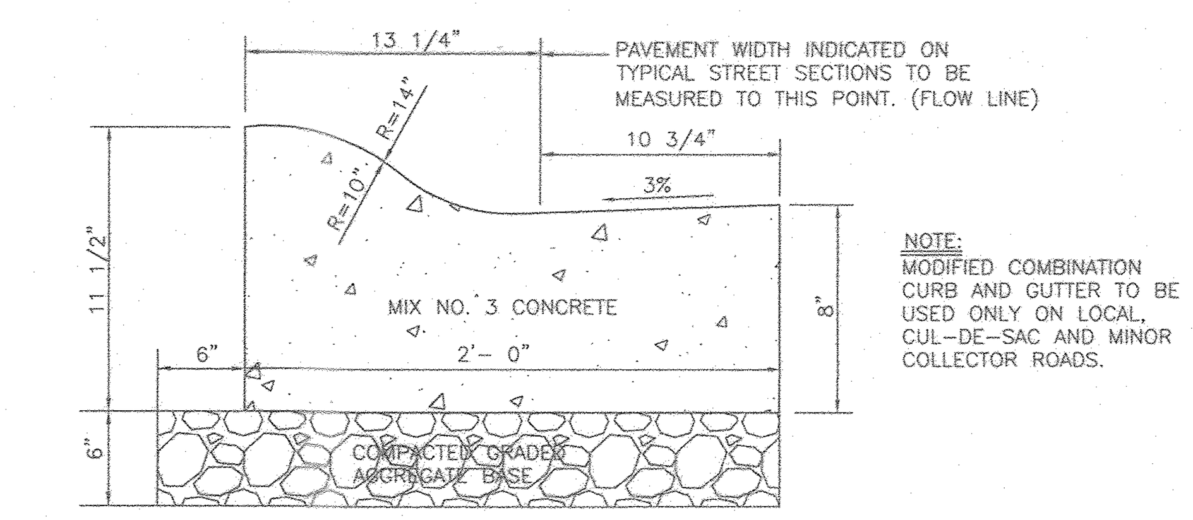
TYPICAL ROADWAY SECTION

NO SCALE



7" COMBINATION CONCRETE CURB AND GUTTER

NO SCALE (R-3.01)



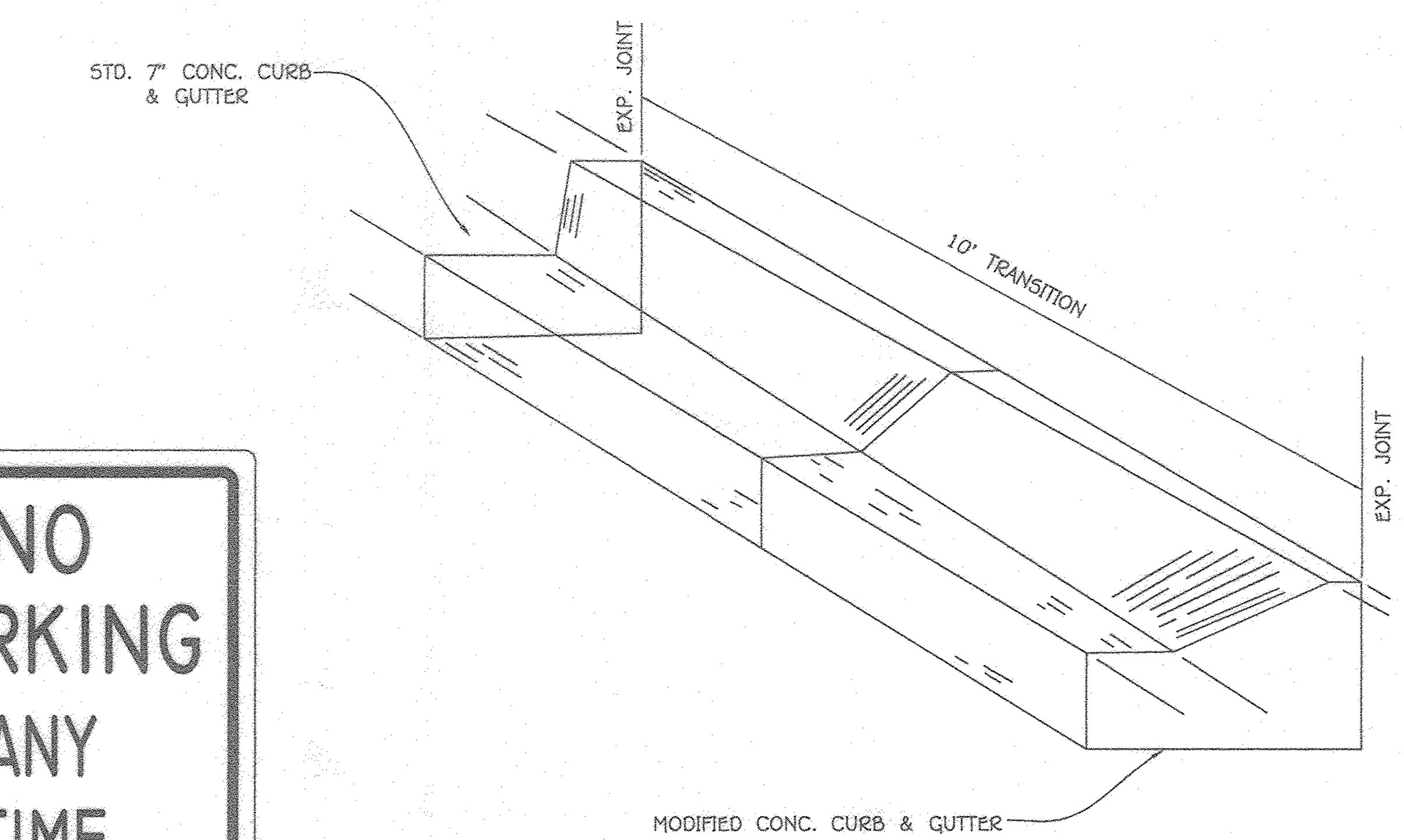
MODIFIED COMBINATION CURB AND GUTTER

NO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS MK	8/17/2020 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT DJ	11/2/20 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION AW	8.28.20 DATE

REVISIONS

NO.	DESCRIPTION	DATE



CONCRETE CURB & GUTTER TRANSITION

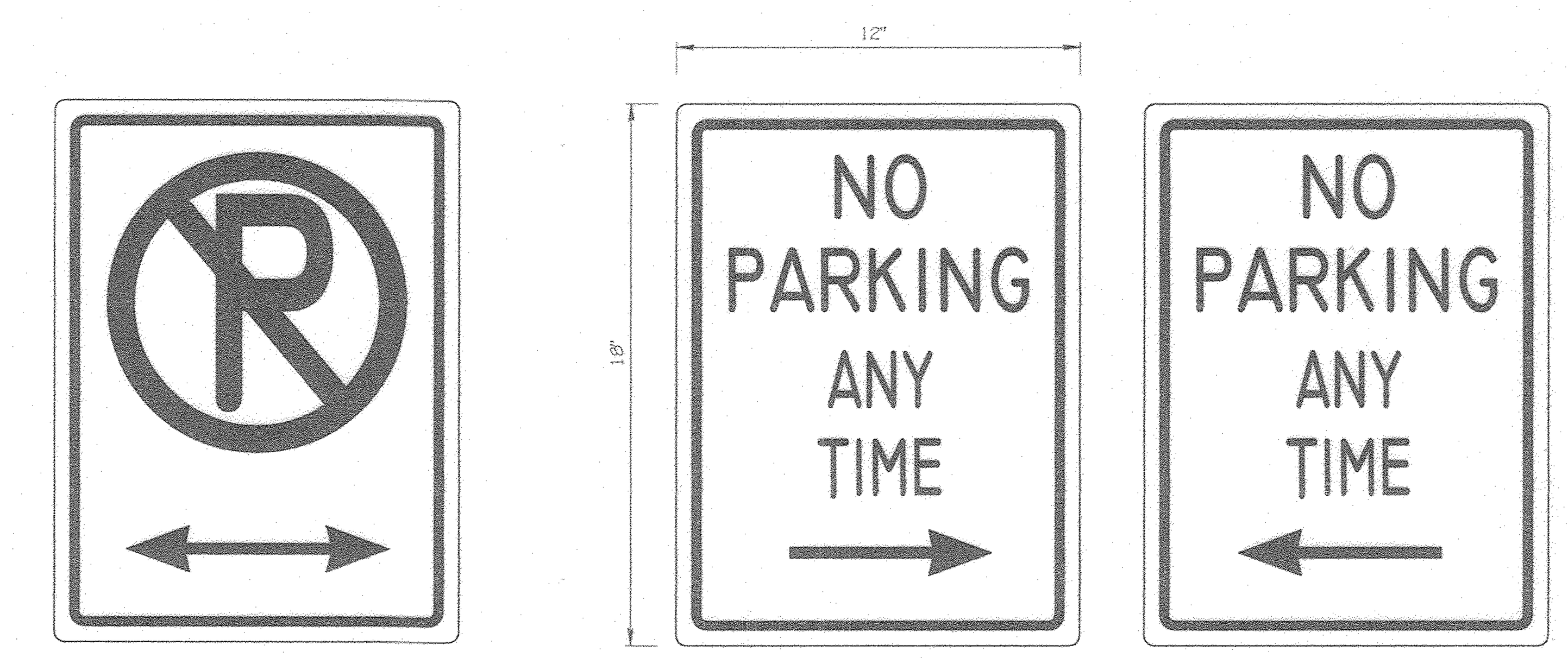
NO SCALE

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS	PAVING SECTION
HERITAGE RIDGE ROAD	PUBLIC ACCESS STREET	30 M.P.H.	RC-DEO	6+43.90 TO 16+03.17	P-2

DETAIL R-2.01

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥7	3 TO <5	5 TO <7	≥7
		PAVEMENT MATERIAL (INCHES)	MIN HMA WITH GAB			HMA WITH CONSTANT GAB		
P-2	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY; LOCAL ROADS: ACCESS PLACE, ACCESS STREET; CUL-DE-SACS: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM. PG 64-22; LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		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



"R7-I(I) NO PARKING" SIGN DETAIL

NOT TO SCALE

"R7-I NO PARKING" SIGN DETAIL

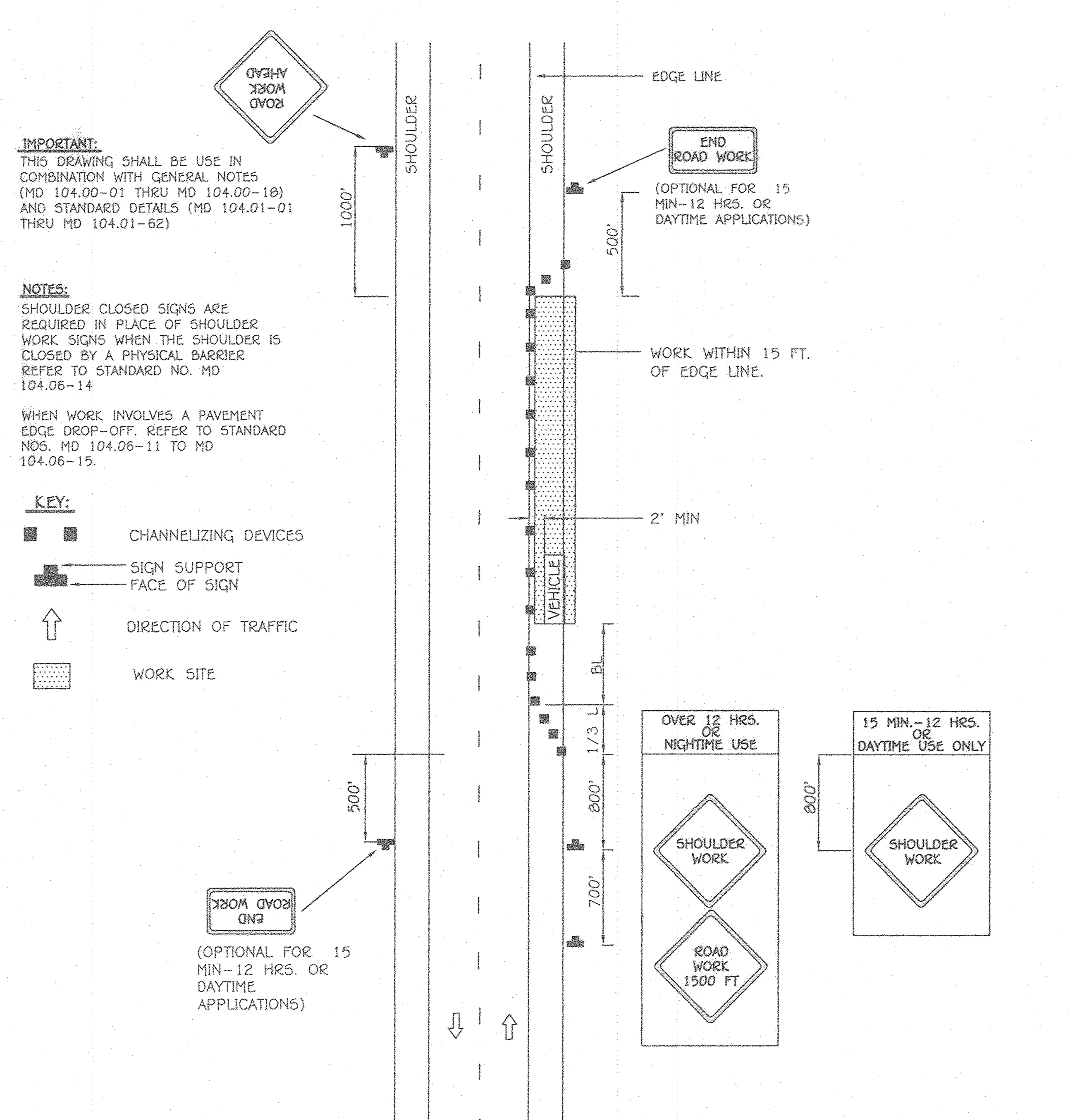
NOT TO SCALE

IMPORTANT:
THIS DRAWING SHALL BE USE IN COMBINATION WITH GENERAL NOTES (MD 104.00-01 THRU MD 104.00-18) AND STANDARD DETAILS (MD 104.01-01 THRU MD 104.01-62)

NOTES:
SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER REFER TO STANDARD NO. MD 104.06-14

WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-11 TO MD 104.06-15.

KEY:
CHANNELIZING DEVICES
SIGN SUPPORT FACE OF SIGN
DIRECTION OF TRAFFIC
WORK SITE



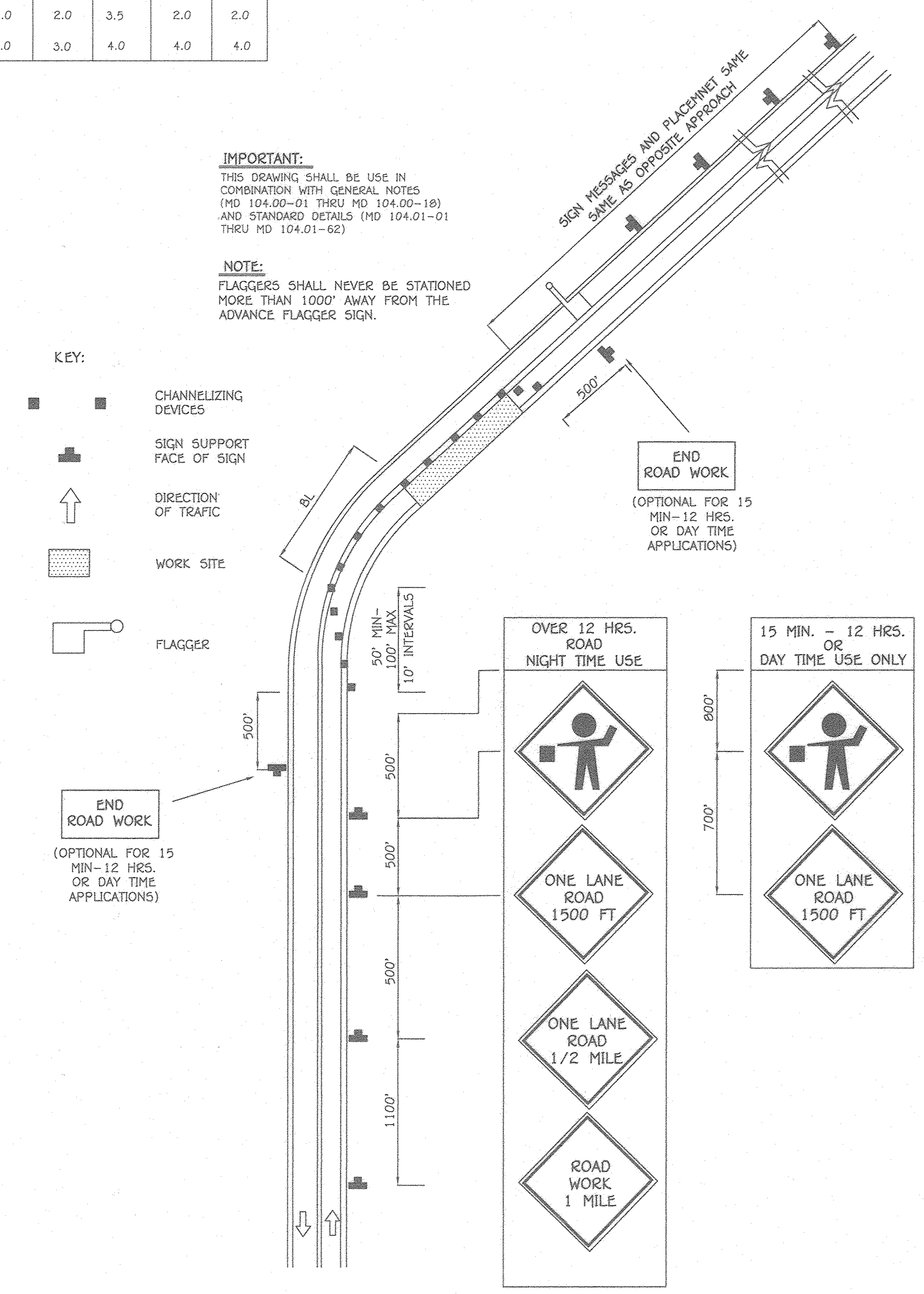
FOR FREDERICK ROAD - ROUTE 144 USE-IN-COMMON DRIVEWAY INSTALLATION SHOULDER WORK/2-LANE, 2-WAY EQL/LESS THAN 40 MPH

NO SCALE

IMPORTANT:
THIS DRAWING SHALL BE USE IN COMBINATION WITH GENERAL NOTES (MD 104.00-01 THRU MD 104.00-18) AND STANDARD DETAILS (MD 104.01-01 THRU MD 104.01-62)

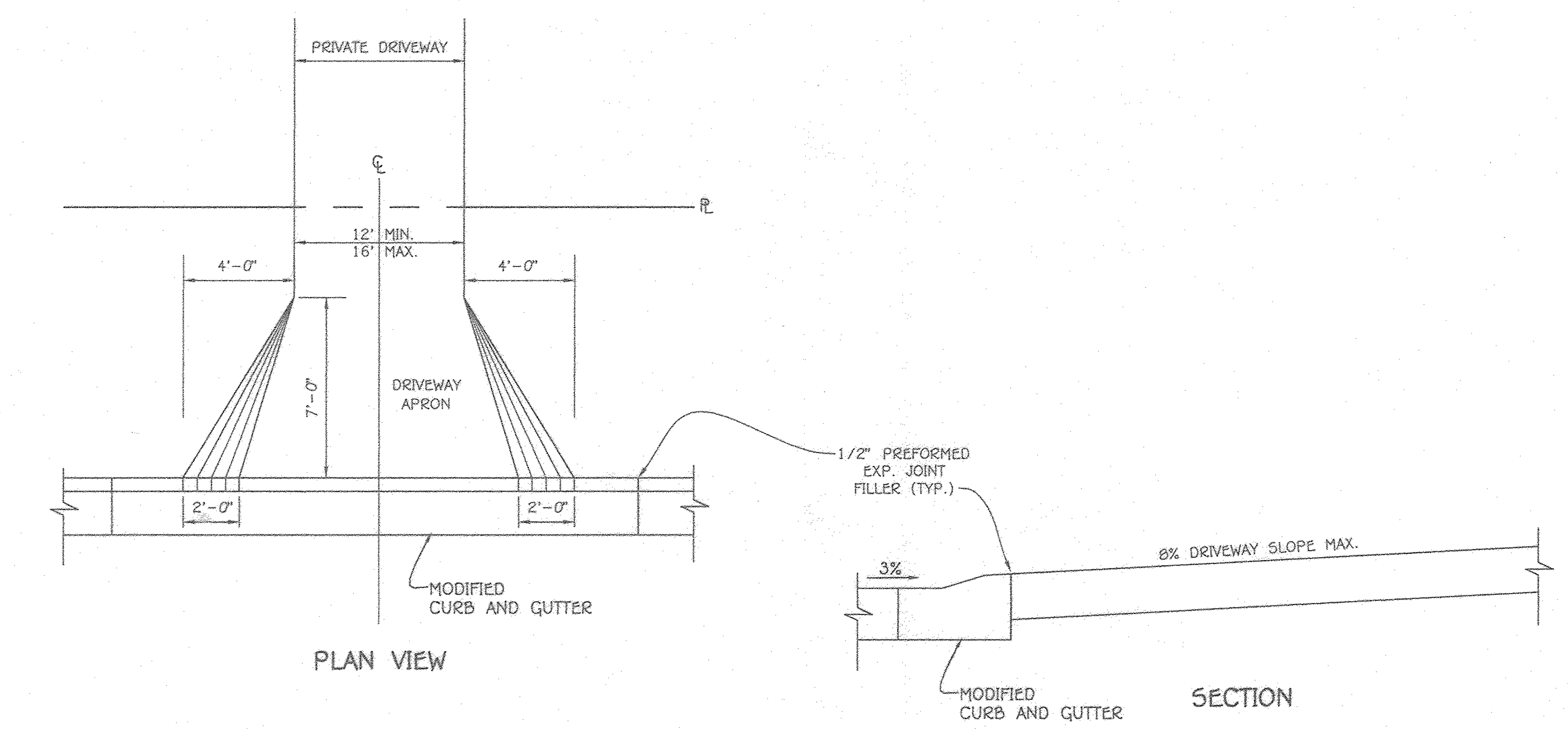
NOTE:
FLAGGERS SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

KEY:
CHANNELIZING DEVICES
SIGN SUPPORT FACE OF SIGN
DIRECTION OF TRAFIC
WORK SITE
FLAGGER



FLAGGING OPERATION /-LANE, 2-WAY EQUAL/LESS THAN 40 MPH

NO SCALE



RESIDENTIAL DRIVEWAY ENTRANCE MODIFIED COMBINATION CURB & GUTTER

NOT TO SCALE

NOTE: APPROX. LOCATION SHOWN ON SHEET 2 SUBJECT TO FINAL GRADING PERMIT PLAN.

AS-BUILT CERTIFICATION

I hereby certify, by my seal, that the facilities shown on the plan was constructed as shown on this "AS-BUILT" plan meet the approved plans and specifications.

5/31/22
Date

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

Aldo M. Vitucci, P.E. 6/17/2020 Date

"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. 20740, Expiration Date 2-22-21."

ROADWAY DETAILS & MOT PLAN
LINDEN GROVE
PHASE TWO
LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 16, 2020

"AS-BUILT" F-20-019

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

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II (F-18-092)	TRAP NO. 3	TRAP NO. 4
DRAINAGE AREA - INITIAL	3.28 AC.	1.93 AC.
DRAINAGE AREA - INTERIM	---	---
DRAINAGE AREA - FINAL	4.34 AC.	2.52
TOTAL STORAGE REQUIRED	15,624 CF	9,072 CF
TOTAL STORAGE PROVIDED	31,659 CF	13,460 CF
WET STORAGE REQUIRED	7,812 CF	4,536 CF
WET STORAGE PROVIDED	7,812 CF	4,536 CF
DRY STORAGE REQUIRED	9,583 CF	4,792 CF
DRY STORAGE PROVIDED	9,583 CF	4,792 CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	548.25	562.30
TRAP BOTTOM ELEVATION	546.00	562.00
TRAP BOTTOM DIMENSIONS	88' x 40'	70' x 35'
WEIR LENGTH	22'	20'
WEIR CREST (DRY STORAGE) ELEVATION	548.30	563.55
CLEANOUT ELEVATION	547.00	562.75
TOP OF EMBANKMENT ELEVATION	552.00	566.00
SIDE SLOPE	2:1	2:1
EMBANKMENT TOP WIDTH	6.0'	6.0'
OUTLET PROTECTION - LENGTH	18'	30'
OUTLET PROTECTION - DEPTH	19"	19"

HOUSE CONSTRUCTION NOTES:

1. THIS HOWARD (SCD) STANDARD SEDIMENT CONTROL PLAN MAY NOT BE USED TO OBTAIN PERMITS FOR HOUSE CONSTRUCTION FOR THIS PROJECT.
2. HOUSES MAY NOT BE BUILT USING THIS DRAWING.

CERTIFICATION

I hereby certify that the facilities shown on the plan was constructed according to the "AS-BUILT" plan meet the approved plans and specifications.

5/31/22
Date

SEDIMENT CONTROL LEGEND

- SUPER-SILT FENCE
- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- S.I.P. (A) STANDARD INLET PROTECTION, INLET TYPE ('A' or 'B')
- L.O.D. LIMIT OF DISTURBANCE
- FUTURE LIMIT OF DISTURBANCE FOR SEPTIC SYSTEM INSTALL.
- R.P.S. REMOVABLE PUMPING STATION
- F.B. FILTER BAG
- TYPE A-2 EARTH DIKE
- 12' DISCONNECTION OF NON ROOF-TOP RUNOFF CREDIT. (TYPE N-2)

SEE SHEET 24 FOR DETAILS ON LOT SWM, GRADING AND HOUSE CONFIGURATIONS

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

DESIGN CERTIFICATION

I Hereby Certify That This Plan Has Been Designed In Accordance With Current Maryland Erosion And Sediment Control Laws, Regulations And Standards. That It Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site, And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Designer's Signature — Date: 6/17/2020
Aldo M. Vitucci — MD Registration No. 20749
Printed Name — P.E., R.L.S., or R.L.A. (circle one)

OWNER/DEVELOPER CERTIFICATION

"I/We Certify That Any Clearing, Grading, Construction Or Development Will Be Done Pursuant To This Approved Erosion And Sediment Control Plan, Including Inspecting And Maintaining Controls And That The Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Training At A Maryland Department Of The Environment (MDE) Approved Training Program For The Control On Erosion And Sediment Prior To Beginning The Project. I Certify Right-of-entry For Periodic On-site Evaluation By Howard County, The Howard Soil Conservation District And/or MDE."

Owner's/Developer's Signature — 6/25/20 Date
Timothy Feugn, Manager
Printed Name & Title

Approved: This Plan Is Approved For Soil Erosion And Sediment Control By Howard Soil Conservation District — 7/29/20 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 11/2/20 Date

Chief, Development Engineering Division — 8.28.20 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways MK — 8/17/2020 Date

REVISIONS		
NO.	DESCRIPTION	DATE
a ⚠1		
b ⚠2	To show house type, grading & SWM details	12/27/21

CONTRACTOR NOTES:

1. CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.
2. SHOULD THE STOCKPILE EXCEED 15 FT. IN HEIGHT IT MUST BE BENCHED.
3. EARTH DIKES CROSSING THE ROADWAYS ARE TO BE CONNECTED TO MACADAM BERMS AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
4. ANY ROADSIDE SWALE OR DITCH LOCATED IN FILL SHALL BE COMPACTED TO 95% COMPACTION TO AVOID EROSION IN THESE AREAS.

Scale: 1" = 50'

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

ROOFLEADER NOTE:

A OVERFLOW OUTFALL (SURCHARGE) SHALL BE PROVIDED AT EACH DOWNSPOUT PRIOR TO CONNECTION TO THE UNDERGROUND ROOFLEADER. SEE DETAIL, SHEET 18.

Aldo M. Vitucci, P.E. — 6/17/2020 Date

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

GRADING & SEDIMENT CONTROL PLAN

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO
TAX MAP No. 8 GRID No. 7 PARCEL No. 5
4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 16, 2020
SHEET 4 of 24

"AS-BUILT" F-20-019

I:\2012\12020\dwg\Finals\Phase II Finals\12020 Sheet 4-5 sediment control plans.dwg, C-04, F-20-, 1:1

HOUSE CONSTRUCTION NOTES:

1. THIS HOWARD (SCD) STANDARD SEDIMENT CONTROL PLAN MAY NOT BE USED TO OBTAIN PERMITS FOR HOUSE CONSTRUCTION FOR THIS PROJECT.
2. HOUSES MAY NOT BE BUILT USING THIS DRAWING.

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II (F-18-092)	TRAP NO. 5
DRAINAGE AREA – INITIAL	1.57 AC.
DRAINAGE AREA – INTERIM	---
DRAINAGE AREA – FINAL	2.56 AC.
TOTAL STORAGE REQUIRED	9,216 CF
TOTAL STORAGE PROVIDED	12,858 CF
WET STORAGE REQUIRED	4,608 CF
WET STORAGE PROVIDED	4,608 CF
DRY STORAGE REQUIRED–1–YR. STORAGE	5,227 CF
DRY STORAGE PROVIDED–1–YR. STORAGE	5,227 CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	566.52
TRAP BOTTOM ELEVATION	565.00
TRAP BOTTOM DIMENSIONS	66' x 92'
WEIR LENGTH	11'
WEIR CREST (DRY STORAGE) ELEVATION	568.40 –1–YR.
CLEANOUT ELEVATION	565.90
TOP OF EMBANKMENT ELEVATION	569.00
SIDE SLOPE	2:1
EMBANKMENT TOP WIDTH	4.0'
OUTLET PROTECTION – LENGTH	32'
OUTLET PROTECTION – DEPTH	19"

DESIGN CERTIFICATION

I Hereby Certify That This Plan Has Been Designed In Accordance With Current Maryland Erosion And Sediment Control Laws, Regulations And Standards, That It Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site, And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Designer's Signature — Date: 6/17/2020

Printed Name: ALDO M. VITUCCI — MD Registration No. 20748
P.E., R.L.S., or R.L.A. (circle one)

OWNER/DEVELOPER CERTIFICATION

"I/We Certify That Any Clearing, Grading, Construction Or Development Will Be Done Pursuant To This Approved Erosion And Sediment Control Plan, Including Inspecting And Maintaining Controls And That The Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Training At A Maryland Department Of The Environment (MDE) Approved Training Program For The Control On Erosion And Sediment Prior To Beginning The Project. I Certify Right-of-entry For Periodic On-site Evaluation By Howard County, The Howard Soil Conservation District And/or MDE."

Owner's/Developer's Signature — Date: 6-25-20

Printed Name & Title: Timothy Feaga, Manager

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

Howard Soil Conservation District — Date: 7/29/20

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 11/2/20

Chief, Development Engineering Division — Date: 8.28.20

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 8/17/2020

REVISIONS

NO.	DESCRIPTION	DATE

CONTRACTOR NOTES:

1. CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.
2. SHOULD THE STOCKPILE EXCEED 15 FT. IN HEIGHT IT MUST BE BENCHED.
3. EARTH DIKES CROSSING THE ROADWAYS ARE TO BE CONNECTED TO MACADAM BERMS AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
4. ANY ROADSIDE SWALE OR DITCH LOCATED IN FILL SHALL BE COMPACTED TO 95% COMPACTION TO AVOID EROSION IN THESE AREAS.

ROOFLEADER NOTE:

A OVERFLOW OUTFALL (SURCHARGE) SHALL BE PROVIDED AT EACH DOWNSPOUT PRIOR TO CONNECTION TO THE UNDERGROUND ROOFLEADER. SEE DETAIL, SHEET 18.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED STORM DRAIN LINE
	PROPOSED DRYWELL
	NON-ROOFTOP DISCONN. CREDIT 'N-2'
	BOUNDARY/RIGHT OF WAY LINE
B.R.L.	BUILDING RESTRICTION LINE
	PROPOSED CURB
	PROPOSED WELL
	PROPOSED WELL BOX
	EXISTING 10 FT. CONTOUR
	EXISTING 2 FT. CONTOUR
	PROPOSED SEPTIC FIELD
	25% OR GREATER SLOPES
	15% – 24.99% SLOPES
	EXISTING/PROPOSED TREELINE
	PROP. NATURE WALKING PATH
	PROP. EROSION CONTROL MATTING

SEDIMENT CONTROL LEGEND

SYMBOL	DESCRIPTION
—SSF—SSF—SSF—	SUPER-SILT FENCE
—SF—SF—SF—	SILT FENCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
S.I.P. (A)	STANDARD INLET PROTECTION INLET TYPE ('A' or 'B')
L.O.D.	LIMIT OF DISTURBANCE
	FUTURE LIMIT OF DISTURBANCE FOR SEPTIC SYSTEM INSTALL
R.P.S.	REMOVABLE PUMPING STATION
F.B.	FILTER BAG
TYPE A-2	EARTH DIKE

AS-BUILT CERTIFICATION

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

Date: 5/31/22

Aldo M. Vitucci, P.E. — Date: 6/17/2020

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

GRADING, SEDIMENT & EROSION CONTROL PLAN

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 16, 2020

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

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

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

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

F-20-019

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

A. Soil Preparation

1. Temporary Stabilization

a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans.

c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.

2. Permanent Stabilization

a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:

i. Soil pH between 6.0 and 7.0.
ii. Soluble salts less than 500 parts per million (ppm).
iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
iv. Soil contains 1.5 percent minimum organic matter by weight.
v. Soil contains sufficient pore space to permit adequate root penetration.

b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.

d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling

1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.

3. Topsoiling is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.

c. The original soil to be vegetated contains material toxic to plant growth.

d. The soil is so acidic that treatment with limestone is not feasible.

4. Areas having slopes steeper than 2:1 require special consideration and design.

5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:

a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter.

b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.

c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

6. Topsoil Application

a. Erosion and sediment control practices must be maintained when applying topsoil.

b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.

c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer 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.

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	3/1 - 5/15, 8/15 - 10/15	1"		
RYE	112	3/1 - 5/15, 8/15 - 10/15	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. 1-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)

STANDARD STABILIZATION NOTE

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

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

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

STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA (B-4-8)

Definition

The 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 tha 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.

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

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 keetp inoculant 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 weedcontrol until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

2. Application
a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with weighted roller to provide good seed to soil contact.
b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P_2O_5 (phosphorus), 200 pounds per acre; K_2O (potassium), 200 pounds per acre.
ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
iii. Mix seed and fertilizer on site and seed immediately and without interruption.
iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching
1. Mulch Materials (in order of preference)
a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into uniform fibrous physical state.
i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate colot to facilitate visual inspection of the uniformly spread slurry.
ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
iv. WCFM material must not contain elements or compounds at concentration levels that will by phyto-toxic.
v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

2. Application
a. Apply mulch to all seeded areas immediately after seeding.
b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
c. Wood cellulose fiber used as mulch must be applied to a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

3. Anchoring
a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size 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.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

Definition

Establishment of vegetative cover on cut and fill slopes.

Purpose

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

Conditions Where Practice Applies

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

Criteria

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

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

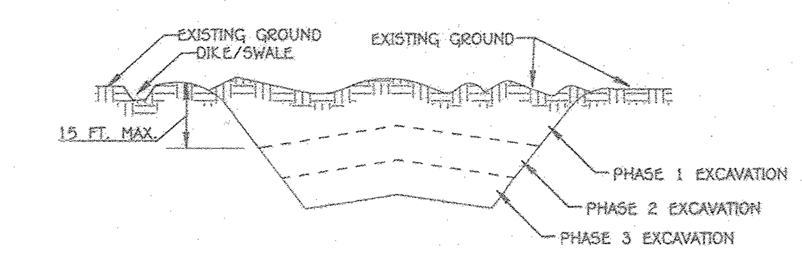


Figure B.1: Incremental Stabilization - Cut

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

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

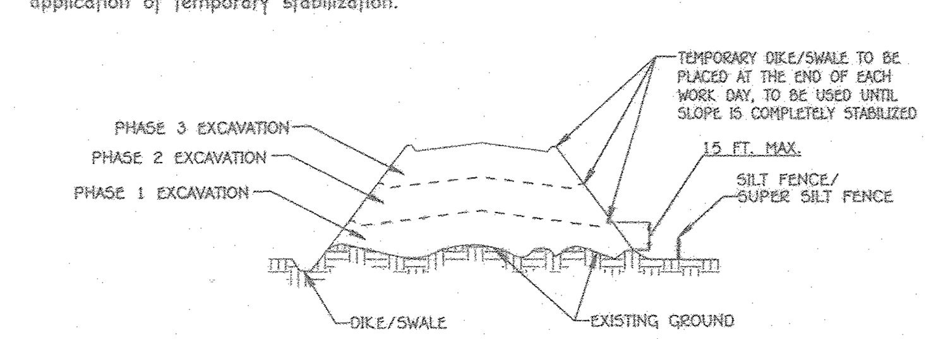


Figure B.2: Incremental Stabilization - Fill

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT. (2 WEEKS)

2. NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 AT LEAST 24 HOURS BEFORE STARTING WORK.

3. INSTALL THE STABILIZED CONSTRUCTION ENTRANCES. (1 DAY)

4. INSTALL SUPER SILT/SILT FENCE AS SHOWN ON THE PLANS. (1 WEEK)

5. UPON COMPLETION OF THE SEDIMENT CONTROL INSTALLATION, RECEIVE PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING.

6. CLEAR AND GRUB SITE (2 WEEKS)

7. GRADE PROPOSED ROADS & LOTS TO SUBGRADE. INSTALL THE STORM DRAIN INLETS, MANHOLES AND END SECTIONS. (3 WEEKS) STABILIZE ALL SLOPES IMMEDIATELY UPON COMPLETION OF GRADING.

8. CONSTRUCT ROAD BASE COURSE. (3 WEEKS)

9. 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 AND/OR BACKFILLED AND THE REMAINING AREAS BROUGHT TO FINAL GRADE AND THE FINAL SWM FACILITIES CONSTRUCTED. STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 WEEKS)

10. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR FINAL INSPECTION OF THE COMPLETED PROJECT. (1 WEEK)

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

DESIGN CERTIFICATION

I Hereby [illegible] Plan Has Been Designed In Accordance With Current Maryland Ero[illegible] Laws, Regulations And Standards, That It Represents [illegible] Plan Based On My Personal Knowledge Of The Site, And That [illegible] With The Requirements Of The Howard Soil Conser[illegible]

Designer Signature — Date: 6/17/2020
Printed Name: ALDO M. VITUCCI — MD Registration No. 20748, P.E., R.L.S., or R.L.A. (circle one)

OWNER/DEVELOPER CERTIFICATION

"I/We Certify That Any Clearing, Grading, Construction Or Development Will Be Done Pursuant To This Approved Erosion And Sediment Control Plan, Including Inspecting And Maintaining Controls And That The Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Training At A Maryland Department Of The Environment (MDE) Approved Training Program For The Control On Erosion And Sediment Prior To Beginning The Project. I Certify Right-of-entry For Periodic On-site Evaluation By Howard County, The Howard Soil Conservation District And/or MDE."

Owner's/Developer's Signature — Date: 6-25-20
Printed Name & Title: Timothy W. Feaga, Manager

Approved: This Plan Is Approved For Soil Erosion And Sediment Control By The Howard Soil Conservation District
Howard Soil Conservation District — Date: 7/29/20

Approved: Department Of Planning And Zoning
Chief, Division Of Land Development — Date: 11/2/20
Chief, Development Engineering Division — Date: 8-28-20

Approved: Howard County Department Of Public Works
Chief, Bureau Of Highways — Date: 8/17/2020

REVISIONS

NO.	DESCRIPTION	DATE

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 any other before proceeding with 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 Tract Area (Phase One & Two):	176.680	Acres
Total Area of This Plan:	26.155	Acres (Bulk Parcels 'F' & 'G')
Area Disturbed:	18.10	Acres
Area to be roofed or paved:	1.1	Acres
Area to be vegetatively stabilized:	17.0	Acres
Total Cut:	11,700	Cu. Yds.
Total Fill:	9,690	Cu. Yds.
Offsite waste/borrow area location:	ONSITE	

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.

[illegible] CERTIFICATION
[illegible] "AS-BUILT" information provided on this sheet.
Date: 5/31/22

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

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

Aldo M. Vitucci, P.E. — 6/17/2020
"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

SEDIMENT AND EROSION CONTROL NOTES & DETAILS

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

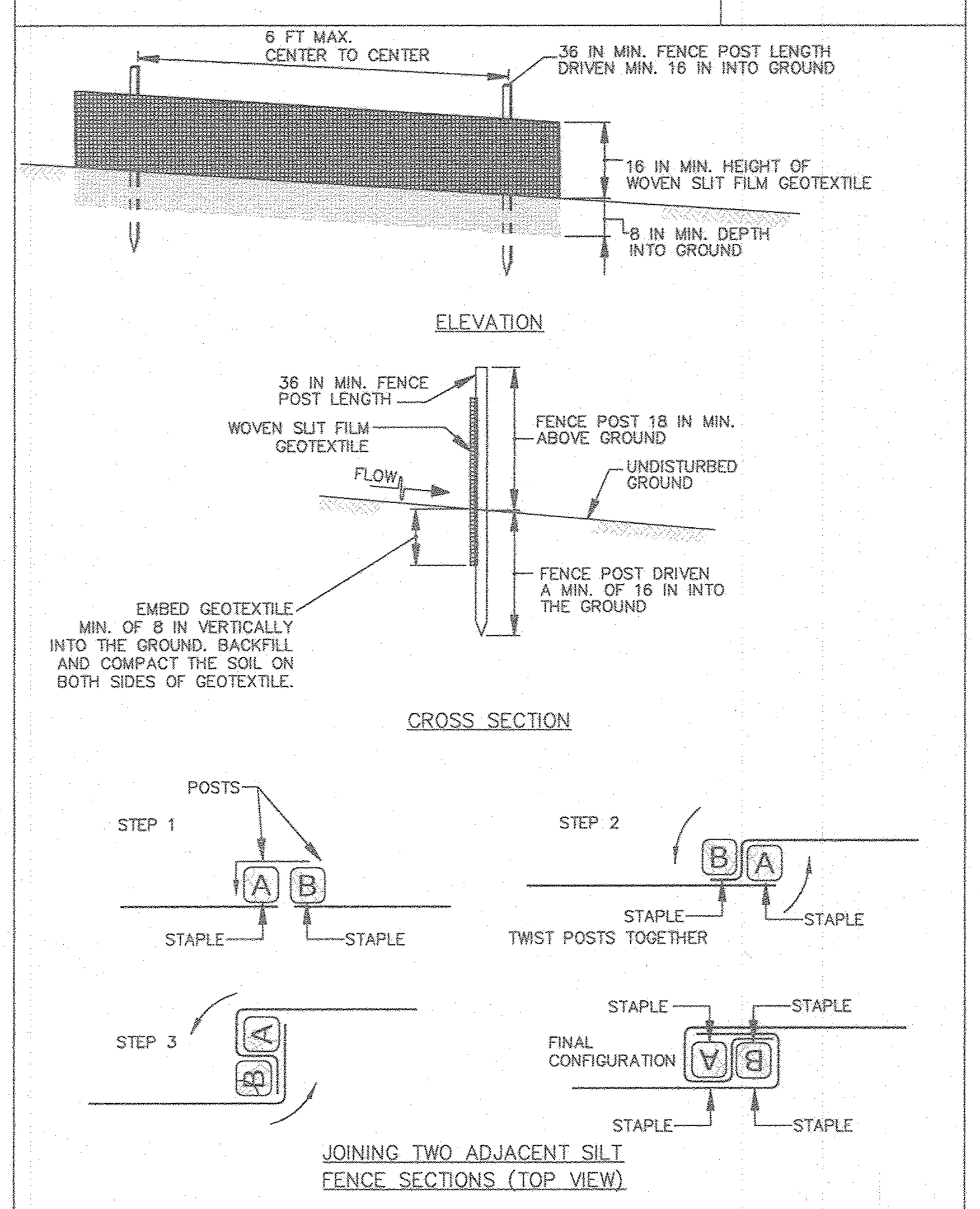
ZONED: RC-DEO
TAX MAP No. 8 GRID No. 7 PARCEL No. 5
4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 16, 2020

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

F-20-019

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: ——SF——



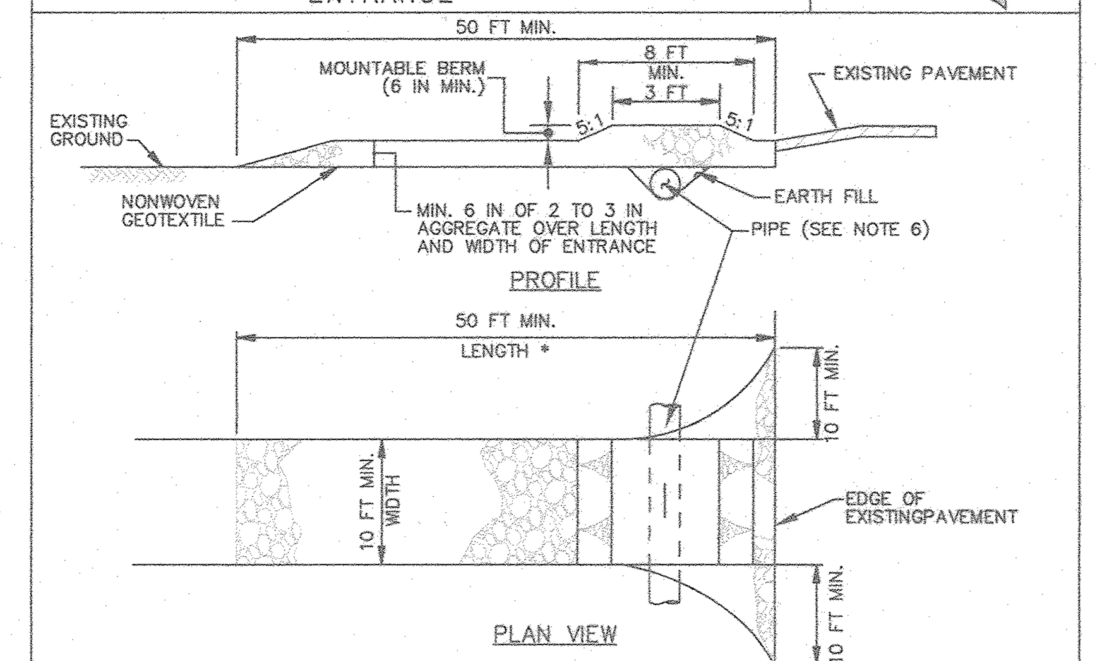
CONSTRUCTION SPECIFICATIONS

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-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

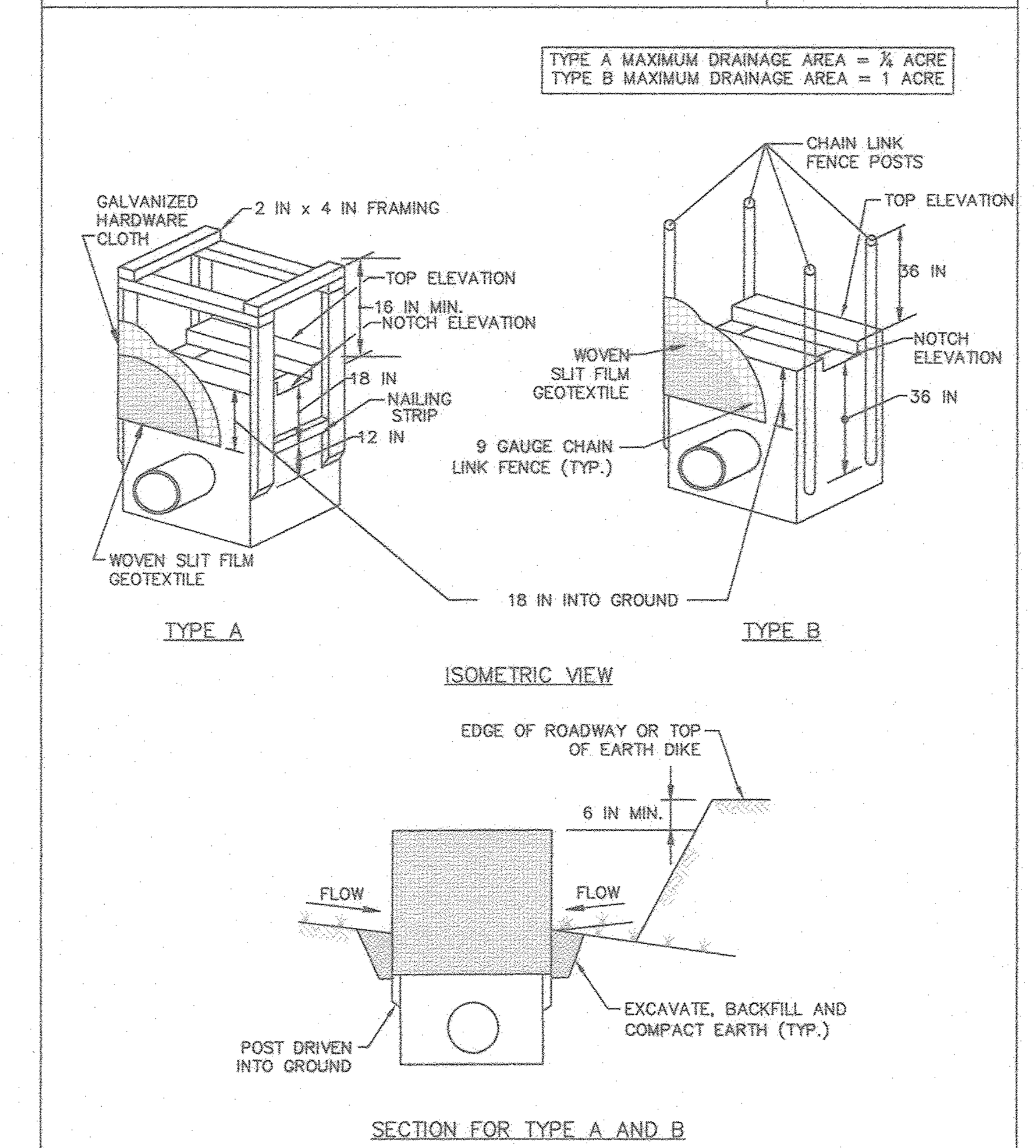
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING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

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

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

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



CONSTRUCTION SPECIFICATIONS

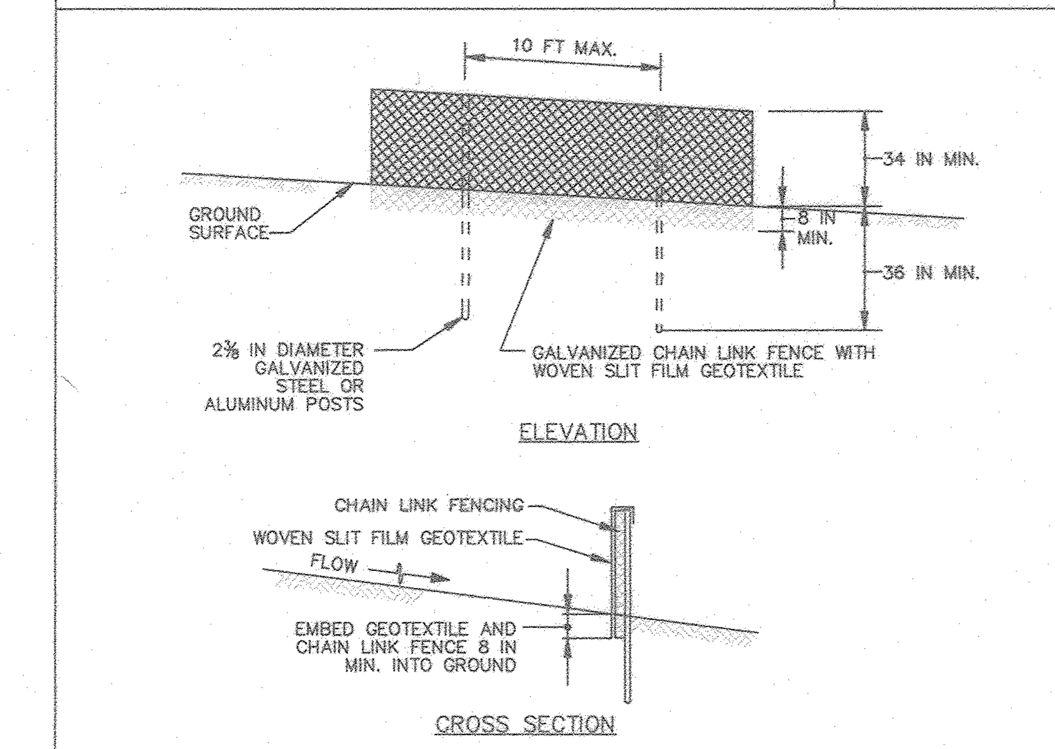
1. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS.
2. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
3. FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE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

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

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

DESIGN CERTIFICATION

I Hereby Certify That This Plan Has Been Designed In Accordance With Current Maryland Erosion And Sediment Control Laws, Regulations And Standards, That It Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site, And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Designer's Signature — Date: 6/17/2020
Printed Name: ALDO M. VITUCCI — MD Registration No.: 20749
P.E., R.L.S., or R.L.A. (circle one)

OWNER/DEVELOPER CERTIFICATION

"I/We Certify That Any Clearing, Grading, Construction Or Development Will Be Done Pursuant To This Approved Erosion And Sediment Control Plan, Including Inspecting And Maintaining Controls And That The Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Training At A Maryland Department Of The Environment (MDE) Approved Training Program For The Control On Erosion And Sediment Prior To Beginning The Project. I Certify Right-of-entry For Periodic On-site Evaluation By Howard County, The Howard Soil Conservation District And/or MDE."

Owner's/Developer's Signature — Date: 6-25-20
Printed Name & Title: Timothy Feaga, Manager

Approved: This Plan Is Approved For Soil Erosion And Sediment Control By The Howard Soil Conservation District
Howard Soil Conservation District — Date: 7/29/20

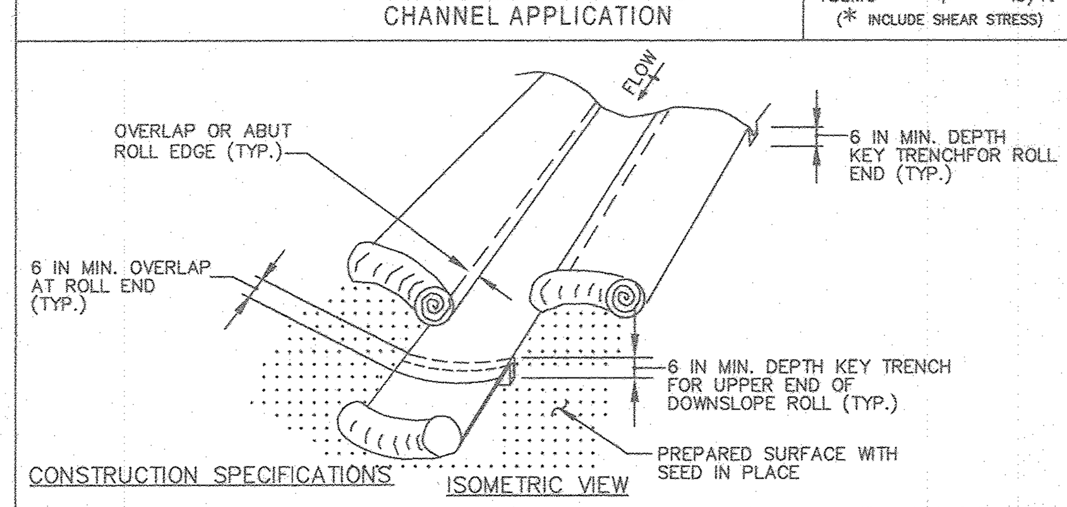
Approved: Department Of Planning And Zoning
Chief, Division Of Land Development — Date: 11/2/20
Chief, Development Engineering Division — Date: 8.28.20

Approved: Howard County Department Of Public Works
Chief, Bureau Of Highways — Date: 8/17/2020

REVISIONS		
NO.	DESCRIPTION	DATE

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

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



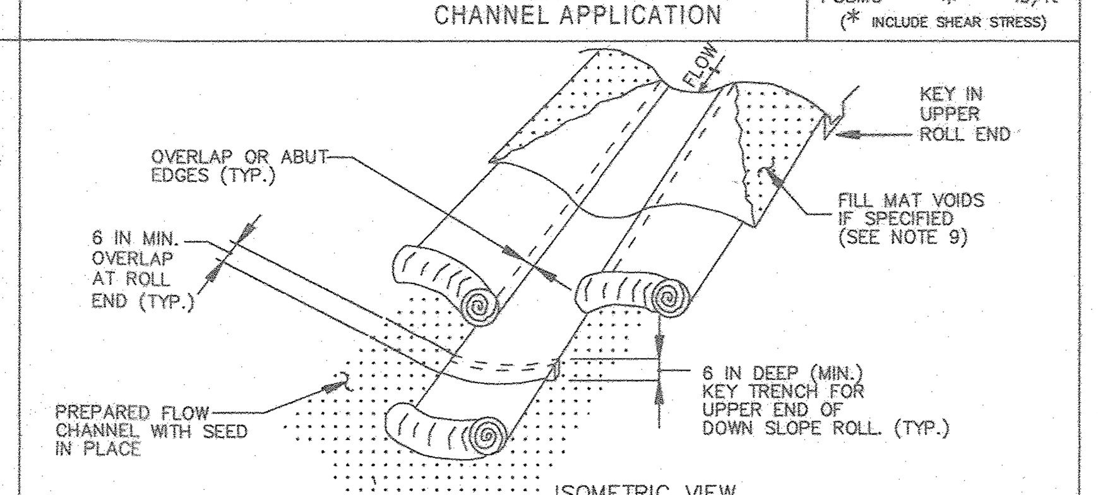
CONSTRUCTION SPECIFICATIONS

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

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

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

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



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON–DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON–LEACHING AND NON–TOXIC TO VEGETATION AND SEED GERMINATION AND NON–INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH–SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B–4 VEGETATIVE STABILIZATION.

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

SHEAR STRESS COMPUTATIONS:

ECM#1:
DRAINAGE AREA = 0.14 AC.
% IMPERVIOUS: 2% (122 Sq.Ft.)
SOILS: 'B' SOILS– 100%
AVERAGE SLOPE = 9.89%
'C' FACTOR = 0.35 (RESIDENTIAL LOT)
WEIGHTED 'C' FACTOR = 0.35
TIME = 5.00 MINUTES MIN.
Q10 = 0.42 C.F.S.–Q=CIA, WHERE I10=8.5
BOTTOM WIDTH = 5'
SIDE SLOPE = 3:1
DEPTH OF SWALE = 1'
LENGTH OF SLOPE = 79'
V10 = 0.68 F.P.S.
DEPTH OF FLOW = 0.12'
WETTED PERIMETER = 5.53'
FLOW AREA = 0.62 SQ.FT.
R=A/WP = 0.62/5.53 = 0.1121

SHEAR STRESS: 0.69 lb./ft^2
SHEAR STRESS = Y x R x Sw
WHERE Y = WEIGHT DENSITY OF WATER
R = HYDRAULIC RADIUS
Sw = WATER SURFACE SLOPE FT/FT

ECM#1 = 62.4 x 0.1121 x 0.0989 = 0.69 lb/ft2
USE WOOD CELLULOSE FIBER.

ECM#2:
DRAINAGE AREA = 0.16 AC.
% IMPERVIOUS: 4% (279 Sq.Ft.)
SOILS: 'B' SOILS– 100%
AVERAGE SLOPE = 10.52%
'C' FACTOR = 0.35 (RESIDENTIAL LOT)
WEIGHTED 'C' FACTOR = 0.35
TIME = 5.00 MINUTES MIN.
Q10 = 0.48 C.F.S.–Q=CIA, WHERE I10=8.5
BOTTOM WIDTH = 5'
SIDE SLOPE = 3:1
DEPTH OF SWALE = 1'
LENGTH OF SLOPE = 122'
V10 = 0.75 F.P.S.
DEPTH OF FLOW = 0.12'
WETTED PERIMETER = 5.55'
FLOW AREA = 0.64 SQ.FT.
R=A/WP = 0.64/5.55 = 0.1153

SHEAR STRESS: 0.75 lb./ft^2
SHEAR STRESS = Y x R x Sw
WHERE Y = WEIGHT DENSITY OF WATER
R = HYDRAULIC RADIUS
Sw = WATER SURFACE SLOPE FT/FT

ECM#2 = 62.4 x 0.1153 x 0.1052 = 0.75 lb/ft2
USE WOOD CELLULOSE FIBER.

ECM#3:
DRAINAGE AREA = 0.17 AC.
% IMPERVIOUS: 7.8% (580 Sq.Ft.)
SOILS: 'B' SOILS– 100%
AVERAGE SLOPE = 1.53%
'C' FACTOR = 0.42 (RESIDENTIAL LOT)
WEIGHTED 'C' FACTOR = 0.42
TIME = 5.00 MINUTES MIN.
Q10 = 0.61 C.F.S.–Q=CIA, WHERE I10=8.5
BOTTOM WIDTH = 5'
SIDE SLOPE = 3:1
DEPTH OF SWALE = 1'
LENGTH OF SLOPE = 95'
V10 = 0.44 F.P.S.
DEPTH OF FLOW = 0.25'
WETTED PERIMETER = 6.12'
FLOW AREA = 1.37 SQ.FT.
R=A/WP = 1.37/6.12 = 0.2238

SHEAR STRESS: 0.21 lb./ft^2
SHEAR STRESS = Y x R x Sw
WHERE Y = WEIGHT DENSITY OF WATER
R = HYDRAULIC RADIUS
Sw = WATER SURFACE SLOPE FT/FT

ECM#3 = 62.4 x 0.2238 x 0.0153 = 0.21 lb/ft2
USE WOOD CELLULOSE FIBER.

CERTIFICATION
"AS-BUILT" information ... sheet.
Date: 5/9/22

SEDIMENT AND EROSION CONTROL NOTES & DETAILS

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non–Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non–Buildable Preservation Parcels 'B' Thru 'E' And Non–Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC–DEO
TAX MAP No. 8 GRID No. 7 PARCEL No. 5
4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 16, 2020
SHEET 7 of 24

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

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

Aldo M. Vitucci, P.E. — Date: 6/17/2020
"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

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

F-20-019

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 11/2/20

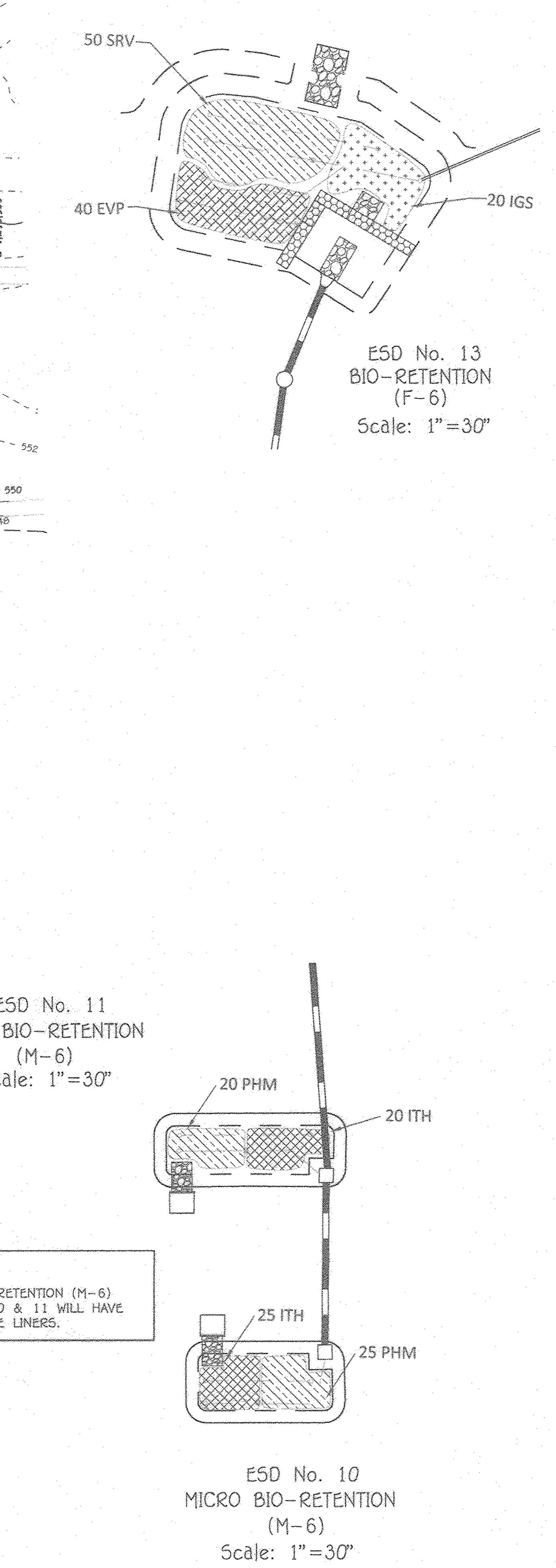
Chief, Development Engineering Division — Date: 8-28-20

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways MK — Date: 8/17/2020

REVISIONS

NO.	DESCRIPTION	DATE



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

AS-BUILT CERTIFICATION

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

Date: 5/31/22

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: 6/25/20

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

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

Aldo M. Vitucci, P.E. — Date: 6/17/2020

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

LANDSCAPE PLAN

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 16, 2020

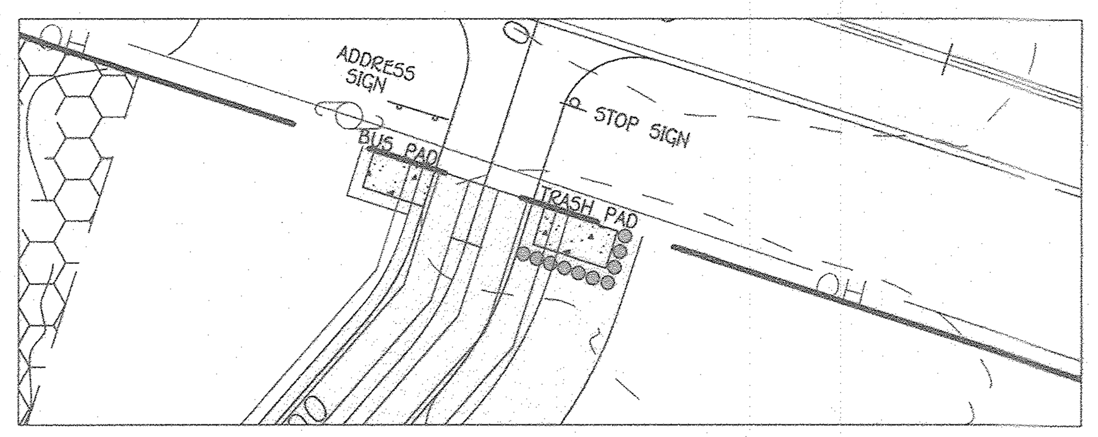
SHEET 8 of 24

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

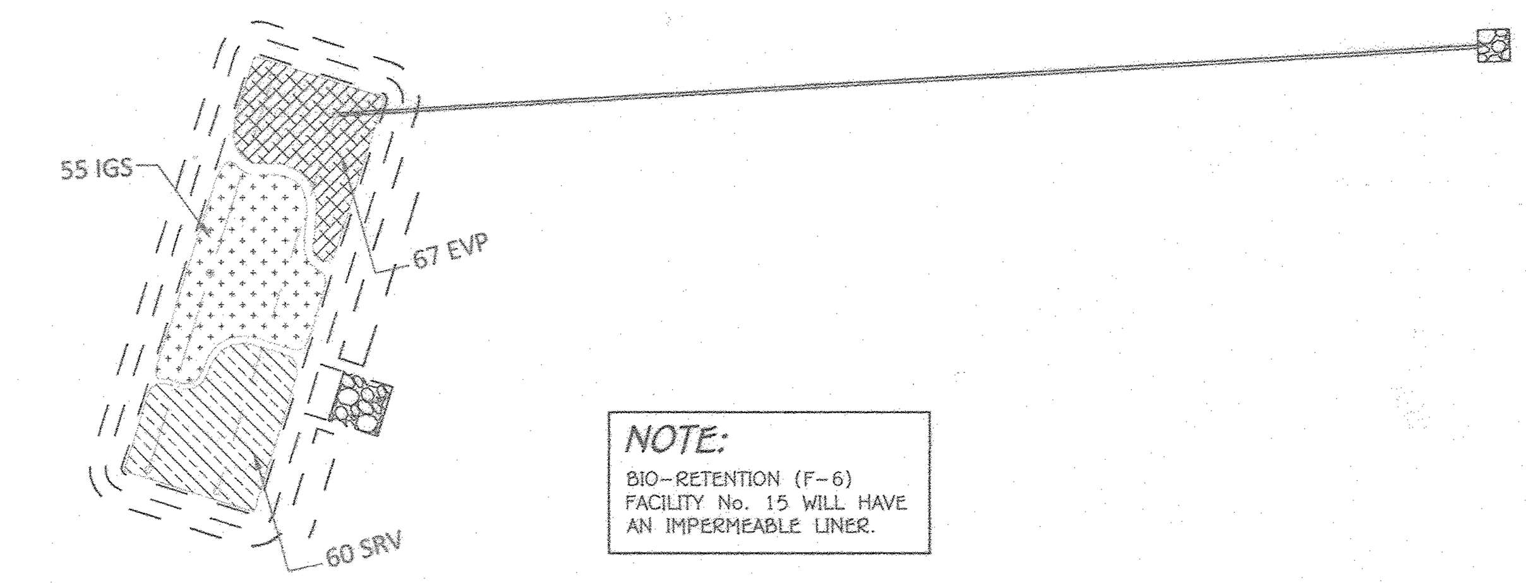
F-20-019

I:\2012\12026\dwg\Finals\Phase II Finals\12026 Sheet 8-9 landscape plan.dwg, C-08_F-20-0, 1:1

I:\2012\12026\dwg\Finals\Phase II Finals\12026 Sheet 8-9 landscape plan.dwg, C-09_F-20-0, 1:1



TRASH PAD LANDSCAPING PLAN
Scale: 1"=30'



ESD No. 15
BIO-RETENTION
(F-6)
Scale: 1"=30'

NOTE:
BIO-RETENTION (F-6)
FACILITY No. 15 WILL HAVE
AN IMPERMEABLE LINER.

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development	9/2/20 Date
Chief, Development Engineering Division	8.28.20 Date

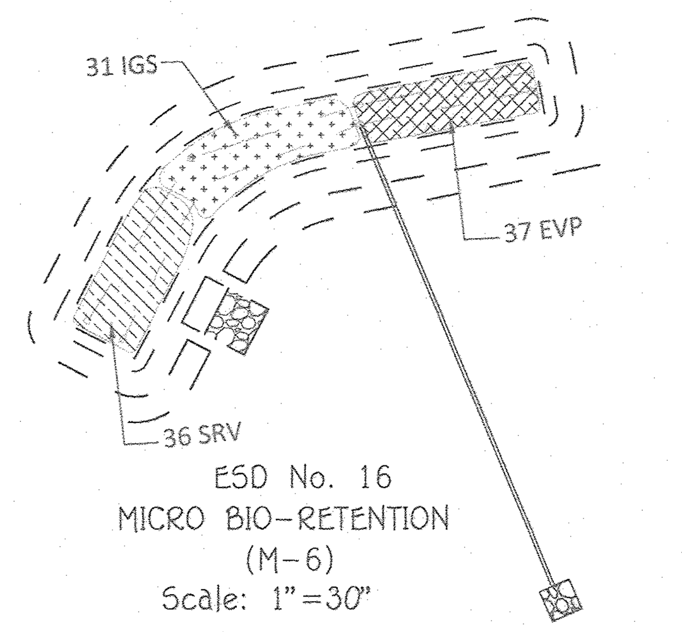
Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways MK	8/17/2020 Date

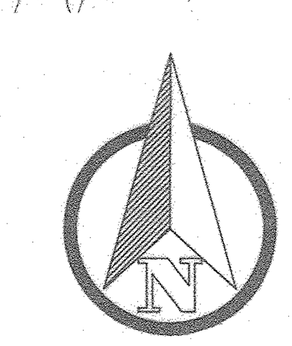
REVISIONS

NO.	DESCRIPTION	DATE

NOTE:
BIO-RETENTION (F-6)
FACILITY No. 16 WILL HAVE
AN IMPERMEABLE LINER.



ESD No. 16
MICRO BIO-RETENTION
(M-6)
Scale: 1"=30'



Scale: 1" = 100'

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

5/31/22
Date

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 6-25-20

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

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

Aldo M. Vitucci, P.E. — 6/17/2020 Date

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

LANDSCAPE PLAN

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 16, 2020

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

F-20-019

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 11/12/20

Chief, Development Engineering Division — Date 8-28-20

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 8/17/2020

REVISIONS

NO.	DESCRIPTION	DATE

TRASH/RECYCLE PAD LANDSCAPING

LINEAR FEET OF PERIMETER	LOTS 40-44 PAD: 24 l.f.
NUMBER OF SHRUBS PROVIDED:	10

NOTES: 1. THE TRASH/RECYCLE PAD LANDSCAPING WILL BE MAINTAINED BY THE USERS OF THE PRIVATE USE-IN-COMMON MAINTENANCE AGREEMENT.

2. THE LANDSCAPING SHALL BE INSTALLED AROUND THE PERIMETER OF THE PAD EXCLUDING THE SIDE ADJACENT TO THE PUBLIC ROAD RIGHT-OF-WAY.

STREET TREE SCHEDULE

QTY. REQ'D.	QTY. PROV'D.	SIZE	BOTANICAL AND COMMON NAME	COMMENTS
TOTAL ROW LENGTH = 1603' 3206'/40 = 80.15 80 TREES	50 TREES (Phase Two)	2 1/2 -3" CAL.	PRUNUS SARGENTII SARGENT CHERRY	40' APART ON PUBLIC R/W (HERITAGE RIDGE)

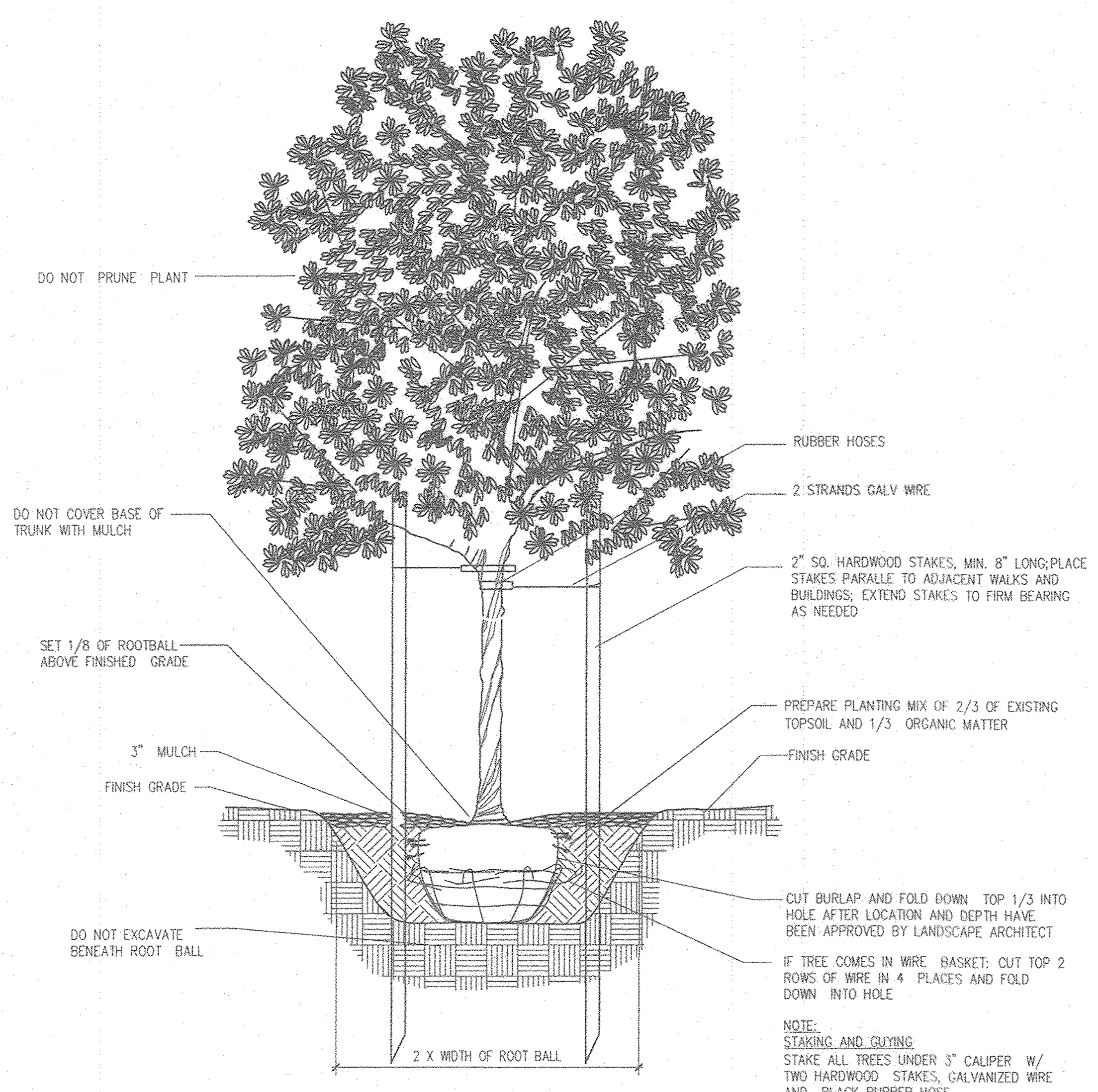
NOTE: FINAL PLACEMENT OF STREET TREES WILL OCCUR IN THE FIELD AND BE PLACED A MINIMUM OF 30 FEET FROM ALL SIGNS AND INTERSECTIONS WHEN PLANTED BETWEEN SIDEWALK AND CURB, BE LOCATED WITHIN CONSIDERATION OF UNDERGROUND UTILITIES AND STRUCTURES AND MAINTAIN A MINIMUM 5 FEET DISTANCE ON CENTER FROM A DRAIN INLET STRUCTURE, 5 FEET FROM AN OPEN SPACE ACCESS STRIP AND 10 FEET AWAY FROM A DRIVEWAY.

SCHEDULE 'A' - PERIMETER LANDSCAPE EDGE

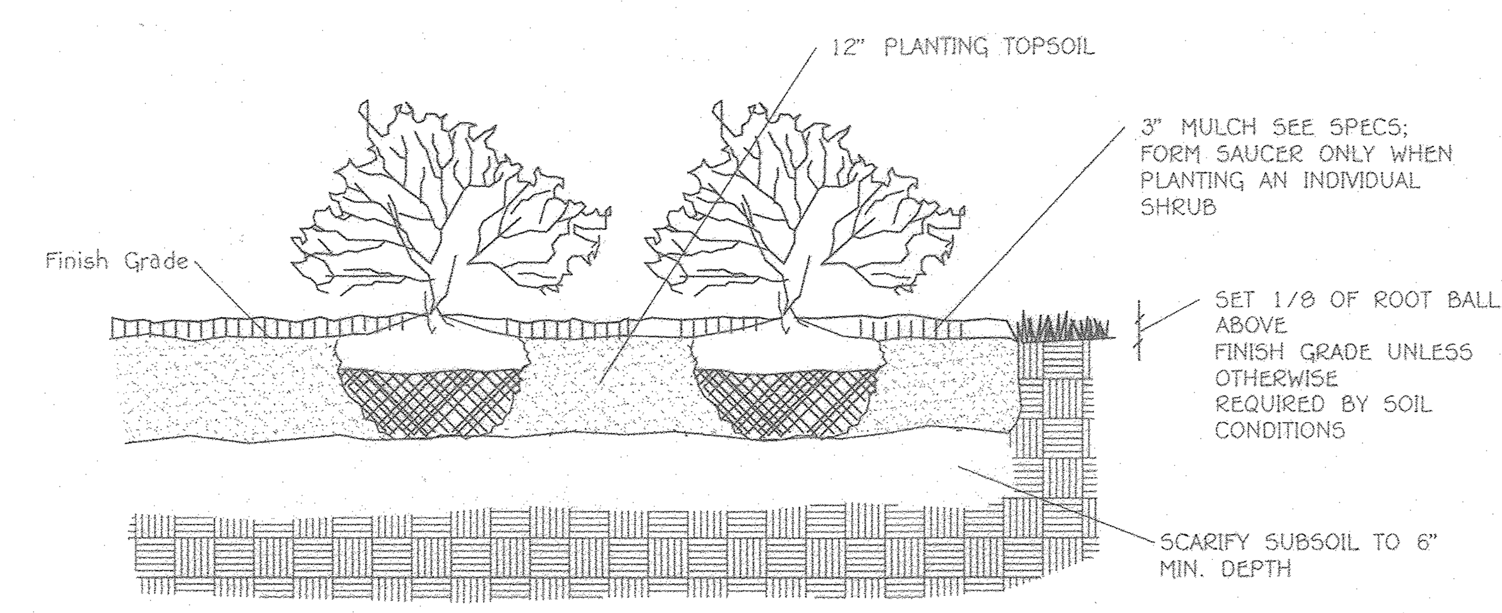
PERIMETER	P-3	P-4	P-5	P-11	P-12	P-13	P-14
CATEGORY	Adjacent to Preservation Parcel	Adjacent to Roadway	Adjacent to Preservation Parcel	Adjacent to Roadway	Adjacent to Preservation Parcel	Adjacent to Preservation Parcel	Adjacent to Preservation Parcel
LANDSCAPE TYPE	A	B	A	B	A	A	A
LINEAR FEET OR ROADWAY FRONTAGE/PERIMETER	2406.2' (total) 1731.2' (Phase Two)	700.6'	2350.4' (total) 1201.4' (Phase Two)	355.9'	702.3'	386.4'	702.5'
CREDIT FOR EXISTING VEGETATION (YES, NO LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	-	-	-	-	-	-	-
CREDIT FOR WALL, FENCE OR BERM (YES, NO LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	-	-	-	-	-	-	-
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	* 40 (total) - -	14 18 -	* 39 (total) - -	7 9 -	12 - -	6 - -	12 - -
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SHRUBS	29 - -	14 18 -	21 - -	7 9 -	12 - -	6 - -	12 - -

* 11 Planted in Phase One

* 18 Planted in Phase One



DECIDUOUS TREE - TYPICAL PLANTING DETAIL



SHRUB AND HEDGEROW - TYPICAL PLANTING DETAIL

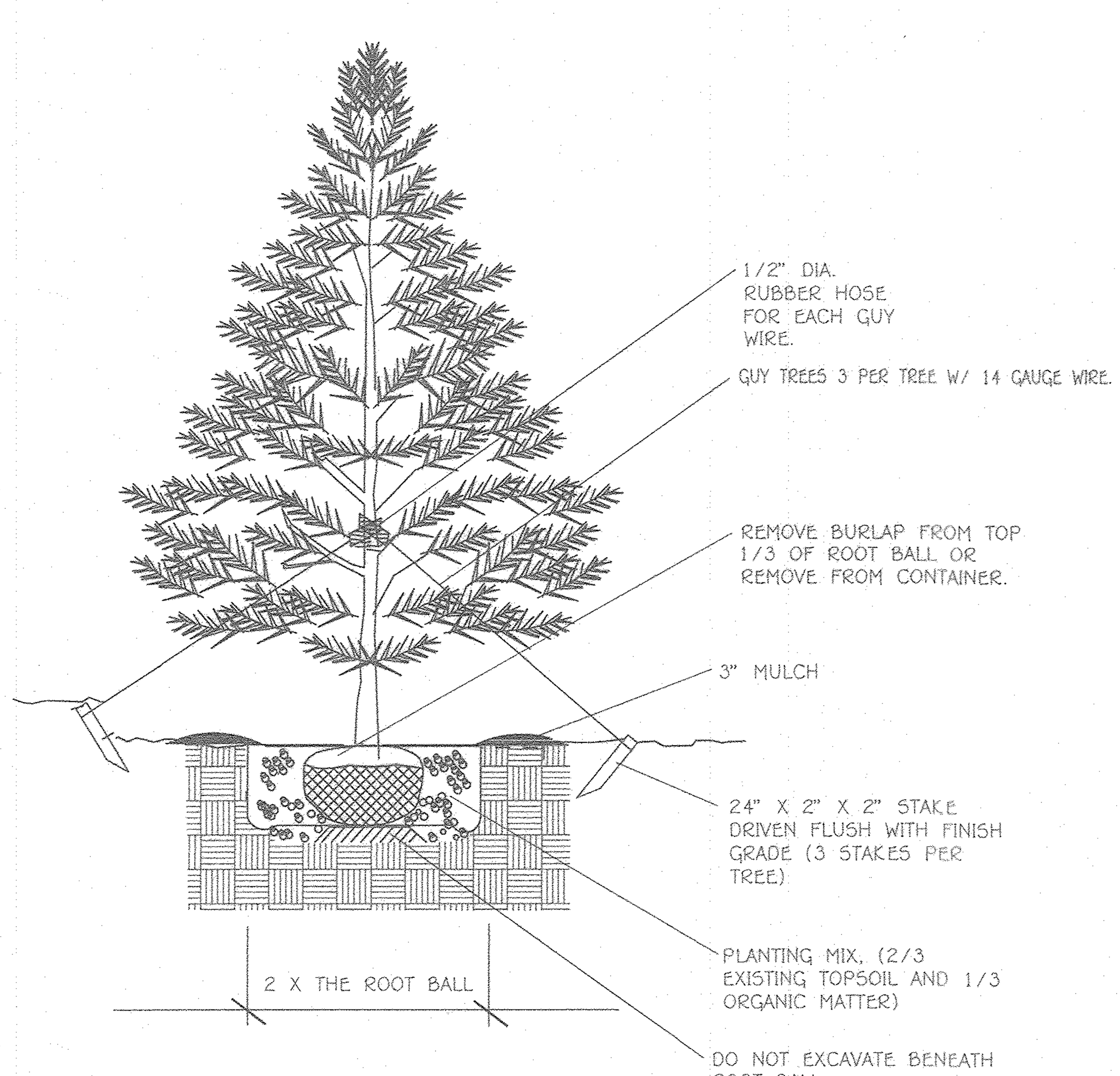
NOTES:

1. "Should any tree designated for preservation for which landscaping credit is given, die prior to release of bonds, the developer will be required to replace the tree with the equivalent species or with a tree which will obtain the same height, spread and growth characteristics. The replacement tree must be a minimum of 2.5 inches in caliper and installed as required in the Howard County Landscape Manual."

2. "At the time of plant installation, all shrubs and trees listed and approved on the landscape Plan, shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no subtitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from the 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 the applicable plans".

3. "The Owner, tenants and/or their agents shall be responsible for maintenace of the required perimeter 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 the other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced".

4. This Plan Has Been Prepared In Accordance With The Provisions Of Section 16.124 Of The Howard County Code And The Landscape Manual". Financial Surety For The Required 101 Shade, 9 Evergreen Trees & 10 Shrubs Has Been Posted As Part Of The Developer's Agreement In The Amount Of $18,150.00.



EVERGREEN TREE - TYPICAL PLANTING DETAIL

PLANTING SPECIFICATIONS

1. CLEAR & GRUB ALL PLANTING AREAS AS INDICATED ON THE DRAWINGS.
2. PROVIDE PROTECTION FOR TREES, SHRUBS, AND PERENNIALS/GROUND COVERS THAT ARE TO BE PRESERVED.
3. CONTRACTOR SHALL VERIFY THE CORRECT LOCATION OF ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO INSTALLATION OF ANY PLANT MATERIALS.
4. ALL PLANTING SHALL BE DONE AS PER PLANTING DETAILS AND SPECIFICATIONS.
5. NO CHANGES SHALL BE MADE WITHOUT WRITTEN CONSENT OF THE OWNER OR LANDSCAPE ARCHITECT.
6. PRIOR TO CONSTRUCTION OF PLANTING BEDS, THE CONTRACTOR SHALL STAKE OUT PLANTING BED LINES IN THE FIELD FOR REVIEW BY THE LANDSCAPE ARCHITECT. LANDSCAPE ARCHITECT SHALL MAKE ADJUSTMENTS IN THE FIELD AS NECESSARY. ALL FINAL PLANTING BED LOCATIONS ARE TO BE APPROVED BY THE LANDSCAPE ARCHITECT. FOR LAYOUT REVIEW, CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT A MINIMUM OF THREE DAYS IN ADVANCE.
7. INSTALL ALL REQUIRED PLANTING AND LAWN SOILS AS PER DETAILS AND SPECIFICATIONS, AND ALL SHRUBS, GROUND COVERS, AND PERENNIALS SHALL BE PLANTED IN PLANTING BEDS PREPARED AS REQUIRED BY THE DETAILS AND SPECIFICATIONS.
8. MAINTAIN POSITIVE DRAINAGE OUT OF PLANTING BEDS AT A MINIMUM 2% SLOPE AND MAINTAIN POSITIVE DRAINAGE OF ALL LAWN AREAS, UNLESS OTHERWISE NOTED ON DRAWINGS. ALL GRADES, DIMENSIONS, AND EXISTING CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR ON SITE BEFORE CONSTRUCTION BEGINS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT OR OWNER.
9. ALL PLANT BEDS SHALL BE CONTAINED WITH A SPADED EDGE UNLESS OTHERWISE NOTED ON DRAWINGS.
10. IN THE EVENT OF A DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE DRAWINGS AND QUANTITIES SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE DRAWINGS SHALL APPLY. REPORT DISCREPANCIES TO THE LANDSCAPE ARCHITECT FOR CLARIFICATION PRIOR TO BIDDING.
11. ALL PLANTS SHALL CONFORM TO THE SIZES GIVEN IN THE PLANT LIST AND SHALL BE NURSERY GROWN IN ACCORDANCE WITH THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1), LATEST EDITION.
12. PLANTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS. PRIOR TO PLANTING, THE CONTRACTOR SHALL STAKE OUT THE LOCATIONS OF ALL PLANTS IN THE FIELD FOR REVIEW BY THE LANDSCAPE ARCHITECT. LANDSCAPE ARCHITECT SHALL MAKE ADJUSTMENTS IN THE FIELD AS NECESSARY. ALL FINAL PLANT LOCATIONS ARE TO BE APPROVED BY THE LANDSCAPE ARCHITECT. FOR LAYOUT REVIEW, CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT A MINIMUM OF THREE DAYS IN ADVANCE.
13. ALL DISTURBED AREAS SHALL BE FINE GRADED AND SEEDED OR SODDED; SEE PLAN FOR LOCATIONS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING AND MAINTAINING ALL PLANTS DURING THE WARRANTY PERIOD; REFER TO SPECIFICATIONS.

PERIMETER PLANT LIST FOR SCHEDULE 'A' - PERIMETER LANDSCAPE EDGE TRASH/RECYCLE PAD LANDSCAPING

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
AR	34	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2-3" CAL.
QP	25	QUERCUS PALUSTRIS PIN OAK	2 1/2-3" CAL.
CL	28	CLADRASTIS LUTEA YELLOWWOOD	2 1/2-3" CAL.
AM	7	* ACER GINNALA AMUR MAPLE	2 1/2-3" CAL.
PM	7	* ACER GRISEUM PAPERBARK MAPLE	2 1/2-3" CAL.
NS	18	* LLEX 'NELLIE R. STEVENS' NELLIE R. STEVENS HOLLY	5' - 6' HT.
PS	9	PINUS STROBUS EASTERN WHITE PINE	6'-8' HT.
•	10	PRUNUS LAUROCERASUS 'SCHIPKAENSIS'/ SKIP CHERRYLAUREL	18"-24" SPREAD

* DENOTES APPROVED TREE TO BE PLANTED UNDER OR WITHIN 20' OF OVERHEAD LINES

ESD PLANTS

211	IGS	Ilex glabra 'Shamrock' Inkberry	24"-30" Ht.	Cont.	40" o.c./Male Cultivar
284	EVP	Eupatorium dubium 'Little Joe' Dwarf Joe-Pye Weed	# 1	Cont.	24" O.C.
45	ITH	Itea virginica 'Little Henry' Dwarf Virginia Sweetspire	24"-30" ht.	Cont.	36" O.C.
45	PHM	Panicum virgatum 'Heavy Metal' Heavy Metal Switchgrass	#1	Cont.	36" O.C.
296	SRV	Solidago Rugosa Goldenrod	#1	Cont.	18" O.C.

AS-BUILT CERTIFICATION

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

Date 5/31/22

DEVELOPER'S / BUILDER'S CERTIFICATE

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NAME — DATE 6-25-20

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

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

Aldo M. Vitucci, P.E. — Date 6/17/2020

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

LANDSCAPE NOTES & DETAILS

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 16, 2020

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

F-20-019

I:\2012\12026\dwg\Finals\Phase II Finals\12026 Sheet 10 landscape details.dwg, C-10_F-20-0, 1:1

Infiltration and Filter System Construction Specifications

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

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

Design Constraints:

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

Bio-retention

Soil Bed Characteristics

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

The planting soil should be a sandy loam, loamy sand, loam (USDA), or a loam/sand mix (should contain a minimum 35 to 60% sand, by volume). The clay content for these soils should be less than 25% by volume (Environmental Quality Resources (EQR), 1996; Engineering Technology Inc. and Stahbitats, Inc. (ETAB), 1993). Soils should fall within the SM, ML, SC classifications or the Unified Soil Classification System (USCS). A permeability of at least 1.0 feet per day (0.5"/hr) is required (a conservative value of 0.5 feet per day is used for design). The soil should be free of stones, stumps, roots, or other woody material over 1" in diameter. Brush or seeds from noxious weeds (e.g., Johnson Grass, Mugwort, Nutsedge, and Canada Thistle or other noxious weeds as specified under COMAR 15.08.01.05.) should not be present in the soils. Placement of the planting soil should be in 12 to 18 lifts that are loosely compacted (tamped lightly with a backhoe bucket or traversed by dozer tracks). The specific characteristics are presented in Table A.3.

Table A.3 Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate - P205)	75 lbs. per acre, minimum
Potassium (potash -1(K20)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	0 to 5%
Silt	30 to 55%
Sand	35 to 60%

Mulch Layer

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

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

Planting Guidance

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

STORMWATER MANAGEMENT COUNTY MAINTENANCE NOTE

ALL STORMWATER MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION. THE STREET TREES, PERFORATED UNDERDRAINS, FEEDERS, PLANTINGS AND SWALES WILL ALSO BE PRIVATELY OWNED AND MAINTAINED BY THE H.O.A. HOWARD COUNTY WILL ONLY MAINTAIN THE INLET STRUCTURE WITHIN THE MICRO BIO-RETENTION FACILITIES ADJACENT TO THE PUBLIC RIGHT-OF-WAY (E50 No. 10 & E50 No. 11).

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

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

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

1. Material Specifications

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

2. Filtering Media or Planting Soil

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

The planting soil shall be tested and shall meet the following criteria:

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

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

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

pH Range -Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

3. Compaction

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

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

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

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

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

4. Plant Material

Recommended plant material for micro-bioretention practices can be found in Appendix A, Section A.E.3.

5. Plant Installation

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

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/0 th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

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

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

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

6. Underdrains

Underdrains should meet the following criteria:

Pipe- Should be 47to 6?diameter, slotted or perforated rigid plastic pipe (ASTMF 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).

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

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

The main collector pipe shall be at a minimum 0.5% slope.

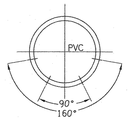
A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.

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

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

7. Miscellaneous

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



PIPE SIZE: 4"
HOLE SIZE: 3/8"
CENTER TO CENTER: 3"
ROWS OF HOLES: 2 @ 90°
2 @ 160° (+/-3°)

Sch 40 Pvc Perforated Underdrain Pipe Detail For Horizontal Drain Pipe

NO SCALE

NOTES:
UNDERDRAIN PIPE SHALL BE 4" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28 OR AASHTO-M- 278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED 4" RIGID PIPE (e.g., PVC OR HDPE).

PERFORATIONS SHALL BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (No. 4 OR 4 x 4) GALVANIZED HARDWARE CLOTH.

GRAVEL LAYER SHALL BE (No. 57 STONE PREFERRED) AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.

THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.

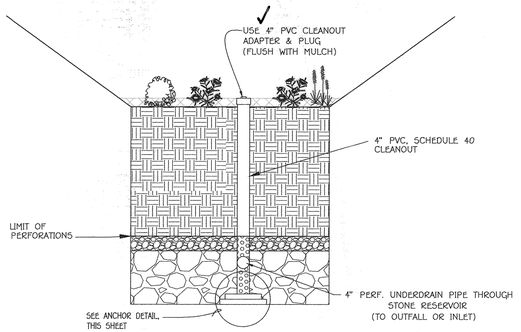
A RIGID, NON PERFORATED OBERSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQ.FT.) TO PROVIDE A CLEANOUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

AS-BUILT CERTIFICATION FOR PSWM

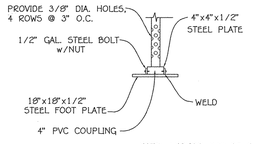
I hereby certify that the facility shown on the plan was constructed as shown on the "AS-BUILT" plans and complies with the approved plans and specifications. I have verified the contributing drainage area is sufficiently stabilized to prevent clogging of the facility.

5/3/22
Date



Section @ Observation Well Location

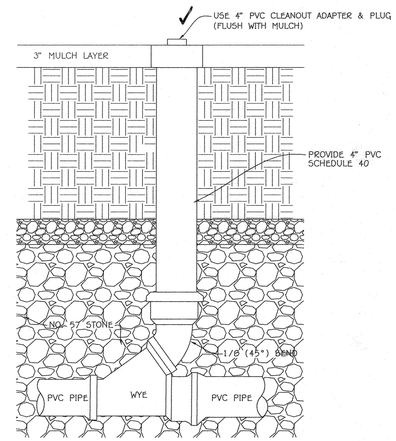
NO SCALE



NOTE: ANCHOR MAY BE SUBSTITUTED WITH ANOTHER METHOD. (MUST BY APPROVED BY INSPECTOR)

Anchor Detail

NO SCALE



Typical Clean-Out Detail (4" Underdrain to Outfall Or Inlet)

NO SCALE

Operation And Maintenance Schedule For Homeowners Association Owned & Maintained Bio-Retention Areas (M-6)

1. 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.

2. The owner shall perform a plant in the spring and in the fall 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.

3. 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.

4. The owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.

5. The owner shall maintain all observation wells, clean-outs and perforated underdrains.

6. Filter material must be replaced when water remains on the surface of the filter bed for more than 24 hours following a 1 or 2 year storm event or more than 48 hours following a 10 year storm event.

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 11/2/20 Date

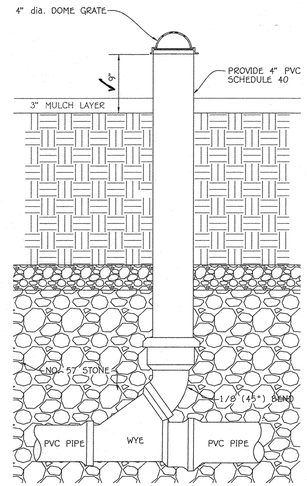
Chief, Development Engineering Division — 10/22/20 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways MK — 10/19/2020 Date

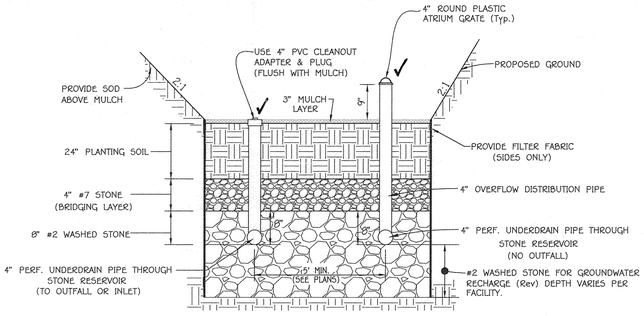
REVISIONS

NO.	DESCRIPTION	DATE



Typical Clean-Out Detail (4" Distribution Pipe)

NO SCALE



Bio-Retention (F-6) Section With 4" Overflow Distribution Pipe

NO SCALE

ALDO MICHAEL VITUCCI — STATE OF MARYLAND — PROFESSIONAL ENGINEER

Aldo M. Vitucci, P.E. — 9/8/2020 Date

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

Stormwater Management Notes And Details (Bio-Retention)

LINDEN GROVE

PHASE TWO

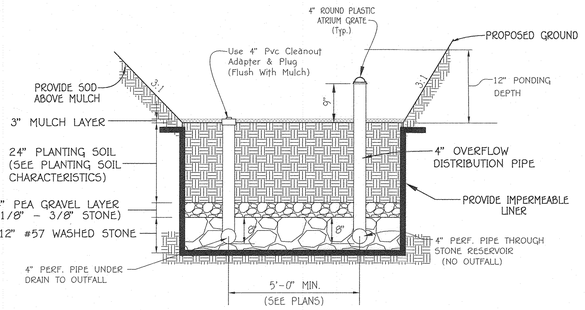
LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO
TAX MAP No. 8 GRID No. 7 PARCEL No. 5
4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 16, 2020
SHEET 11 of 24

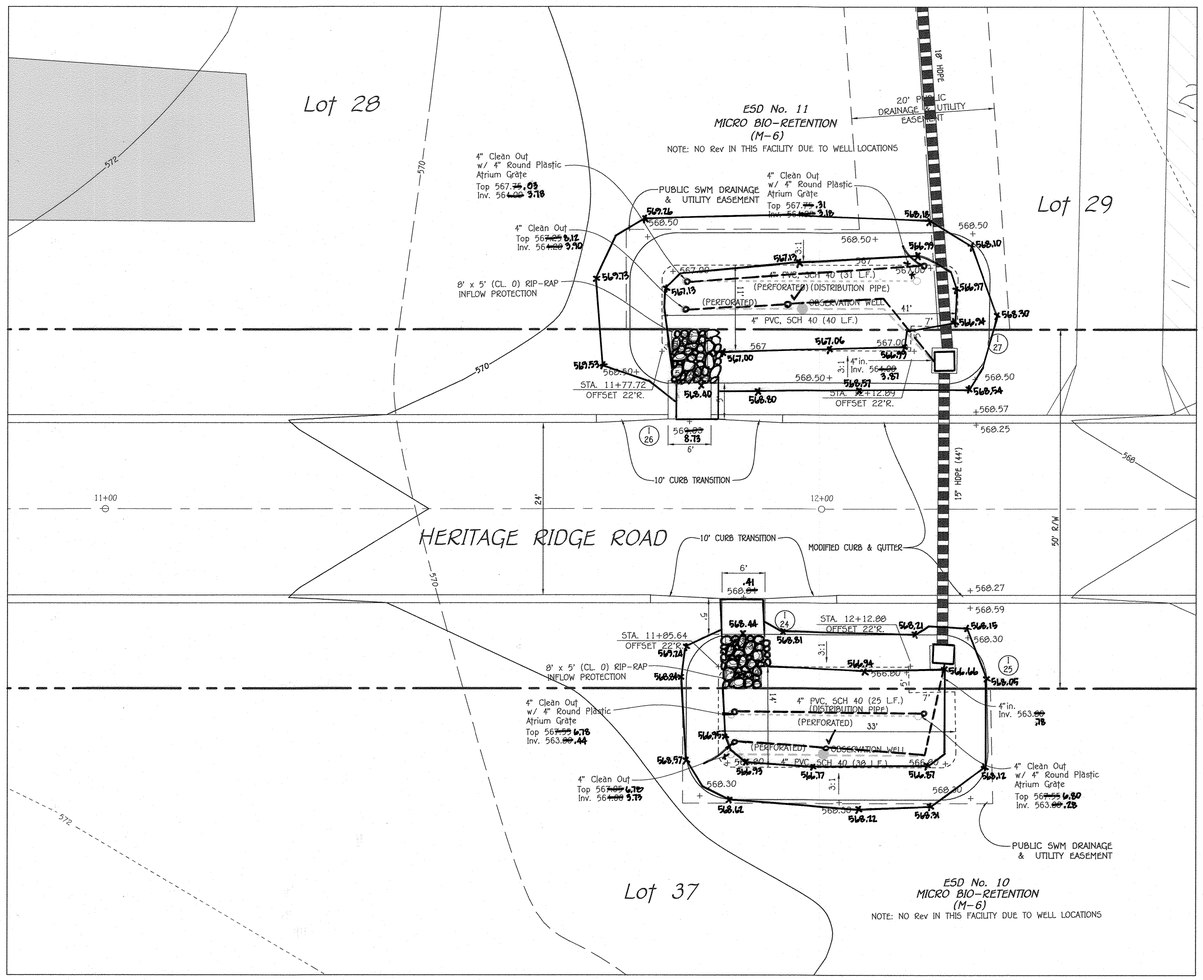
"AS-BUILT" F-20-019

I:\2021\21026\dwg\Finals\Phase II Finals\21026 Sheet 11-17 Swm plans NEW.dwg, C-11_F-18-0, 1:1



(FOR Nos. 10 & 11)
MICRO BIO-RETENTION SECTION
WITH 4" OVERFLOW DISTRIBUTION PIPE

NO SCALE



PROPOSED MICRO BIO-RETENTION (M-6)
ESD Nos. 10 & 11 PLAN VIEW

SCALE: 1" = 10'

STORMWATER MANAGEMENT MAINTENANCE NOTE

ALL STORMWATER MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE LINDEN GROVE HOMEOWNERS ASSOCIATION. THE STREET TREES, PLANTINGS WITHIN THE BIO-RETENTION, PERFORATED UNDERDRAINS, FEEDERS AND SWALES WILL ALSO BE PRIVATELY OWNED AND MAINTAINED BY THE LINDEN GROVE HOMEOWNERS ASSOCIATION. HOWARD COUNTY WILL ONLY MAINTAIN THE INLET STRUCTURE WITHIN THE MICRO BIO-RETENTION FACILITIES ADJACENT TO THE PUBLIC RIGHT-OF-WAY.

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 11/4/20

Chief, Development Engineering Division — Date 10/22/20

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways MK — Date 10/19/2020

REVISIONS		
NO.	DESCRIPTION	DATE

AS-BUILT CERTIFICATION FOR PSWM

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

5/31/22
Date

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

0' 10' 15' 20'
Scale: 1" = 10'

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

Aldo M. Vitucci, P.E. — Date 9/8/2020

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

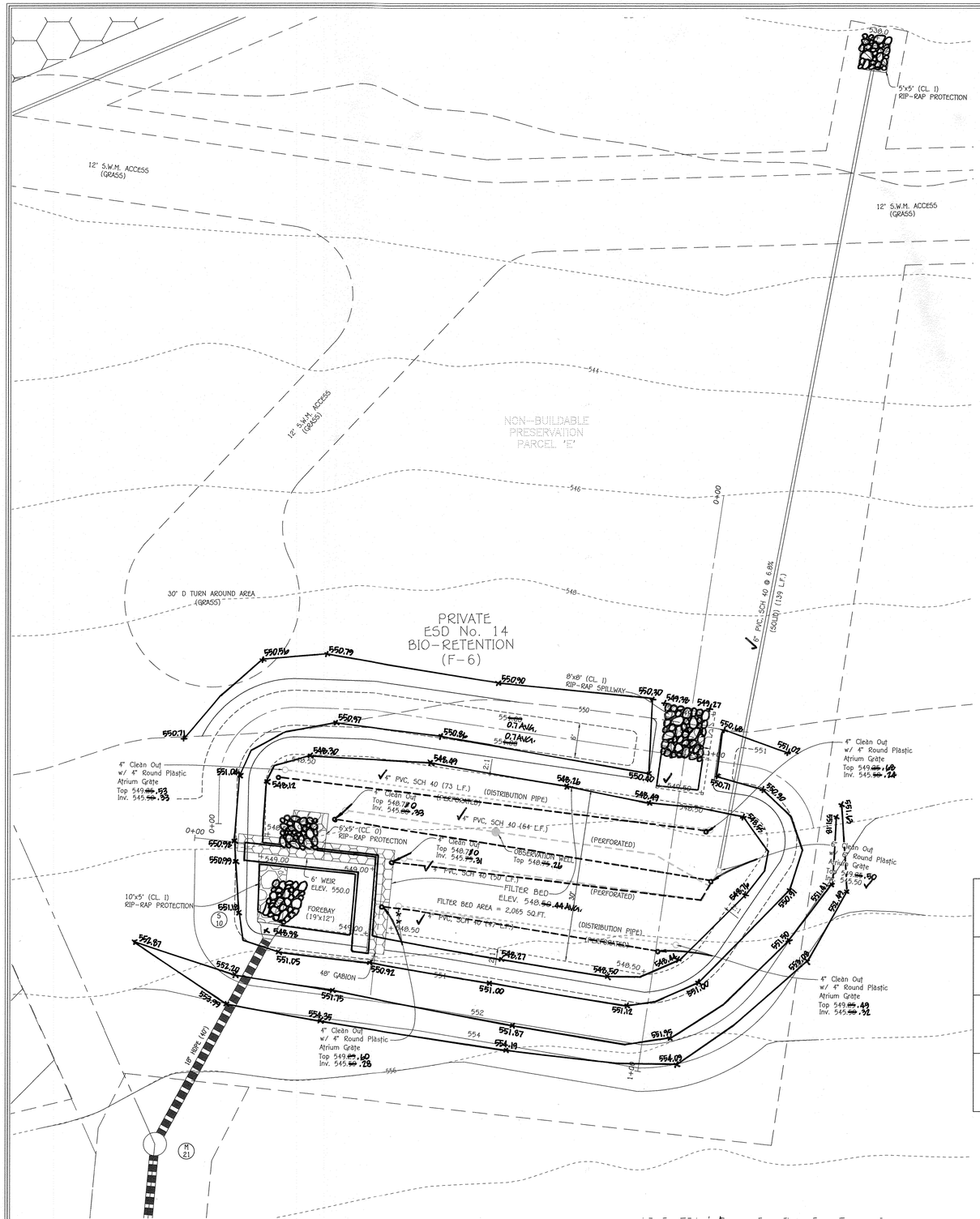
Stormwater Management Plan Views

LINDEN GROVE
PHASE TWO
LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO
TAX MAP No. 8 GRID No. 7 PARCEL No. 5
4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 16, 2020
SHEET 12 of 24

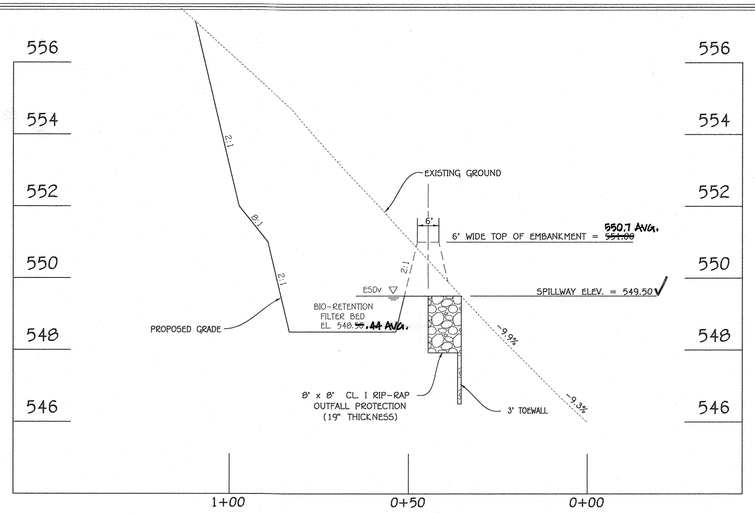
"AS-BUILT" F-20-019



PROPOSED BIO-RETENTION (F-6)
ESD No. 14 PLAN VIEW

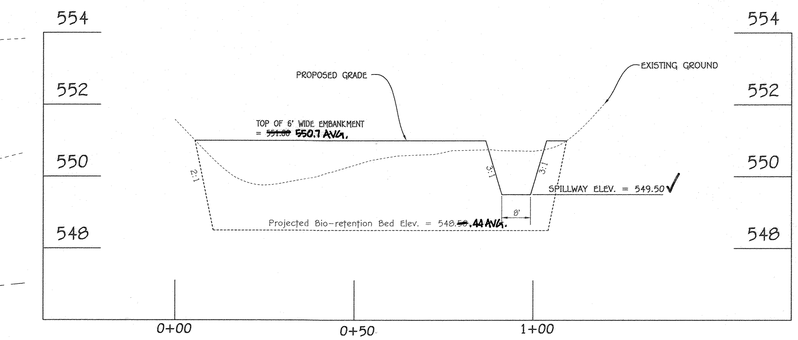
SCALE: 1" = 10'

0' 10' 15' 20'
Scale: 1" = 10'



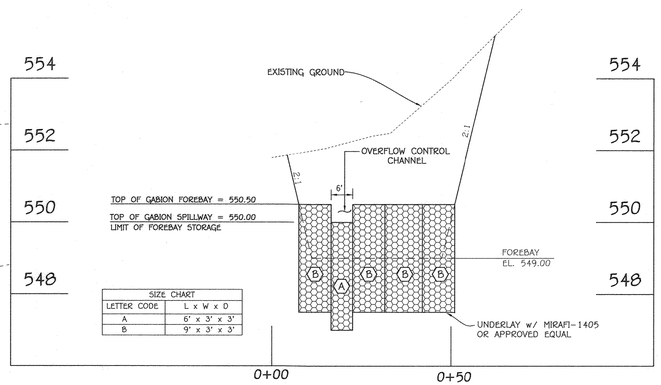
ESD NO. 14
SECTION THRU SPILLWAY

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



ESD NO. 14
PROFILE ALONG TOP OF EMBANKMENT

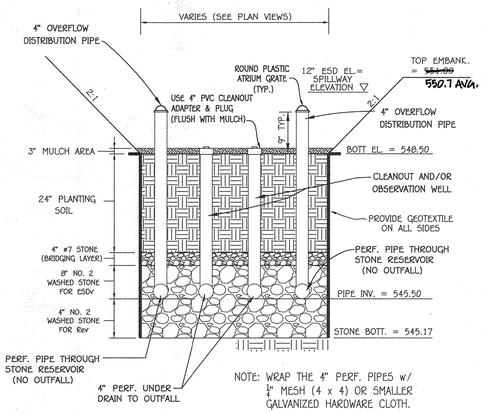
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



GABION FOREBAY PROFILE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

0' 20' 40'
Scale: 1" = 20'



BIO-RETENTION SECTION (F-6) ESD #14

NO SCALE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 11/2/20

Chief, Development Engineering Division — Date 10/22/20

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways MK — Date 10/19/2020

REVISIONS

NO.	DESCRIPTION	DATE

AS-BUILT CERTIFICATION FOR PSWM

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

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

5/3/22
Date

Stormwater Management
Plan Views

LINDEN GROVE
PHASE TWO
LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 16, 2020

SHEET 13 of 24

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

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

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

Aldo M. Vitucci, P.E. — Date 9/8/2022

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

"AS-BUILT" F-20-019

I:\2012\12026\dwg\Finals\Phase II Finals\12026 Sheet 11-17 Swm plans NEW.dwg, C-13_F-18-0, 1:1

Approved: Department Of Planning And Zoning

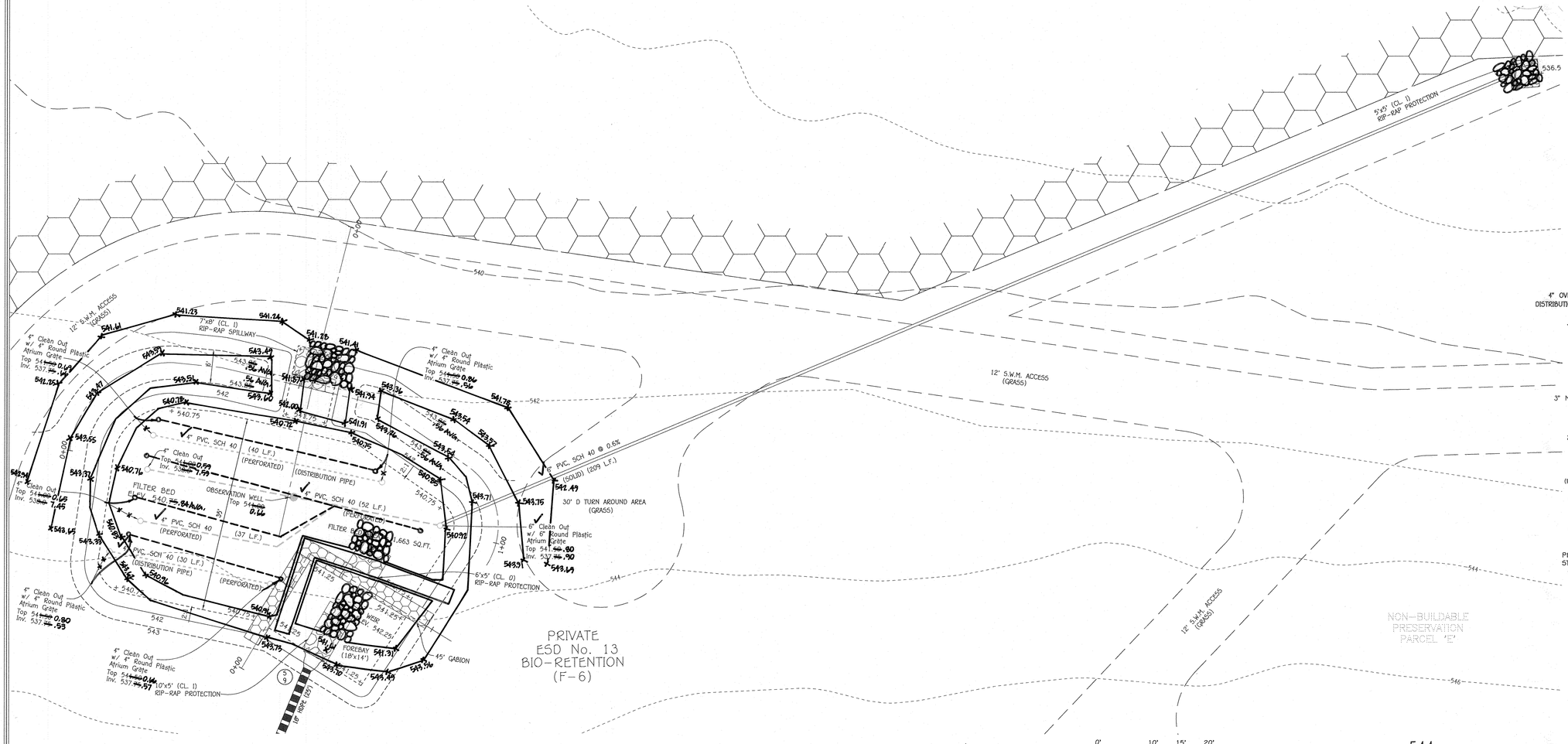
Chief, Division Of Land Development — 11/2/20 Date

Chief, Development Engineering Division — 10/22/20 Date

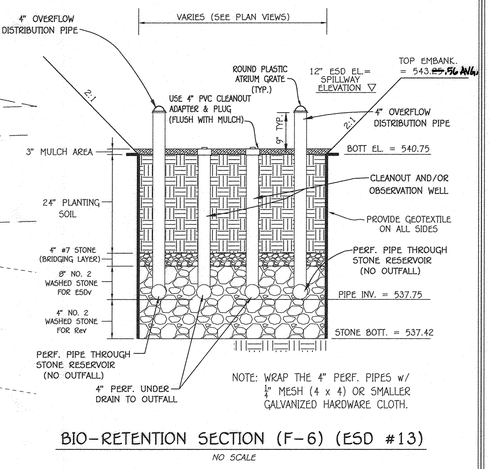
Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 10/19/2020 Date

REVISIONS		
NO.	DESCRIPTION	DATE

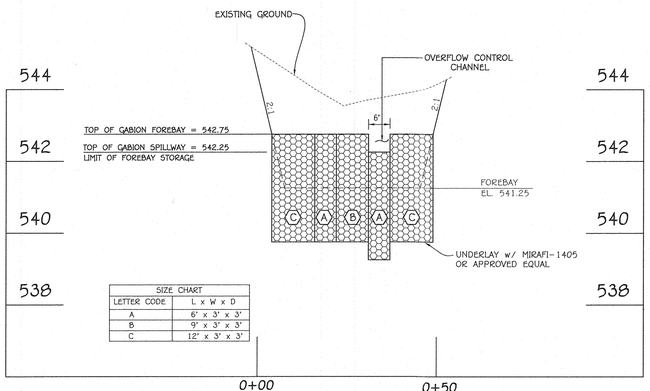


PRIVATE
ESD No. 13
BIO-RETENTION
(F-6)



BIO-RETENTION SECTION (F-6) (ESD #13)

NO SCALE



SIZE CHART	
LETTER CODE	L x W x D
A	6' x 3' x 3'
B	9' x 3' x 3'
C	12' x 3' x 3'

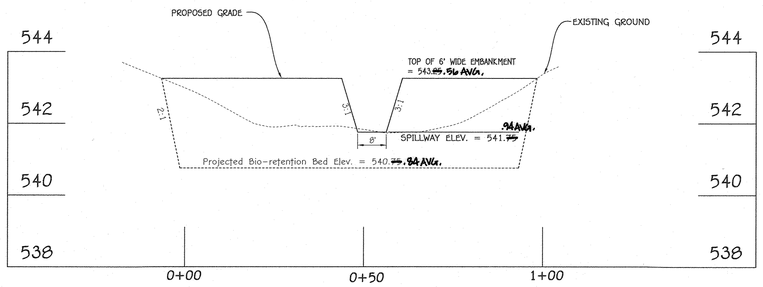
GABION FOREBAY PROFILE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

PROPOSED BIO-RETENTION (F-6) ESD No. 13 PLAN VIEW

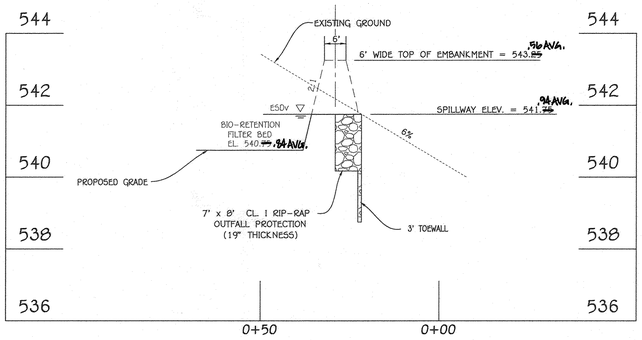
SCALE: 1" = 10'

0' 10' 15' 20'
Scale: 1" = 10'



PROFILE ALONG TOP OF EMBANKMENT

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



SECTION THRU SPILLWAY

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

AS-BUILT CERTIFICATION FOR PSWM

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

5/4/22
Date

0' 20' 40'
Scale: 1" = 20'

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

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

Aldo M. Vitucci, P.E. — 9/9/2020 Date

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

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

Stormwater Management Plan Views

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO
TAX MAP No. 8 GRID No. 7 PARCEL No. 5
4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 16, 2020
SHEET 14 of 24

"AS-BUILT" F-20-019

I:\2012\12026\dwg\Finals\Phase II Finals\12026 Sheet 11-17 Swm plans NEW.dwg, C-14_F-BR-0, 1:1

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 11/2/20 Date

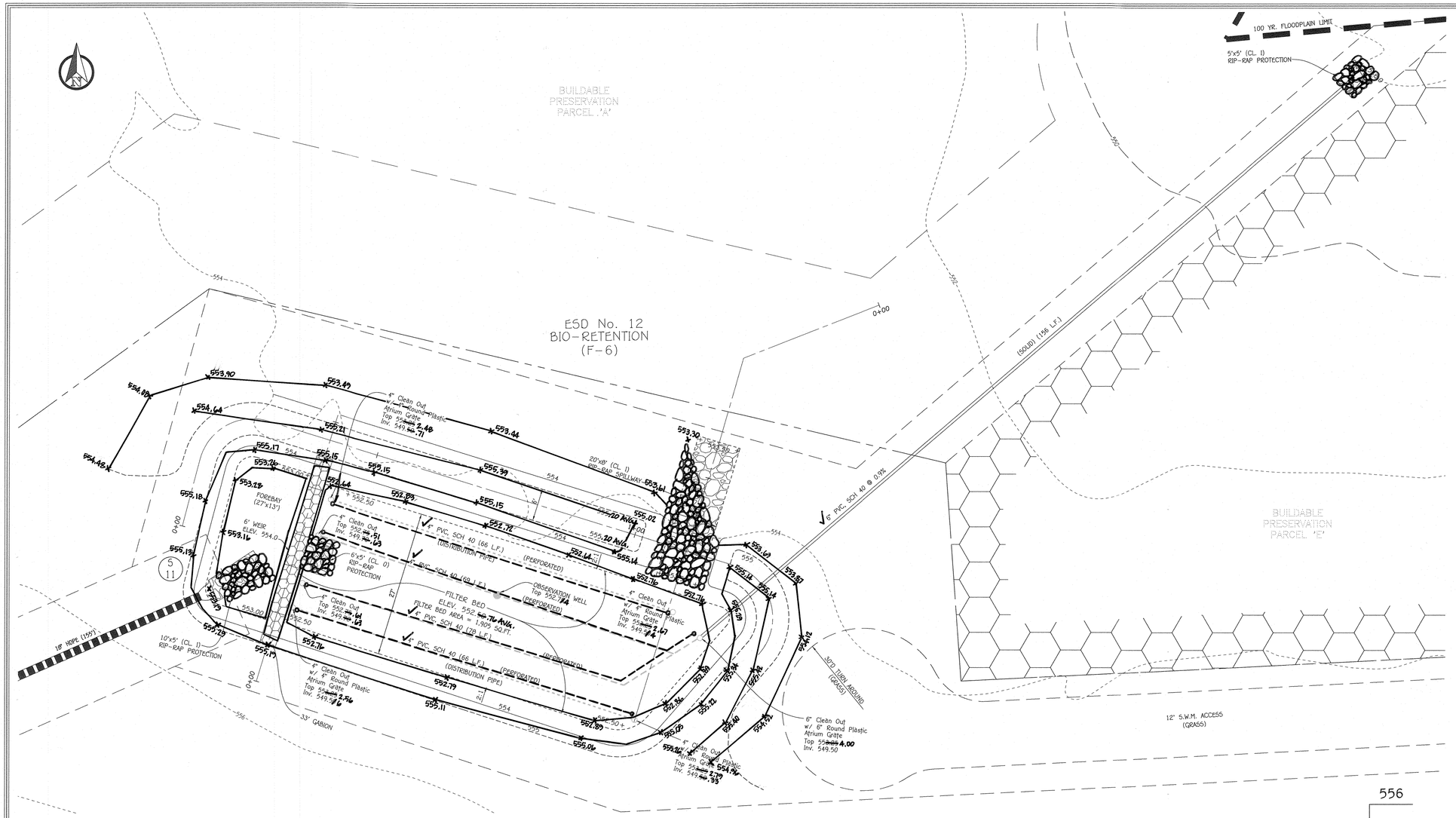
Chief, Development Engineering Division — 10/22/20 Date

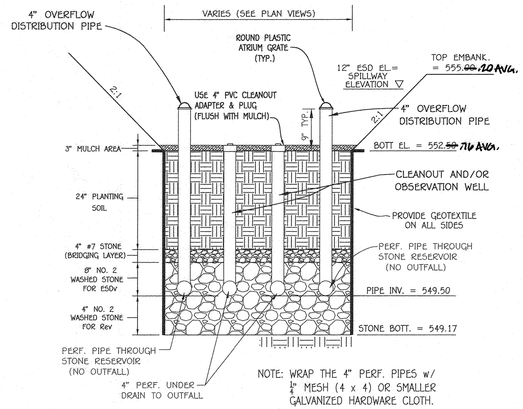
Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways MK — 10/19/2020 Date

REVISIONS

NO.	DESCRIPTION	DATE





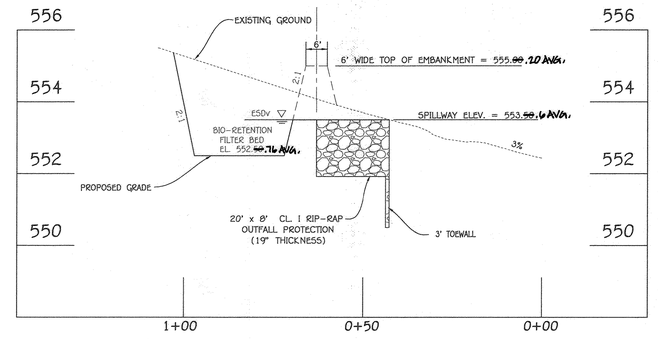
BIO-RETENTION SECTION (F-6) (ESD #12)

NO SCALE

AS-BUILT CERTIFICATION FOR PSWM

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

5/3/22 Date



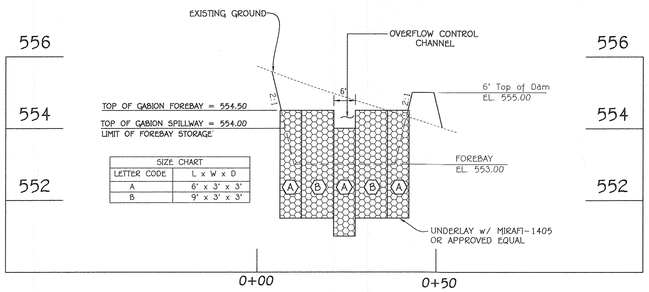
SECTION THRU SPILLWAY

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

PROPOSED BIO-RETENTION (F-6)-PRIVATE ESD No. 12 PLAN VIEW

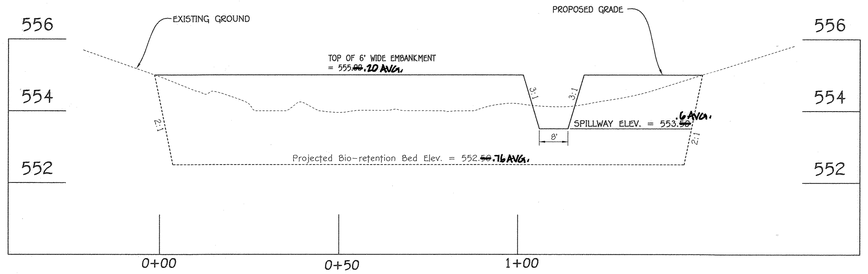
SCALE: 1" = 10'

0' 10' 15' 20'
Scale: 1" = 10'



GABION FOREBAY PROFILE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



PROFILE ALONG TOP OF EMBANKMENT

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

0' 20' 40'
Scale: 1" = 20'

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

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

9/6/2020 Date

Aldo M. Vitucci, P.E.

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

Stormwater Management Plan Views
LINDEN GROVE
PHASE TWO
LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO
TAX MAP No. 8 GRID No. 7 PARCEL No. 5
4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 16, 2020
SHEET 15 of 24

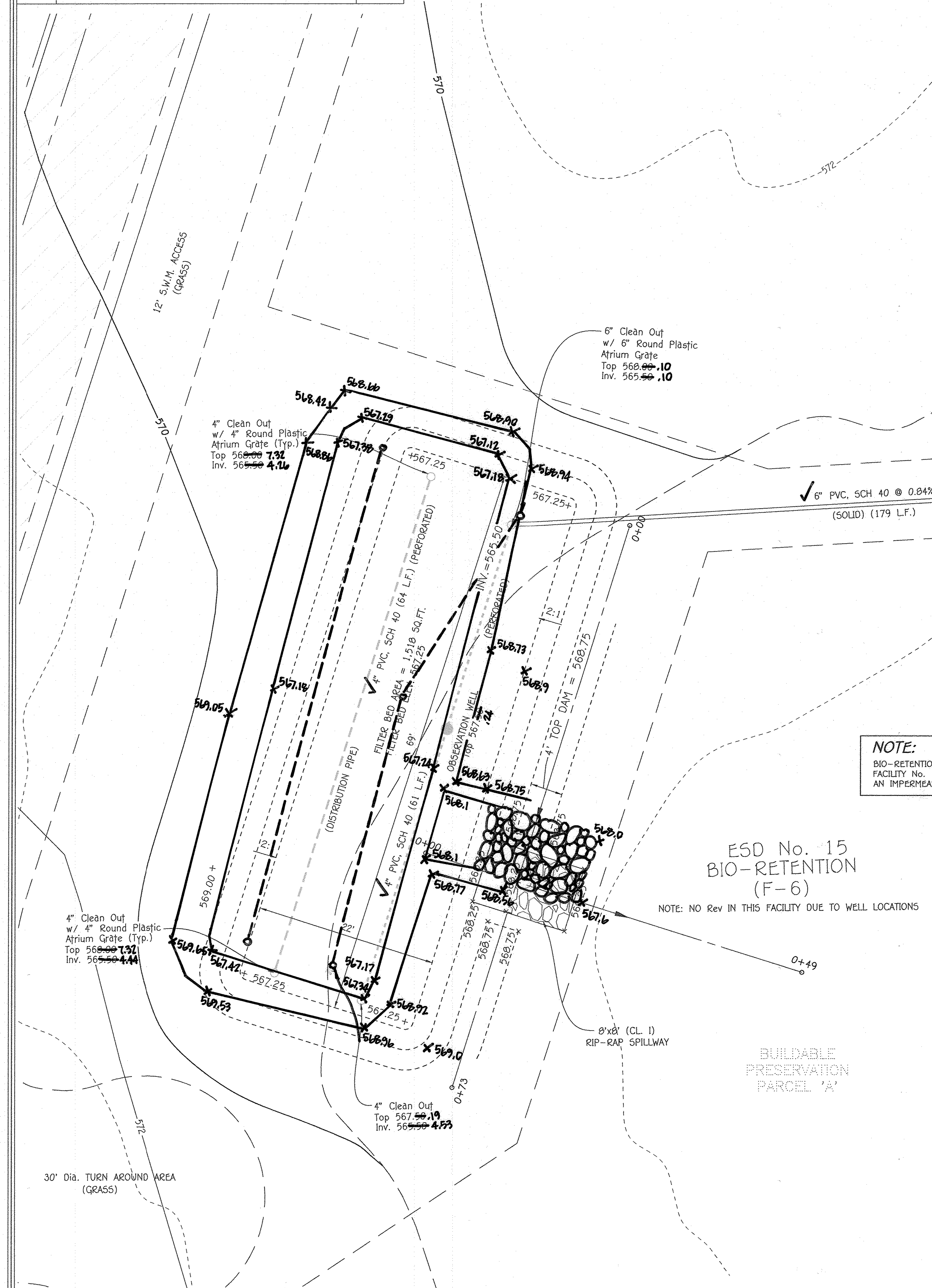
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

"AS-BUILT" F-20-019

Approved: Department Of Planning And Zoning	
Chief, Division Of Land Development	11/2/20 Date
Chief, Development Engineering Division	10/22/20 Date
Approved: Howard County Department Of Public Works	
Chief, Bureau Of Highways MK	10/19/2020 Date

REVISIONS

NO.	DESCRIPTION	DATE



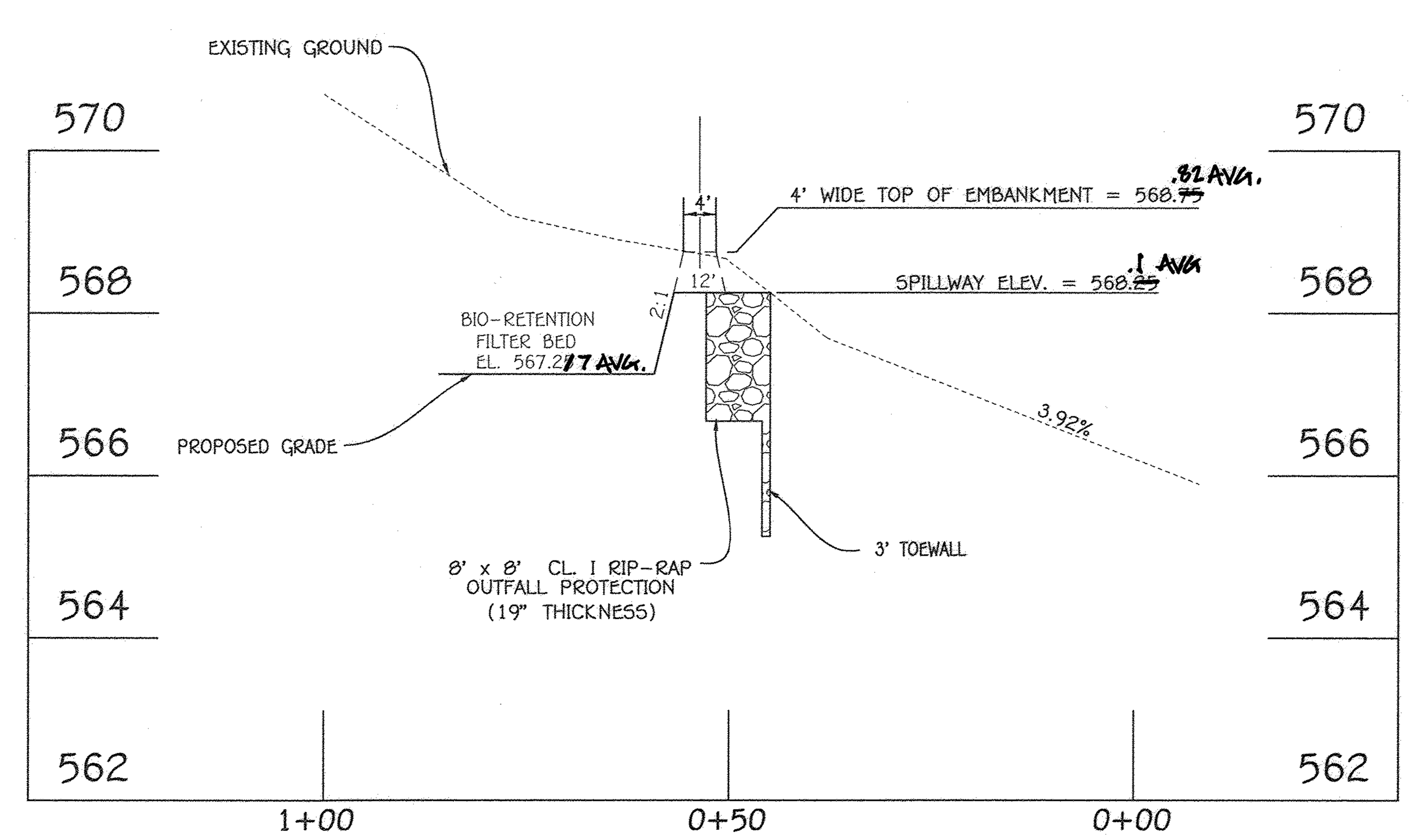
BUILDABLE PRESERVATION PARCEL 'A'
12' S.W.M. ACCESS (GRASS)
EXISTING PIPELINE TRANSMISSION R/W (COLONIAL PIPELINE)
6" Clean Out w/ 6" Round Plastic Atrium Grate Top 568.10 Inv. 565.10
4" Clean Out w/ 4" Round Plastic Atrium Grate (Typ.)
6" PVC, SCH 40 @ 0.84% (SOLID) (179 L.F.)
5'x5' (CL. I) RIP-RAP PROTECTION
4" PVC, SCH 40 (64 L.F.) (PERFORATED)
FILTER BED AREA = 1,518 SQ. FT.
(DISTRIBUTION PIPE)
OBSERVATION WELL
4' TOP DAM = 568.75
8'x8' (CL. I) RIP-RAP SPILLWAY
ESD No. 15 BIO-RETENTION (F-6)
NOTE: NO Rev IN THIS FACILITY DUE TO WELL LOCATIONS
4" Clean Out
30' Dia. TURN AROUND AREA (GRASS)

NOTE:
BIO-RETENTION (F-6) FACILITY No. 15 WILL HAVE AN IMPERMEABLE LINER.

AS-BUILT CERTIFICATION FOR PSWM

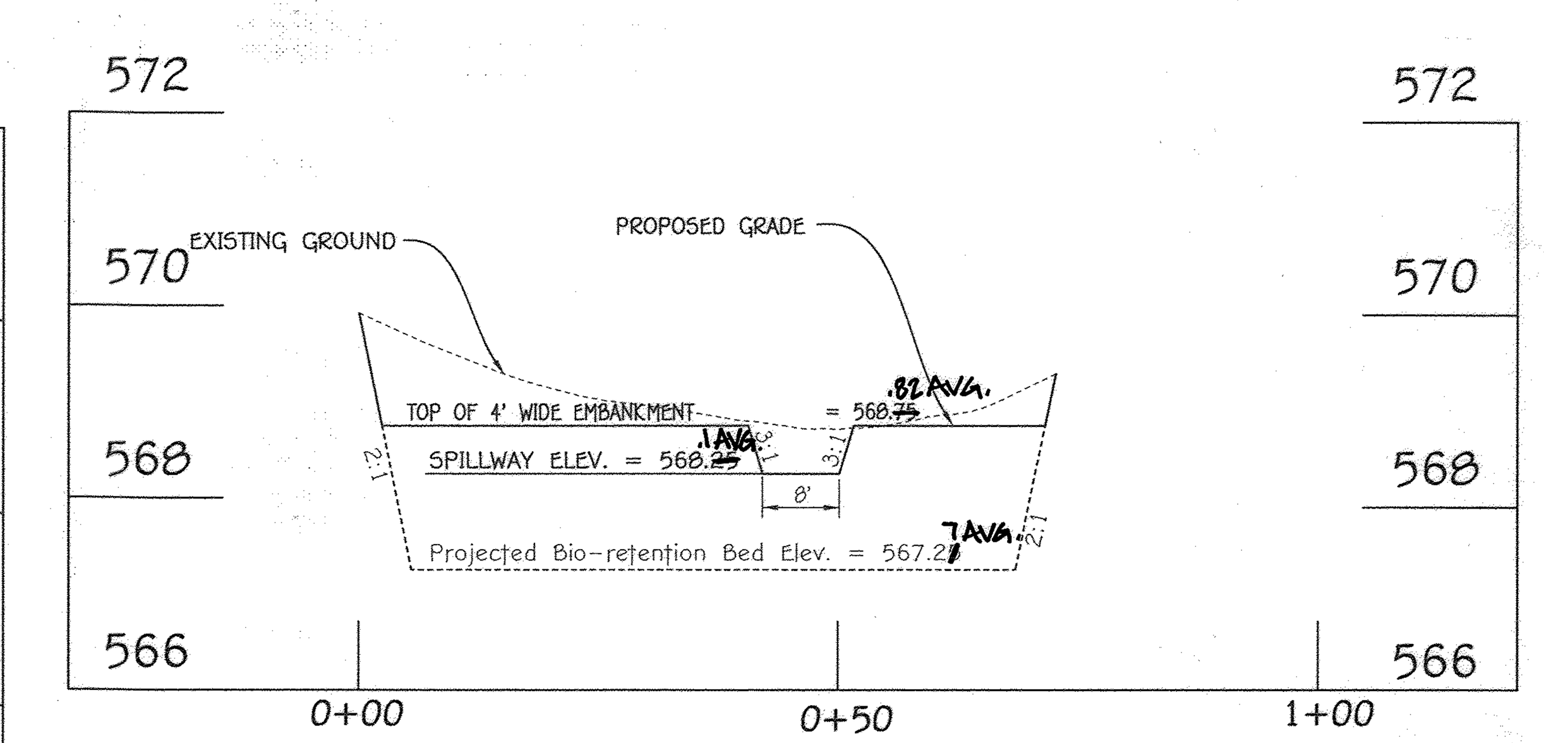
I hereby certify that the facility shown on the plan was constructed as shown on the "AS-BUILT" plans and complies with the approved plans and specifications. I have verified the contributing drainage area is sufficiently stabilized to prevent clogging of the facility.

5/3/22
Date



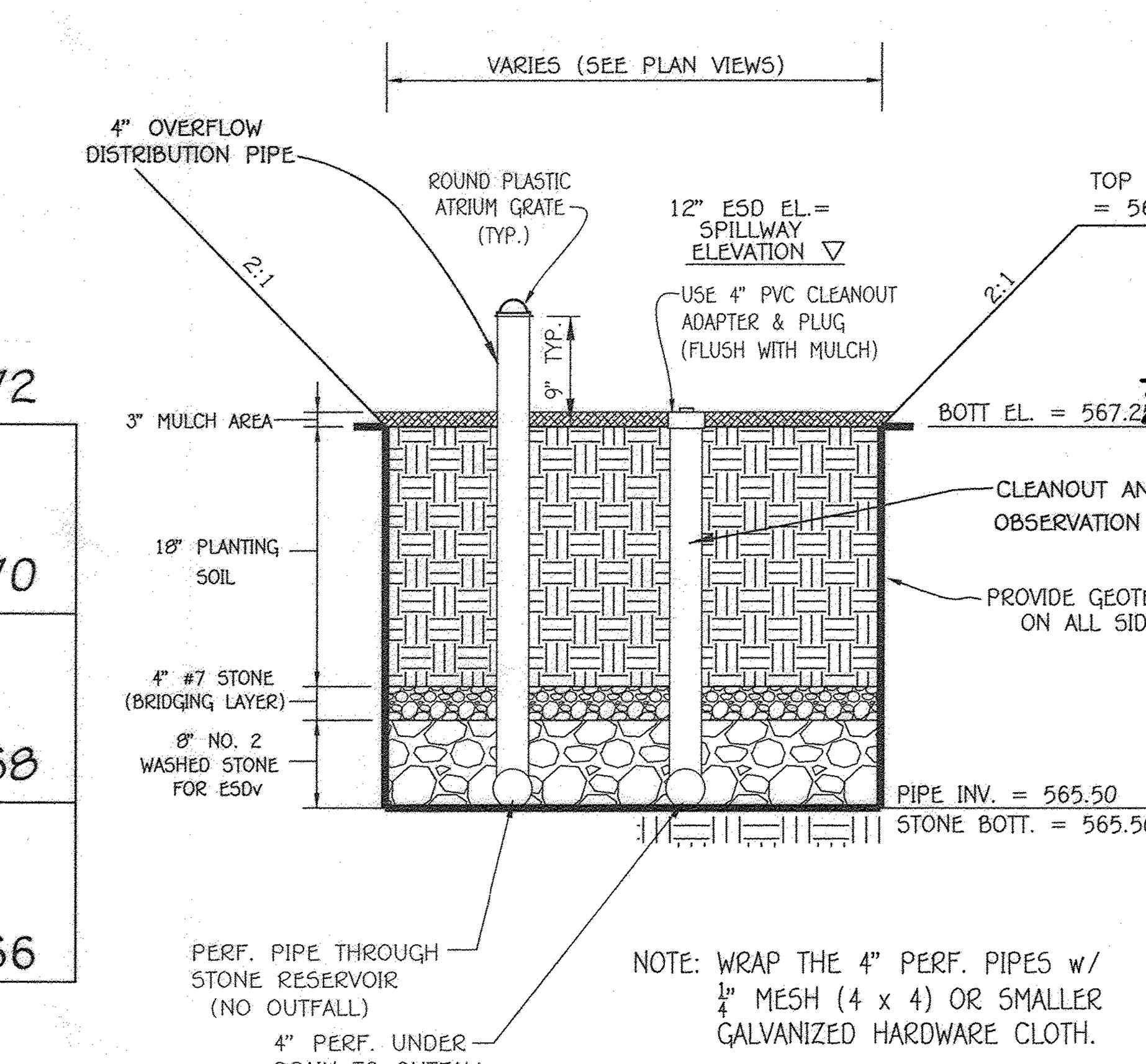
SECTION THRU SPILLWAY

SCALE: HORIZ. 1" = 20' VERT. 1" = 2'



PROFILE ALONG TOP OF EMBANKMENT

SCALE: HORIZ. 1" = 20' VERT. 1" = 2'



VARIES (SEE PLAN VIEWS)
4" OVERFLOW DISTRIBUTION PIPE
ROUND PLASTIC ATRIUM GRATE (TYP.)
12" ESD EL.= SPILLWAY ELEVATION
TOP EMBANK. = 568.82 AVG.
USE 4" PVC CLEANOUT ADAPTER & PLUG (FLUSH WITH MULCH)
BOTT EL. = 567.27 AVG.
3" MULCH AREA
18" PLANTING SOIL
4" #7 STONE (BRIDGING LAYER)
8" NO. 2 WASHED STONE FOR ESDv
CLEANOUT AND/OR OBSERVATION WELL
PROVIDE GEOTEXTILE ON ALL SIDES
PIPE INV. = 565.50
STONE BOTT. = 565.50
PERF. PIPE THROUGH STONE RESERVOIR (NO OUTFALL)
4" PERF. UNDER-DRAIN TO OUTFALL

NOTE: WRAP THE 4" PERF. PIPES w/ ¼" MESH (4 x 4) OR SMALLER GALVANIZED HARDWARE CLOTH.

BIO-RETENTION SECTION (F-6) (ESD #15)

NO SCALE

Scale: 1" = 10'

PROPOSED BIO-RETENTION (F-6)
ESD No. 15 PLAN VIEW

SCALE: 1" = 10'

Scale: 1" = 20'

FISHER, COLLINS & CARTER, INC.
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Aldo M. Vitucci, P.E. 9/9/2020 Date

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Stormwater Management Plan Views

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

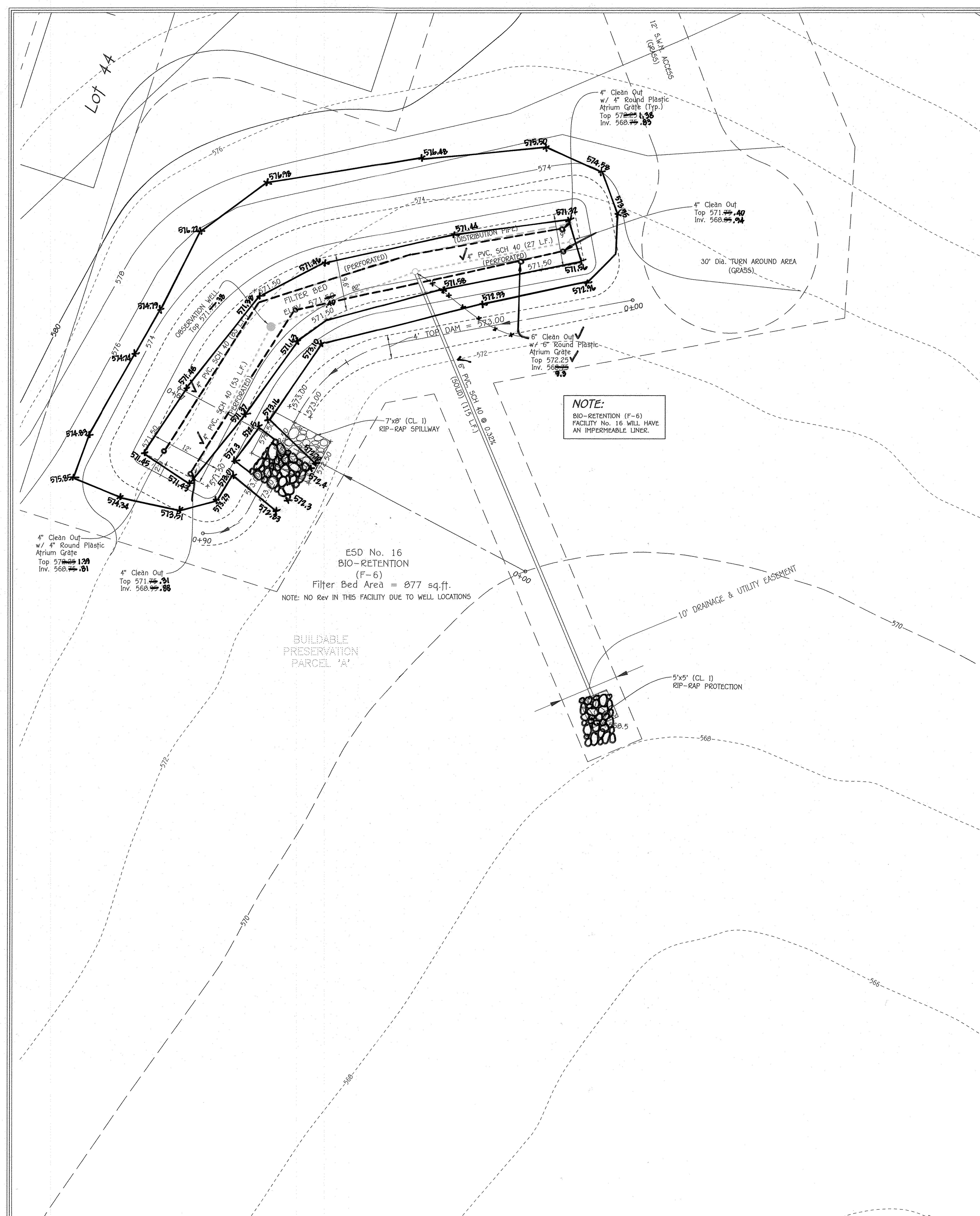
ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 16, 2020

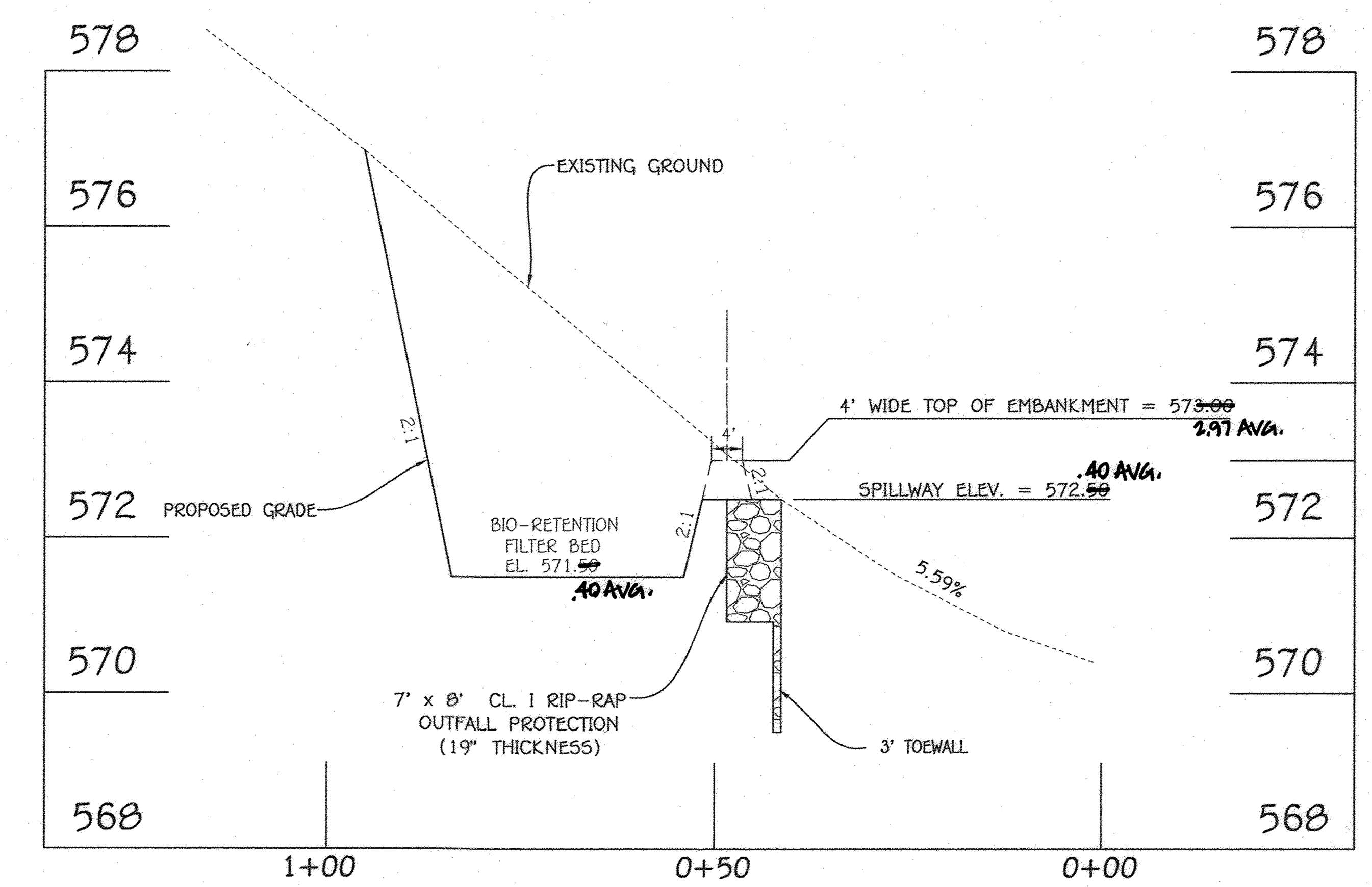
"AS-BUILT" F-20-019



PRIVATE
PROPOSED BIO-RETENTION (F-6)
ESD No. 16 PLAN VIEW

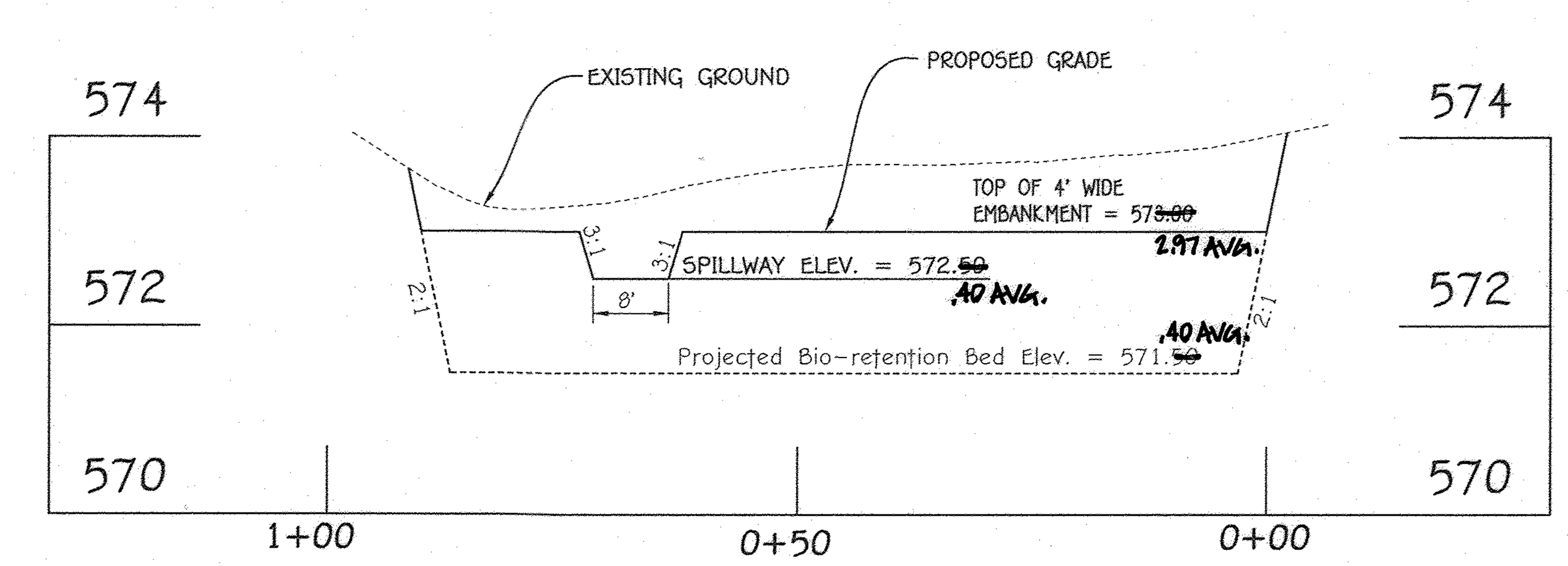
SCALE: 1" = 10'

Scale: 1" = 10'



SECTION THRU SPILLWAY

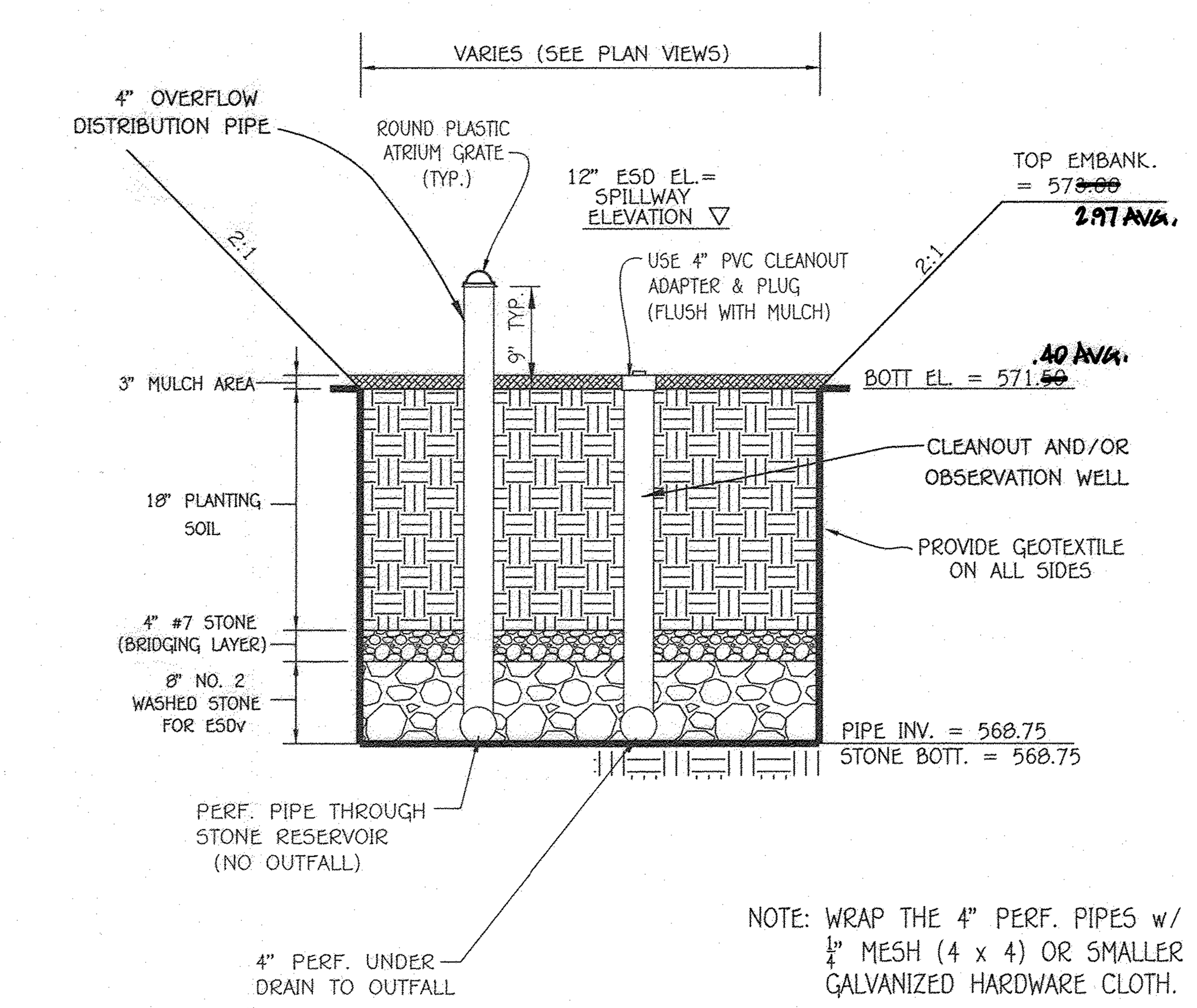
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



PROFILE ALONG TOP OF EMBANKMENT

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

Scale: 1" = 20'



NOTE: WRAP THE 4" PERF. PIPES w/ ¼" MESH (4 x 4) OR SMALLER GALVANIZED HARDWARE CLOTH.

BIO-RETENTION SECTION (F-6) (ESD #16)

NO SCALE

Approved: Department Of Planning And Zoning	
Chief, Division Of Land Development	11/2/20 Date
Chief, Development Engineering Division	10/22/20 Date
Approved: Howard County Department Of Public Works	
Chief, Bureau Of Highways MK	10/19/2020 Date

REVISIONS

NO.	DESCRIPTION	DATE

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 the contributing drainage area is sufficiently stabilized to prevent clogging of the underground SWM facility.

5/31/22
Date

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Stormwater Management
Plan Views

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

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ZONED: RC-DEO
TAX MAP No. 8 GRID No. 7 PARCEL No. 5
4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 16, 2020

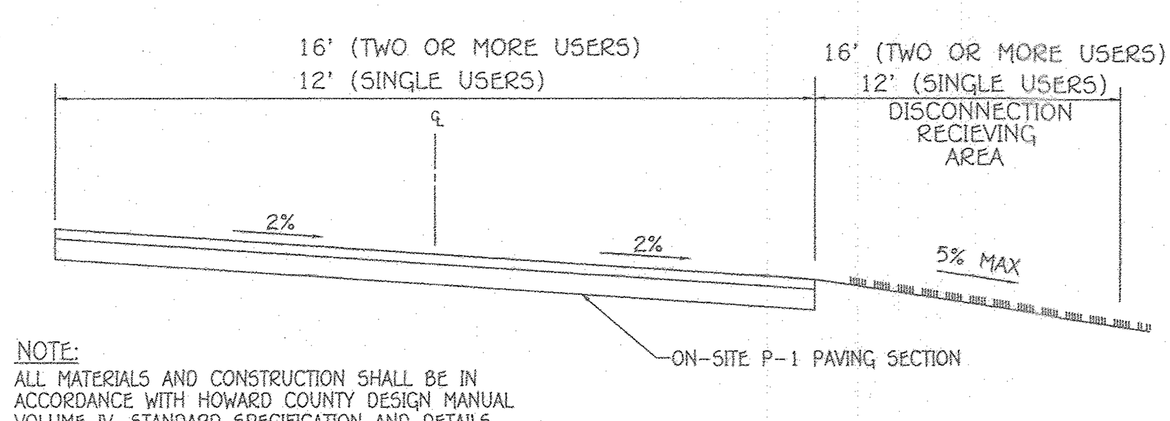
"AS-BUILT" F-20-019

I:\2012\12026\dwg\Finals\Phase II Finals\12026 Sheet 11-17 Swm plans NEW.dwg, C-17_F-18-0, 1:1

APPROVED: DEPARTMENT OF PUBLIC WORKS
8/17/2020
CHIEF, BUREAU OF HIGHWAYS MK — DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING
11/2/20
CHIEF, DIVISION OF LAND DEVELOPMENT DJ — DATE
8-28-20
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

REVISIONS

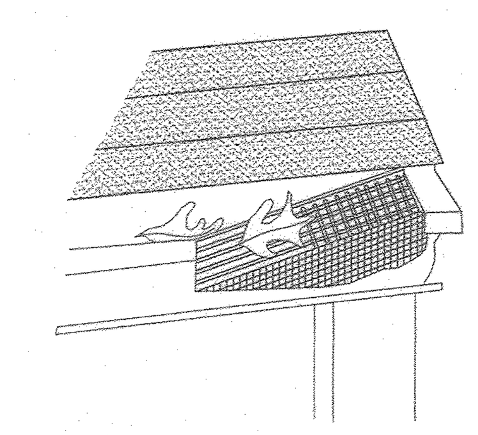
NO.	DESCRIPTION	DATE



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

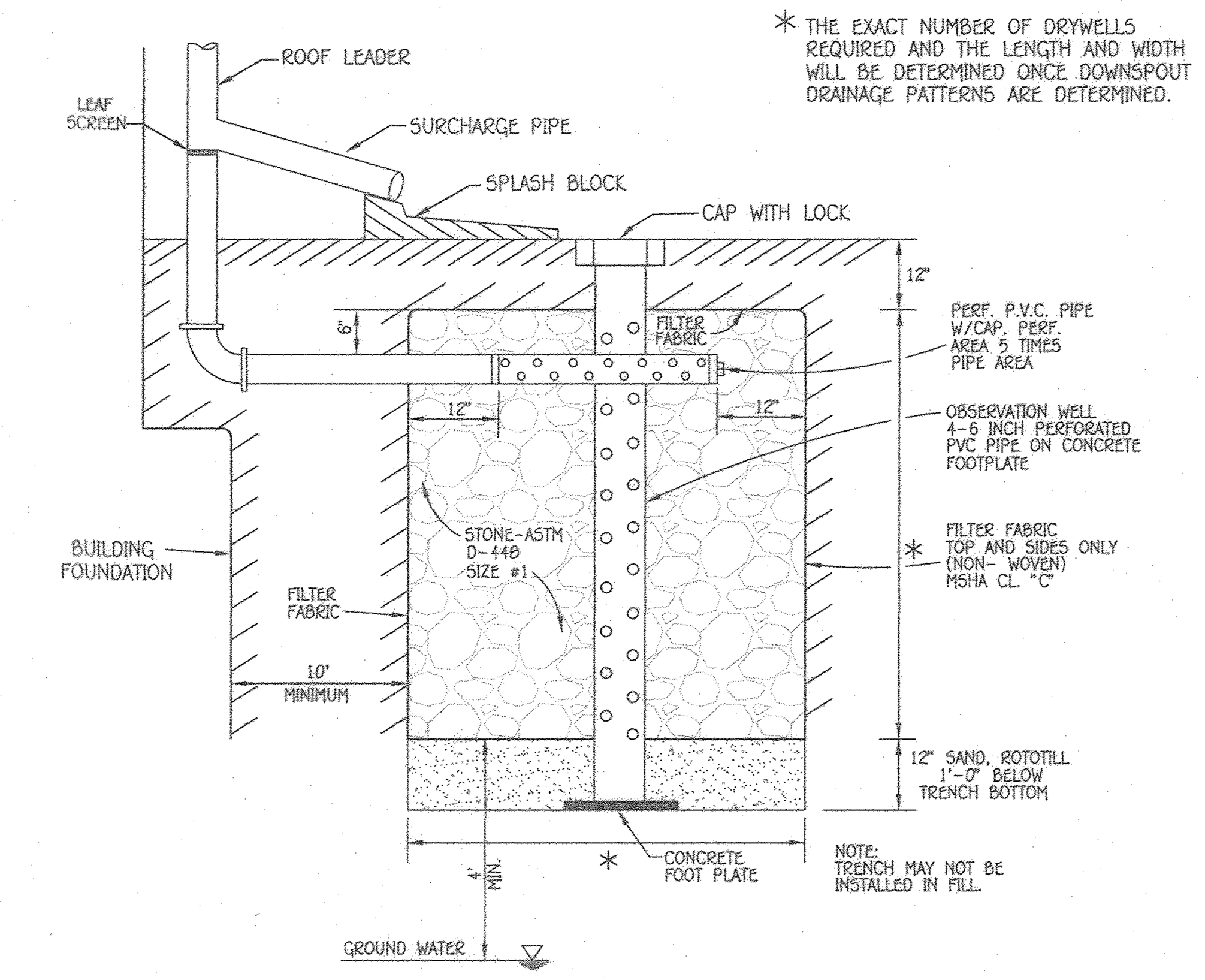
Typical Private Drive Cross Slope Section

NOT TO SCALE



GUTTER DRAIN FILTER DETAIL

NOT TO SCALE



* THE EXACT NUMBER OF DRYWELLS REQUIRED AND THE LENGTH AND WIDTH WILL BE DETERMINED ONCE DOWNSPOUT DRAINAGE PATTERNS ARE DETERMINED.

DRYWELL (M-5)

Operation & Maintenance Schedule For Privately Owned And Maintained 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.

OPERATION AND MAINTENANCE SCHEDULE FOR DRYWELLS (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 INSURE 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.

AS-BUILT CERTIFICATION

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

5/31/22
Date

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

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

OWNER:
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410-489-7900

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Aldo M. Vitucci, P.E. — 6/17/2020 Date
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PRIVATE STORMWATER MANAGEMENT NOTES AND DETAILS

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

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ZONED: RC-DEO
TAX MAP No. 8 GRID No. 7 PARCEL No. 5
4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 16, 2020

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

F-20-019

STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-24	569.46	----	----	HERITAGE RIDGE ROAD	11+89.13	12.43' R	COG/COS OPENING ✓	MD - 374.68
I-25	567.71	563.78 (4") ✓	562.80 (15") ✓	HERITAGE RIDGE ROAD	12+16.90	21.7' R	'S' INLET ✓	D - 4.22
I-26	569.58	----	----	HERITAGE RIDGE ROAD	11+81.56	12.43' L	COG/COS OPENING ✓	MD - 374.68
I-27	567.90	563.78 (4") ✓, 561.74 (15") ✓	561.53 (18") ✓	HERITAGE RIDGE ROAD	12+17.13	21.7' L	'S' INLET ✓	D - 4.22
I-28	563.75	559.78 (15") ✓	559.46 (18") ✓	HERITAGE RIDGE ROAD	15+01.92	12.4' L	A-10 ✓	D - 4.03
I-29	563.72	----	559.91 (15") ✓	HERITAGE RIDGE ROAD	15+01.95	12.4' R	A-10 ✓	D - 4.03
I-30	560.06 ✓	----	555.85 (15") ✓	HERITAGE RIDGE ROAD	L.P. 1+46.12	-----	A-10 ✓	D - 4.03
I-31	571.29	566.89 (15") ✓	567.14 (18") ✓	HERITAGE RIDGE ROAD	7+99.96	12.5' L	A-10 ✓	D - 4.03
I-32	571.31	----	567.51 (15") ✓	HERITAGE RIDGE ROAD	7+99.96	12.5' L	A-10 ✓	D - 4.03
M-18	555.25	551.34 (18") ✓	551.24 (18") ✓	N 606,083.75 E 1,294,659.56	-----	-----	4' DIA. MANHOLE ✓	G - 5.12
M-19	546.98	541.80 (18") ✓	541.76 (18") ✓	N 606,094.94 E 1,295,018.31	-----	-----	4' DIA. MANHOLE ✓	G - 5.12
M-20	564.14	559.19 (18") ✓	559.09 (18") ✓	HERITAGE RIDGE ROAD	15+10.19	25' L	4' DIA. MANHOLE ✓	G - 5.12
M-21	556.43	549.48 (18") ✓	549.30 (18") ✓	N 606,004.34 E 1,295,162.72	-----	-----	4' DIA. MANHOLE ✓	G - 5.12
M-22	564.43	554.66 (18") ✓	553.00 (18") ✓	N 605,853.25 E 1,295,151.88	-----	-----	4' DIA. MANHOLE ✓	G - 5.12
M-23	560.69	555.90 (15") ✓	554.05 (18") ✓	HERITAGE RIDGE ROAD	L.P. 1+04.17	6.5' L	4' DIA. MANHOLE ✓	G - 5.12
M-24	560.68	555.88 (18") ✓	555.57 (18") ✓	N 606,053.11 E 1,294,121.93	-----	-----	4' DIA. MANHOLE ✓	G - 5.12
M-25	576.12	566.24 (18") ✓	565.93 (18") ✓	HERITAGE RIDGE ROAD	8+20.00	82.7' L	4' DIA. MANHOLE ✓	G - 5.12
S-8	552.30	550.80 (18") ✓	----	N 606,134.79 E 1,294,683.89	-----	-----	FLARED END SECTION ✓	***
S-9	543.11	541.61 (18") ✓	----	N 606,120.57 E 1,295,029.62	-----	-----	FLARED END SECTION ✓	***
S-10	550.48	548.98 (18") ✓	----	N 606,039.85 E 1,295,182.99	-----	-----	FLARED END SECTION ✓	***
S-11	554.69	553.19 (18") ✓	----	N 606,116.21 E 1,294,267.14	-----	-----	FLARED END SECTION ✓	***

***- A.D.S. FLARED END SECTION OR EQUAL

NOTE: TOP ELEVATION FOR THE COG/COS OPENING AND A-10 INLETS IS THE TOP OF CURB ELEVATION.

PIPE SCHEDULE

SIZE	CLASS	LENGTH
4"	PVC, SCH. 40 (PERFORATED)	820'
6"	PVC, SCH. 40 (SOLID)	798'
6"	PVC, SCH. 40 (PERFORATED)	149'
15"	HDPE	139'
18"	HDPE	1,532'

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS MK — DATE 8/17/2020

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/2/20

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/28/20

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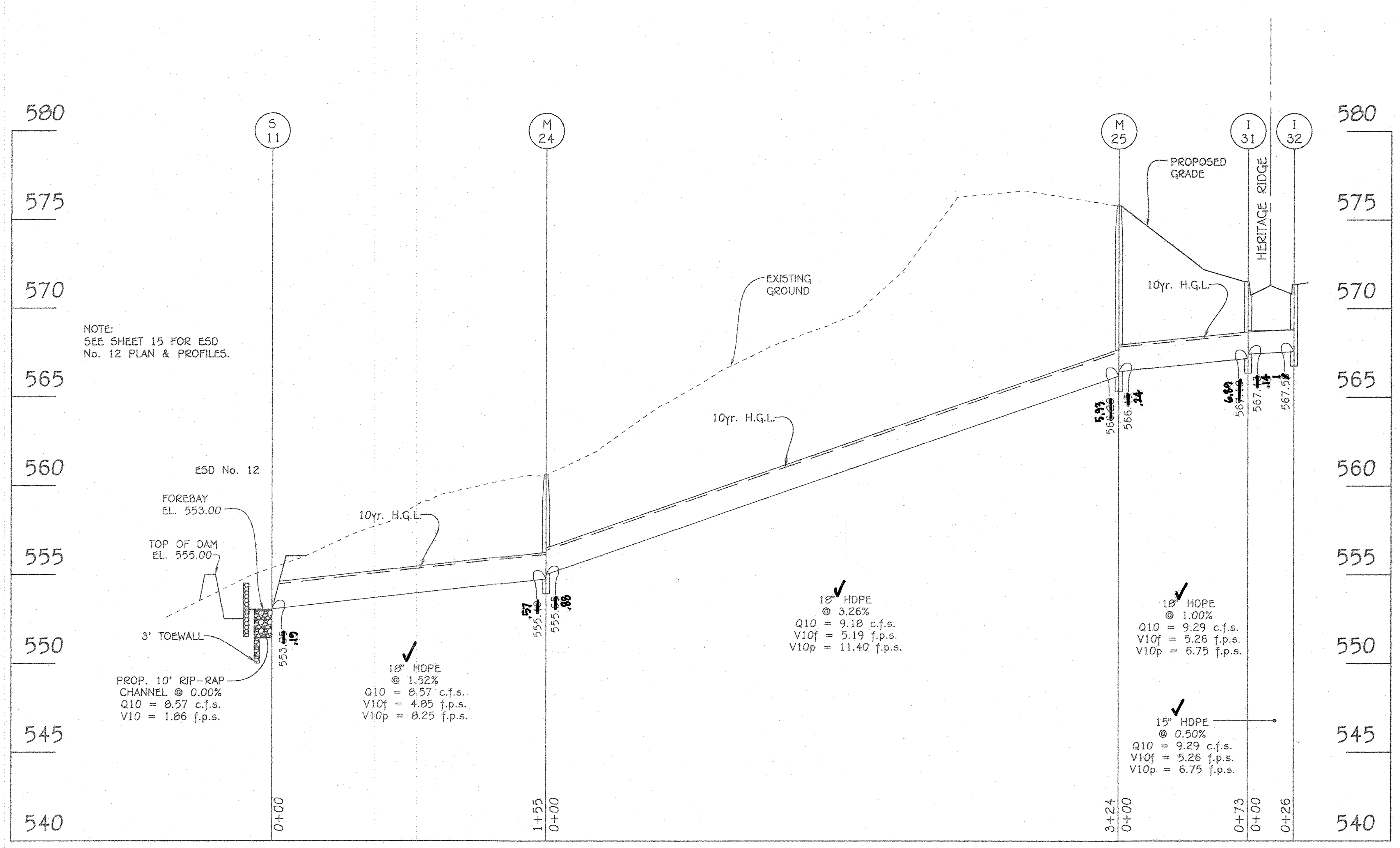
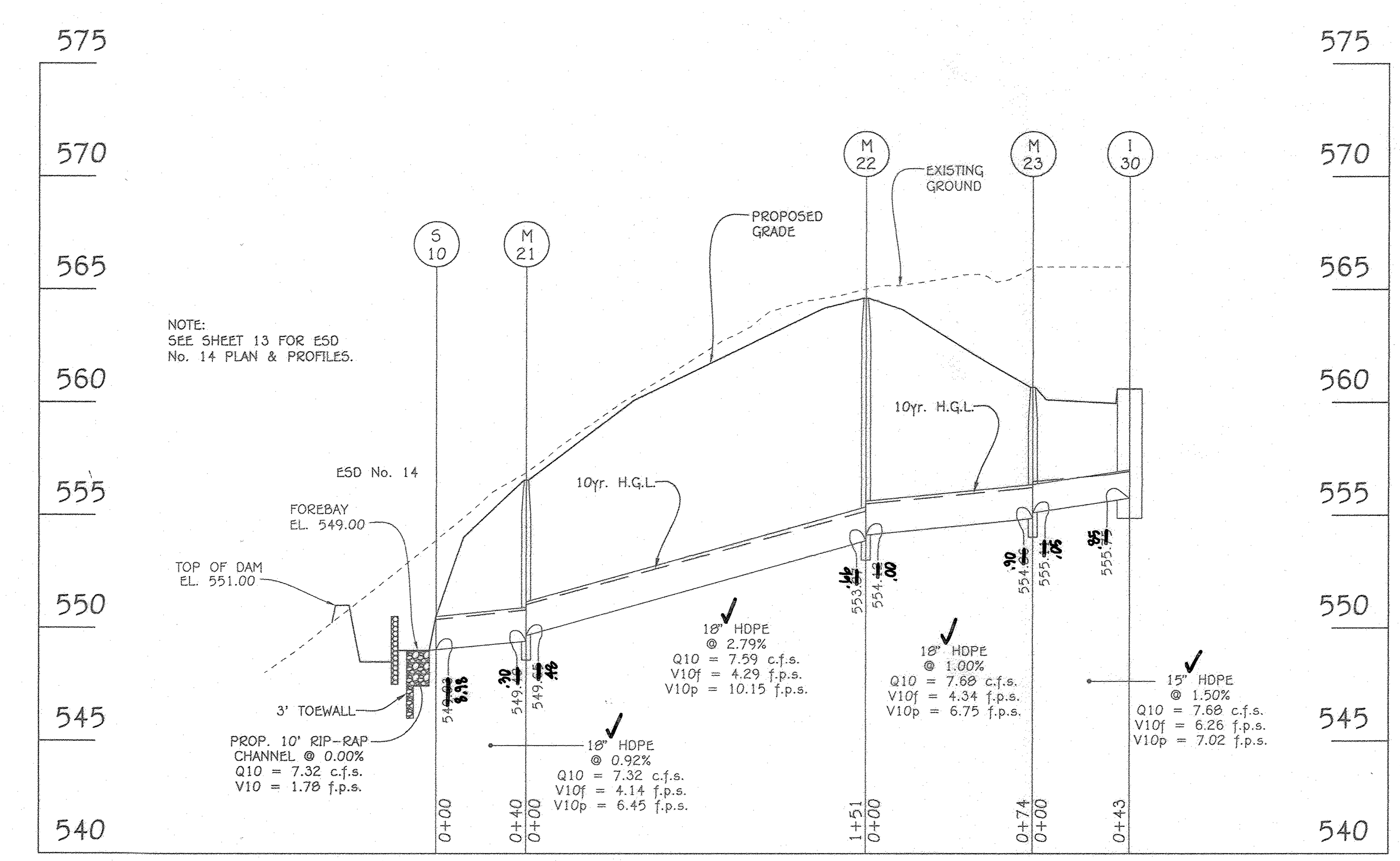


PROFILE
SCALE HORZ. 1"=50'
VERT. 1"=5'



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

AS-BUILT CERTIFICATION

I hereby certify that the facilities shown on the plan was constructed as shown on the "as-built" plan meet the approved plans and specifications.

5/3/22
Date

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STORM DRAIN PROFILES

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

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ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 16, 2020

"AS-BUILT" F-20-019

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II (F-18-092)	TRAP NO. 3	TRAP NO. 4
DRAINAGE AREA – INITIAL	3.28 AC.	1.93 AC.
DRAINAGE AREA – INTERIM	----	----
DRAINAGE AREA – FINAL	4.34 AC.	2.52
TOTAL STORAGE REQUIRED	15,624 CF	9,072 CF
TOTAL STORAGE PROVIDED	31,699 CF	13,460 CF
WET STORAGE REQUIRED	7,812 CF	4,536 CF
WET STORAGE PROVIDED	7,812 CF	4,536 CF
DRY STORAGE REQUIRED	9,583 CF	4,792 CF
DRY STORAGE PROVIDED	9,583 CF	4,792 CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	548.25	562.30
TRAP BOTTOM ELEVATION	546.00	562.00
TRAP BOTTOM DIMENSIONS	80' x 40'	70' x 35'
WEIR LENGTH	22'	20'
WEIR CREST (DRY STORAGE) ELEVATION	548.30	563.55
CLEANOUT ELEVATION	547.00	562.75
TOP OF EMBANKMENT ELEVATION	552.00	566.00
SIDE SLOPE	2:1	2:1
EMBANKMENT TOP WIDTH	6.0'	6.0'
OUTLET PROTECTION – LENGTH	18'	30'
OUTLET PROTECTION – DEPTH	19"	19"

HOUSE CONSTRUCTION NOTES:

1. THIS HOWARD (SCD) STANDARD SEDIMENT CONTROL PLAN MAY NOT BE USED TO OBTAIN PERMITS FOR HOUSE CONSTRUCTION FOR THIS PROJECT.
2. HOUSES MAY NOT BE BUILT USING THIS DRAWING.

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF MARYLAND, LICENSE NO. 21328, EXPIRATION DATE 1/8/23.

LOT 24 DRYWELLS (M-5): DW1 = 7L x 5.5W x 5D; DW2 = 7L x 6W x 5D; DW3 = 7L x 5.5W x 5D; DW4 = 7L x 5.5W x 5D

LOT 25 DRYWELLS (M-5): DW1 = 6L x 5W x 5D; DW2 = 7L x 5W x 5D; DW3 = 7L x 6W x 5D; DW4 = 7L x 6W x 5D

LOT 26 DRYWELLS (M-5): DW1 = 6L x 5W x 5D; DW2 = 7L x 5W x 5D; DW3 = 7L x 6W x 5D; DW4 = 6L x 5W x 5D

LOT 27 DRYWELLS (M-5): DW1 = 7L x 6W x 5D; DW2 = 7L x 6W x 5D; DW3 = 7L x 5W x 5D; DW4 = 5L x 4W x 5D; DW5 = 7L x 5.5W x 5D

LOT 28 DRYWELLS (M-5): DW1 = 7L x 5.5W x 5D; DW2 = 7L x 6W x 5D; DW3 = 7L x 6W x 5D; DW4 = 7L x 6W x 5D; DW5 = 6L x 4.5W x 5D

LOT 29 DRYWELLS (M-5): DW1 = 7L x 5.5W x 5D; DW2 = 7L x 6W x 5D; DW3 = 7L x 6W x 5D

LOT 30 DRYWELLS (M-5): DW1 = 7L x 5.5W x 5D; DW2 = 7L x 6W x 5D; DW3 = 6L x 5.5W x 5D; DW4 = 7L x 5.5W x 5D; DW5 = 6L x 4W x 5D

LOT 31 DRYWELLS (M-5): DW1 = 7L x 6W x 5D; DW2 = 7L x 6W x 5D; DW3 = 7L x 5W x 5D; DW4 = 5L x 4W x 5D; DW5 = 7L x 5.5W x 5D

LOT 32 DRYWELLS (M-5): DW1 = 6L x 5.5W x 5D; DW2 = 6L x 6W x 5D; DW3 = 7L x 5.5W x 5D; DW4 = 6L x 5.5W x 5D; DW5 = 7L x 6W x 5D

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LOT 34 DRYWELLS (M-5): DW1 = 7L x 6W x 5D; DW2 = 7L x 5.5W x 5D; DW3 = 7L x 6W x 5D; DW4 = 6L x 4W x 5D; DW5 = 7L x 6W x 5D

LOT 35 DRYWELLS (M-5): DW1 = 7L x 6W x 5D; DW2 = 7L x 6W x 5D; DW3 = 7L x 5W x 5D; DW4 = 5L x 4W x 5D; DW5 = 7L x 5.5W x 5D

LOT 36 DRYWELLS (M-5): DW1 = 7L x 6W x 5D; DW2 = 7L x 6W x 5D; DW3 = 7L x 5W x 5D; DW4 = 6L x 4W x 5D; DW5 = 7L x 5.5W x 5D

LOT 37 DRYWELLS (M-5): DW1 = 7L x 6W x 5D; DW2 = 7L x 5W x 5D; DW3 = 7L x 6W x 5D; DW4 = 6L x 5W x 5D

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LOT 39 DRYWELLS (M-5): DW1 = 6L x 5W x 5D; DW2 = 7L x 5W x 5D; DW3 = 7L x 6W x 5D; DW4 = 6L x 5W x 5D

SEDIMENT CONTROL LEGEND

- SSF SSF SSF SUPER-SILT FENCE
- SF SF SF SILT FENCE
- SCE STABILIZED CONSTRUCTION ENTRANCE
- S.I.P. (A) STANDARD INLET PROTECTION — INLET TYPE 'A' OR 'B'
- L.O.D. LIMIT OF DISTURBANCE
- FUTURE LIMIT OF DISTURBANCE FOR SEPTIC SYSTEM INSTALL.
- R.P.S. REMOVABLE PUMPING STATION
- F.B. FILTER BAG
- TYPE A-2 EARTH DIKE
- 12" DISCONNECTION OF NON ROOF-TOP RUNOFF CREDIT. (TYPE N-2)

STATE OF MARYLAND — MICHAEL JOE BOYCE — 21328 — PROFESSIONAL LAND SURVEYOR — 05/02/22

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/23/22

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6.15.22

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — MK — DATE 06/09/2022

APPROVED: HOWARD SOIL CONSERVATION DISTRICT

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 06/21/22

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR IN THE STATE OF MARYLAND, LICENSE NO. 21328, EXPIRATION DATE 1/8/23.

MICHAEL JOE BOYCE
PROFESSIONAL SURVEYOR FOR ESE CONSULTANTS, INC.
MD. LICENSE NO. 21328, EXPIRES 1/8/23 — DATE 05/02/22

REVISIONS

NO.	DESCRIPTION	DATE
1	LOTS 24 & 39 REVISIONS	07/15/2021
2	LOTS 27-30 REVISIONS	10/05/2021
3	LOT 33 REVISIONS	10/16/2021
4	LOTS 26 AND 36 REVISIONS	03/15/2022
5	LOTS 29 AND 33 REVISIONS	05/02/2022

CONTRACTOR NOTES:

1. CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.
2. SHOULD THE STOCKPILE EXCEED 15 FT. IN HEIGHT IT MUST BE BENCHED.
3. EARTH DIKES CROSSING THE ROADWAYS ARE TO BE CONNECTED TO MACADAM BERMS AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
4. ANY ROADSIDE SWALE OR DITCH LOCATED IN FILL SHALL BE COMPACTED TO 95% COMPACTION TO AVOID EROSION IN THESE AREAS.

0' 50' 100' 150' — Scale: 1" = 50'

ROOFLEADER NOTE:

A OVERFLOW OUTFALL (SURCHARGE) SHALL BE PROVIDED AT EACH DOWNSPOUT PRIOR TO CONNECTION TO THE UNDERGROUND ROOFLEADER. SEE DETAIL, SHEET 18.

NEW SHEET
REVISED

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — 20748 — PROFESSIONAL ENGINEER — 6/17/2022

Aldo M. Vitucci, P.E. — Date

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

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

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

GRADING & SEDIMENT CONTROL PLAN

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G'", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: NOVEMBER 22, 2021

SHEET 24 OF 24

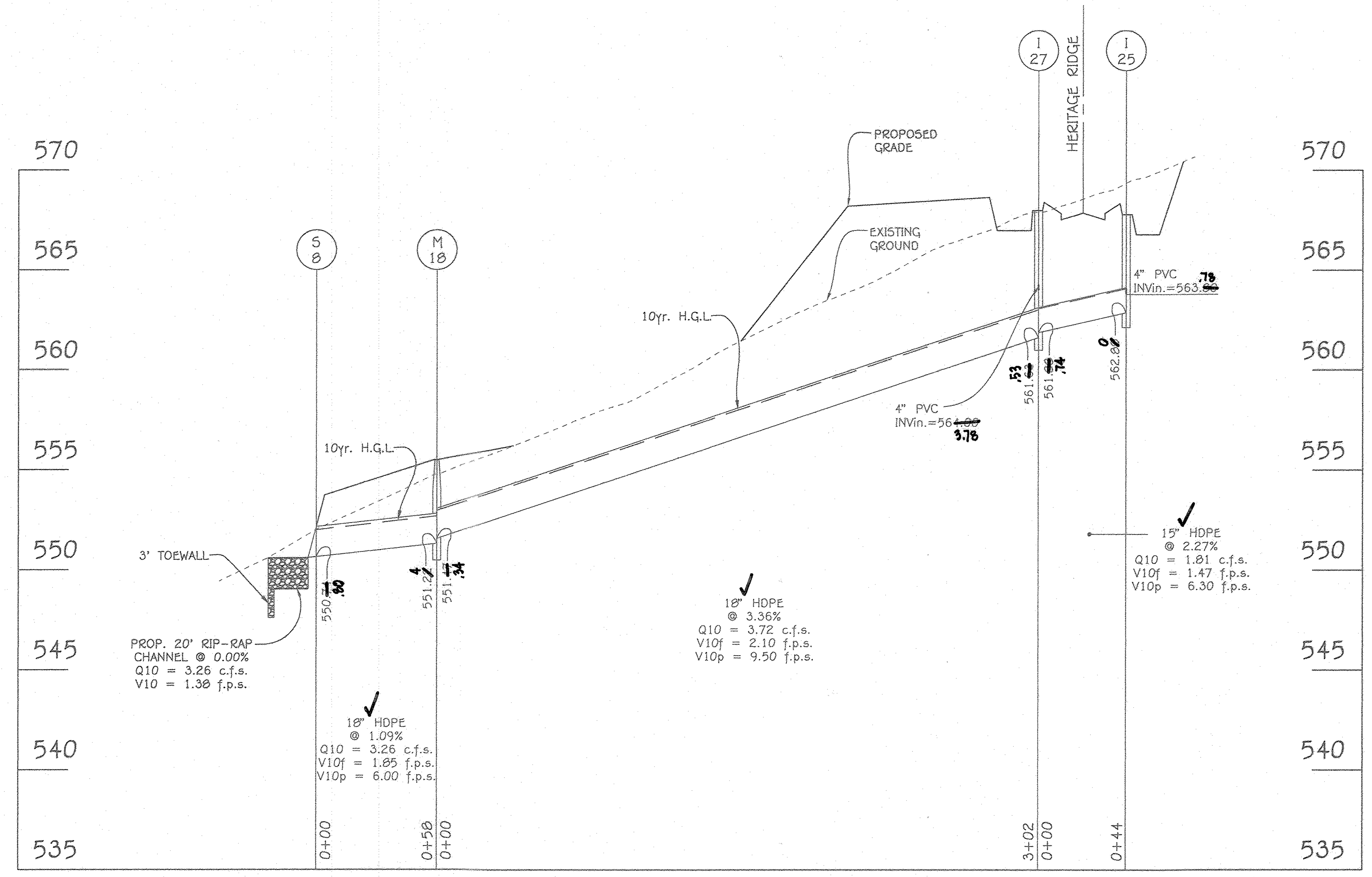
SHEET 4 of 24

F-20-019

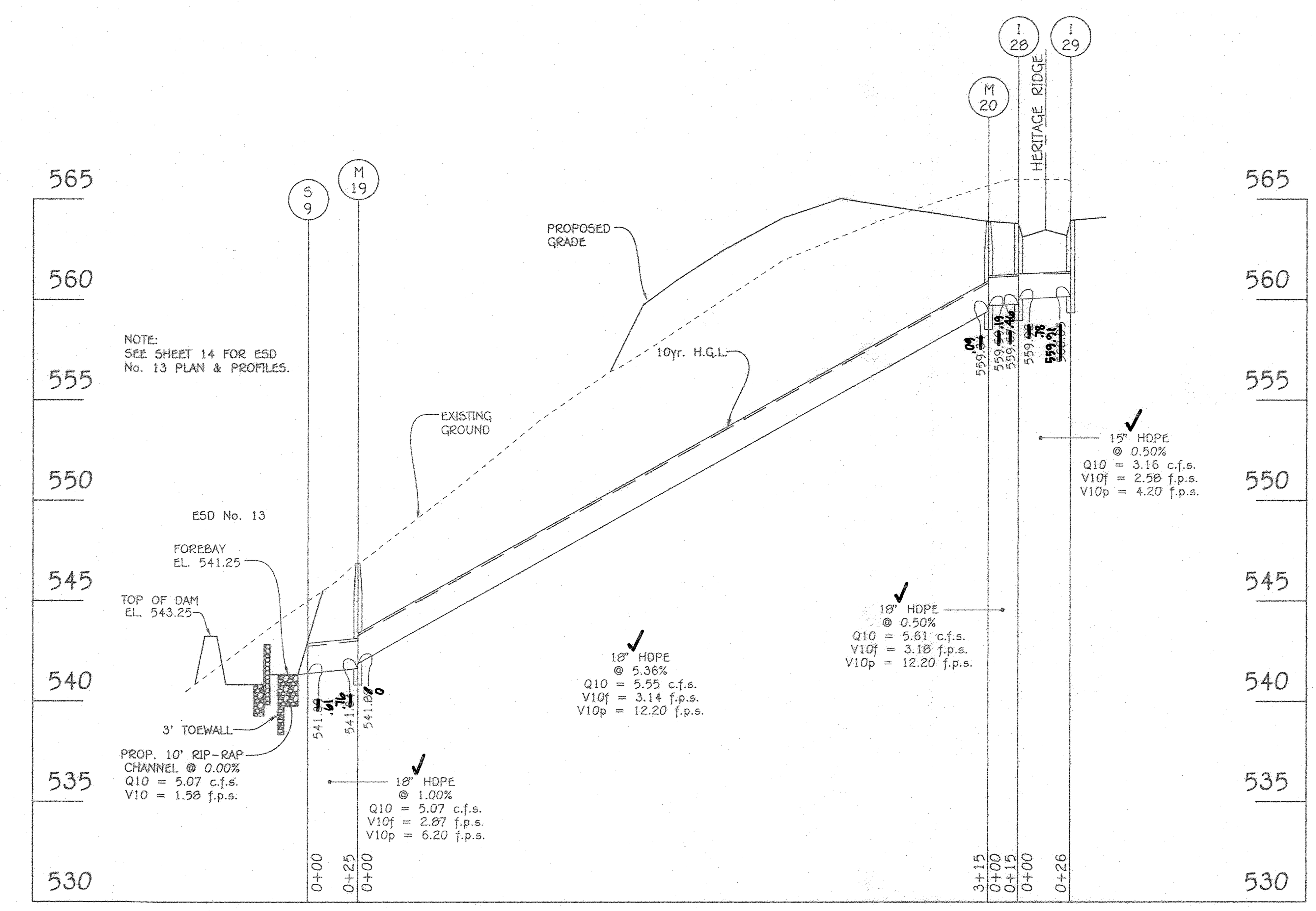
APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS MK	8/17/2020 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT	11/24/20 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	8-28-20 DATE

REVISIONS

NO.	DESCRIPTION	DATE



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



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

AS-BUILT CERTIFICATION

I hereby certify, by my seal, that the facilities shown on the plan was constructed as shown on this AS-BUILT plan meet the approved plans and specifications.

5/31/22
Date

Aldo M. Vitucci, P.E. 6/17/2020 Date

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

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

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

STORM DRAIN PROFILES

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 16, 2020

SHEET 20 of 24

"AS-BUILT" F-20-019

I:\2012\12026\dwg\Finals\Phase II Finals\12026 Sheet 19-20 storm drain profiles.dwg, C-20_ 1:1

APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS MK	10/19/2020 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT DJ	11/2/20 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	10/22/20 DATE

REVISIONS

NO.	DESCRIPTION	DATE

AS-BUILT CERTIFICATION

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

5/31/22
Date

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

DRAINAGE AREA DATA						
STRUCTURE NO.	DRAINAGE AREA	AREA	ZONED	'C' FACTOR	TIME (Min.)	REMARKS
I-31	Q	1.29 AC.	RC-DEO	0.46	5.00	D-4.03
I-24 & I-25	S	0.52 AC.	RC-DEO	0.43	5.00	D-4.22 & MD-374.68
I-26 & I-27	T	0.55 AC.	RC-DEO	0.37	5.00	D-4.22 & MD-374.68
I-28	U	0.67 AC.	RC-DEO	0.41	5.00	D-4.03
I-29	V	0.80 AC.	RC-DEO	0.43	5.00	D-4.03
I-30	W	1.58 AC.	RC-DEO	0.47	5.00	D-4.03
I-32	Y	1.00 AC.	RC-DEO	0.46	5.00	D-4.03
ESD #12	EE	1.21 AC.	RC-DEO	---	---	BIORETENTION FACILITY
ESD #13	FF	0.63 AC.	RC-DEO	---	---	BIORETENTION FACILITY
ESD #14	GG	0.51 AC.	RC-DEO	---	---	BIORETENTION FACILITY
ESD #15	HH	2.26 AC.	RC-DEO	---	---	BIORETENTION FACILITY
ESD #16	II	0.99 AC.	RC-DEO	---	---	BIORETENTION FACILITY

SOILS LEGEND			
SOIL	NAME	CLASS	Kw
BrD	Brinklow channery loam, 15 to 25 percent slopes	B	.20
GgA	Glenelg loam, 0 to 3 percent slopes	B	.20
GgB	Glenelg loam, 3 to 8 percent slopes	B	.20
GgC	Glenelg loam, 8 to 15 percent slopes	B	.20
*GmA	Glenville silt loam, 0 to 3 percent slopes	C	.37
*GmB	Glenville silt loam, 3 to 8 percent slopes	C	*** .37
*GnB	Glenville-Baile silt loams, 0 to 8 percent slopes	C	*** .37
MaC	Manor loam, 8 to 15 percent slopes	B	.24

NOTES:

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

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

STORM DRAIN DRAINAGE AREA MAP & SOILS MAP

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 16, 2020

SHEET 21 of 24

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

OWNER:
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3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

Aldo M. Vitucci, P.E. 9/10/2020 Date

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

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

F-20-019

I:\2012\12026\dwg\Finals\Phase II Finals\12026 Sheet 21 Drainage Area Map.dwg, C-21_F-18-0, 1:1

Approved: Department Of Planning And Zoning

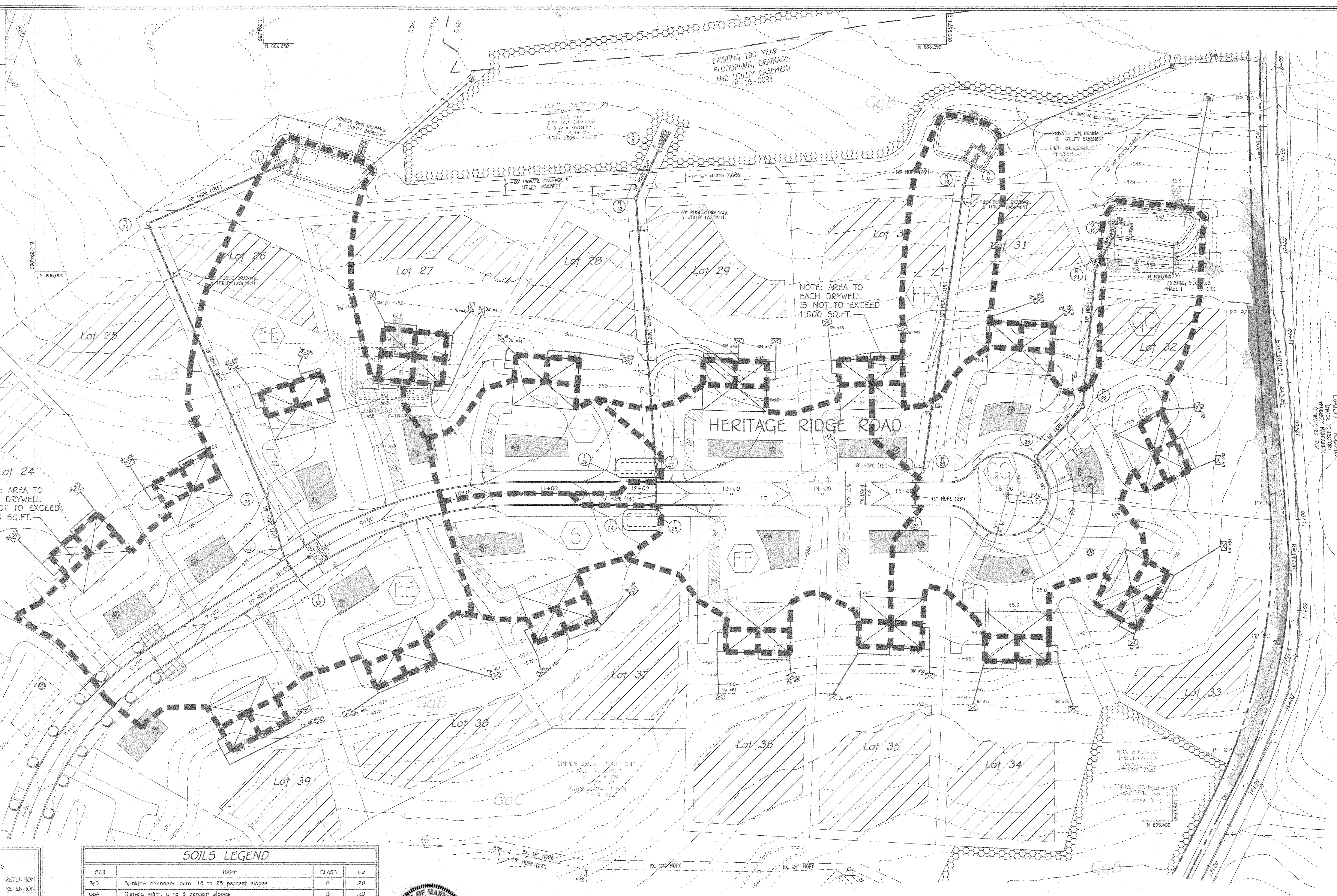
Chief, Division Of Land Development DJ	11/2/20 Date
Chief, Development Engineering Division	8/24/20 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways MK	8/17/2020 Date

REVISIONS

NO.	DESCRIPTION	DATE



SWM DRAINAGE AREA SUMMARY TABLE

DRAINAGE AREA	AREA AC. +\-	% IMP.	IMP. AREA AC. +\-	REMARKS
S	0.52	23%	0.110	(M-6) MICRO BIO-RETENTION
T	0.55	26%	0.140	(M-6) MICRO BIO-RETENTION
EE	1.22	22%	0.217	(F-6) BIO-RETENTION
FF	0.63	20%	0.200	(F-6) BIO-RETENTION
GG	0.51	27%	0.273	(F-6) BIO-RETENTION
HH	2.34	20%	0.460	(F-6) BIO-RETENTION
II	1.17	20%	0.190	(M-6) MICRO BIO-RETENTION

SOILS LEGEND

SOIL	NAME	CLASS	Kw
BrD	Brinklow channery loam, 15 to 25 percent slopes	B	.20
GgA	Glenelg loam, 0 to 3 percent slopes	B	.20
GgB	Glenelg loam, 3 to 8 percent slopes	B	.20
GgC	Glenelg loam, 8 to 15 percent slopes	B	.20
*GmA	Glenville silt loam, 0 to 3 percent slopes	C	.37
*GmB	Glenville silt loam, 3 to 8 percent slopes	C	*** .37
*GnB	Glenville-Baile silt loams, 0 to 8 percent slopes	C	*** .37
MaC	Manor loam, 8 to 15 percent slopes	B	.24

NOTES:

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

AS-BUILT CERTIFICATION

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

5/31/22 Date

0' 50' 100' 150'

Scale: 1" = 50'

N

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

OWNER:
KIMBERTHY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
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410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

STATE OF MARYLAND ALDO MICHAEL VITUCCI PROFESSIONAL ENGINEER

6/17/2020
Aldo M. Vitucci, P.E. Date

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

SWM DRAINAGE AREA MAP

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G' ", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JANUARY 22, 2020

SHEET 22 of 24

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

F-20-019

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II (F-18-092)	TRAP NO. 3	TRAP NO. 4
DRAINAGE AREA – INITIAL	3.28 AC.	1.93 AC.
DRAINAGE AREA – INTERIM	----	----
DRAINAGE AREA – FINAL	4.34 AC.	2.52
TOTAL STORAGE REQUIRED	15,624 CF	9,072 CF
TOTAL STORAGE PROVIDED	31,659 CF	13,460 CF
WET STORAGE REQUIRED	7,812 CF	4,536 CF
WET STORAGE PROVIDED	7,812 CF	4,536 CF
DRY STORAGE REQUIRED	9,583 CF	4,792 CF
DRY STORAGE PROVIDED	9,583 CF	4,792 CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	546.25	562.30
TRAP BOTTOM ELEVATION	546.00	562.00
TRAP BOTTOM DIMENSIONS	88' x 40'	70' x 35'
WEIR LENGTH	22'	20'
WEIR CREST (DRY STORAGE) ELEVATION	548.30	563.55
CLEANOUT ELEVATION	547.00	562.75
TOP OF EMBANKMENT ELEVATION	552.00	566.00
SIDE SLOPE	2:1	2:1
EMBANKMENT TOP WIDTH	6.0'	5.0'
OUTLET PROTECTION – LENGTH	18'	30'
OUTLET PROTECTION – DEPTH	1'9"	1'9"

HOUSE CONSTRUCTION NOTES:

1. THIS HOWARD (SCD) STANDARD SEDIMENT CONTROL PLAN MAY NOT BE USED TO OBTAIN PERMITS FOR HOUSE CONSTRUCTION FOR THIS PROJECT.
2. HOUSES MAY NOT BE BUILT USING THIS DRAWING.

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF MARYLAND, LICENSE NO. 21328, EXPIRATION DATE 1/8/23.

LOT 24 DRYWELLS (M-5) DW1 = 7L x 5.5W x 5D DW2 = 7L x 6W x 5D DW3 = 7L x 5.5W x 5D DW4 = 7L x 5.5W x 5D

LOT 25 DRYWELLS (M-5) DW1 = 6L x 5W x 5D DW2 = 7L x 5W x 5D DW3 = 7L x 6W x 5D DW4 = 7L x 6W x 5D

LOT 26 DRYWELLS (M-5) DW1 = 6L x 5W x 5D DW2 = 7L x 5W x 5D DW3 = 7L x 6W x 5D DW4 = 6L x 5W x 5D

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LOT 29 DRYWELLS (M-5) DW1 = 7L x 5.5W x 5D DW2 = 7L x 6W x 5D DW3 = 7L x 6W x 5D

LOT 30 DRYWELLS (M-5) DW1 = 6L x 5W x 5D DW2 = 7L x 5W x 5D DW3 = 7L x 6W x 5D DW4 = 7L x 6W x 5D

LOT 31 DRYWELLS (M-5) DW1 = 7L x 6W x 5D DW2 = 7L x 6W x 5D DW3 = 7L x 5.5W x 5D DW4 = 5L x 4W x 5D DW5 = 7L x 5.5W x 5D

LOT 32 DRYWELLS (M-5) DW1 = 6.5L x 5W x 5D DW2 = 8L x 4.5W x 5D DW3 = 6L x 4.5W x 5D DW4 = 7L x 5.5W x 5D

LOT 33 DRYWELLS (M-5) DW1 = 7L x 5.5W x 5D DW2 = 7L x 6W x 5D DW3 = 7L x 6W x 5D DW4 = 6L x 5W x 5D

LOT 34 DRYWELLS (M-5) DW1 = 7L x 5.5W x 5D DW2 = 7L x 5.5W x 5D DW3 = 7L x 5.5W x 5D DW4 = 7L x 5W x 5D

LOT 35 DRYWELLS (M-5) DW1 = 7L x 6W x 5D DW2 = 7L x 5W x 5D DW3 = 7L x 5W x 5D DW4 = 5L x 4W x 5D DW5 = 7L x 5.5W x 5D

LOT 36 DRYWELLS (M-5) DW1 = 7L x 6W x 5D DW2 = 7L x 6W x 5D DW3 = 7L x 5W x 5D DW4 = 5L x 4W x 5D DW5 = 7L x 5.5W x 5D

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LOT 39 DRYWELLS (M-5) DW1 = 6L x 5W x 5D DW2 = 7L x 5W x 5D DW3 = 7L x 5W x 5D DW4 = 6L x 5W x 5D

SEDIMENT CONTROL LEGEND

- SSF SSF SSF — SUPER-SILT FENCE
- SF SF SF — SILT FENCE
- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
- S.I.P. (A) — STANDARD INLET PROTECTION / INLET TYPE ('A' or 'B')
- L.O.D. — LIMIT OF DISTURBANCE
- FUTURE LIMIT OF DISTURBANCE FOR SEPTIC SYSTEM INSTALL.
- R.P.S. — REMOVABLE PUMPING STATION
- F.B. — FILTER BAG
- TYPE A-2 — EARTH DIKE
- 12' DISCONNECTION OF NON ROOF-TOP RUNOFF CREDIT. (TYPE N-2)

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/19/22

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7.14.22

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 07/07/2022

APPROVED: HOWARD SOIL CONSERVATION DISTRICT

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 06/27/22

STATE OF MARYLAND — MICHAEL JOE BOYCE — 21328 — PROFESSIONAL LAND SURVEYOR

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR IN THE STATE OF MARYLAND, LICENSE NO. 21328, EXPIRATION DATE 1/8/23.

MICHAEL JOE BOYCE — DATE 6/15/22

PROFESSIONAL SURVEYOR FOR ESE CONSULTANTS, INC.
MD. LICENSE NO. 21328, EXPIRES 1/8/23

REVISIONS		
NO.	DESCRIPTION	DATE
1	LOTS 24 & 39 REVISIONS	07/15/2021
2	LOTS 27-30 REVISIONS	10/05/2021
3	LOT 33 REVISIONS	10/16/2021
4	LOTS 26 AND 35 REVISIONS	03/15/2022
5	LOTS 29 AND 33 REVISIONS	05/02/2022
6	LOT 27 REVISIONS	05/07/2022
7	LOTS 20, 30, 31, 32, 34 AND 35 REVISIONS	06/15/2022

CONTRACTOR NOTES:

1. CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.
2. SHOULD THE STOCKPILE EXCEED 15 FT. IN HEIGHT IT MUST BE BENCHED.
3. EARTH DIKES CROSSING THE ROADWAYS ARE TO BE CONNECTED TO MACADAM BERMS AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
4. ANY ROADSIDE SWALE OR DITCH LOCATED IN FILL SHALL BE COMPACTED TO 95% COMPACTION TO AVOID EROSION IN THESE AREAS.

0' 50' 100' 150'

Scale: 1" = 50'

OWNER:
KIMBERLY/HERITAGE LLC
3425 HIPSLEY MILL ROAD
WOODBINE, MARYLAND 21797-7615
410-489-7900

DEVELOPER:
HERITAGE LAND DEVELOPMENT
15950 NORTH AVENUE
LISBON, MARYLAND 21765
410-489-7900

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — 21328 — PROFESSIONAL ENGINEER

Aldo M. Vitucci, P.E. — Date 6/17/2020

"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-21."

ROOFLEADER NOTE:

A OVERFLOW OUTFALL (SURCHARGE) SHALL BE PROVIDED AT EACH DOWNSPOUT PRIOR TO CONNECTION TO THE UNDERGROUND ROOFLEADER. SEE DETAIL, SHEET 18.

NEW SHEET
REVISED

GRADING & SEDIMENT CONTROL PLAN

LINDEN GROVE

PHASE TWO

LOTS 24 THRU 44

(A Resubdivision of Non-Buildable Bulk Parcels 'F' & 'G', Recorded As "Linden Grove, Phase One Lots 1 Thru 23, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E' And Non-Buildable Bulk Parcels 'F' And 'G'", Plat Nos. 25064 Thru 25073.)

ZONED: RC-DEO

TAX MAP No. 8 GRID No. 7 PARCEL No. 5

4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 16, 2020

SHEET 24 OF 24

F-20-019

I:\2012\12026\dwg\Finals\Phase II Finals\12026 Sheet 4-5 sediment control plans.dwg, C-04, F-20-, 1:1