

SHEET No.	DESCRIPTION
1	TITLE SHEET
2	FAIRLANE ROAD - PLAN AND PROFILE
3-4	THUNDERBIRD DRIVE - PLAN AND PROFILE AND FAIRLANE ROAD PROFILE
5	ROADWAY & GUARDRAIL DETAILS
6-9	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
10-12	SEDIMENT CONTROL NOTES & DETAILS
13-17	LANDSCAPE PLAN
18	LANDSCAPE NOTES & DETAILS
19-24	STORMWATER MANAGEMENT NOTES AND DETAILS
25-26	OVERALL STORM DRAIN DRAINAGE AREA MAP
27	PRIVATE STORMWATER MANAGEMENT DETAILS
28-30	STORM DRAIN PROFILES
31	FOREST CONSERVATION PLAN
32	STREAM RESTORATION COVER SHEET
33	STREAM RESTORATION GRADING AND EROSION & SEDIMENT PLAN
34	STREAM RESTORATION PROFILES & CROSS-SECTIONS
35	STREAM RESTORATION DETAILS
36	STREAM RESTORATION DETAILS

ROADWAY INFORMATION CHART			
ROAD NAME	CLASSIFICATION	DESIGN SPEED	R/W WIDTH
FAIRLANE ROAD	PUBLIC ACCESS PLACE/STREET	30 M.P.H.	50'
THUNDERBIRD DRIVE	PUBLIC ACCESS PLACE	25 M.P.H.	50'
TORINO WAY	USE-IN-COMMON	15 M.P.H.	24' EASEMENT

TRAFFIC CONTROL SIGNS				
ROAD NAME	CENTERLINE STA.	OFFSET	POSTED SIGN	SIGN CODE
THUNDERBIRD DRIVE	0+50	15'	STOP	R1-1
THUNDERBIRD DRIVE	2+00	13'	SPEED LIMIT 25	R2-1

STORMWATER MANAGEMENT PRACTICES				
LOT No.	MICRO-BMP-SECTION (M-6)	DRY WELL (M-5)	ROOFTOP DISCONNECTION (N-1)	NON-ROOFTOP DISCONNECTION (N-2)
19		4		1
20		4		1
21	1			1
22				1
23				1
24		4		1
25				1
26				1
27				1
28	1			1
29		4		1
30	1			1
31				1
32				1
33	1			1
34	1			1
35	1			1
36	1			1
37	1			1
38				1
39				1
40				1
41				1
42				1
43				1
44				1

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLAN

FAIRLANE FARM PHASE TWO

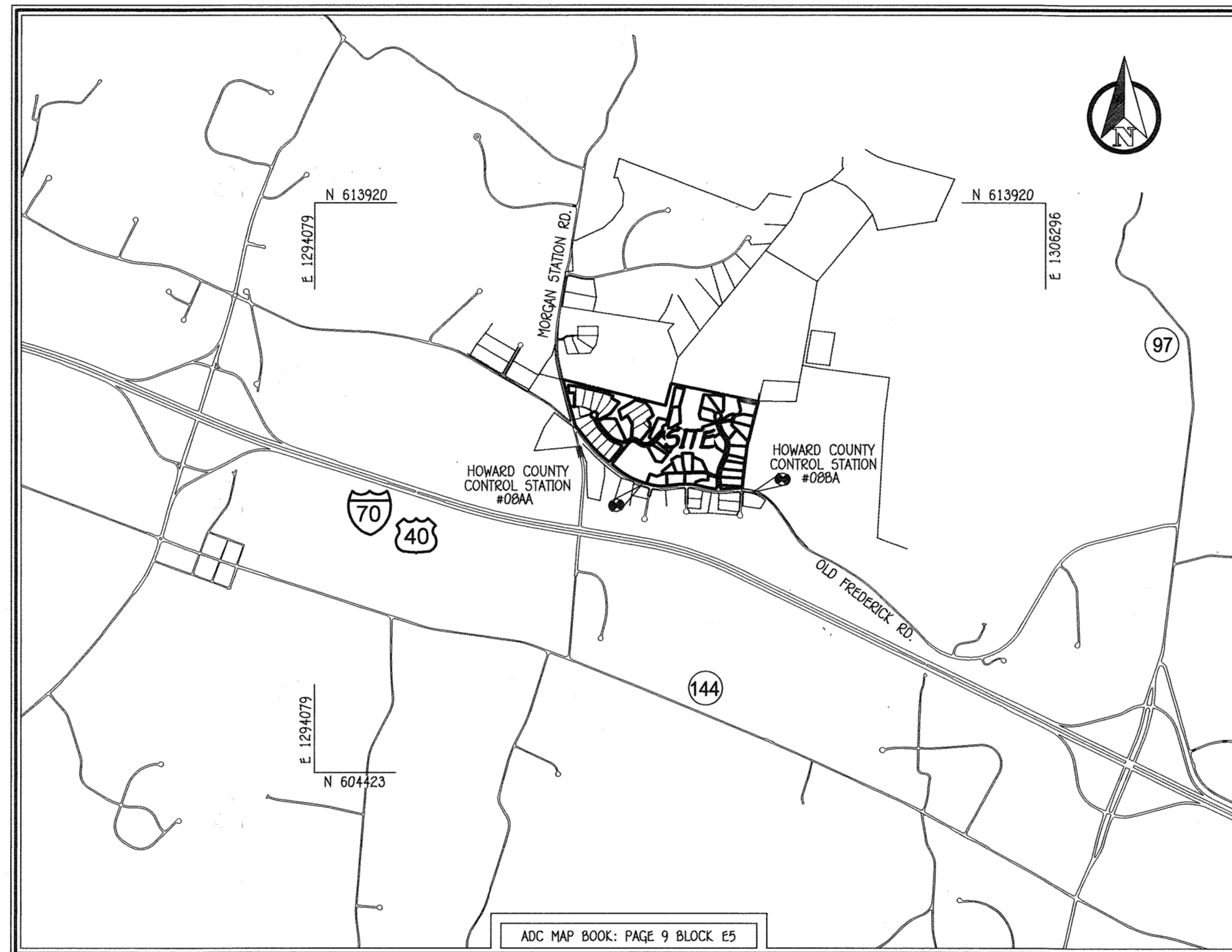
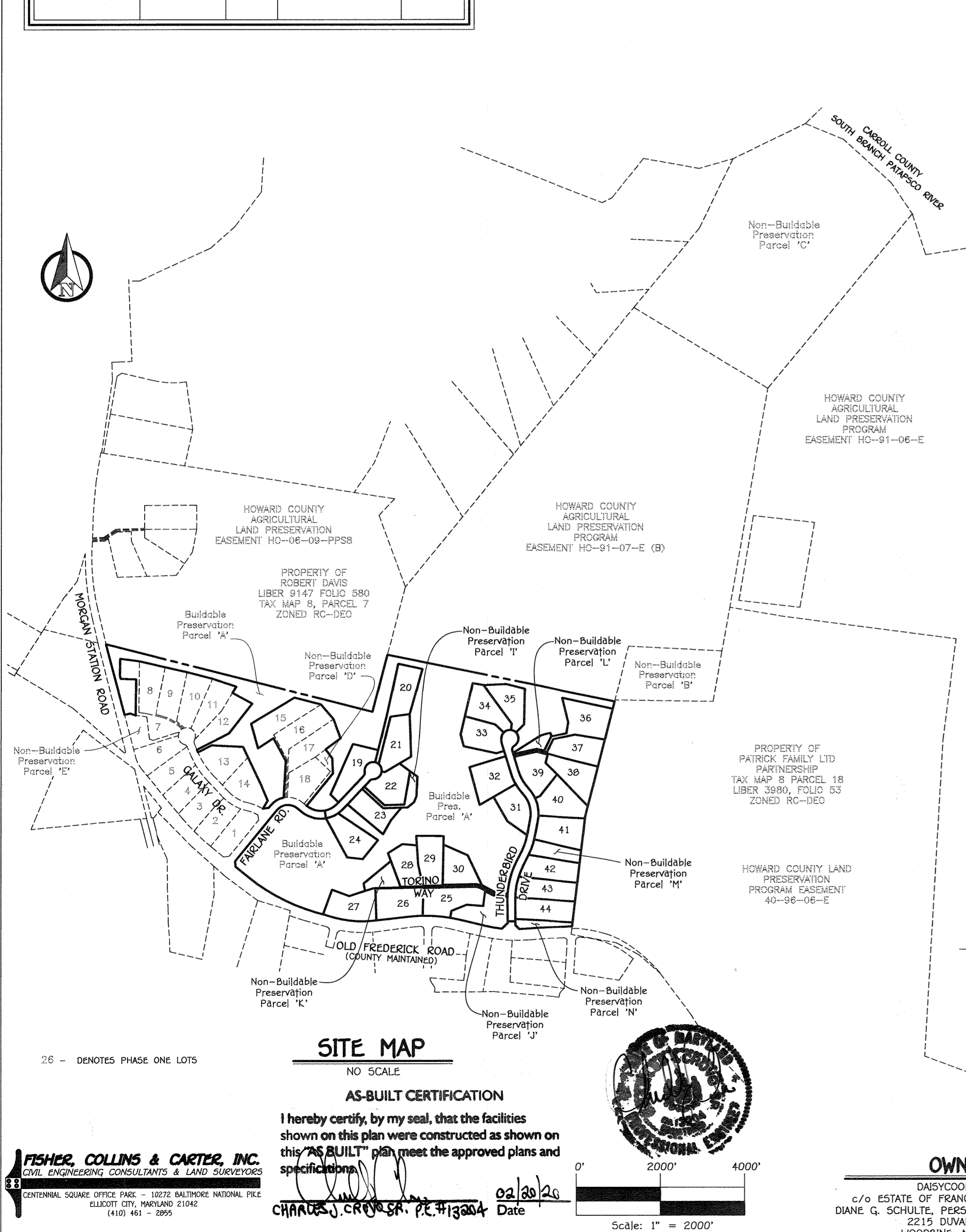
LOTS 19 THRU 44, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'

A Resubdivision of Non-Buildable Bulk Parcels 'G' & 'H' And A Revision To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E', Parcel 'F' And Non-Buildable Bulk Parcels 'G' And 'H' "

ZONING: RC-DEO

TAX MAP NO: 8 GRID NO: 2, PAR: 8

TAX MAP NO: 8 GRID NO: 3, PAR: 17



FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DENSITY TABULATION (TOTAL PROJECT, PHASE ONE AND PHASE TWO)

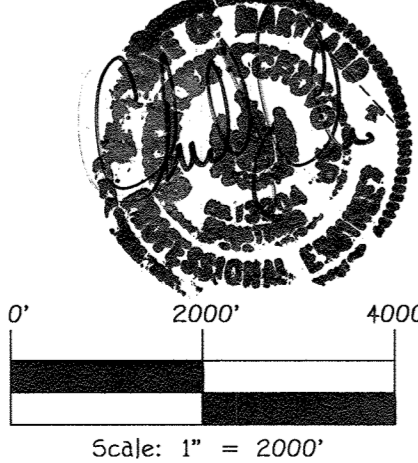
- TRACT AREA = 138.610 ACRES
- FLOODPLAIN AREA = 6.01 ACRES
- STEEP SLOPES AREA = 3.110 ACRES
- NET TRACT AREA = 129.490 ACRES (138.610 AC - 6.01 AC - 3.110 AC)
- DENSITY ALLOWED BY MATTER OF RIGHT: 138.610 ACRES X 1 DWELLING UNIT/4.25 ACRES = 32 SINGLE FAMILY DETACHED UNITS
- DENSITY ALLOWED WITH DENSITY EXCHANGE OPTION = 64 SINGLE FAMILY UNITS (1 DWELLING UNIT / 2 NET ACRES X 129.490 NET ACRES)
- TOTAL NUMBER OF PROPOSED DWELLING UNITS FOR PROJECT = 45 UNITS (44 CLUSTER LOTS + 1 BUILDABLE PRESERVATION PARCEL)
- TOTAL NUMBER OF PROPOSED DWELLING UNITS IN PHASE ONE (F-15-054) (26 UNITS ARE PROPOSED WITHIN PHASE TWO)
- DEVELOPMENT RIGHTS TO BE TRANSFERRED TO FAIRLANE FARM SUBDIVISION = 13 UNITS (45 UNITS - 32 UNITS)

SITE MAP
NO SCALE

AS-BUILT CERTIFICATION

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

CHARLES J. CARROLL, P.E. #13884 Date: 02/20/16

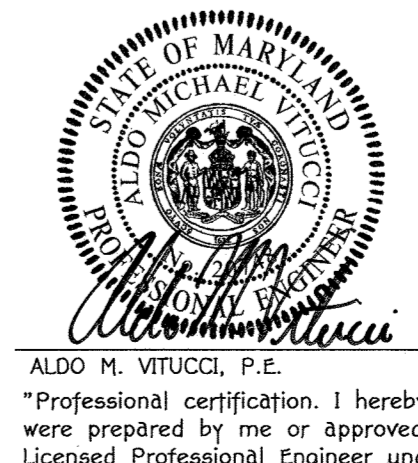


OWNER
DAISYCOOP, LLC
c/o ESTATE OF FRANCES JEAN SCHULTE
DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
2215 DUNN ROAD
WOODBINE, MD 21797
410-977-1327

DEVELOPER
LAND DESIGN & DEVELOPMENT
8318 FOREST STREET
SUITE 200
ELLCOTT CITY, MARYLAND 21043
(410)-922-4600

GENERAL NOTES:

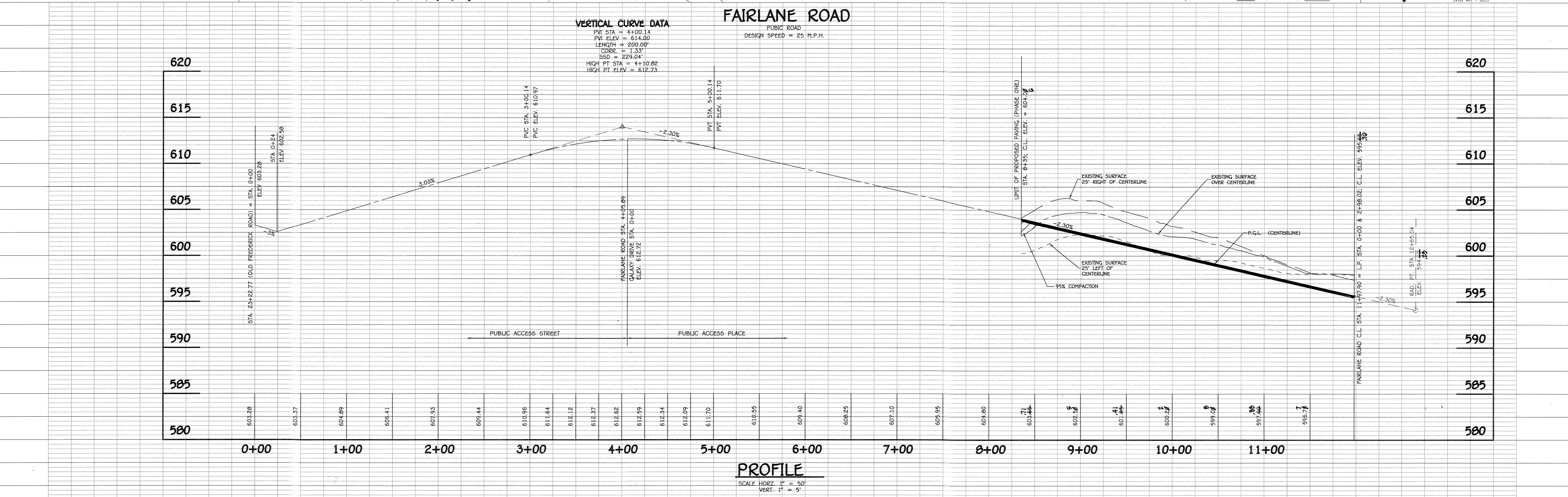
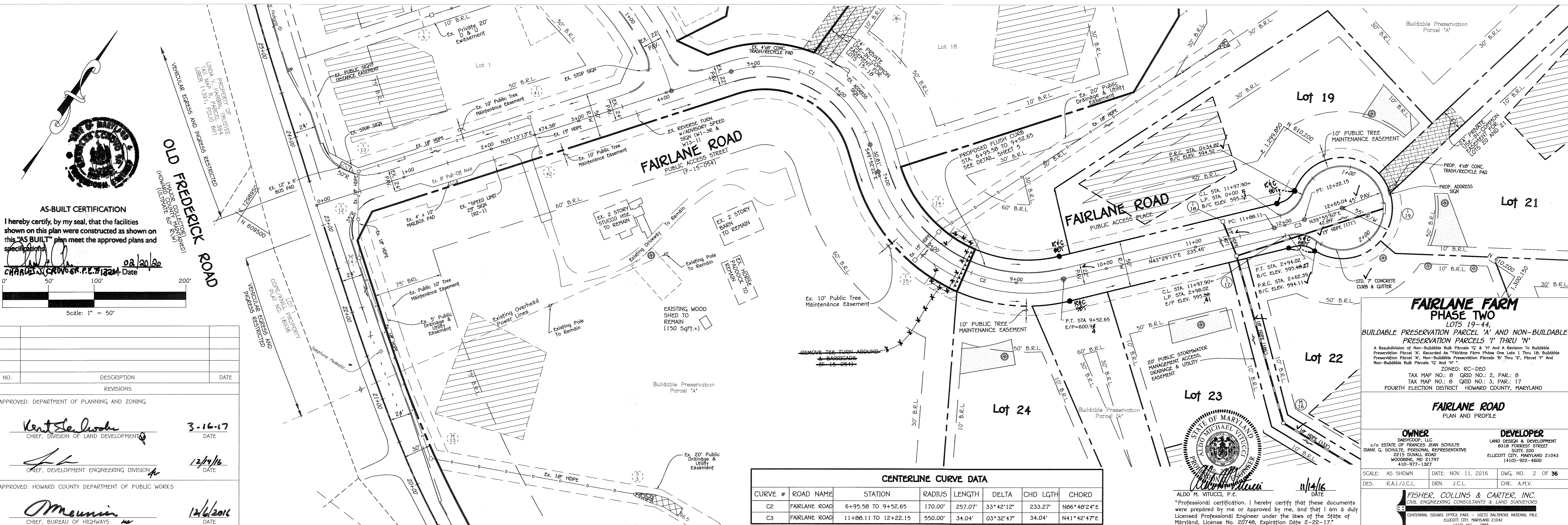
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENGINEERING, CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST 5 (FIVE) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MSS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES:
 - THE R-1 (STOP) SIGN AND THE STREET SIGN (S)S ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
 - THE TRAFFIC CONTROL DEVICES 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.
 - ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
 - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PREPARED ("QUICK PUNCH"), SQUARE TUBE POST (1 1/2" GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PREPARED, SQUARE TUBE SLEEVE (1 1/2" 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.
- 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:
 - ✓ H.O. CO. CONTROL STATION #088A - HORIZONTAL - NAD '83
 - ✓ H.O. CO. CONTROL STATION #088A - VERTICAL - NAD '83
 - ✓ E. 1,299,547.9412
 - ✓ ELEVATION = 608.586 - VERTICAL - (NAD '83)
 - ✓ E. 1,301,499.1044
 - ✓ ELEVATION = 630.720 - VERTICAL - (NAD '83)
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY TRAFFIC GROUP DATED NOVEMBER 21, 2013 AND WAS APPROVED UNDER SP-14-002 ON AUGUST 7, 2014.
- BACKGROUND INFORMATION:
 - SUBDIVISION NAME: FAIRLANE FARM (FORMERLY SCHULTE PROPERTY)
 - TAX MAP NO.: 8
 - PARCEL NO.: 8 & 17
 - ZONING: RC-DEO
 - ELECTION DISTRICT: FORTNEY
 - TOTAL TRACT AREA: 138.610 AC. (PHASE ONE & TWO)
 - NET AREA: 129.490 AC.
 - AREA OF STEEP SLOPES 25% AND GREATER = 3.11 AC. (OUTSIDE FLOODPLAIN)
 - NO. OF BUILDABLE LOTS: 26 (PHASE TWO)
 - NO. OF NON-BUILDABLE PRESERVATION PARCELS: 6
 - NO. OF BUILDABLE PRESERVATION PARCELS: 1
 - AREA OF BUILDABLE LOTS: 30,500 SQ. FT.
 - AREA OF NON-BUILDABLE PRESERVATION PARCELS: 3,545 AC.
 - AREA OF BUILDABLE PRESERVATION PARCELS: 35,133 AC.
 - TOTAL AREA OF ROADWAY TO BE DEDICATED: 2,210 AC.
 - P. PREVIOUS FILE NOS.: ECP-14-003, SP-14-002, WP-14-107, RE-15-001, RE-15-001 (S1), F-15-094 & F-15-094
 - AREA OF FLOODPLAIN: 6.01 AC.
- NO CEMETRIES EXIST WITHIN THIS SUBDIVISION.
- ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
- PROPERTY ZONED RC-DEO PER 10/6/13 COMPREHENSIVE ZONING PLAN.
- AS PER SECTION 104.F.4.B OF THE ZONING REGULATIONS, ONLY ONE EASEMENT HOLDER IS REQUIRED FOR PRESERVATION PARCELS DESIGNED SOLELY FOR SWM FACILITIES OR COMMUNITY SEWERAGE DISPOSAL SYSTEMS.
 - A NON-BUILDABLE PRESERVATION PARCEL 'I' THRU 'N' OWNED: HOMEOWNERS ASSOCIATION
 - EASEMENT HOLDER: HOWARD COUNTY, MARYLAND
- SOILS INFORMATION TAKEN FROM NCS WEB SOIL SURVEY.
- FOREST STAND DELINEATION REPORT DATED OCTOBER, 2013 AND WETLAND REPORT DATED NOVEMBER 21, 2013 FOR SCHULTE PROPERTY WAS PREPARED BY ECO-TONE, INC AND APPROVED ON AUGUST 7, 2014.
- THESE ARE STEEP SLOPES OF 25% OR GREATER ON SITE OF 3.11 ACRES.
- HISTORIC HOUSE WITH ACCESSORY STRUCTURES EXIST ON SITE AND HAVE BEEN PRESENTED TO THE HISTORIC DISTRICT COMMISSION AS FILE NO. 13-57 FOR ADVISORY COMMENTS ON DECEMBER 5, 2013.
- SITE IS NOT ADJACENT TO A SCENIC ROAD.
- THERE ARE EXISTING STRUCTURES LOCATED WITHIN BUILDABLE PRESERVATION PARCEL 'A' TO REMAIN. ALL OTHER STRUCTURES WERE REMOVED WITH PHASE ONE (F-15-054).
- BUILDABLE PRESERVATION PARCEL 'A' (PHASE ONE) IS PRIVATELY OWNED AND EMBURGERED BY AN EASEMENT AGREEMENT WITH THE FAIRLANE FARM HOMEOWNERS ASSOCIATION, INC. AND HOWARD COUNTY, MARYLAND.
- NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N' WILL BE OWNED BY THE FAIRLANE FARM HOMEOWNERS ASSOCIATION, INC. AND THE PRESERVATION EASEMENT HELD BY HOWARD COUNTY, MARYLAND.
- 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 FOREST LOT OF BOWENWAY.
- ARTICLES OF INCORPORATION FOR THE FAIRLANE FARM HOMEOWNERS ASSOCIATION, INC. WILL BE FILED WITH THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION PRIOR TO RECORDECTION OF THE FINAL PLAT.
- A PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON AUGUST 12, 2013.
- THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWERAGE EASEMENT. RECORDECTION OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.
- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
- ANY CHANGES TO THE PRIVATE SEWERAGE AREA SHALL REQUIRE A REVISED PERC CERTIFICATION PLAN.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS. FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
- THE 100 YEAR FLOODPLAIN DELINEATED ON THIS PLAN HAS BEEN DETERMINED TO BE "NOT CRITICAL" BASED ON A REPORT PREPARED BY FISHER, COLLINS & CARTER, INC. ON MAY, 2014.
- THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST ACT, INC. CLEARING, GRADING OR CONSTRUCTION WITHIN THE FOREST CONSERVATION EASEMENTS, HOWEVER, STORMWATER 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 WILL BE FULFILLED BY 29.87 ACRES AND 8.11 ACRES REFORESTATION. PHASE TWO IS PROPOSED TO BE 1.09 AC OF CRESTED RETENTION AND 2.12 AC OF REFORESTATION. THERE IS NO SURETY FOR FOREST RETENTION. A SURETY IN THE AMOUNT OF \$46,174.00 (2.12 ACRES X 43,660 SQ.FT. / ACRES X 80.50/SQ.FT) WILL BE INCLUDED AS PART OF THE DEVELOPER'S AGREEMENT.
- PERMITS LANDSCAPING FOR PHASE TWO SHALL BE IN ACCORDANCE WITH SECTION 16.124 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF \$50,280.00 FOR 136 SHADE TREES, 21 EVERGREEN TREES, 25 ORNAMENTAL TREES & 21 SHRUBS HAVE BEEN PROVIDED AS PART OF THE DEVELOPER'S AGREEMENT. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- THE EXISTING TOPOGRAPHY INFORMATION SHOWN IS TAKEN FROM HARFORD AERIAL CONTOUR MAPPING FLOWN ON JANUARY, 2006 AND SUPPLEMENTED WITH A FIELD RUN TOPOGRAPHIC SURVEY PERFORMED ON OR ABOUT JULY 26, 2013 BY FISHER, COLLINS & CARTER, INC.
- BOUNDARY INFORMATION IS BASED ON A SURVEY PERFORMED ON OR ABOUT APRIL 4, 2013 BY FISHER, COLLINS & CARTER, INC.
- THIS PROPERTY IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT. PRIVATE WELL AND SEPTIC WILL BE UTILIZED FOR THIS PROJECT.
- STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE P.D.E. STORM WATER DESIGN MANUAL, VOLUMES 1 & 2, REVISED 2009. WE ARE PROVIDING STORM WATER MANAGEMENT BY THE USE OF 4 AREAS OF (N-1) ROOFTOP DISCONNECTION CREDIT, 17 AREAS OF (N-2) NON-ROOFTOP DISCONNECTION CREDIT, 2 AREAS OF (M-5) DRYWELLS, 3 (M-6) MICRO-BORSTENTION FACILITIES & 6 (M-8) GROSS SWALES TO MEET AND EXCEED THE REQUIRED ESO VOLUME.
- 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 COVENANTS, EASEMENTS AND RESTRICTIONS LOCATED WITHIN THE PUBLIC R/W WILL BE PRIVATELY OWNED AND MAINTAINED, AND SWM DEVICES LOCATED ON NON-BUILDABLE PRESERVATION 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.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- THIS SUBDIVISION IS WITHIN THE GROWTH TIER IV AREA, BUT NOT AFFECTED BY 58-236 (SUSTAINABLE GROWTH AND AGRICULTURAL PRESERVATION ACT), BECAUSE THE DEVELOPER RECEIVED APPROVAL OF A PERC TEST FROM THE HEALTH DEPARTMENT BEFORE JULY 1, 2012. HAS SUBMITTED A PRELIMINARY PLAN WITHIN 180 DAYS OF THE SOIL PRELIMINARY TEST APPROVAL OF JULY 1, 2012 AND WILL OBTAIN PRELIMINARY PLAN APPROVAL BY OCT. 1, 2016. NO FURTHER SUBDIVISION IS PERMITTED FOR LOTS 1 THRU 44 UNDER 58-236.
- A GOVERNMENT APPROPRIATIONS PERMIT MUST BE OBTAINED FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT PRIOR TO HOWARD COUNTY HEALTH DEPARTMENT SIGNATURE OF THE FINAL PLAT.
- BUILDABLE PRESERVATION PARCEL 'A' (PHASE ONE) HAS BEEN DESIGNED TO BE USED FOR HORSEBACK RIDING THAT ALLOWS HORSE TRAILS TO WEADE THROUGHOUT THE SUBDIVISION.
- PLAN SUBJECT TO WP-14-107 WHICH THE DIVISION OF LAND DEVELOPMENT WAVE ON JUNE 19, 2014 APPROVED A REQUEST TO 16.1200(A)(1) AND 16.119(F)(1) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH STATES THAT RESIDENTIAL DEVELOPMENTS THAT FRONT ON A MAJOR COLLECTOR ROAD SHOULD PROVIDE VEHICULAR ACCESS TO THE SUBDIVISION BY A LOWER CLASSIFICATION PUBLIC ROAD. SECTION 16.1200(A)(1) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH REQUIRES THE RETENTION OF STATE CHAMPION TREES, TREES 75% OF THE DIAMETER OF STATE CHAMPION TREES, AND TREES 30" IN DIAMETER OR LARGER. SECTION 16.1200(C)(5) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH REQUIRES 20 FEET OF PUBLIC ROAD FRONTAGE FOR NON-BUILDABLE PRESERVATION PARCELS, AND SECTION 16.132(A)(3)(D) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH REQUIRES CONSTRUCTION OF ROAD IMPROVEMENTS ON MAJOR COLLECTOR OR PRINCIPAL ARTERIAL ROADS.
- APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
 - THE USE-IN-COMMON DRIVEWAY PROPOSED ALONG OLD FREDERICK ROAD IS PERMITTED WITH PROVISION OF ADEQUATE SIGHT DISTANCE AND THE NUMBER OF USERS DO NOT EXCEED 6.
 - THE FRONTAGE ALONG OLD FREDERICK ROAD AND MORGAN STATION ROAD WILL BE WIDENED TO THE MINIMUM (12-FEET) HALF SECTION FOR A PUBLIC ROADWAY AND CONSTRUCTION OF ADEQUATE SIDE SWALES.
 - REMOVAL OF SEVEN SPECIEM TREES #1915, #1916, #1918, #1928, #1934, #1938 AND #1939 WILL REQUIRE MITIGATION OF SEVEN 7"-4" CALIPER TREE AND SHALL BE OF SIMILAR SPECIES AS THE REMOVED TREES. (SEE SHEET 36 FOR PROPOSED TREE LOCATIONS)
- THE LOT DESIGN HAS CHANGED SINCE THE WEAVER PETITION APPROVAL, THEREFORE, A WAIVER TO SECTION 16.119(F)(1) AND 16.1200(A)(1) ARE NO LONGER APPLICABLE.
- DRIVEWAY (S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
 - WIDTH - 12 FEET (16 FEET SPACING MORE THAN ONE RESIDENCE)
 - SURFACE - 18" DEPTH OF COMPACTED COURSE BASE WITH T&E AND CHIP COATING
 - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45 FOOT TURNING RADIUS
 - STRUCTURE - CONCRETE (REINFORCED) CAPABLE OF SUPPORTING 25 TONS (HEAVY LOADING)
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
 - MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
- ALL WELLS TO BE DRILLED PRIOR TO FINAL PLAT APPROVAL. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED "CONSTRUCTION DELAY" IF THE WELL DRILLING HOLDS UP THE HEALTH DEPARTMENT SIGNATURE OF THE DEED (DEED PART).
- THIS PLAN CANNOT BE USED FOR THE CONSTRUCTION OF HOUSES SINCE THE ACTUAL HOUSE TYPE AND THE REQUIRED SEDIMENT CONTROL HAS NOT BEEN ESTABLISHED.
- THE 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.
- H.O.A. DECLARATION OF COVENANTS AND RESTRICTIONS WERE RECORDED WITH PHASE ONE (F-15-054). ADDITIONAL S.W.M. DOC'S WILL BE RECORDED WITH THIS PHASE TWO PLAN.
- THE EXISTING STORMWATER CONTROL PLAN (PHASE ONE OF 15-054) WILL BE OBTAINED THROUGH THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER A SEWERAGE PERMIT APPLICATION.



FAIRLANE FARM PHASE TWO
LOTS 19-44, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'

A Resubdivision of Non-Buildable Bulk Parcels 'G' & 'H' And A Revision To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E', Parcel 'F' And Non-Buildable Bulk Parcels 'G' And 'H' "

ZONED: RC-DEO
TAX MAP NO: 8 GRID NO: 2, PAR: 8
TAX MAP NO: 8 GRID NO: 3, PAR: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: NOVEMBER 11, 2016
SHEET 1 OF 36



OWNER
DASHWOOD, LLC
c/o ESTATE OF FRANCES JEAN SCHULTE
DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
2215 DAVALL ROAD
WOODBINE, MD 21797
410-977-1327

DEVELOPER
LAND DESIGN & DEVELOPMENT
8318 FOREST STREET
SUITE 200
ELLCOTT CITY, MARYLAND 21043
(410)-922-4600

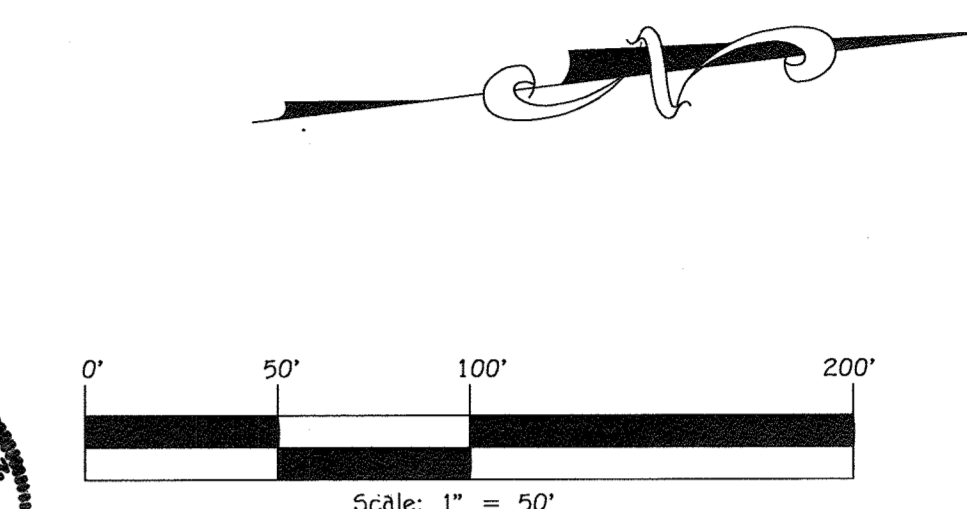
SCALE: AS SHOWN
DATE: NOV. 11, 2016
DRN: J.C.L.
DWG. NO.: 2 OF 36
CHK.: A.M.V.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
10773 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
(410) 461-2895

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kent Schuch
CHIEF, DIVISION OF LAND DEVELOPMENT
3-16-17
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Orman
CHIEF, BUREAU OF HIGHWAYS
12/6/2016
DATE

CENTERLINE CURVE DATA							
CURVE #	ROAD NAME	STATION	RADIUS	LENGTH	DELTA	CHD LGTH	CHORD
C7	THUNDERBIRD DRIVE	2+19.38 TO 4+57.17	500.00'	237.79'	22°24'00"	235.56'	N13°04'51"E
C8	THUNDERBIRD DRIVE	5+36.01 TO 6+46.42	400.00'	110.41'	15°01'48"	108.66'	N18°20'36"E
C9	THUNDERBIRD DRIVE	7+54.68 TO 9+51.86	210.00'	197.19'	53°00'01"	190.02'	N16°00'34"W
C10	THUNDERBIRD DRIVE	9+51.86 TO 11+01.59	330.00'	149.73'	25°09'64"	148.45'	N29°54'41"W
C11	THUNDERBIRD DRIVE	12+31.10 TO 13+18.78	110.50'	87.68'	45°46'39"	85.40'	N05°49'08"E



AS-BUILT CERTIFICATION
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS BUILT" plan meet the approved plans and specifications.
 Date: 08/20/20
 CHARLES J. CRANSRAW, P.E. #11364



I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17.
 DATE: 11/14/16
 ALDO M. VITUCCI, P.E.

FAIRLANE FARM PHASE TWO
 LOTS 19-44,
 BUILDABLE PRESERVATION PARCELS 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'

A Resubdivision of Non-Buildable Bulk Parcels 'C' & 'H' And A Portion To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcel 'B' Thru 'E', Parcel 'F' And Non-Buildable Bulk Parcels 'G' And 'I'".

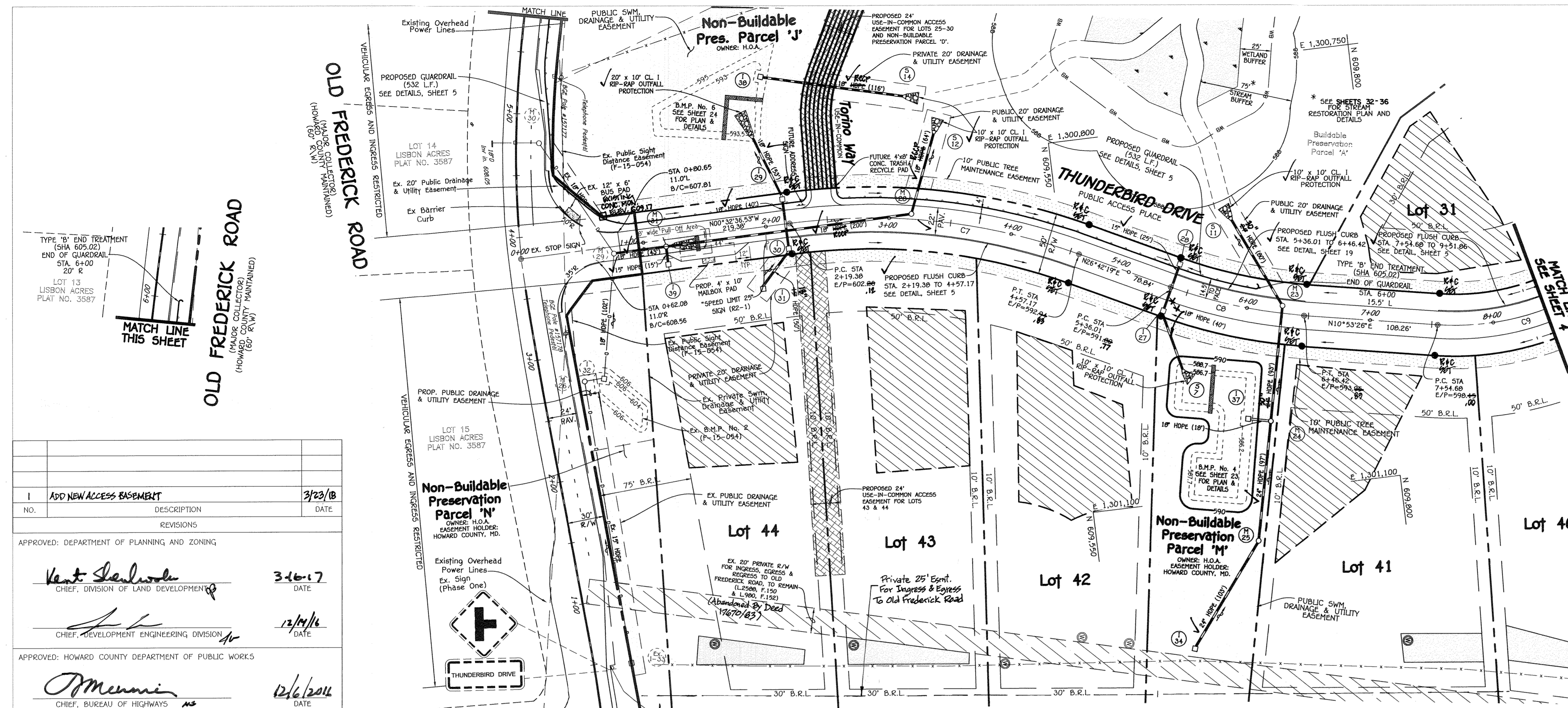
ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

THUNDERBIRD DRIVE
 PLAN AND PROFILE

OWNER DAVITORY, LLC c/o ESTATE OF FRANCES JEAN SCHULTE DIANE G. SCHULTE, PERSONAL REPRESENTATIVE 2215 DUNN ROAD WOODROW, MD 21797 410-977-1387	DEVELOPER LAND DESIGN & DEVELOPMENT 8318 FOREST STREET SUITE 200 ELIJAH CITY, MARYLAND 21043 (410)-922-4600
---	---

SCALE: AS SHOWN DATE: NOV. 11, 2016 DWG. NO. 3 OF 36
 DES. RAI/J.C.L. DRN. J.C.L. CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL PIKE
 ELIJAH CITY, MARYLAND 21042
 (410) 461-2222



OLD FREDERICK ROAD
 (MAJOR COUNTY ROAD)
 (HOWARD COUNTY MAINTAINED)
 (60' R/W)

OLD FREDERICK ROAD
 (MAJOR COUNTY ROAD)
 (HOWARD COUNTY MAINTAINED)
 (60' R/W)

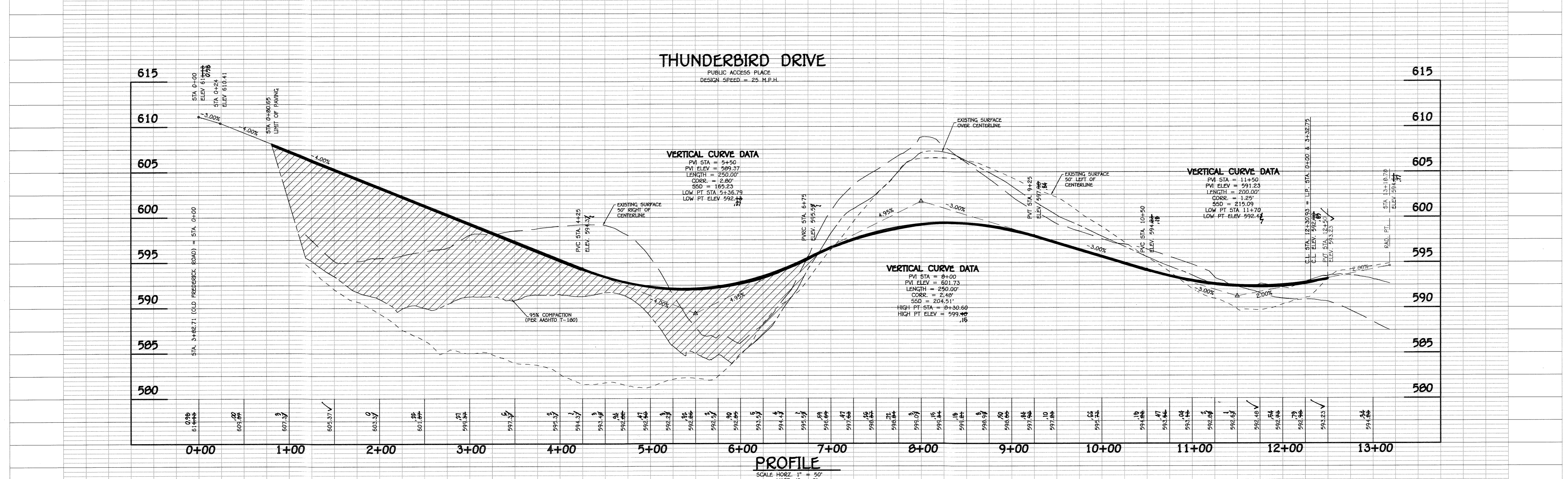
TYPE 'B' END TREATMENT (SHA 605.02) END OF GUARDRAIL STA. 6+00 20' R

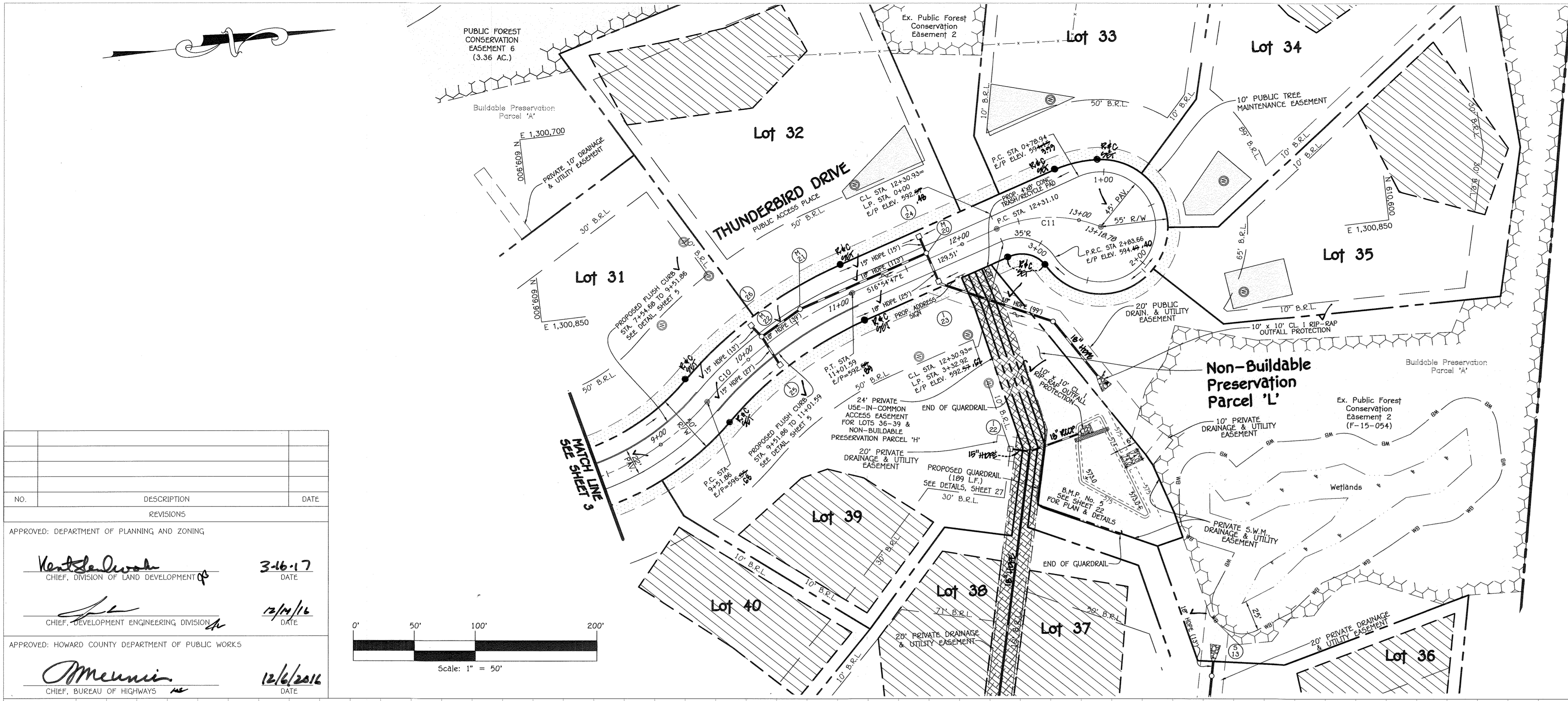
LOT 13 LISBON ACRES PLAT NO. 3587

LOT 14 LISBON ACRES PLAT NO. 3587

LOT 15 LISBON ACRES PLAT NO. 3587

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Kent Seawalker, CHIEF, DIVISION OF LAND DEVELOPMENT, 3/23/18
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 J. Mennini, CHIEF, BUREAU OF HIGHWAYS, 12/6/2016





CENTERLINE CURVE DATA							
CURVE #	ROAD NAME	STATION	RADIUS	LENGTH	DELTA	CHD LGTH	CHORD
C7	THUNDERBIRD DRIVE	2+19.30 TO 4+57.17	500.00'	237.79'	22°24'08"	235.56'	N13°04'51"E
C8	THUNDERBIRD DRIVE	5+36.01 TO 6+46.42	400.00'	110.41'	15°81'48"	108.66'	N18°20'36"E
C9	THUNDERBIRD DRIVE	7+54.60 TO 9+51.86	210.00'	197.19'	53°80'01"	190.02'	N16°00'34"W
C10	THUNDERBIRD DRIVE	9+51.86 TO 11+01.59	330.00'	149.73'	25°59'6"	148.45'	N29°54'41"W
C11	THUNDERBIRD DRIVE	12+31.10 TO 13+18.78	110.50'	87.68'	45°46'39"	85.40'	N05°49'08"E

NO.	DESCRIPTION	DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
	<i>Kent DeLoach</i>	3-16-17
	CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
	<i>[Signature]</i>	12/14/16
	CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS		
	<i>[Signature]</i>	12/16/2016
	CHIEF, BUREAU OF HIGHWAYS	DATE



AS-BUILT CERTIFICATION
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS BUILT plan meet the approved plans and specifications.
 CHARLES J. EVANS, P.E. #13354 Date 02/06/18

B.M.P. No. 5 (F-6)
 BIO-RETENTION FACILITY
 (TO BE OWNED BY THE FAIRLANE FARM HOMEOWNERS ASSOCIATION AND JOINTLY MAINTAINED)



ALDO M. VITUCCI, P.E.
 "Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17"

FAIRLANE FARM PHASE TWO
 LOTS 19-44
 BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
 A Re subdivision of Non-Buildable Bulk Parcel 'C' & 'I' And A Revision To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'I' Thru 'C', Parcel 'N' And Non-Buildable Bulk Parcels 'G' And 'H'"
 ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

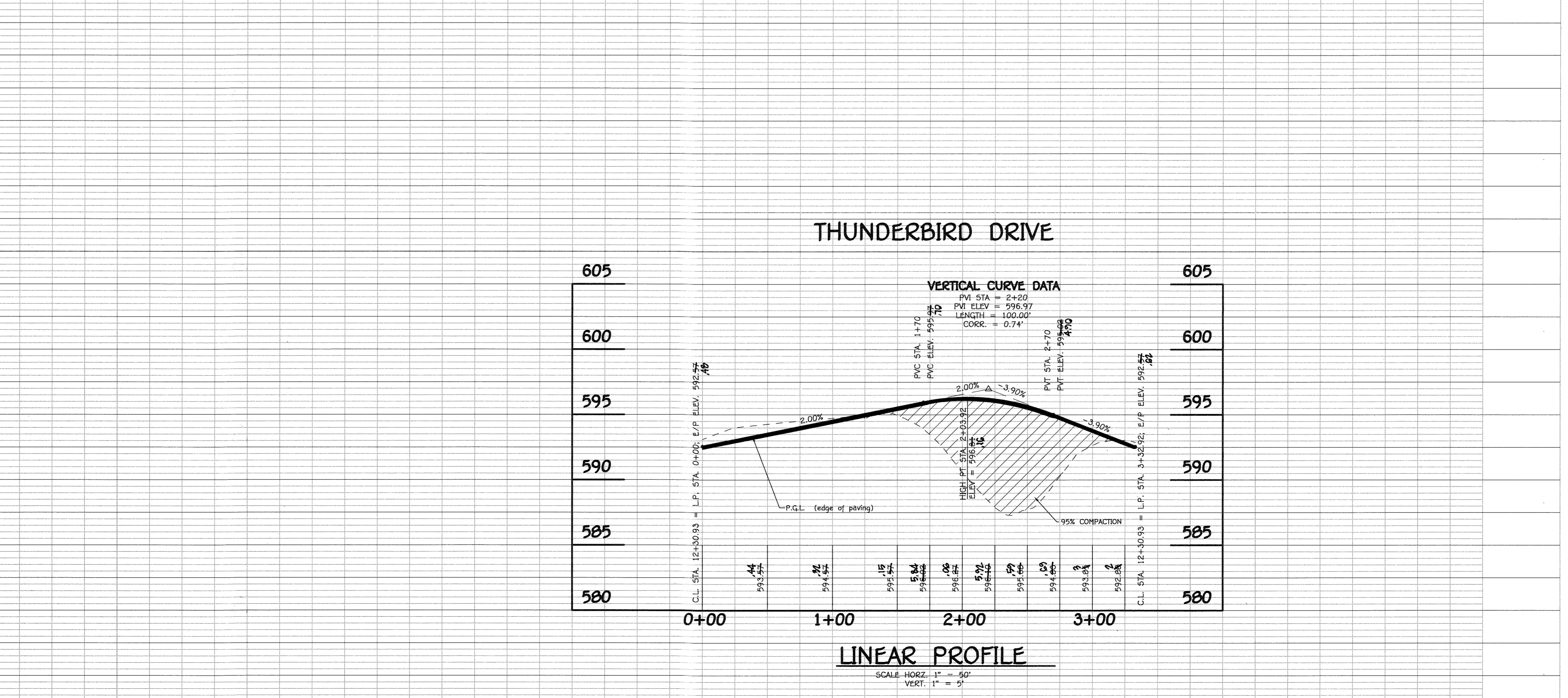
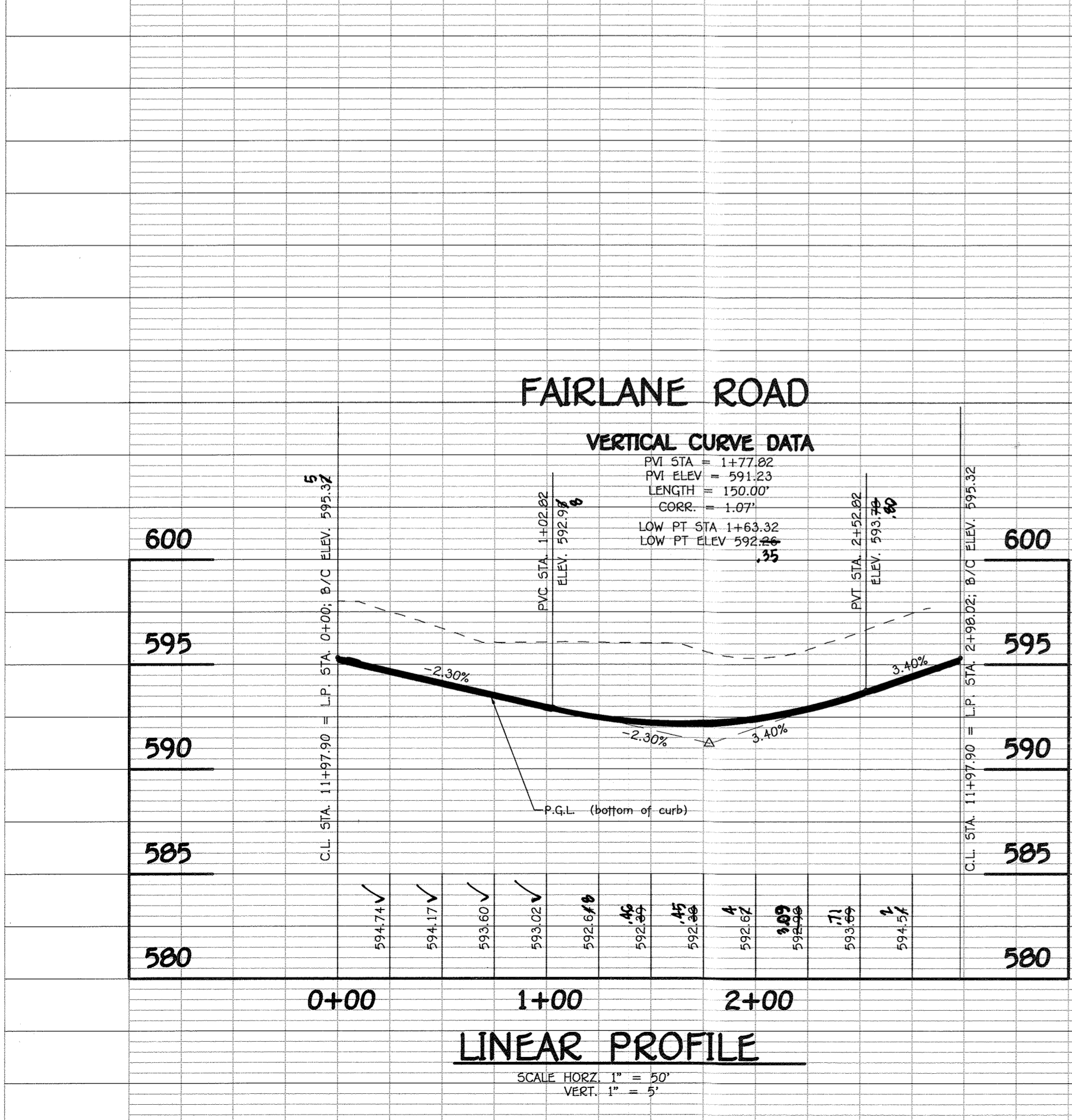
THUNDERBIRD DRIVE FAIRLANE ROAD
 PLAN AND PROFILE PROFILE

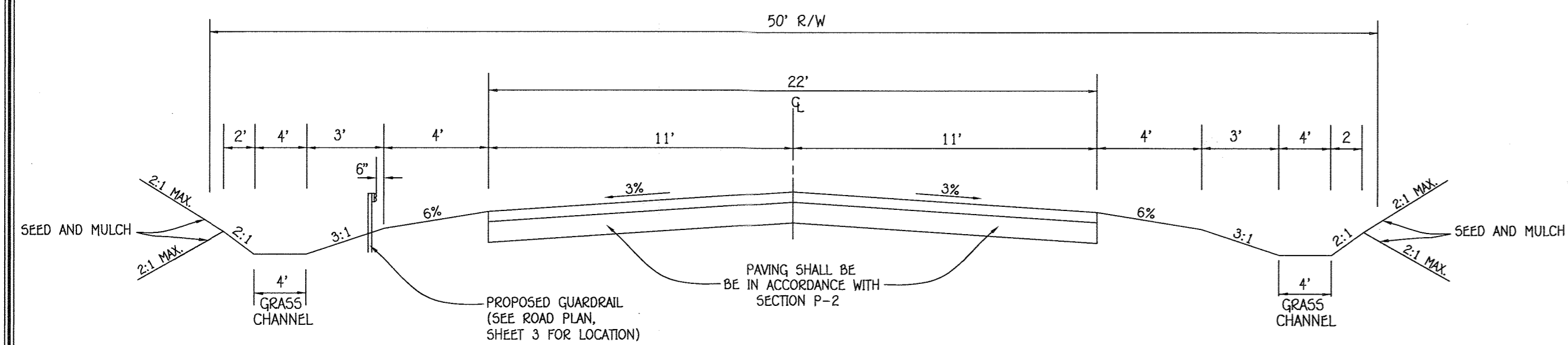
OWNER
 DMSYCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUNNALL ROAD
 WOODBINE, MD 21797
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8018 FOREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21043
 (410)-922-4600

SCALE: AS SHOWN DATE: NOV. 11, 2016 DWG. NO. 4 OF 36
 DES. R.A.I./J.C.L. DRN. J.C.L. CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 NATIONAL SQUARE OFFICE PARK - 10775 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461 - 2895





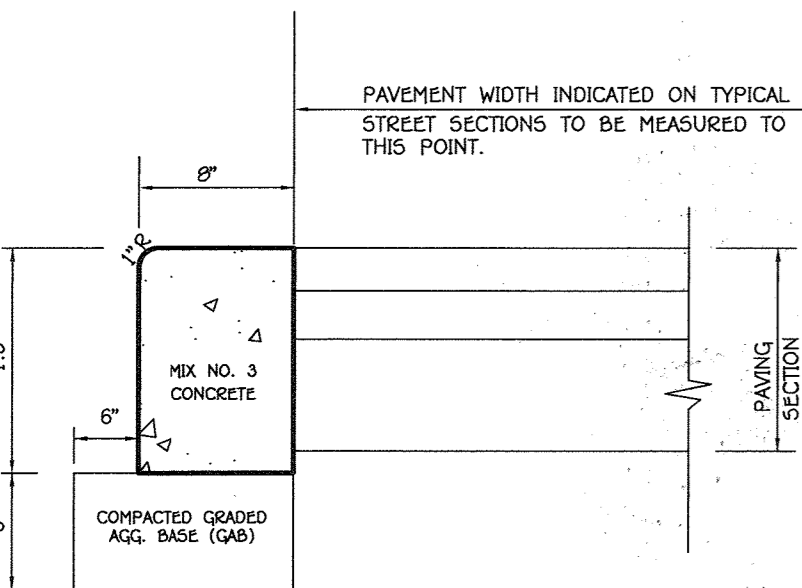
NOTE:
ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.

TYPICAL PUBLIC ACCESS PLACE ROADWAY SECTION

NO SCALE

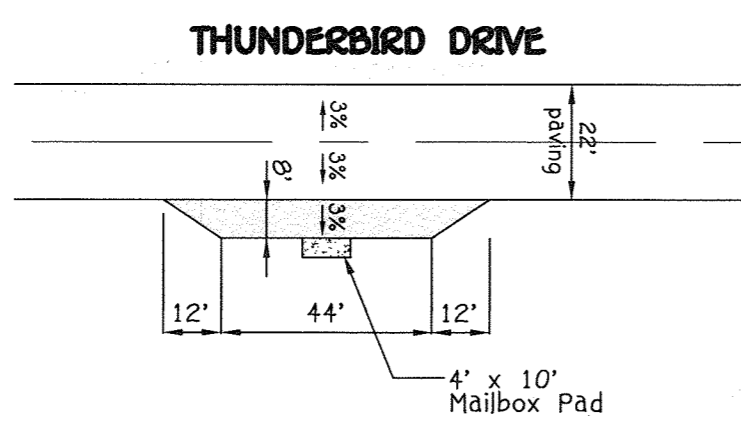
DETAIL R-2.01

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



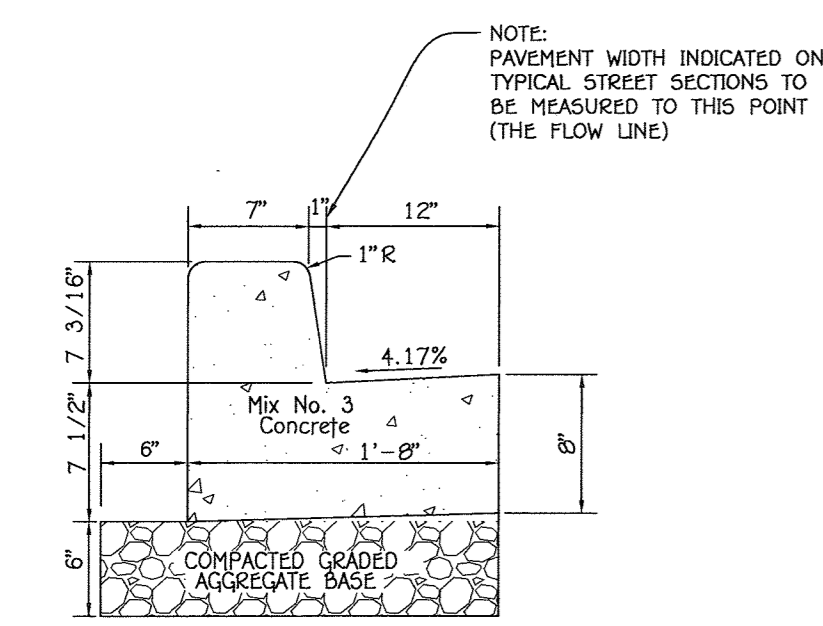
FLUSH CURB

NO SCALE, DETAIL R-3.07



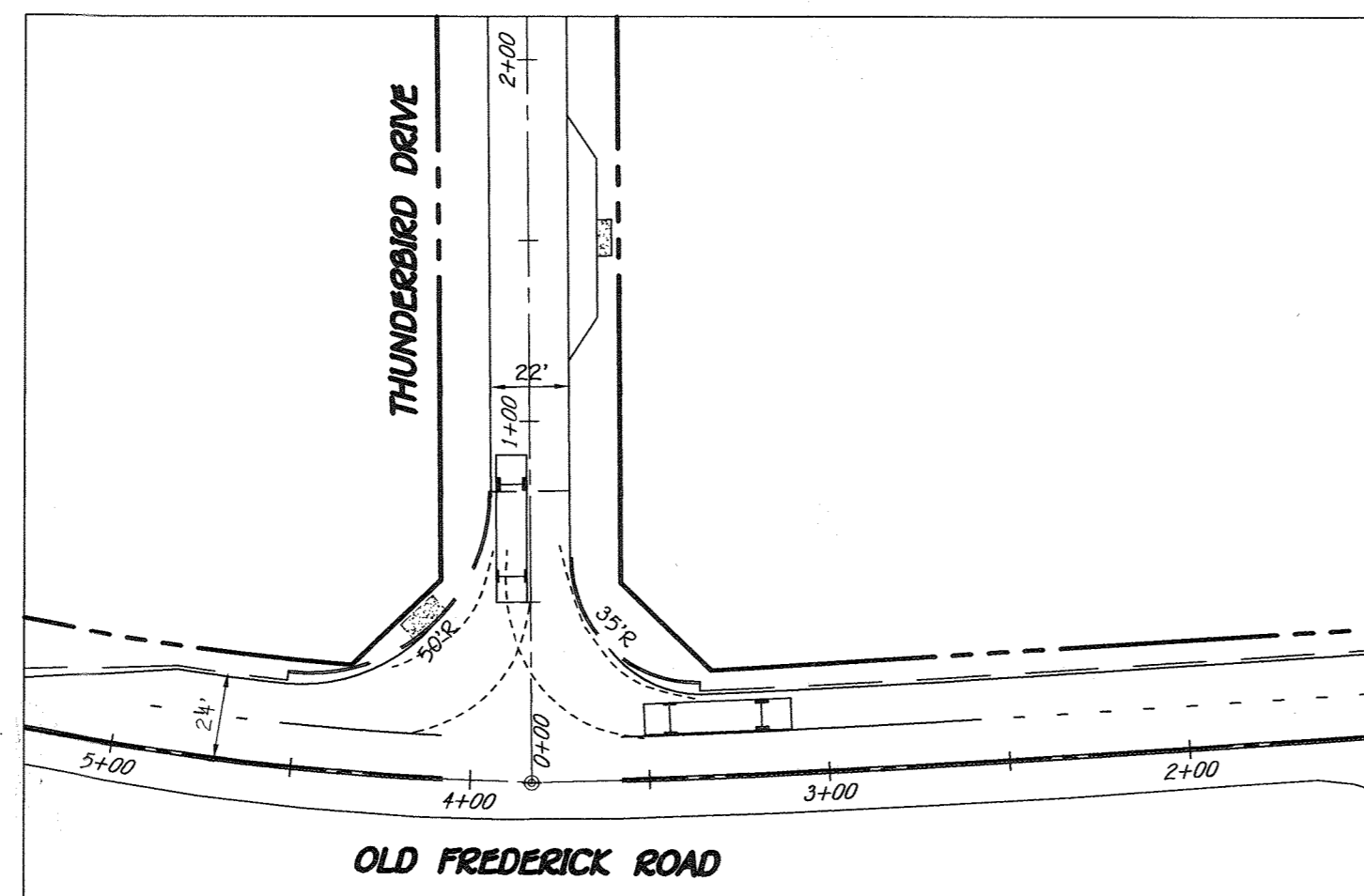
TYPICAL MAILBOX PULL-OFF AREA

SCALE: 1" = 40'



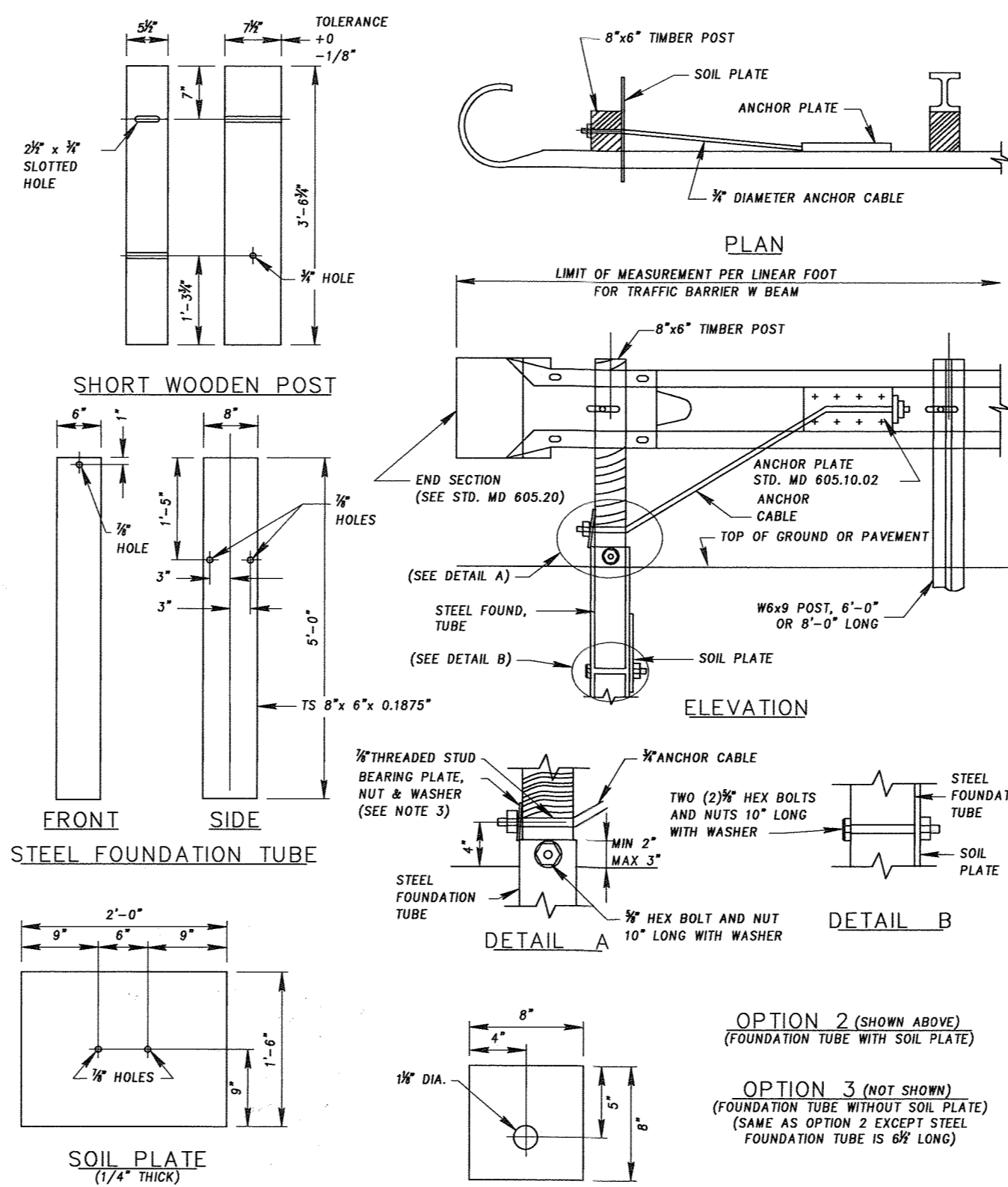
7\"/>

NO SCALE, (R-3.01)



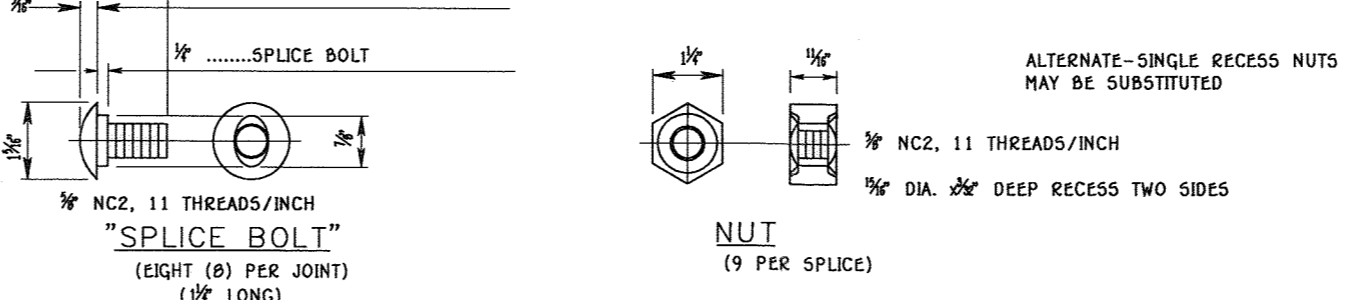
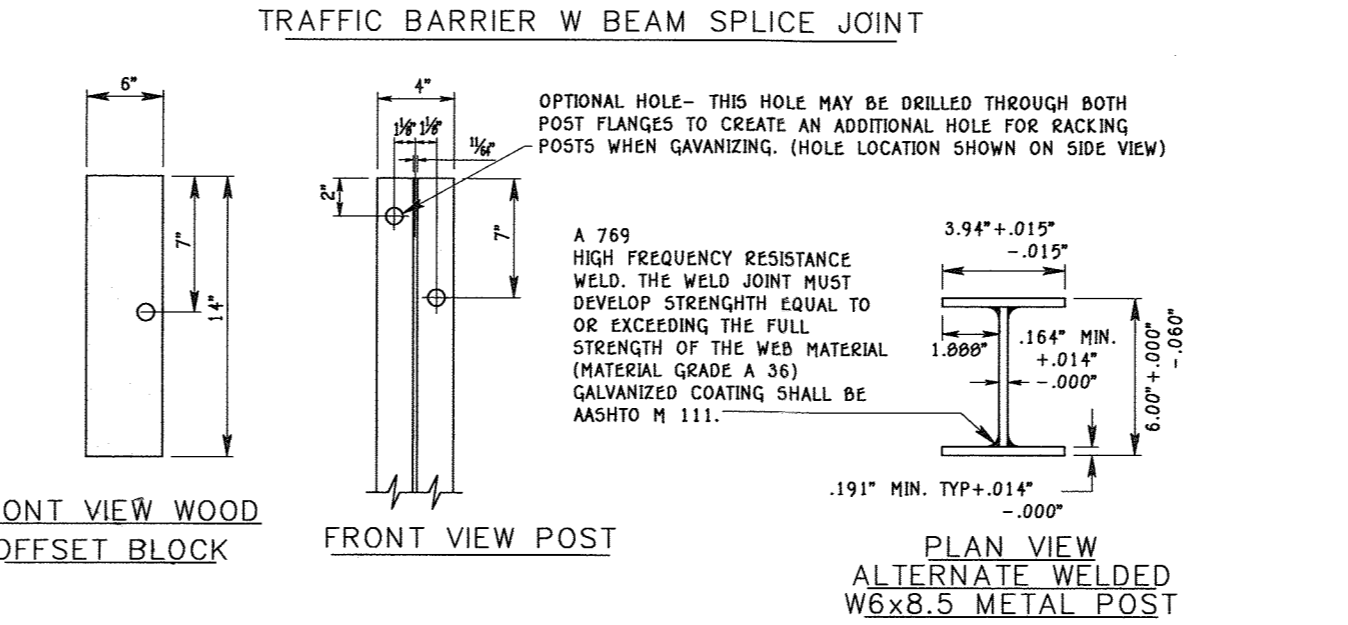
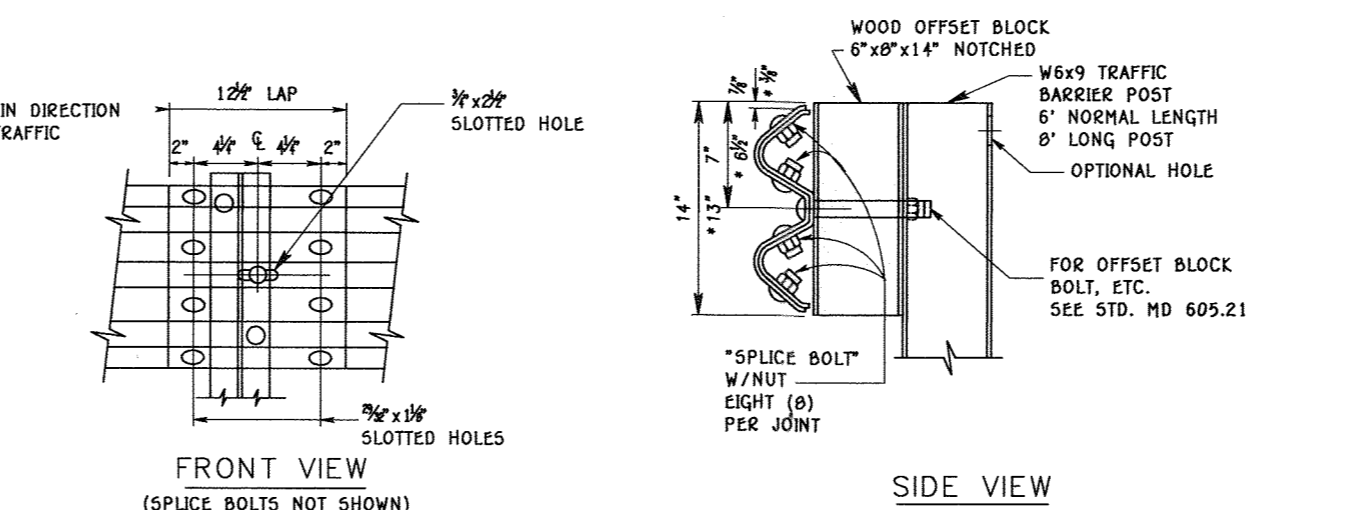
BUS TURNING MOVEMENTS

SCALE: 1" = 50'



NOTES

- NOTES ON STD. MD 605.10 APPLY TO OPTION 2 & 3.
- IF THE FOUNDATION TUBE AND SOIL PLATE (OPTION 2) ARE DRIVEN INTO THE SOIL, PROPER CARE SHOULD BE TAKEN TO ENSURE THAT THE SOIL PLATE FASTENERS ARE NOT BROKEN DURING THE DRIVING PROCESS.
- SECURE BEARING PLATE WITH 16 PENNY GALVANIZED NAIL TO PREVENT ROTATION OF PLATE.
- SAME AS MD 605.01 NOTE 6.



- NOTES**
- EXCEPT FOR THE DIMENSIONS SHOWN ON THE ALTERNATE WELDED W6x8.5 PLAN VIEW, ALL DIMENSIONS FOR HOLES, HOLE SPACING, LENGTHS, ETC. WILL REMAIN THE SAME AS THEY ARE FOR THE W6x9 POSTS AND WOOD OFFSET BLOCKS.
 - FOR COMPOSITE OFFSET BLOCKS SEE NOTE 5 ON MD 605.21.
 - POSTS SHALL BE SPACED 6'-3" C/C, UNLESS OTHERWISE STATED ON THE PLANS OR DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER W BEAM METAL POST, W BEAM SPLICE AND WOOD OFFSET BLOCK

NOT TO SCALE, MD 605.23

APPROVED: DEPARTMENT OF PUBLIC WORKS

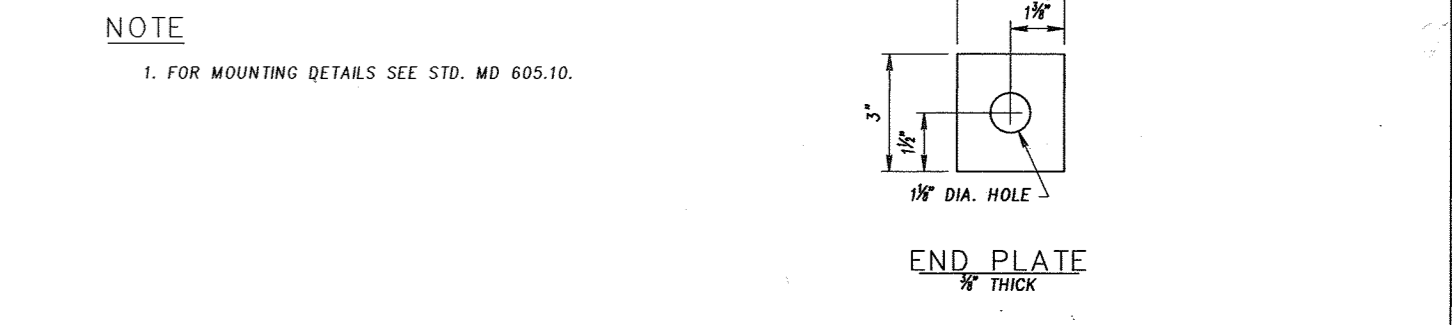
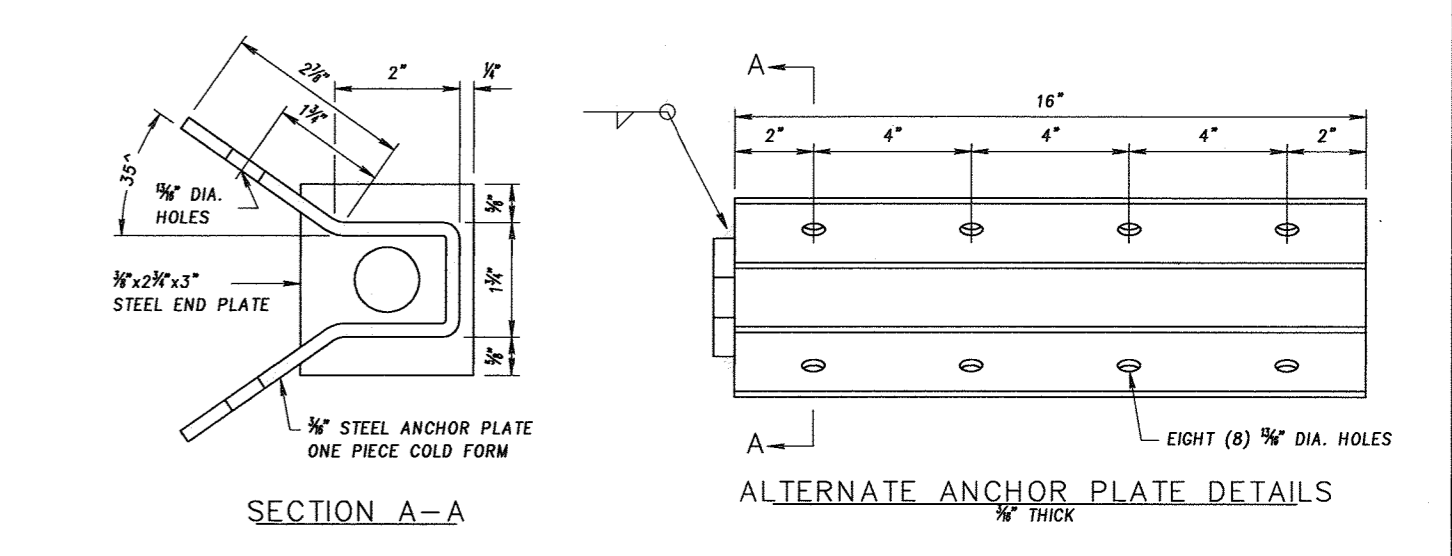
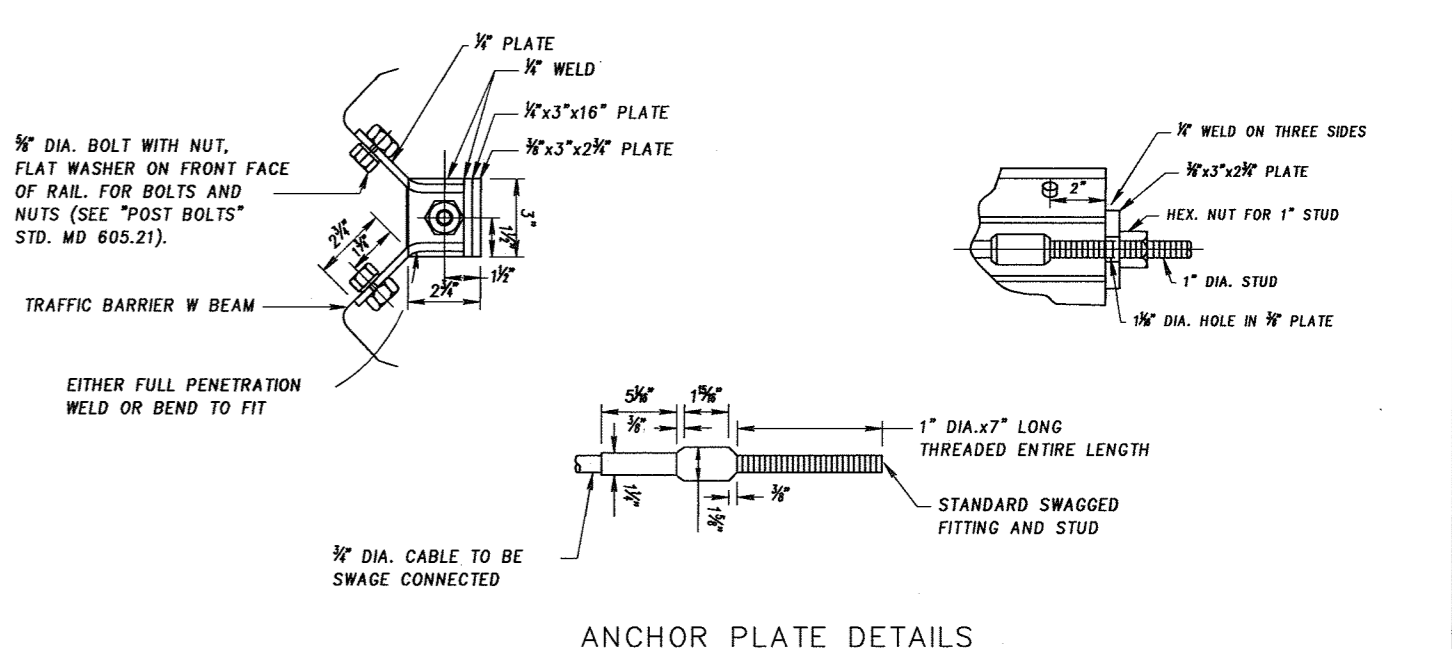
M. M. M. 12/6/2016
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

K. S. S. 3-16-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

J. J. J. 12/14/16
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO.	REVISIONS DESCRIPTION	DATE



NOTE

1. FOR MOUNTING DETAILS SEE STD. MD 605.10.

AS-BUILT CERTIFICATION
Note: There is no "AS BUILT" information provided on this sheet.
C. C. C. 02/20/22
CHARLES J. CROWSON, P.E. #13804 Date

ROADWAY & GUARDRAIL DETAILS
FAIRLANE FARM PHASE TWO
LOTS 19-44,
BUILDABLE PRESERVATION PARCELS 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
A Re-subdivision of Non-Buildable Bulk Parcels 'C' & 'H' And A Revision To Buildable Preservation Parcel 'A', Re-zoned As "R100" Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E', Parcel 'F' And Non-Buildable Bulk Parcels 'G' And 'I' (ZONED: "RC-DEO")
TAX MAP NO.: B GRID NO.: 2, PAR: 8
TAX MAP NO.: B GRID NO.: 3, PAR: 17
FOURTH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND
DATE: NOVEMBER 11, 2016
SHEET 5 OF 36



ALDO R. VIUCCI, P.E. 11/14/16 DATE
"Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17."

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING, CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 16272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2895

OWNER
DAISYCOOP, LLC
c/o ESTATE OF FRANCES JEAN SCHULTE
DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
2215 DUVALL ROAD
WOODBINE, MD 21797
410-977-1327

DEVELOPER
LAND DESIGN & DEVELOPMENT
8318 FORREST STREET
SUITE 200
ELICOTT CITY, MARYLAND 21043
(410)-922-4600

13:2005051061dwg9 Plan/F Plan phase 205106 Sheet 5 Roadway details.dwg, 11/10/2016 2:43:37 PM, 11

DESIGN CERTIFICATION
I hereby certify that this plan has been designed in accordance with current Maryland Erosion Control Laws, Regulations and Standards. That I represent a professional engineer based on my personal knowledge of the site and that I am duly licensed under the requirements of the Howard Soil Conservation District.

11/14/16
Date
20740
MD Registration No.
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 my right of entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE.

11/16/16
Date
Joseph Ruter Developer
Printed Name & Title

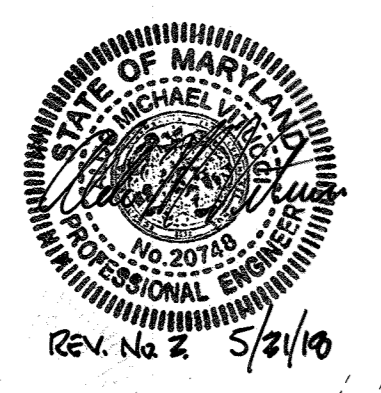
Approved: This Plan is Approved For Soil Erosion And Sediment Control By The Howard Soil Conservation District.
Howard Soil Conservation District
Approved: Department of Planning And Zoning
Chief, Division of Land Development
Approved: Department of Public Works
Chief, Bureau of Highways

REVISIONS

NO.	DESCRIPTION	DATE
1	ADD ACCESS EASEMENT TO ADJACENT PROPERTIES & EXPAND LIMIT OF DISTURBANCE	3/23/16
2	REVISE HOUSE & GRADING ON LOT 42	5/18/16
3	REVISE HOUSE & GRADING ON LOT 41	6/22/16
4	REV. HOUSE & GRADING ON LOT 28	8/22/16
5	REV. HOUSE, GRADING, & SWM FOR LOTS 27 & 29	10/17/16
6	REV. HOUSES, GRADING & SWM FOR LOTS 25, 26, & 30	8/13/17
7	REV. LOTS 27 & 34 TO SHOW FINAL HOUSE & GRADING	4/29/19

SEDIMENT CONTROL LEGEND

- SSP - SUPER-SILT FENCE
- SF - SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- S.I.P. (A) - STANDARD INLET PROTECTION INLET TYPE 'A' OR 'B'
- L.O.D. - LIMIT OF DISTURBANCE
- R.P.S. - REMOVABLE PUMPING STATION
- F.B. - FILTER BAG
- TYPE A-2 - EARTH DIKE

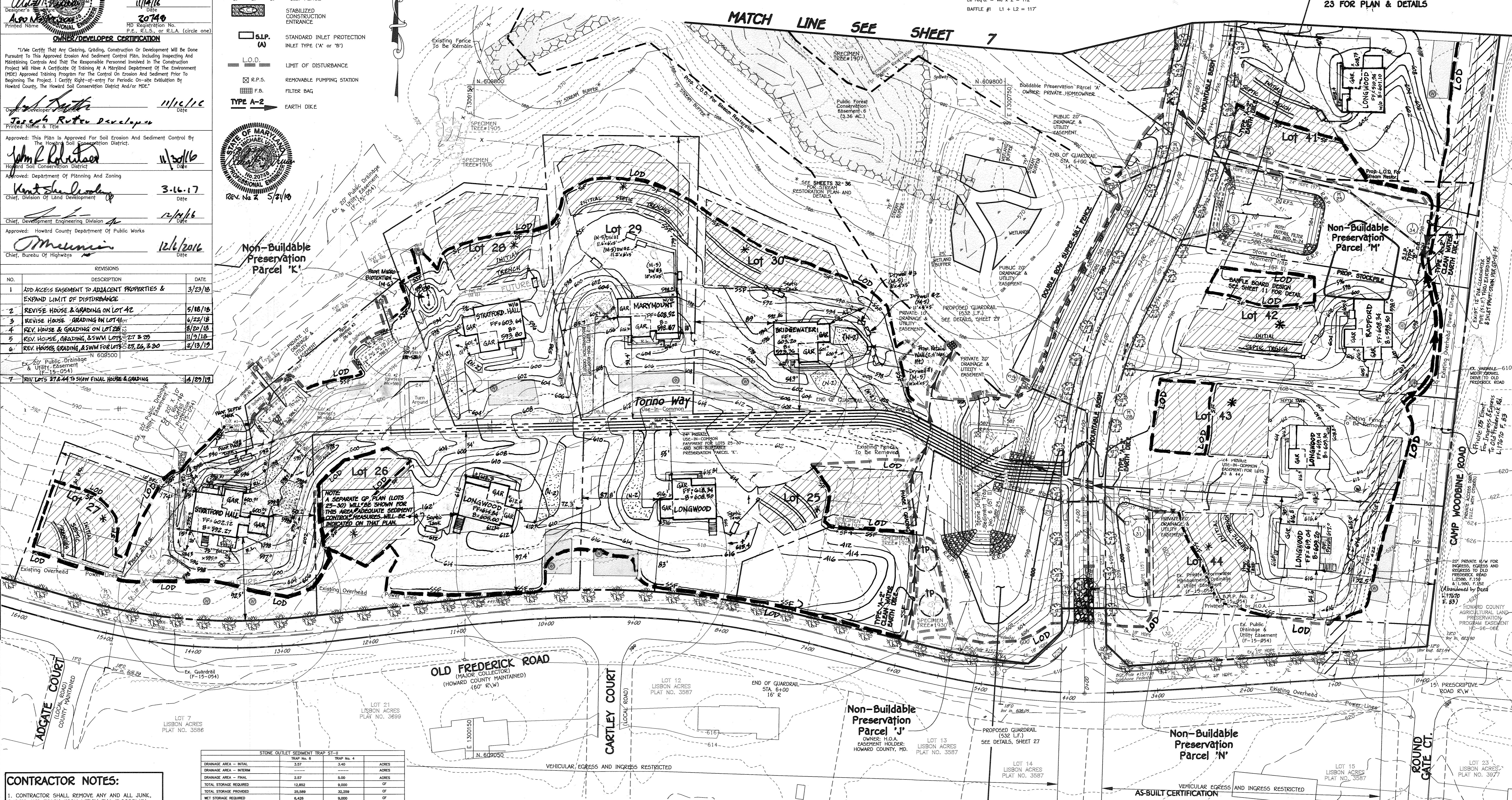


* NOTE: THE SILT FENCE SHOWN WITHIN EACH PRIVATE SEPTIC FIELD IS TO BE INSTALLED WITH THE GP-18-95 FOR THE CONSTRUCTION OF THE HOUSE & SEPTIC SYSTEM FOR THAT SPECIFIC LOT.

BAFFLE DESIGN
TOP OF BAFFLE EL. 585.25
 $W = (A/2)^2 = (6.233/2)^2 = 56'$
Le req'd. = $W \times 2 = 112'$
BAFFLE #1 L1 + L2 = 117'

NOTE: THERE CAN BE NO DISTURBANCE EXCEEDING 20 ACRES AT ANYTIME.

NOTE: FOR B.M.P. No. 4 (F-6) AT S.O.S.T. No. 4 LOCATION, SEE SHEET 23 FOR PLAN & DETAILS



CONTRACTOR NOTES:

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

STONE OUTLET SEDIMENT TRAP ST-1

TRAP No. 6	TRAP No. 4	ACRES
DRAINAGE AREA - INITIAL	3.57	3.40
DRAINAGE AREA - INTERIM	2.37	0.00
DRAINAGE AREA - FINAL	2.37	0.00
TOTAL STORAGE REQUIRED	12,852	9,000
TOTAL STORAGE PROVIDED	25,589	32,209
NET STORAGE REQUIRED	6,429	0,000
NET STORAGE PROVIDED	6,429	0,130
DRY STORAGE REQUIRED	11,329	30,039
DRY STORAGE PROVIDED	17,752	25,168
TRAP BOTTOM ELEVATION	582.25	584.00
TRAP BOTTOM DIMENSIONS	53 x 115	45 x 83
MIN. CREST (DRY STORAGE) ELEVATION	584.26	585.50
OUTLET NET STORAGE ELEVATION	583.36	585.10
CLEARANCE ELEVATION	582.80	584.60
TOP OF EMBANKMENT ELEVATION	587.00	589.50
SIDE SLOPE	2:1	2:1
EMBANKMENT TOP WIDTH	6	4
OUTLET PROTECTION - LENGTH	10'	10'
OUTLET PROTECTION - WIDTH	15'	15'
OUTLET PROTECTION - DEPTH	18"	18"

ROOFLEADER NOTE:
A OVERFLOW OUTFALL (SURCHARGE) SHALL BE PROVIDED AT EACH DOWNSPOUT PRIOR TO CONNECTION TO THE UNDERGROUND ROOFLEADER. SEE DETAIL SHEET 21.

HOUSE CONSTRUCTION NOTES:

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

NOTE: FOR B.M.P. No. 6 (F-6) AT S.O.S.T. No. 6 LOCATION, SEE SHEET 24 FOR PLAN & DETAILS

NOTE: AT NO TIME CAN THERE ANY LAND DISTURBANCE IN EXCESS OF 20 ACRES.

BAFFLE DESIGN
TOP OF BAFFLE EL. 583.40
 $W = (A/2)^2 = (4.272/2)^2 = 46'$
Le req'd. = $W \times 2 = 92'$
BAFFLE #1 L1 + L2 = 95'
BAFFLE #1 L3 + L4 + L5 = 95'

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



STREET TREE, GRADING & SEDIMENT CONTROL PLAN FAIRLANE FARM PHASE TWO

LOTS 19-44, BUILDABLE PRESERVATION PARCELS 'I' THRU 'N' PRESERVATION PARCELS 'J' THRU 'N'

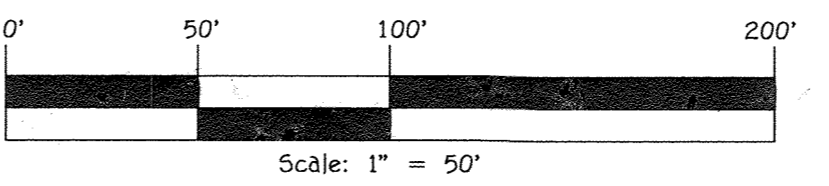
A Resubdivision of Non-Buildable Bulk Parcels 'G' & 'H' And A Revision To Buildable Preservation Parcel 'X', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'X', Non-Buildable Preservation Parcel 'B' Thru 'C', Parcel 'F' And Non-Buildable Bulk Parcels 'G' And 'H'."

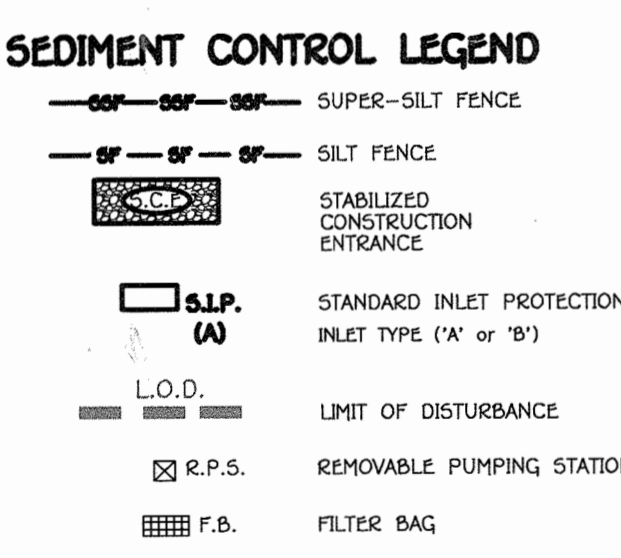
2019; SC-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR. 8
TAX MAP NO.: 8 GRID NO.: 3, PAR. 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: NOVEMBER 11, 2016
SHEET 6 OF 36

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALDORNE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2995

OWNER
DAISYCOOP, LLC
c/o ESTATE OF FRANCIS JEAN SCHULTE
DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
2215 DUVALL ROAD
WOODBINE, MD 21797
410-977-1327

DEVELOPER
LAND DESIGN & DEVELOPMENT
8318 FOREST STREET
SUITE 200
ELICOTT CITY, MARYLAND 21043
(410)-922-4600





BAFFLE DESIGN

TOP OF BAFFLES EL. 576.00

$W = (A/2)^2 = (3.634/2)^2 = 43'$

Le req'd = $W \times 2 = 86'$

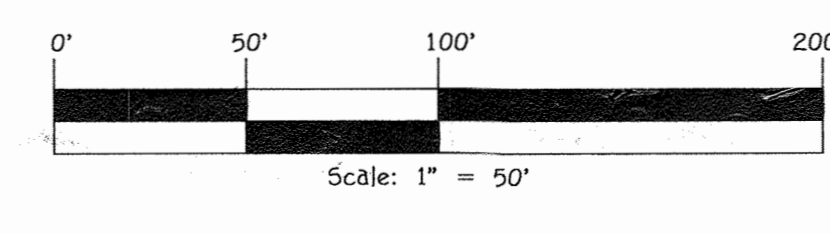
BAFFLE #1 L1 + L2 + L3 = 94'

BAFFLE #2 L4 + L5 + L6 = 89'

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK 10272 BALTIMORE NATIONAL PIKE
 CLAYTON, MD 21040 301-461-2695

OWNER
 DANCYCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUNALL ROAD
 WOODBINE, MD 21797
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8318 FOREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21043
 (410)-922-4600



DESIGN CERTIFICATION

I hereby certify that this plan has been designed in accordance with current Maryland Erosion Control Laws, Regulations and Standards, that it represents a true and correct copy of the original plan as shown to the State, and that it complies with the requirements of the Howard Soil Conservation District.

11/4/16 Date
 ASPO No. 28746
 MD Registration No. 28746
 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.

Joseph R. Vetter, Developer 11/15/16 Date
 Joseph R. Vetter, Developer
 Printed Name & Title

Approved: This Plan is Approved For Soil Erosion And Sediment Control By The Howard Soil Conservation District.
 John P. Robertson 11/30/16 Date
 Howard Soil Conservation District

Approved: Department of Planning And Zoning
 Kent Shalender 3-16-17 Date
 Chief, Division of Land Development

Approved: Howard County Department of Public Works
 [Signature] 12/14/16 Date
 Chief, Bureau of Highways

ROOFLEADER NOTE:

A OVERFLOW OUTFALL (SURCHARGE) SHALL BE PROVIDED AT EACH DOWNSLOUT PRIOR TO CONNECTION TO THE UNDERGROUND ROOFLEADER. SEE DETAIL SHEET 21.

CONTRACTOR NOTES:

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

REVISIONS

NO.	DESCRIPTION	DATE
1	ADD ACCESS ESMT. TO ADJACENT PROPERTIES & EXPAND LIMIT OF DISTURBANCE	3/23/18
2	REV. HOUSE & GRADING LOTS 31, 39, & 40	5/8/18
3	REV. HOUSE & GRADING ON LOT 32	6/25/18

STONE/GRAP OUTLET SEDIMENT TRAP 51-B, TRAP NO. 5

DESCRIPTION	ACRES
DRAINAGE AREA - INITIAL	2.26
DRAINAGE AREA - FINAL	3.44
TOTAL STORAGE REQUIRED	6,192 CF
TOTAL STORAGE PROVIDED	17,116 CF
WET STORAGE REQUIRED	3,096 CF
WET STORAGE PROVIDED	3,096 CF
DRY STORAGE REQUIRED 1-YR >	11,761 CF
DRY STORAGE PROVIDED	14,897 CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	574.20 FT
TRAP BOTTOM ELEVATION	573.00 FT
TRAP BOTTOM DIMENSIONS	34 x 68 FT x FT
WIDE LENGTH	14 FT
WEIR CREST (DRY STORAGE) ELEVATION	577.50 FT
CLEANOUT ELEVATION	573.60 FT
TOP OF EMBANKMENT ELEVATION	578.00 FT
SIDE SLOPE	2:1 HW BATIO
EMBANKMENT TOP WIDTH	4 FT
OUTLET PROTECTION - LENGTH	10 FT
OUTLET PROTECTION - WIDTH	19 FT

REVISIONS (CONT)

4	REVISE HOUSE & GRADING LOT 33	8/20/18
5	REV LOT 34, SHOWING FINAL HOUSE SWM & GRADING	11/9/18
6	REV TO SHOW FINAL HSE, SWM, & GRADING FOR LOTS 35, 36, & 38	2/12/19
7	REV. SEPTIC LOT 37	4/29/19

*NOTE: THE SILT FENCE SHOWN WITH EACH PRIVATE SEPTIC FIELD IS TO BE INSTALLED WITH THE GP-18-35 FOR THE CONSTRUCTION OF THE HOUSE & SEPTIC SYSTEM FOR THAT SPECIFIC LOT.

NOTE: AT NO TIME CAN THERE BE ANY LAND DISTURBANCE IN EXCESS OF 20 ACRES.

AS-BUILT CERTIFICATION

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

02/20/20 Date
 CHARLES J. CARROLL SR. REG. NO. 13204 P.E.

HOUSE CONSTRUCTION NOTES:

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

FAIRLAND FARM - DRIVEWAY CULVERTS

LOT	SLOPE (%)	Q10 (cfs)	DW Pipe Size
2	2.67	0.52	Standard
3	2.50	1.11	Standard
4	2.00	0.27	Standard
5	2.00	0.85	Standard
6	4.00	0.27	Standard
7	T.O.V.C.	U.I.C. Dr.	No Pipe
8	T.O.V.C.	U.I.C. Dr.	No Pipe
9	T.O.V.C.	U.I.C. Dr.	No Pipe
10	T.O.V.C.	U.I.C. Dr.	No Pipe
11	0.36	0.27	Standard
12	4.00	1.52	Standard
13	At 1-10	Down Hill	No Pipe
14	At 1-11	Down Hill	No Pipe
15	1.74	1.25	Standard
16	N/A	U.I.C. Dr.	No Pipe
17	N/A	U.I.C. Dr.	No Pipe
18	N/A	U.I.C. Dr.	No Pipe
19	Sump	At DW	No Pipe
20	Sump	U.I.C. Dr.	No Pipe
21	Sump	U.I.C. Dr.	No Pipe
22	Sump	At DW	No Pipe
23	2.10	1.04	Standard
24	2.00	0.52	Standard
25	N/A	U.I.C. Dr.	No Pipe
26	N/A	U.I.C. Dr.	No Pipe
27	N/A	U.I.C. Dr.	No Pipe
28	N/A	U.I.C. Dr.	No Pipe
29	N/A	U.I.C. Dr.	No Pipe

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 ALDO M. VITUCCI, P.E.
 11/4/16 Date
 "Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17."

STREET TREE, GRADING & SEDIMENT CONTROL PLAN
FAIRLAND FARM
 PHASE TWO
 LOTS 19-44,
 BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'

A Rehabilitation of Non-Buildable Bulk Parcel 'G' & 'H' And A Revision To Buildable Preservation Parcel 'X', Recorded As "Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcel 'I' Thru 'C', Parcel 'Y' And Non-Buildable Bulk Parcel 'Q' And 'R'."

ZONED: RC-DEO
 TAX MAP NO.: B GRID NO.: 2, PAR.: 17
 TAX MAP NO.: B GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 7 OF 36

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062

DESIGN CERTIFICATION
 I Herby Certify That This Plan Has Been Designed In Accordance With Current Maryland Erosion Control Laws, Regulations And Standards, That It Represents A True And Accurate Representation Based On My Personal Knowledge Of The Site, And That It Complies With The Requirements Of The Howard Soil Conservation District.

Designer: *u/h/k*
 A. J. K. Associates, Inc.
 P.E. Registration No. 20749
 P.E. E.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/Developer's Signature: *Joseph Rutter* Date: 11/16/16
 Printed Name & Title: Joseph Rutter, Developer

Approved: This Plan is Approved For Soil Erosion And Sediment Control By The Howard Soil Conservation District.
 John E. Robertson, 11/30/16, District Engineer

Approved: Department Of Planning And Zoning
 Kristi Steadman, 3-16-17, Chief, Division of Land Development

Approved: Department Of Public Works
 O'Meara, 12/6/2016, Chief, Bureau Of Highways

REVISIONS

NO.	DESCRIPTION	DATE
1	EXPAND LIMIT OF DISTURBANCE	3/23/18
2	REV. HOUSE & GRADING ON LOT 24 PER PLOT PLAN	4/12/18
3	REV. GRADING & LOD ON PARCEL ON PARCEL A	5/18/18

CONTRACTOR NOTES:

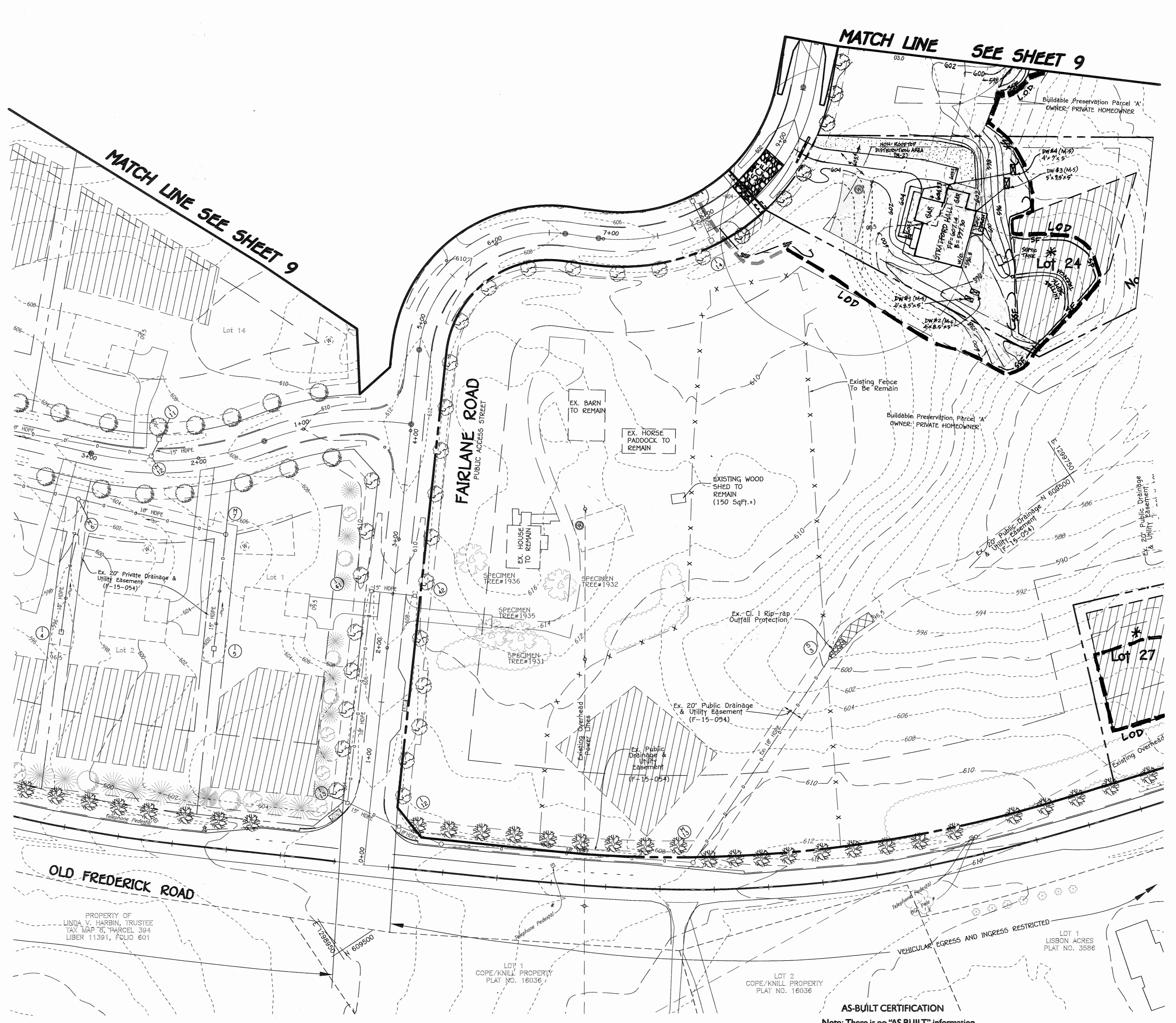
- CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.
- SHOULD THE STOCKPILE EXCEED 15 FT. IN HEIGHT IT MUST BE BENCHED.
- EARTH DIKES CROSSING THE ROADWAYS ARE TO BE CONNECTED TO MACADAM BERMS AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
- 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 21.

SEDIMENT CONTROL LEGEND

- S—S—S— SUPER-SILT FENCE
- S—S—S— SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- S.I.P. (A) STANDARD INLET PROTECTION INLET TYPE ('A' or 'B')
- L.O.D. LIMIT OF DISTURBANCE

STOCKPILE NOTE:
 SHOULD THE STOCKPILE EXCEED 15 FT. IN HEIGHT IT MUST BE BENCHED.



* NOTE: THE SILT FENCE SHOWN WITHIN EACH PRIVATE SEPTIC FIELD IS TO BE INSTALLED WITH THE AP-18-35 FOR THE CONSTRUCTION OF THE HOUSE & SEPTIC SYSTEM FOR THAT SPECIFIC LOT.

NOTE: AT NO TIME CAN THERE BE ANY LAND DISTURBANCE IN EXCESS OF 20 ACRES.

HOUSE CONSTRUCTION NOTES:

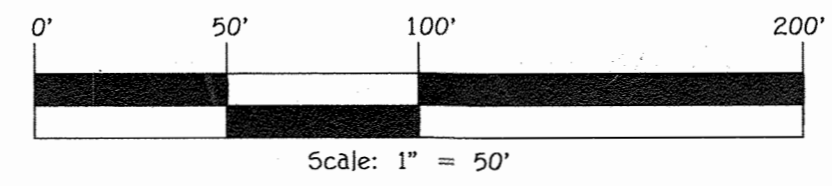
- THIS HOWARD (SCD) STANDARD SEDIMENT CONTROL PLAN MAY NOT BE USED TO OBTAIN PERMITS FOR HOUSE CONSTRUCTION FOR THIS PROJECT.
- HOUSES MAY NOT BE BUILT USING THIS DRAWING.

AS-BUILT CERTIFICATION
 Note: There is no "AS BUILT" information provided on this sheet.
 Signature: *Charles J. Cron*
 CHARLES J. CRON = SR. REG. IN-13804 Date: 02/12/18



ALDO M. VITUCCI, P.E.
 DATE: 11/16/16
 "Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17."

STREET TREE, GRADING & SEDIMENT CONTROL PLAN
FAIRLANE FARM
PHASE TWO
 LOTS 19-44,
 BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
 A Resubdivision of Non-Buildable Bulk Parcels 'C' & 'H' And A Revision To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'C', Parcel 'I' And Non-Buildable Bulk Parcels 'C' And 'H'"
 ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2; PARC: 6
 TAX MAP NO.: 8 GRID NO.: 3; PARC: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 8 OF 36



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2895

OWNER
 DAISYCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUVALL ROAD
 WOODBINE, MD 21797
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8318 FOREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21043
 (410)-922-4600

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062

DESIGN CERTIFICATION

I hereby certify that this plan has been designed in accordance with current Maryland Erosion Control Laws, Regulations and Standards, that it represents a true and accurate plan based on my personal knowledge of the site, and that it is designed in accordance with the requirements of the Howard Soil Conservation District.

11/14/16
 20749
 P.E., E.L.S., or R.L.A. (circle one)
W/IN/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."

11/16/16
 Joseph R. Vitucci, Developer
 Date
 Printed Name & Title

Approved: This Plan is Approved For Soil Erosion And Sediment Control By The Howard Soil Conservation District.
 John R. Robertson
 4/30/16
 Howard Soil Conservation District
 Date

Approved: Department Of Planning And Zoning
 3.16.17
 Chief, Division Of Land Development
 Date

Approved: Howard County Department Of Public Works
 12/6/2016
 Chief, Bureau Of Highways
 Date

REVISIONS

NO.	DESCRIPTION	DATE
1	EXPAND LIMIT OF DISTURBANCE	2/23/16
2	REV. HOUSE & GRADING ON LOTS 19, 20, & 22 PER PLOT PLAN	4/12/16
3	REV. HOUSE & GRADING LOT 23	5/16/18
4	REV. HOUSE & GRADING LOT 21, REV. SEPTIC LOT 19, 20, LOD LOT 19	1/9/18

SEDIMENT CONTROL LEGEND

— SF — SF — SF — SUPER-SILT FENCE
 — SF — SF — SF — SILT FENCE
 STABILIZED CONSTRUCTION ENTRANCE
 S.I.P. (A) STANDARD INLET PROTECTION INLET TYPE ('A' or 'B')
 L.O.D. LIMIT OF DISTURBANCE

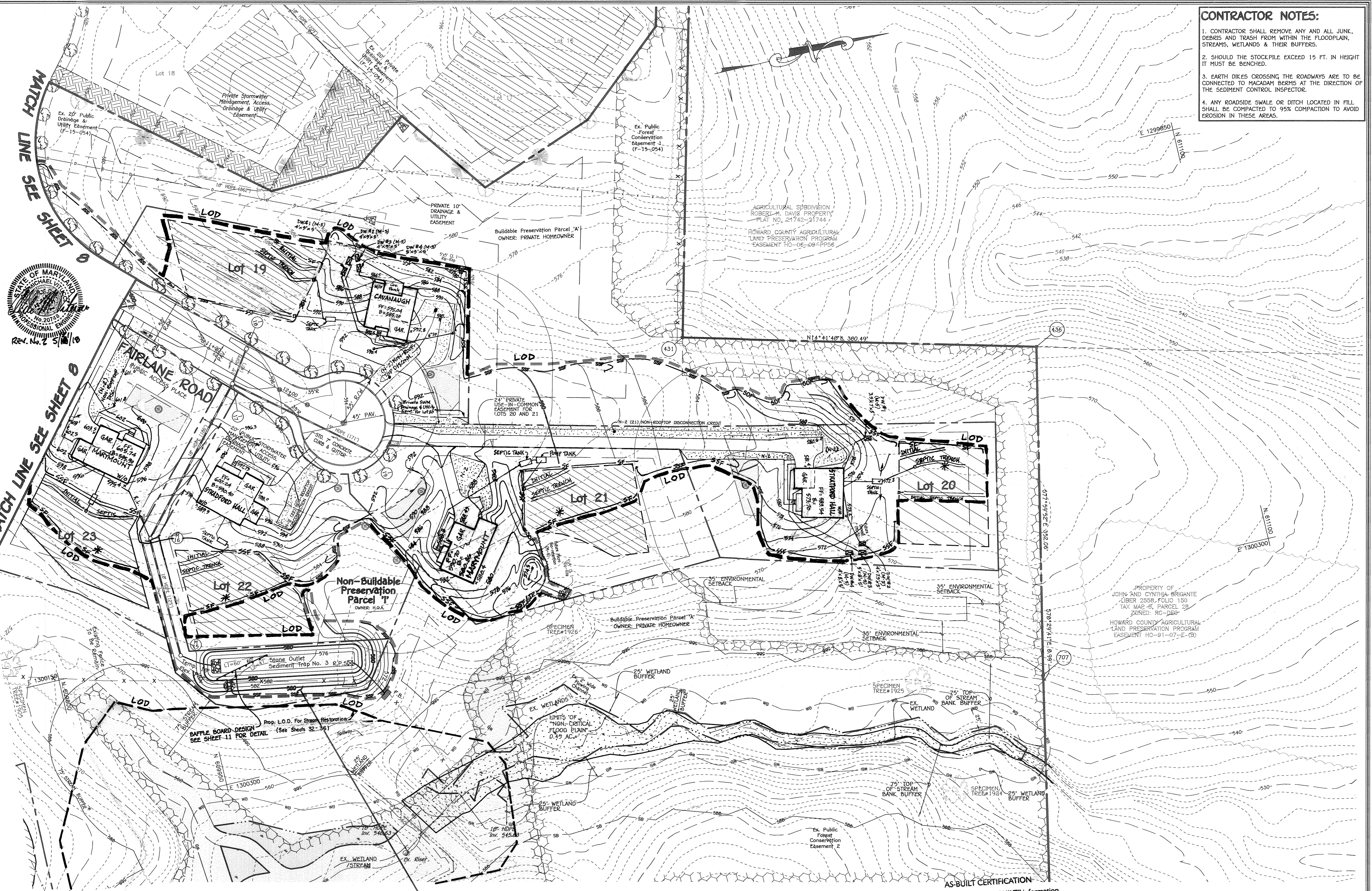
HOUSE CONSTRUCTION NOTES:

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

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 3

DRAINAGE AREA - INITIAL	1.25	ACRES
DRAINAGE AREA - INTERM		ACRES
DRAINAGE AREA - FINAL	2.42	ACRES
TOTAL STORAGE REQUIRED	6,712.00	CF
TOTAL STORAGE PROVIDED	14,000 @ 580.00	CF
WET STORAGE REQUIRED	4,356	CF
WET STORAGE PROVIDED	4,356	CF
DRY STORAGE REQUIRED	4,356	CF
DRY STORAGE PROVIDED	8,712	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	577.50	FT
TRAP BOTTOM ELEVATION	576.00	FT
TRAP BOTTOM DIMENSIONS	15' x 154"	FT x FT
WEIR LENGTH	10	FT
WEIR CREST (DRY STORAGE) ELEVATION	579.80	FT
CLEANOUT ELEVATION	576.90	FT
TOP OF EMBANKMENT ELEVATION	582.00	FT
SIDE SLOPE	2:1	HV RATIO
EMBANKMENT TOP WIDTH	4	FT
OUTLET PROTECTION - LENGTH	10	FT
OUTLET PROTECTION - DEPTH	19	IN

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SOURCE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2995

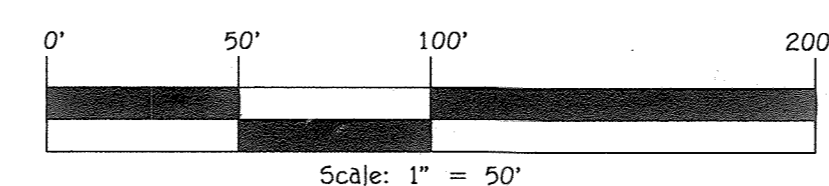


BAFFLE DESIGN
 TOP OF BAFFLES EL. 579.00
 $W = (A/2)^2 = (4.427/2)^2 = 4.7'$
 $L = req'd = W \times 2 = 9.4'$
 BAFFLE #1 L1 + L2 = 107'

NOTE: FOR B.M.P. No. 3 (F-1) AT S.O.S.T. No. 3 LOCATION, SEE SHEET 21 FOR PLAN & DETAILS

ROOFLEADER NOTE:
 A OVERFLOW OUTFALL (SURCHARGE) SHALL BE PROVIDED AT EACH DOWNSPOUT PRIOR TO CONNECTION TO THE UNDERGROUND ROOFLEADER. SEE DETAIL, SHEET 21.

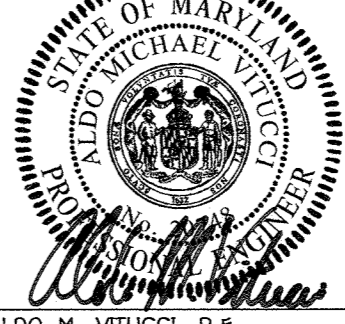
AS-BUILT CERTIFICATION
 Note: There is no "AS BUILT" information provided on this sheet.
 Charles S. Crovo Sr. 02/14/20
 Date



NOTE: AT NO TIME CAN THERE BE ANY LAND DISTURBANCE IN EXCESS OF 20 ACRES.

OWNER
 DAVISCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2210 DUNNALL ROAD
 WOODBINE, MD 21797
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8318 FOREST STREET
 SUITE 200
 ELICOTT CITY, MARYLAND 21043
 (410)-922-4600



ALDO M. VITUCCI, P.E.
 "Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17."

STREET TREE, GRADING & SEDIMENT CONTROL PLAN
FAIRLANE FARM
PHASE TWO
 LOTS 19-44,
 BUILDABLE PRESERVATION PARCELS 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'T' THRU 'N'
 A Resubdivision of Non-Buildable Bulk Parcels 'C' & 'N' and a Revision To Buildable Preservation Parcel 'A', Seconded As 'Fairlane Farm Phase One Lots 1 thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E', Parcel 'F' And Non-Buildable Bulk Parcels 'I' And 'J'
 ZONED: RC-DEO
 TAX MAP NO.: B GRID NO.: 2, PAR.: 8
 TAX MAP NO.: B GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 9 OF 36

CONTRACTOR NOTES:

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

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062

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

- A. Soil Preparation**
- Temporary stabilization
 - Seeded 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 ripper 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.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
 - Permanent stabilization
 - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Soluble salts less than 500 parts per million (ppm).
 - Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lowgrass will be planted, then a sandy soil (less than 30 percent plus clay) would be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments to topsoil is required if on-site soils do not meet the above conditions.
 - 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.
 - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
 - Mix soil amendments in the top 3 to 5 inches of soil by disking or other suitable means. Make 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 implement to roughen the surface where site conditions will not permit normal seeded 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. Seeding loosening may be unnecessary on newly disturbed areas.

B. Topsoiling

- 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 material toxic to plants, and/or unacceptible soil condition.
- Topsoil salvaged from an existing site may be used provided it meets the standards 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.
- Topsoiling is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
- Areas having slopes steeper than 2:1 require special consideration and design.
- Topsoil Specifications: Soil to be used must meet the following criteria:
 - Topsoil must be a loam, sandy loam, clay loam, silty 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 authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, rocks, gravel fragments, glass, sticks, rocks, trash, or other materials larger than 1/2 inches in diameter.
 - 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.
 - 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.

- C. Soil Amendments (Fertilizer and Lime Specifications)**
- Soil tests must be performed to determine the exact rates 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 fertilizing purposes may also be used for chemical analysis.
 - 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.
 - 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 #200 mesh sieve.
 - 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.
 - 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**
- Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardness 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.
 - For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
 - When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3A.1.b and maintain until the next seeding season.

Temporary Seeding Summary

Hardness Zone (from Figure B.3)	Seeding Application Rate (lb/acre)	Seeding Dates	Seeding Depth (in.)	Fertilizer Rate (10-20-20) (10-20-20)	Lime Rate (2 tons/acre (90 lb/1000 sf))	
B	TALL FESCUE	100 lb/acre Mar. 1-May 15 Aug. 1-Oct. 15	1/4-1/2 in.	45 lb/acre (2 lb/1000 sf)	90 lb/acre (90 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)

Permanent Seeding Summary

Hardness Zone (from Figure B.3)	Seeding Application Rate (lb/acre)	Seeding Dates	Seeding Depth (in.)	N	P ₂ O ₅	K ₂ O	Lime Rate (2 tons/acre (90 lb/1000 sf))
B	TALL FESCUE	100 lb/acre Mar. 1-May 15 Aug. 1-Oct. 15	1/4-1/2 in.	45 lb/acre (2 lb/1000 sf)	90 lb/acre (90 lb/1000 sf)	90 lb/acre (90 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)

Standard Stabilization Note

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

- 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
- 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-4-2)

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

- The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
- The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
- Runoff from the stockpile area must drain to a suitable sediment control practice.
- Access the stockpile area from the upgrade side.
- 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.
- Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
- 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.
- 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.

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.

PERMANENT SEEDING NOTES (B-4-5)

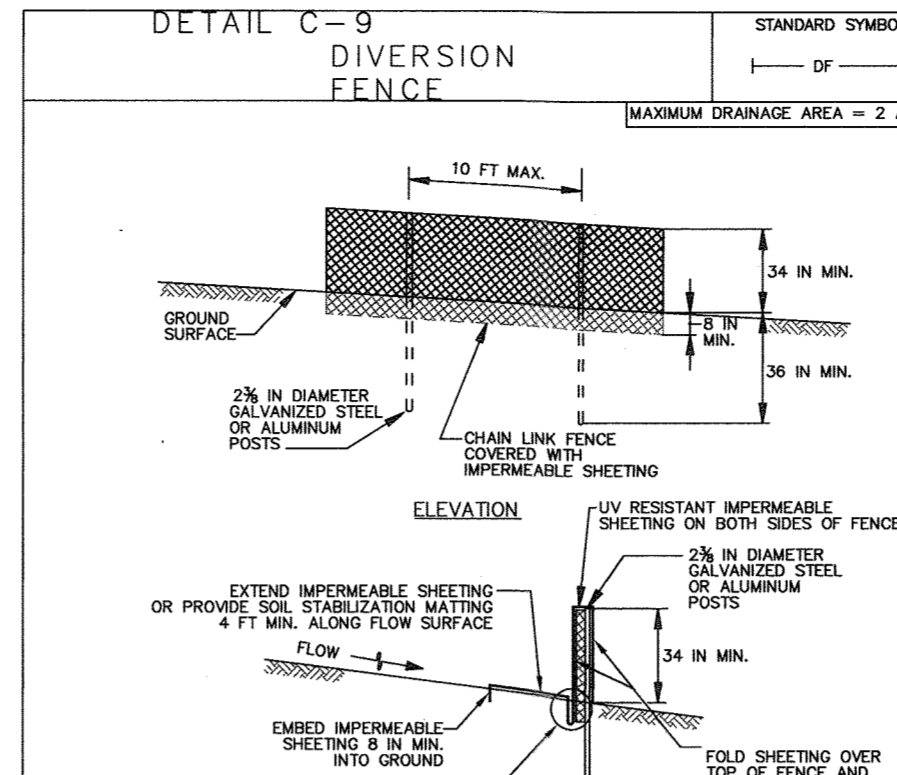
- A. Seed Mixtures**
- General Use
 - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixtures), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - 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 Planning.
 - For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency. 4. 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.
 - Turfgrass Mixtures
 - Areas where turfgrasses may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.

- 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**
- Seeding
 - Specifications
 - 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.
 - 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.
 - Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until use. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and reduce the inoculant's effectiveness.
 - Soil 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 phytotoxic materials.
 - Application
 - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Incorporate seed into the subsoil at the rates presented on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
 - 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.
 - Drill or Outdragger Seeding: Mechanized seeders that apply and cover seed with soil.
 - Cultipositing seeders are required to provide the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
 - Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
 - If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P O (phosphorus), 200 pounds per acre; K O (potassium), 200 pounds per acre.
 - 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.
 - Mix seed and fertilizer on site and seed immediately and without interruption.
 - When hydroseeding do not incorporate seed into the soil.
 - Mulching
 - Mulch (in order of preference)
 - Stow 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, colored, decayed, or excessively dirty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
 - Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into uniform fibrous physical state.
 - WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spreading factors.
 - WCFM, including dye, must contain no germination or growth inhibiting factors.
 - WCFM material to be manufactured and processed in such a manner that the wood cellulose fiber 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 lattice-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.
 - WCFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
 - 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.
 - Application
 - Apply mulch to all seeded areas immediately after seeding.
 - 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.
 - 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 obtain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Anchoring
 - 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:
 - 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.
 - Synthetic binders such as Acrylic UR (Aqua-Lock), DCA-70, Petroseal, Terra Tex II, Terra Tack AR or other approved equal may be used. Follow application of mulch 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.
 - 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.

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**
- Seeding
 - Specifications
 - 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.
 - 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.
 - Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until use. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and reduce the inoculant's effectiveness.
 - Soil 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 phytotoxic materials.
 - Application
 - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Incorporate seed into the subsoil at the rates presented on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
 - 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.
 - Drill or Outdragger Seeding: Mechanized seeders that apply and cover seed with soil.
 - Cultipositing seeders are required to provide the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
 - Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
 - If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P O (phosphorus), 200 pounds per acre; K O (potassium), 200 pounds per acre.
 - 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.
 - Mix seed and fertilizer on site and seed immediately and without interruption.
 - When hydroseeding do not incorporate seed into the soil.
 - Mulching
 - Mulch (in order of preference)
 - Stow 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, colored, decayed, or excessively dirty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
 - Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into uniform fibrous physical state.
 - WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spreading factors.
 - WCFM, including dye, must contain no germination or growth inhibiting factors.
 - WCFM material to be manufactured and processed in such a manner that the wood cellulose fiber 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 lattice-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.
 - WCFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
 - 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.
 - Application
 - Apply mulch to all seeded areas immediately after seeding.
 - 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.
 - 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 obtain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Anchoring
 - 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:
 - 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.
 - Synthetic binders such as Acrylic UR (Aqua-Lock), DCA-70, Petroseal, Terra Tex II, Terra Tack AR or other approved equal may be used. Follow application of mulch 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.
 - 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.

DETAIL C-9 DIVERSION FENCE

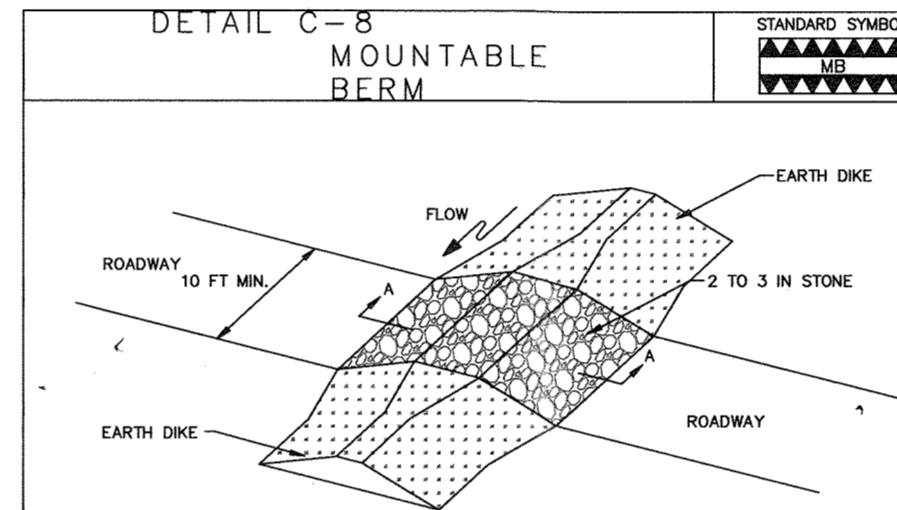


- CONSTRUCTION SPECIFICATIONS**
- USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2% NICH MAXIMUM OPENING).
 - USE 2% NICH DIAMETER GALVANIZED STEEL POSTS OF 0.900 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACING NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
 - FASTEN CHAIN LINK FENCING TO THE FENCE POSTS WITH WIRE TIES.
 - SECURE TO MIN OR THICKER U.V. RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
 - EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED ONE A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
 - WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWN/DRAINAGE.
 - KEEP FLOW SURFACE ALONG DIVERSION FENCE POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL C-8 MOUNTABLE BERM



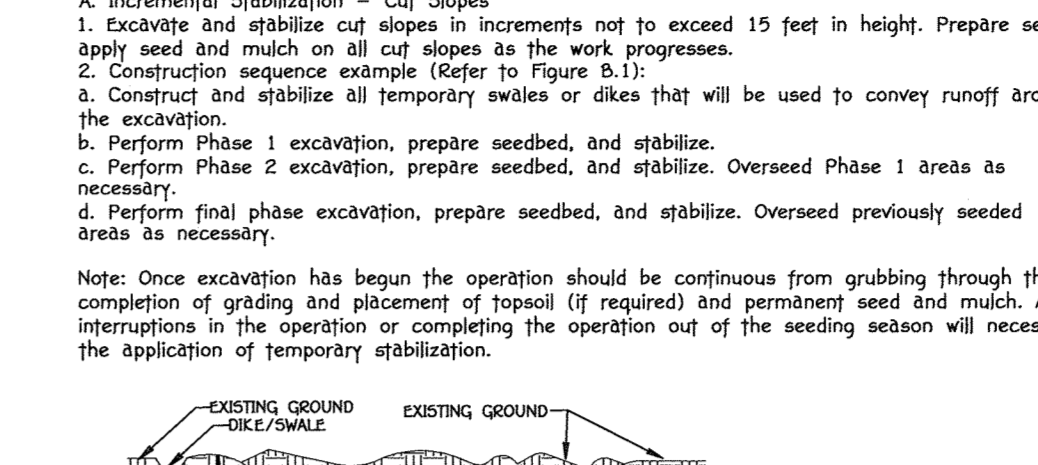
- CONSTRUCTION SPECIFICATIONS**
- USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
 - PLACE NONWEAVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.
 - PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

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.



- CONSTRUCTION SPECIFICATIONS**
- Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seeded and apply seed and mulch on all cut slopes as the work progresses.
 - Perform Phase 1 excavation, prepare seeded, and stabilize.
 - Perform Phase 2 excavation, prepare seeded, and stabilize. Overseed Phase 1 areas as the excavation progresses.
 - Perform final phase excavation, prepare seeded, and stabilize. Overseed previously seeded areas as necessary.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

SEQUENCE OF CONSTRUCTION

- OBTAIN A GRADING PERMIT. (2 WEEKS)
- NOTIFY "HES UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-227-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION INSPECTION DIVISION AT 410-331-1530 AT LEAST 24 HOURS BEFORE STARTING WORK.
- INSTALL THE STABILIZED CONSTRUCTION ENTRANCES. INSTALL ALL TREE PROTECTION FENCE FOR TREES TO BE UNDISTURBED AS INDICATED ON THE PLANS. (1 WEEK)
- INSTALL PERIMETER SILT FENCE AS SHOWN ON THE PLANS. INSTALL THE SEDIMENT TRAPS #4, #5 & #6 AND SPDS DEVICES ALONG WITH THE FILTER BAGS, HOGS AND ASSOCIATED EARTH DIKES TO DRAIN INTO THE PLANS. (4 WEEKS)
- NOTE THAT NO DISTURBANCE IS ALLOWED UNTIL ALL SEDIMENT TRAP PATTERNS FOR THE PERIMETER SLOPES ARE ON SITE AND TRAFFIC FROM THE INSPECTOR IS GRANTED IN WRITING TO PROCEED.
- UPON COMPLETION OF THE SEDIMENT TRAP CONSTRUCTION FOR TRAPS #4, #5 & #6, REMOVE PROVISION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING.
- CLEAR AND GRUB FOR THE INSTALLATION OF THE REMAINING PERIMETER SEDIMENT CONTROL MEASURES. INSTALL TREE PROTECTION FENCE, SILT FENCE, STORM DRAIN TO SUPPORT CLEANWATER DIMENSIONS AND EARTH DIKES AS SHOWN ON THESE PLANS. (3 WEEKS)
- SEAL THE 4 EXISTING STRUCTURES EXISTING BUILDINGS AND DRIVEWAYS AS SHOWN ON PLAN. CLEAR AND GRUB FOR THE REMAINDER OF THE SITE. (3 WEEKS)
- NOTE THE CONTRACTOR SHALL COORDINATE WITH THE INSPECTOR IN REGARDS TO THE REQUIREMENT THAT NO MORE THAN 20-ACRES OF "SOFT" GROUND SHALL BE DISTURBED AT ANY GIVEN TIME. PHASE I TO INCLUDE PUBLIC ROAD GRADING AND PHASE II IS FUTURE PRIVATE DRIVEWAY AND LOTS 25 THRU 30.
- CONSTRUCT ROAD BASE COURSE FOR SUBURBAN ROADS. (4 WEEKS)
- WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES AND TRAPS #1 THRU #4 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. CONSTRUCT FINAL SWF FACILITIES. STABILIZE ALL AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. FINALIZE ALL STORM DRAIN OUTFALL CONSTRUCTION TO COORDINATE WITH SEDIMENT TRAP REMOVAL. (4 WEEKS)
- NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR FINAL INSPECTION OF THE COMPLETED PROJECT. (1 WEEK)

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT NATURAL RESOURCES CONSERVATION SERVICE 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 And That It Was Prepared In Accordance With The Recommendations Of The Howard Soil Conservation District.

Designer's Signature: *Alvo M. Vitucci* Date: 1/14/16

Printed Name: Alvo M. Vitucci Date: 2/7/14

MD Registration No. 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/Developer's Signature: *Joseph R. Rutter* Date: 1/15/16

Printed Name: Joseph R. Rutter Date: 1/15/16

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

Signature: *John R. Robertson* Date: 1/13/16

Howard Soil Conservation District

Approved: Department Of Planning And Zoning

Signature: *Kent DeLoach* Date: 3-16-17

Chief, Division Of Land Development

Approved: Chief, Development Engineering Division

Signature: *[Signature]* Date: 1/14/16

Approved: Howard County Department Of Public Works

Signature: *[Signature]* Date: 12/6/2016

Chief, Bureau Of Highways

REVISIONS

NO.	DESCRIPTION	DATE
1	EXPAND L.O.D. TO INCLUDE PART OF SEPTIC AREAS	3/23/18

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

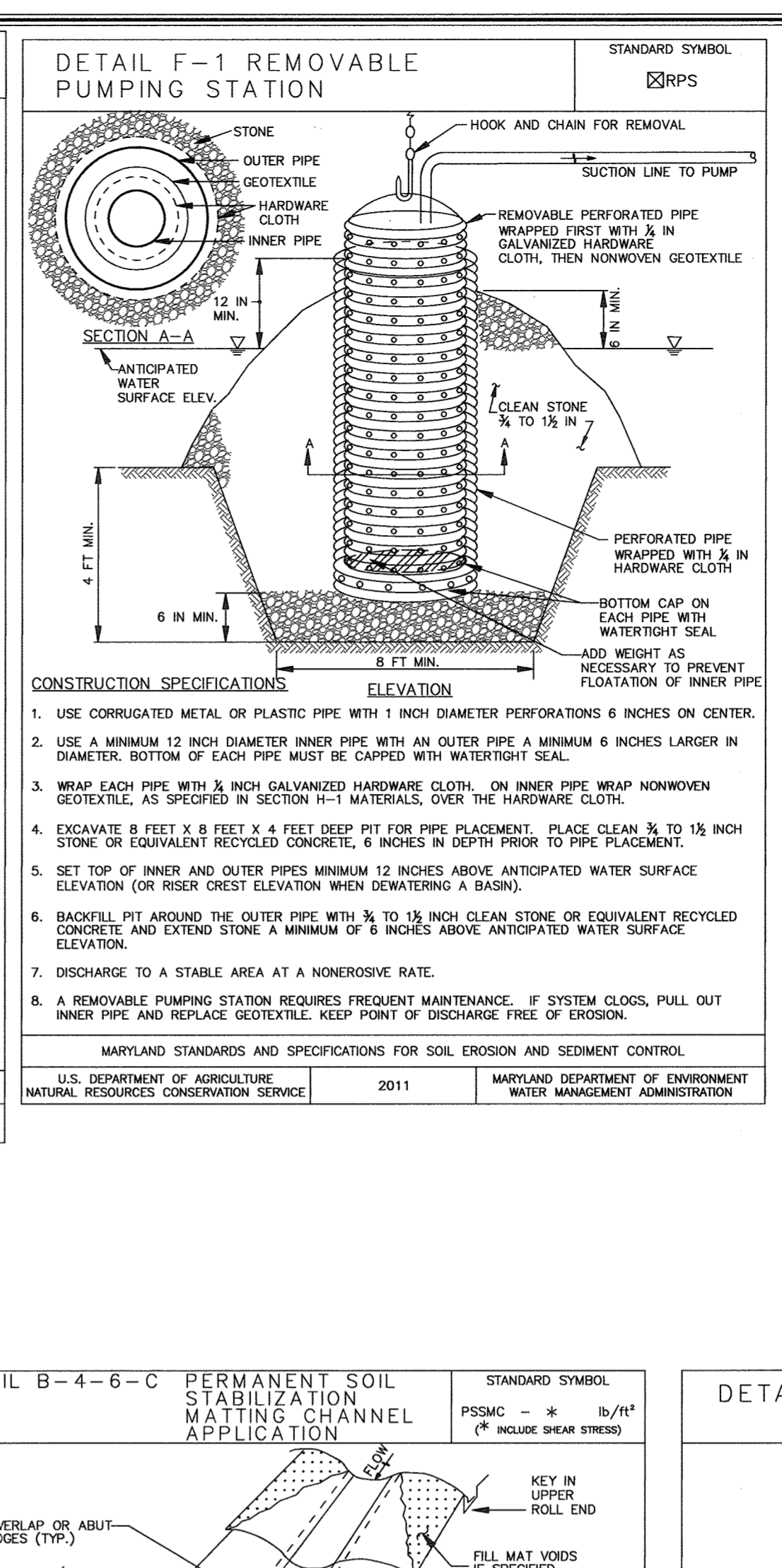
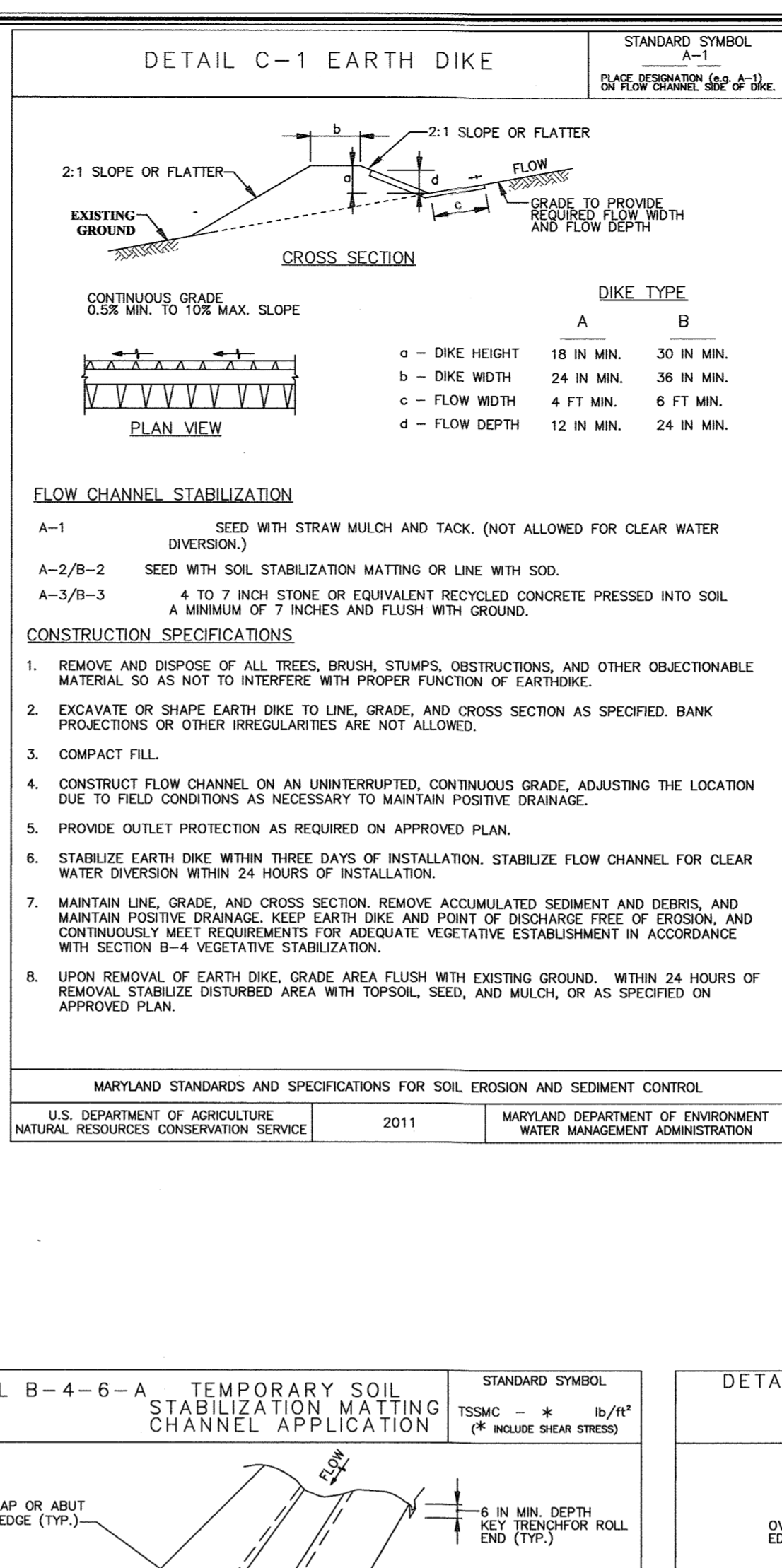
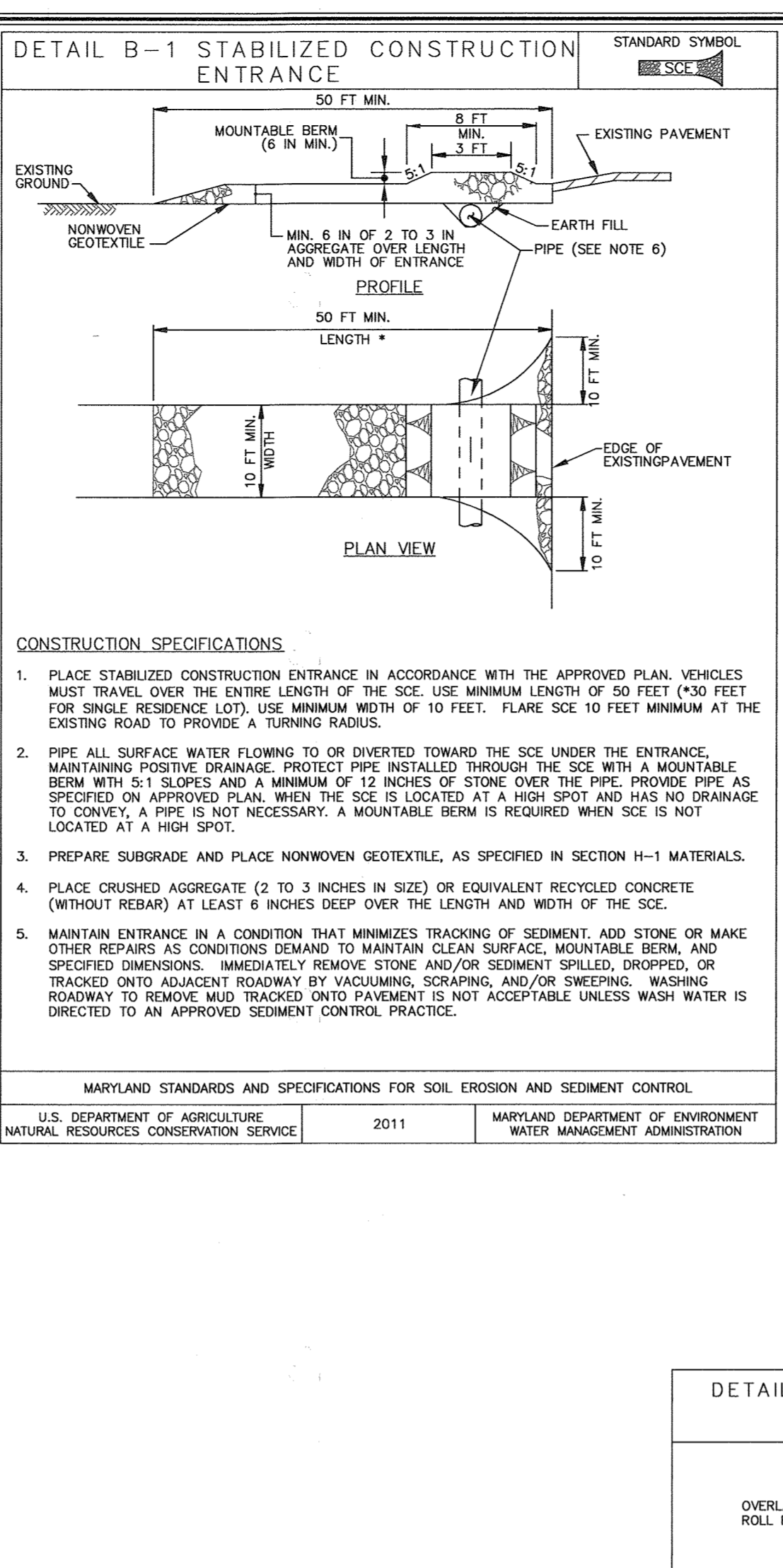
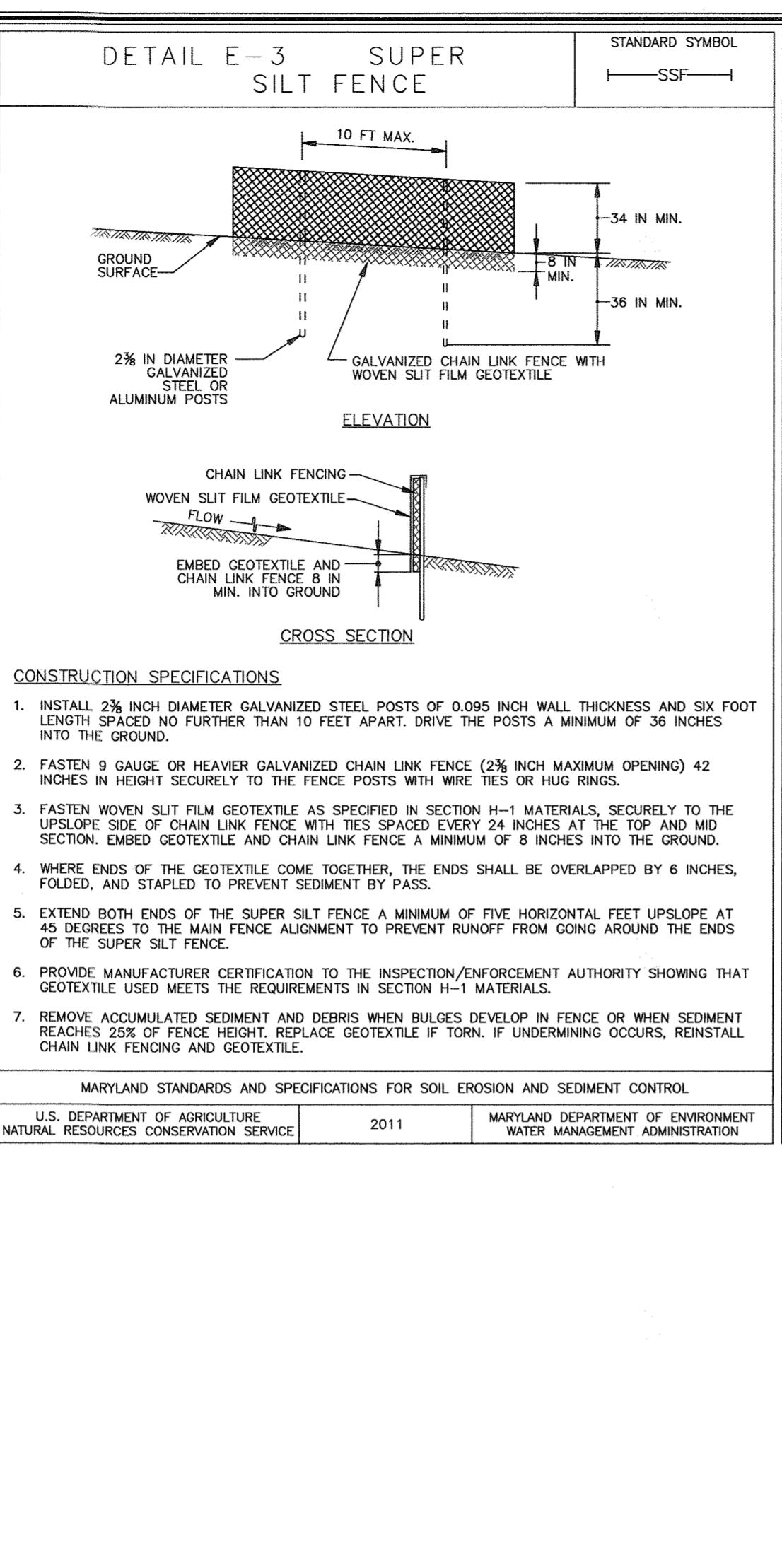
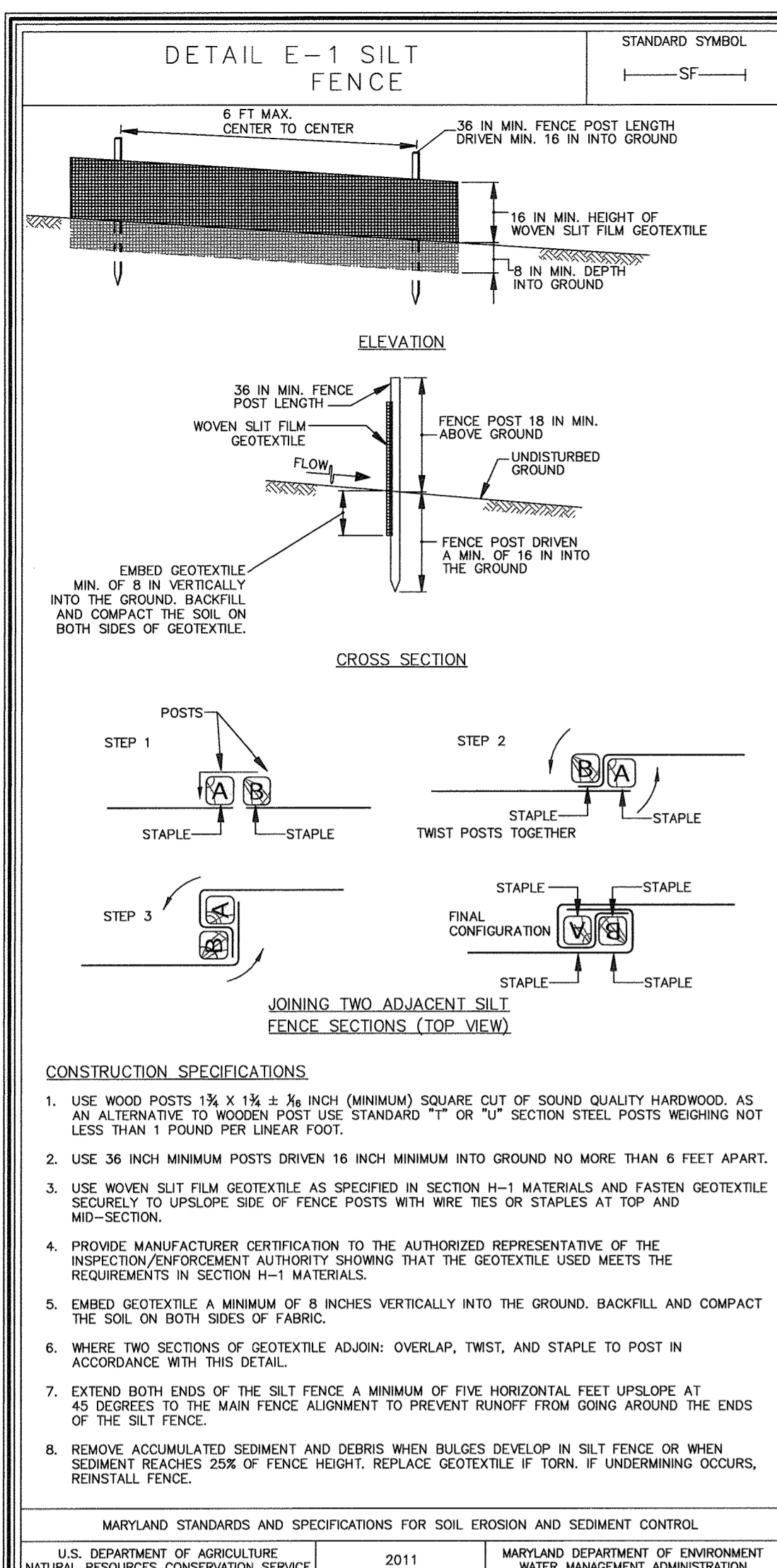
- A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-331-1509 after the future LDD and protected areas are marked clearly in the field. A minimum of 48 hours notice to CID must be given at the following stages: a. Prior to the start of earth disturbance. b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. c. Prior to the start of another phase of construction or opening of another grading unit, d. Prior to the removal or modification of sediment control practices. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced to ensure coordination and to avoid conflicts with this plan.
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereof.
- 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.
- All disturbed areas must be stabilized within the time period specified above and in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereof (Sec. B-4-2), permanent seeding (Sec. B-4-3), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-5). Temporary stabilization with mulch shall 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-4-2) in excess of 20 ft. must be benched with stable outer fill. All concentrated flows, such as in valleys and on crests of banks, shall receive soil stabilization matting (Sec. B-4-3).
- All sediment control structures are to be remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.
- Site Analysis:
 - Total Area of Site: 138.61 Acres
 - Area Disturbed: 29.43 Acres
 - Area to be roofed or paved: 24.4 Acres
 - Area to be vegetatively stabilized: 84.75 Acres
 - Total cut: 12,530 Cu. Yds.
 - Total fill: 38,014 Cu. Yds.
 - Off-site water/borrow area location: _____

NOTE: AT NO TIME CAN THERE BE ANY LAND DISTURBANCE IN EXCESS OF 20 ACRES.

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

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 time (rough, 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 sediment control devices with (if applicable) current status
- Evidence of sediment discharges
- Identification of missing or damaged sediment control devices
- Identification of sediment controls that require maintenance
- Identification of missing or damaged sediment control devices
- Compliance status regarding the sequence of construction and stabilization requirements
- Photographs
- Nonstorm/stranding
- Other corrective action performed</



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: *Alpo M. Vitucci* Date: 11/14/16
Printed Name: **Alpo M. Vitucci** ID Registration No. 20749
P.E., E.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/Developer's Signature: *Joseph R. Kottler* Date: 11/15/16
Printed Name & Title: **Joseph R. Kottler, Developer**

Approved: This Plan is Approved For Soil Erosion And Sediment Control By The Howard Soil Conservation District.
John R. Kottler Date: 11/30/16
Howard Soil Conservation District
Approved: Department Of Planning And Zoning
Vetzel Date: 3/16/17
Chief, Division Of Land Development
Approved: Howard County Department Of Public Works
Date: 12/14/16
Chief, Development Engineering Division
Approved: Howard County Department Of Public Works
Date: 12/6/2016
Chief, Bureau Of Highways

NO.	DESCRIPTION	DATE

CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 1/2 X 1 1/2 X 3/8 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.
- USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SILT 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.
- 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.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- 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.
- 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

CONSTRUCTION SPECIFICATIONS

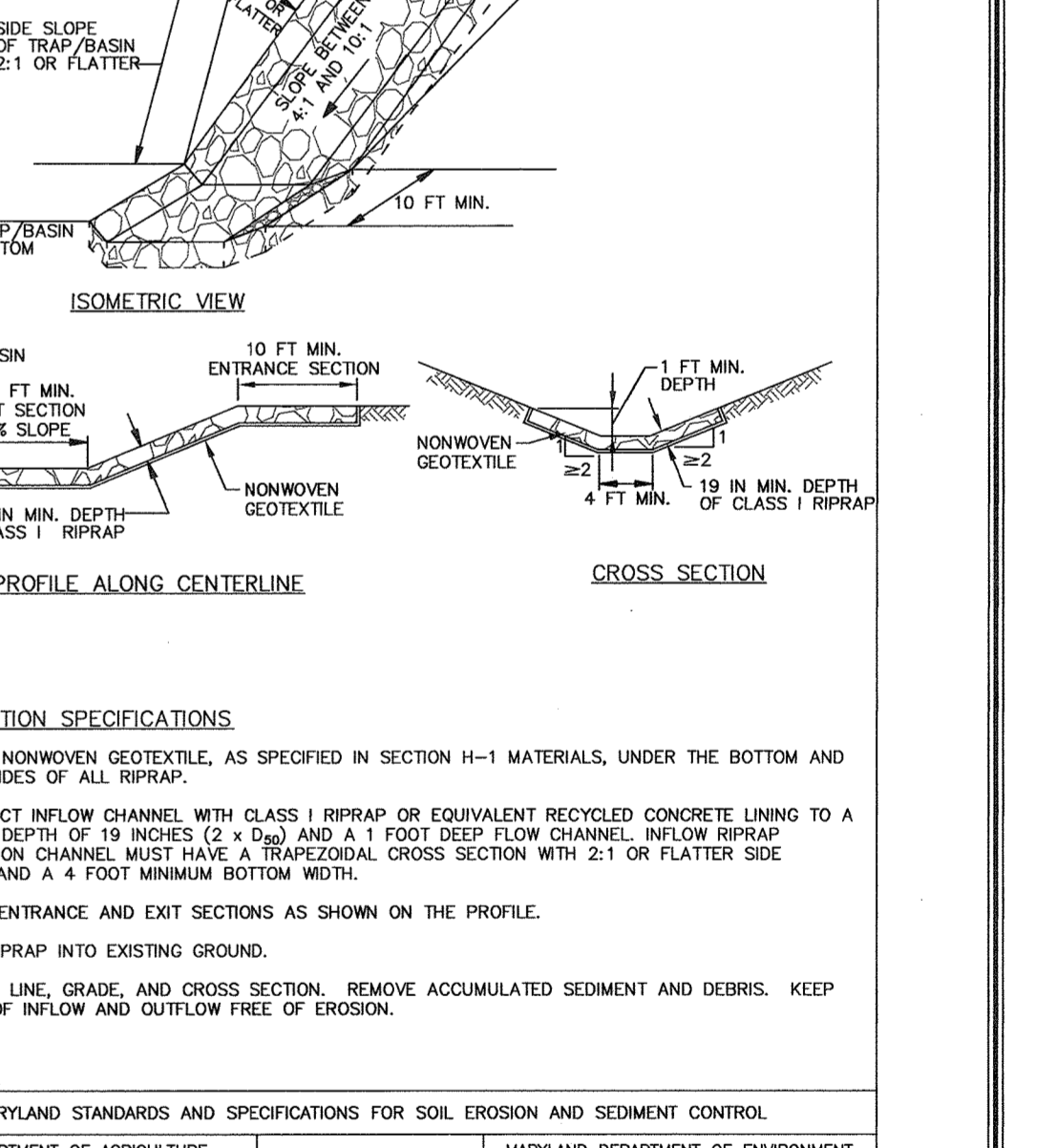
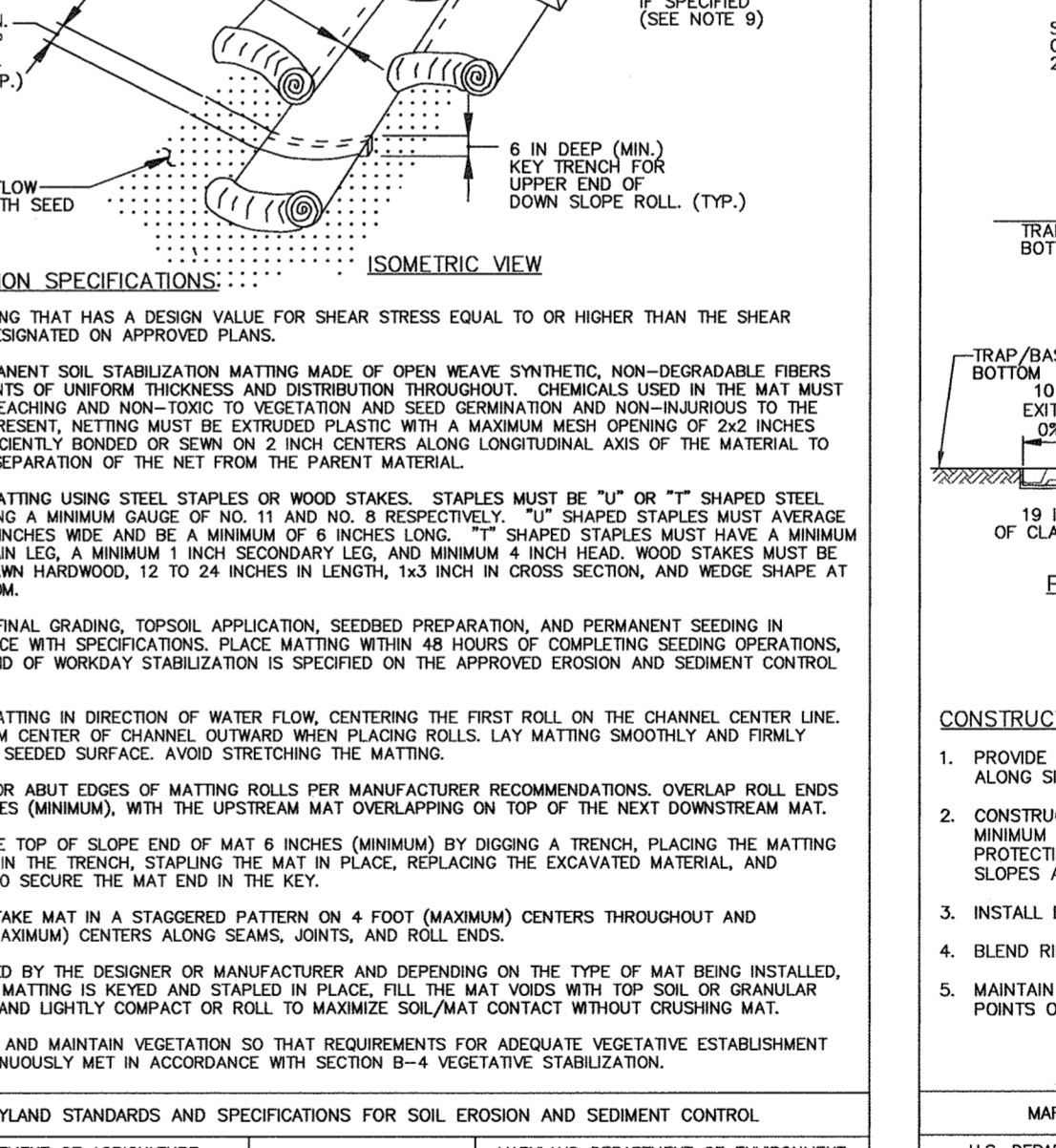
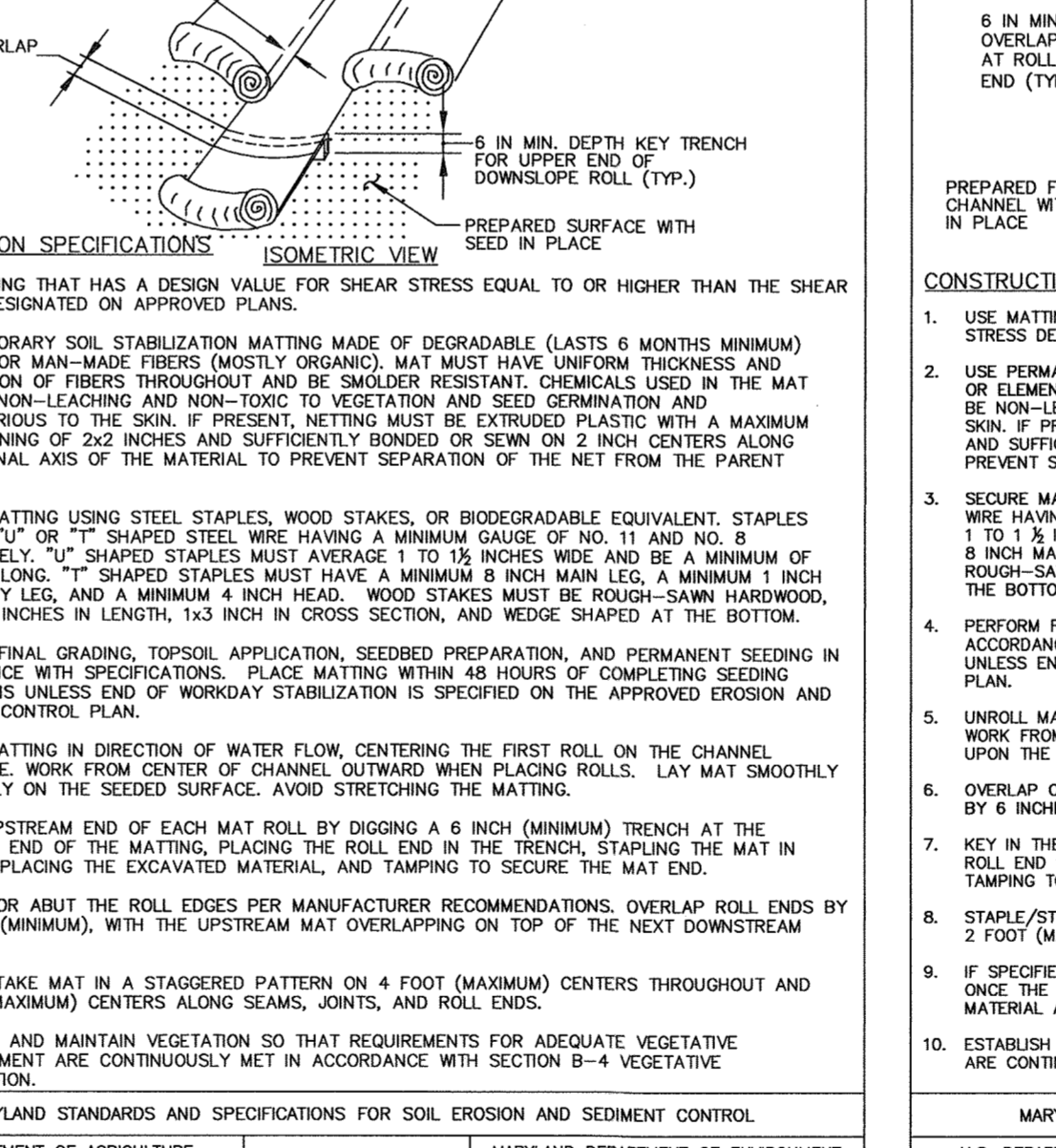
- INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 1/2 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SILT 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.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- 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.
- 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.
- 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

CONSTRUCTION SPECIFICATIONS

- 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.
- 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.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- 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.
- 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



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PARK
GAITHERSBURG, MARYLAND 20878
(410) 461-2895

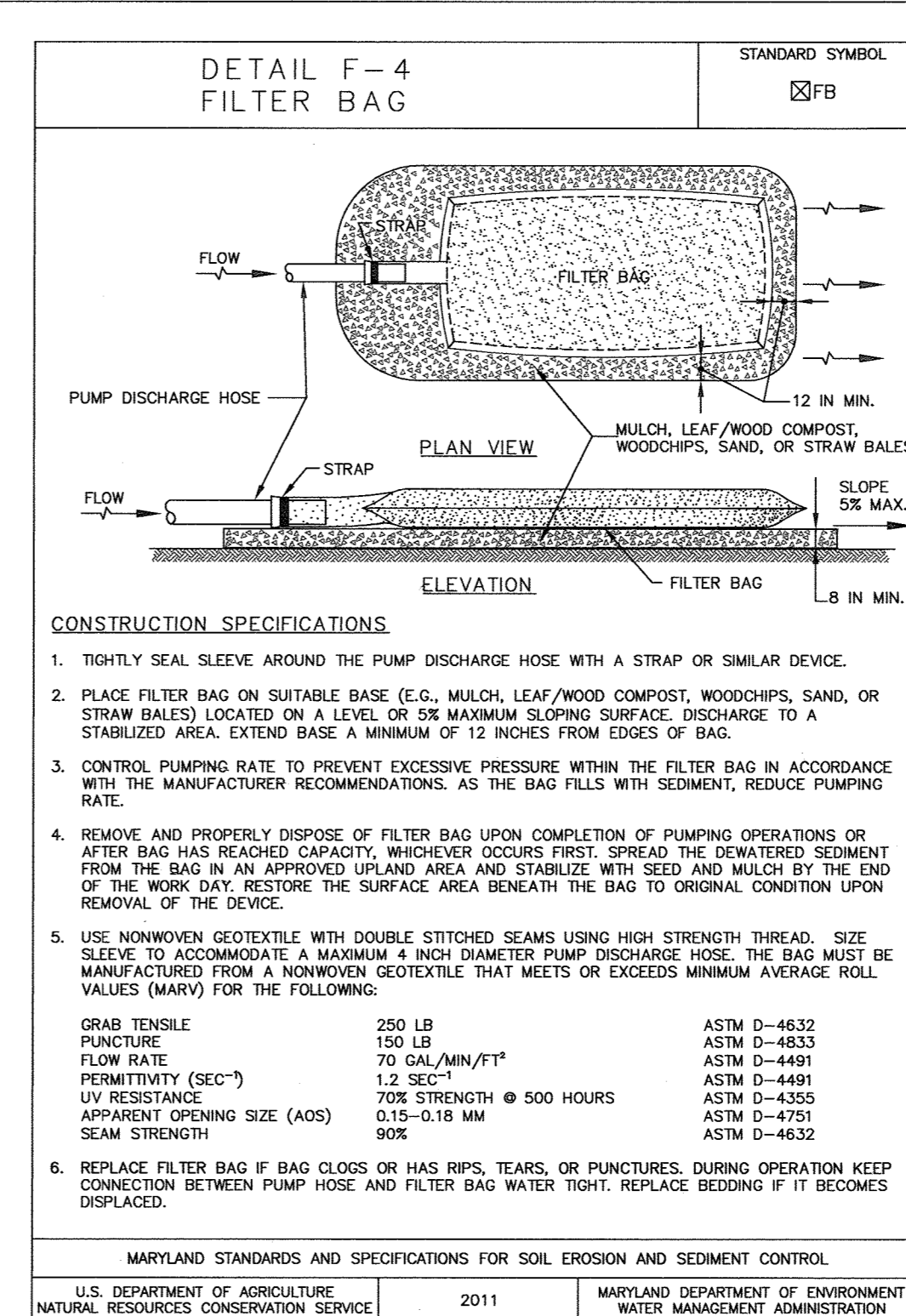
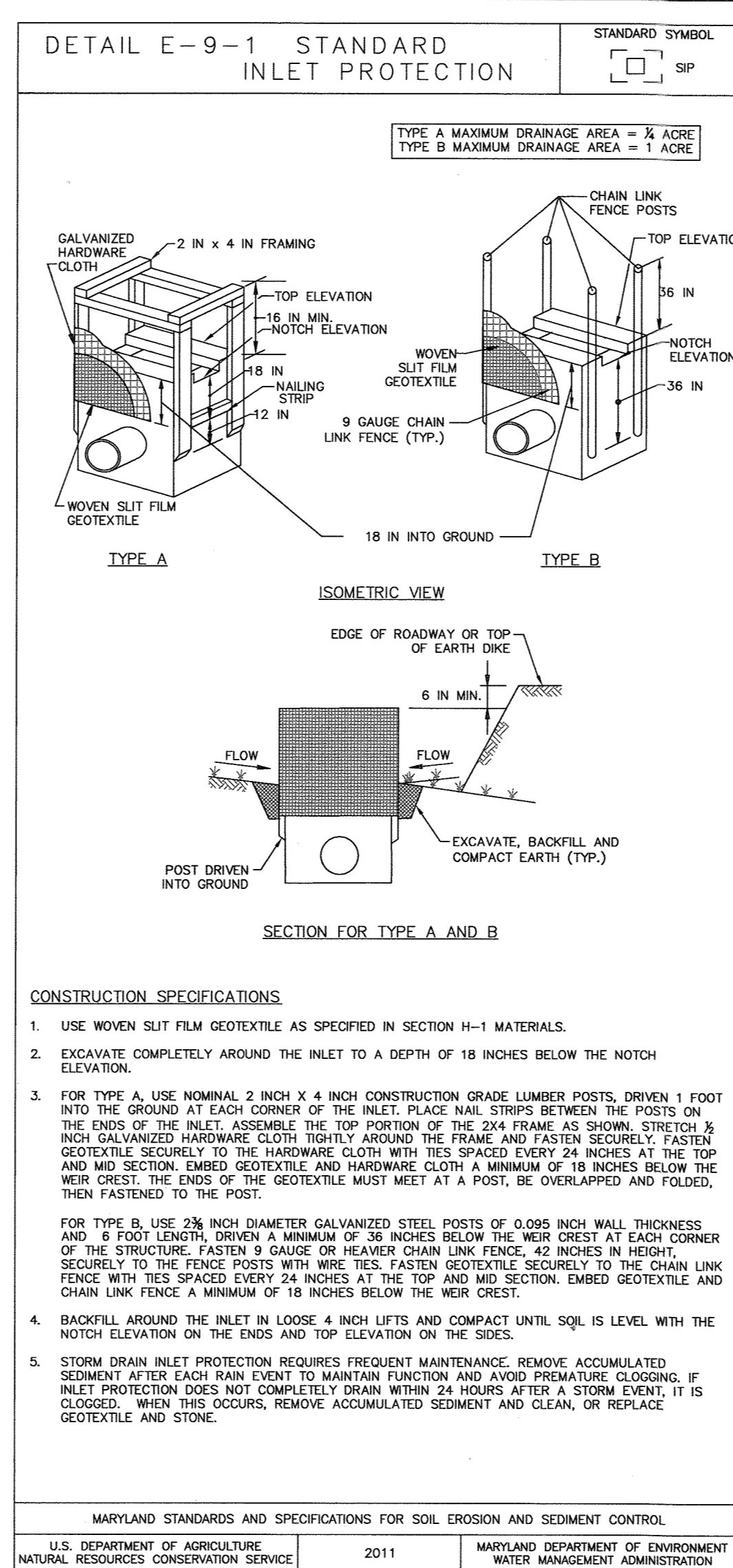
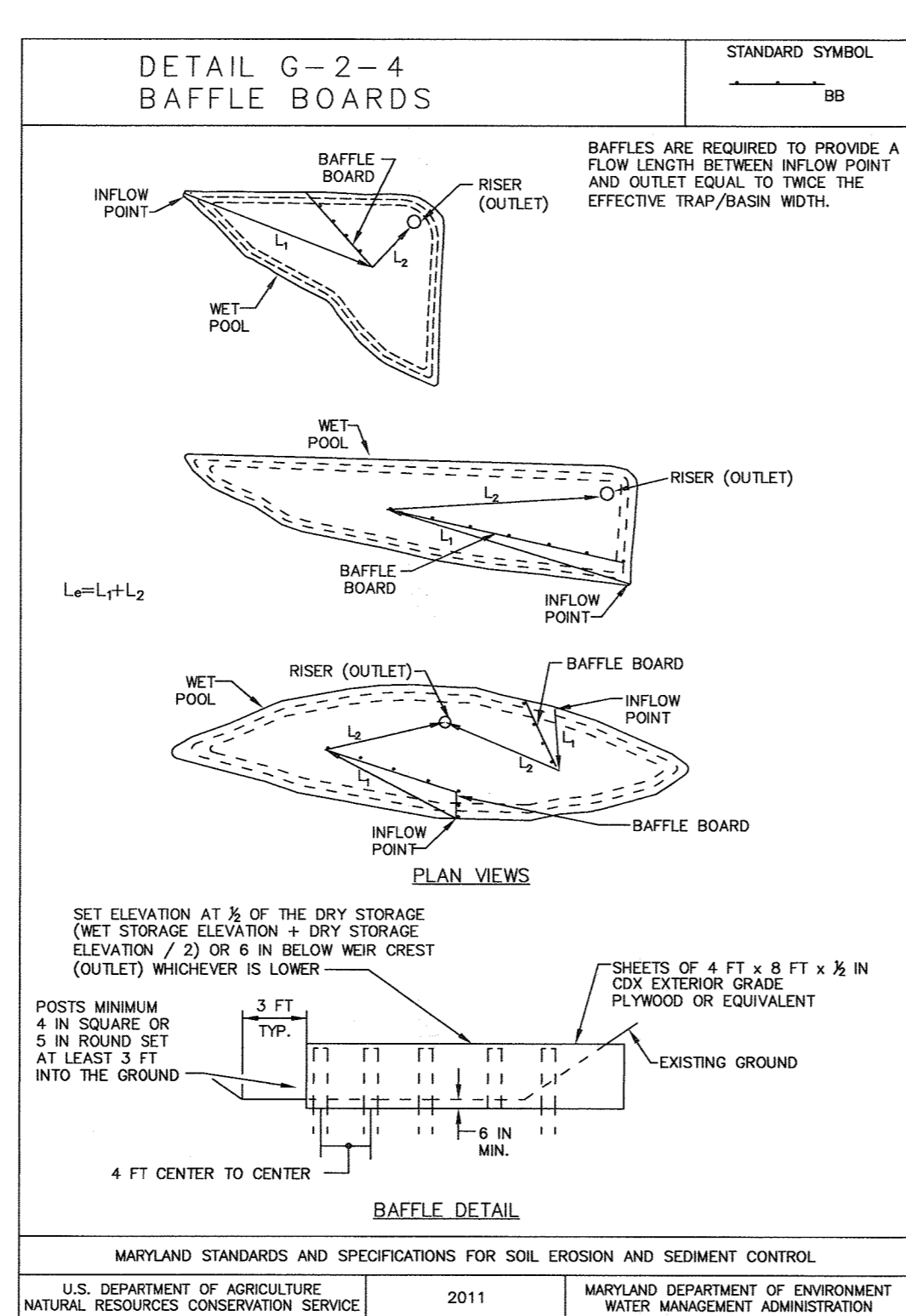
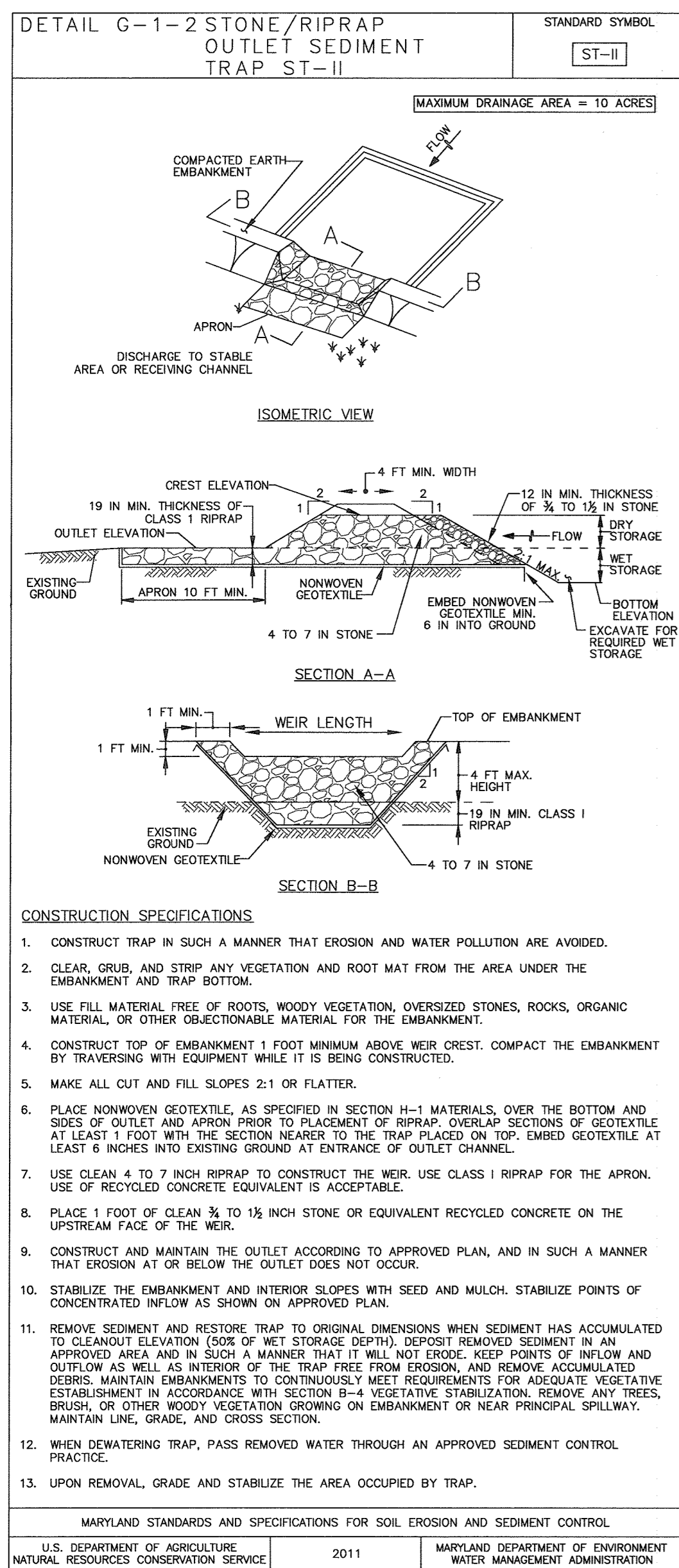
OWNER
DAISYCOOP, LLC
c/o ESTATE OF FRANCES JEAN SCHULTE
DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
2215 DUNALL ROAD
WOODBINE, MD 21797
410-977-1327

DEVELOPER
LAND DESIGN & DEVELOPMENT
8310 FOREST STREET
SUITE 200
ELLCOTT CITY, MARYLAND 21043
(410)-922-4600

AS-BUILT CERTIFICATION
Note: There is no "AS BUILT" information provided on this sheet.
Date: 02/20/20
Signature: *Alpo M. Vitucci*
Professional Engineer License No. 20749, P.E. # 13204

AS-BUILT CERTIFICATION
Note: There is no "AS BUILT" information provided on this sheet.
Date: 02/20/20
Signature: *Alpo M. Vitucci*
Professional Engineer License No. 20749, P.E. # 13204

SEDIMENT AND EROSION CONTROL NOTES & DETAILS
FAIRLANE FARM PHASE TWO
LOTS 19-44, BUILDABLE PRESERVATION PARCELS 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
A Remedial/Non-Buildable Bulk Parcel "C" & "H" and a Revision to Buildable Preservation Parcel "A", Recorded as "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel "A", Non-Buildable Preservation Parcels "I" Thru "C", Parcel "D" and Non-Buildable Bulk Parcel "E", "G" and "N".
ZONED: RC-DEO
TAX MAP NO.: 0 GRID NO.: 2, PAR: 0
TAX MAP NO.: 0 GRID NO.: 3, PAR: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: NOVEMBER 11, 2016
SHEET 11 OF 36



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: *Alvin M. Vitucci* 11/4/16
Printed Name: **Alvin 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/Developer Signature: *John K. Schultz* 11/15/16
Printed Name & Title: **John K. Schultz** Date

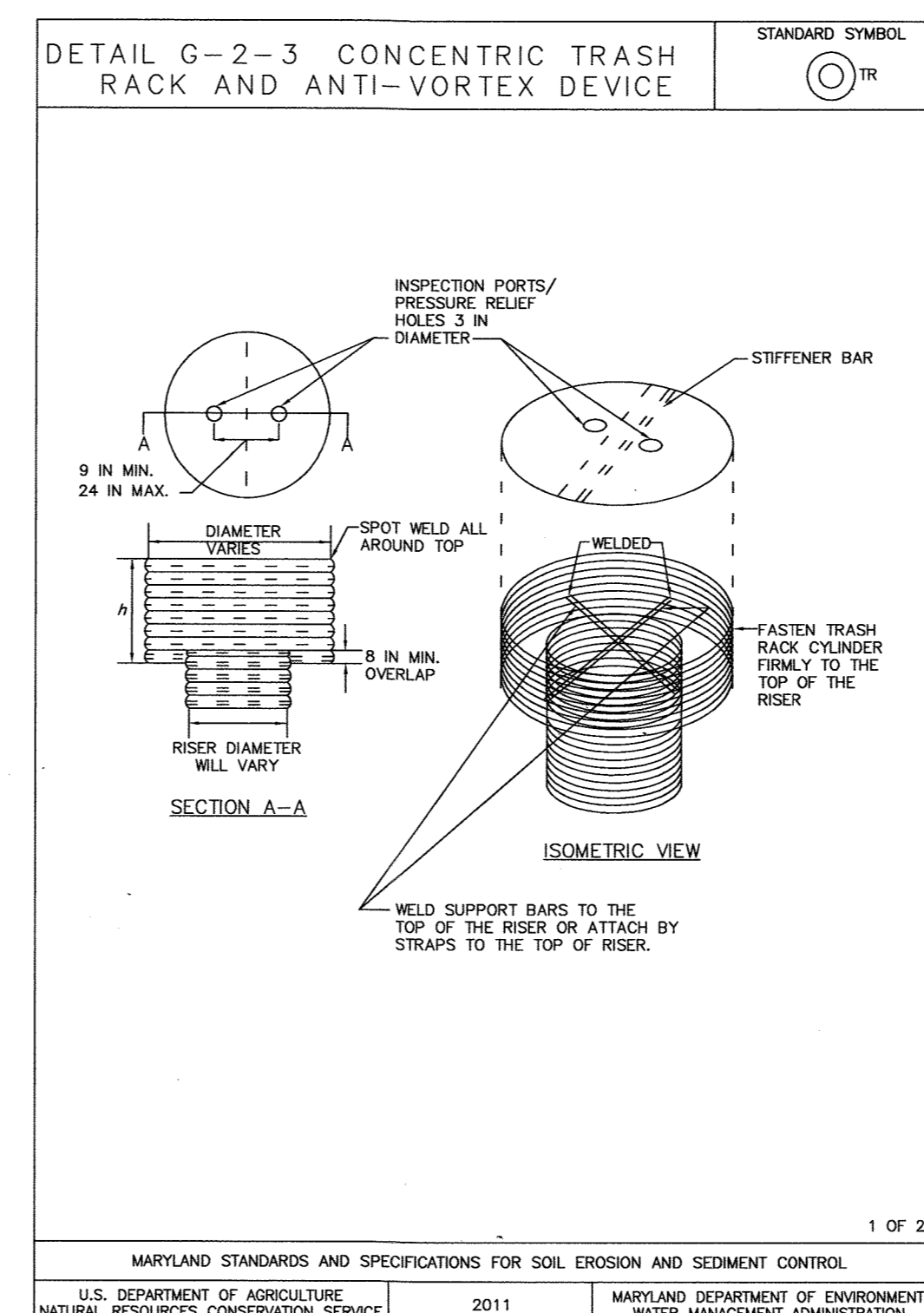
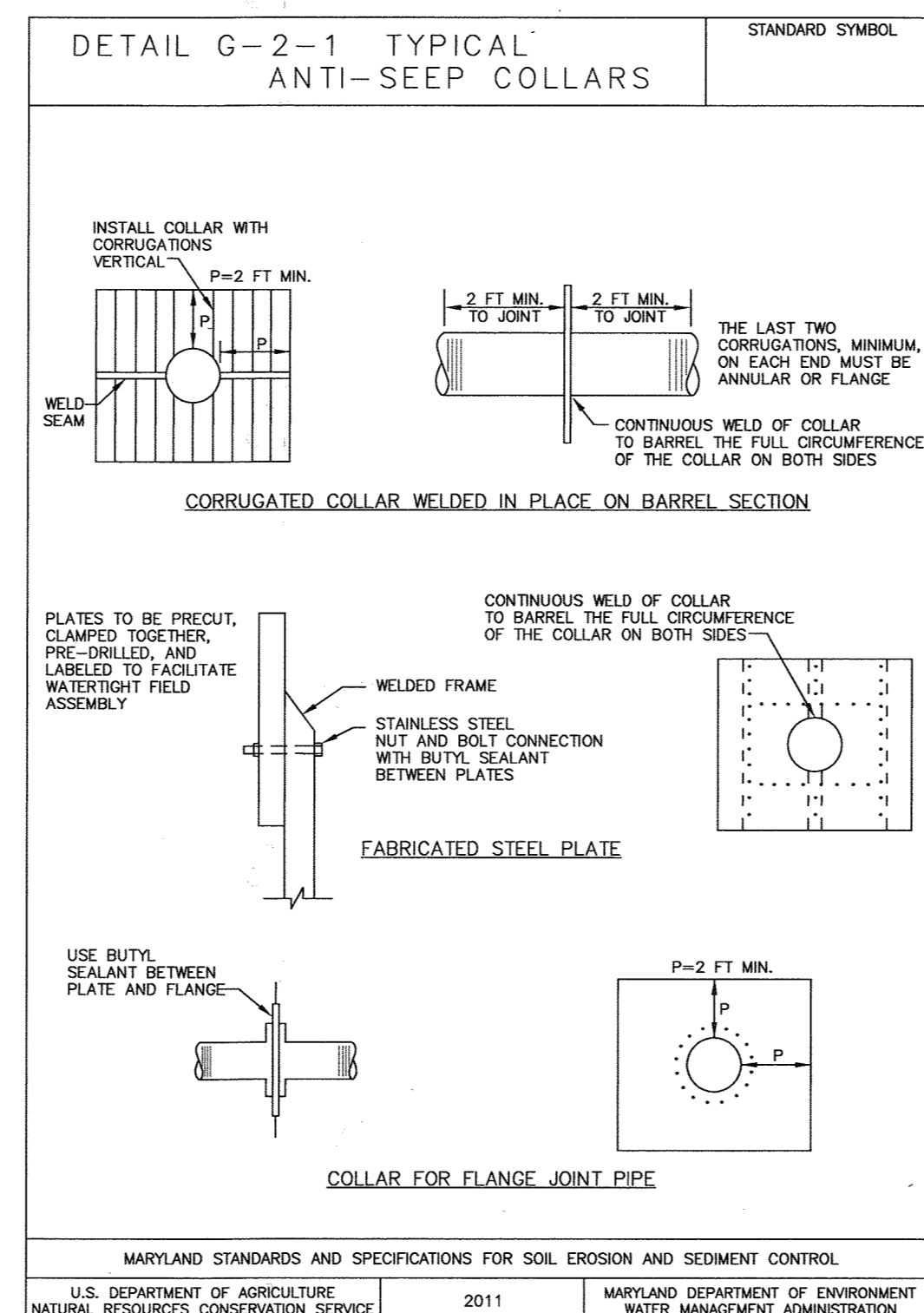
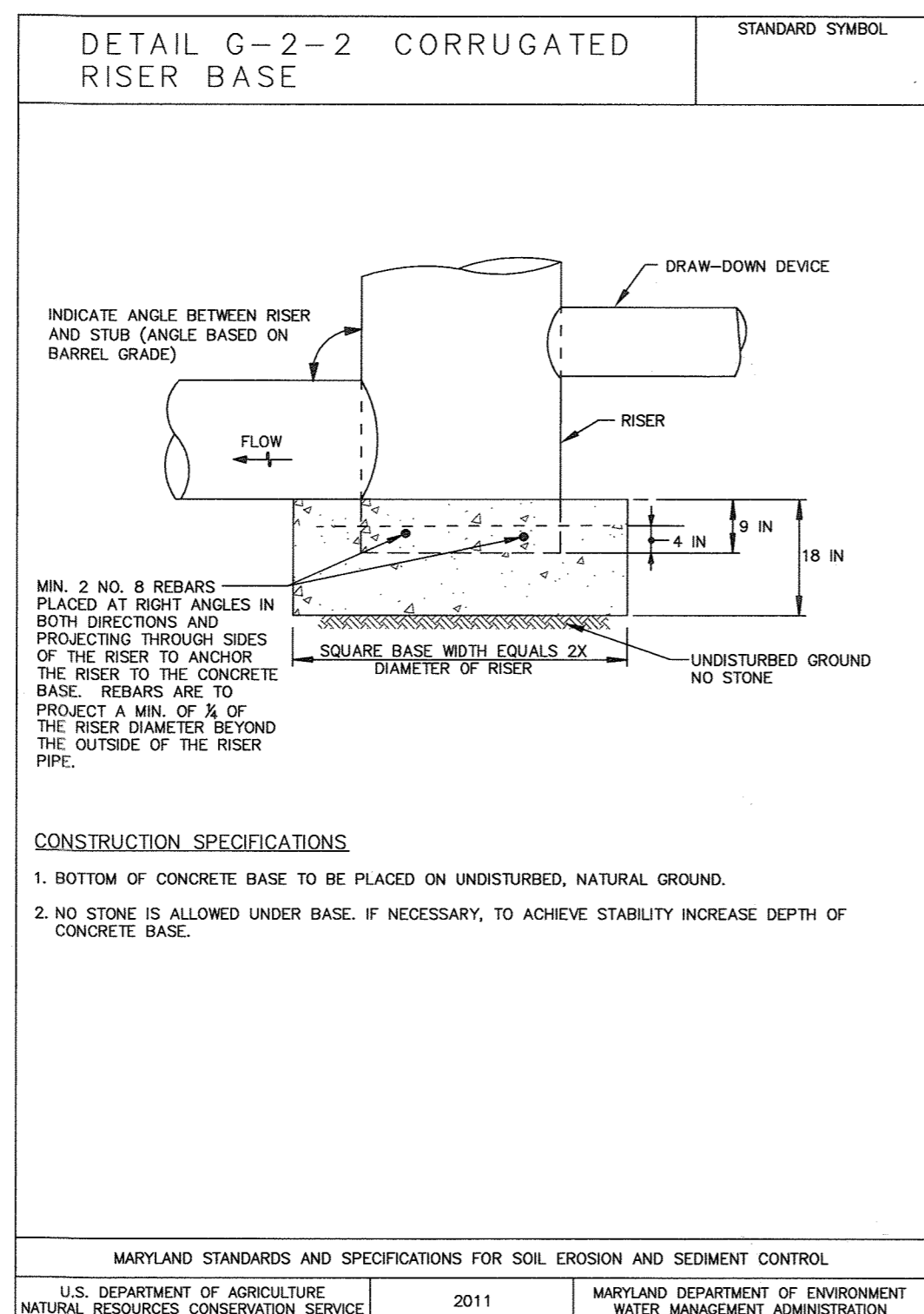
Approved: This Plan is Approved For Soil Erosion And Sediment Control By The Howard Soil Conservation District.
John K. Schultz 11/30/16
Howard Soil Conservation District Date

Approved: Department Of Planning And Zoning
John K. Schultz 3-16-17
Chief, Division Of Land Development Date

Approved: Howard County Department Of Public Works
John K. Schultz 12/6/2016
Chief, Bureau Of Highways Date

REVISIONS

NO.	DESCRIPTION	DATE



DETAIL G-2-3 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

STANDARD SYMBOL: TR

RISER DIAM. (IN)	TRASH RACK CYLINDER DIAM. (IN)	THICKNESS (GAUGE)	MINIMUM SIZE SUPPORT BAR (IN)	MINIMUM TOP THICKNESS (GAUGE)	STIFFENER	
12	18	16	14	#6 REBAR	16	N/A
15	21	16	15	#6 REBAR	16	N/A
18	27	16	16	#6 REBAR	16	N/A
21	30	16	19	#6 REBAR	16	N/A
24	36	16	21	#6 REBAR	14	N/A
27	42	16	21	#6 REBAR	14	N/A
36	54	14	25	#8 REBAR	12	N/A
42	60	14	27	#8 REBAR	12	N/A
48	72	12	29	1 1/2 IN PIPE OR 1 1/2 X 1/2 X 1/4 ANGLE	10	N/A
54	78	12	33	1 1/2 IN PIPE OR 1 1/2 X 1/2 X 1/4 ANGLE	10	N/A
60	90	12	37	1 1/2 IN PIPE OR 1 1/2 X 1/2 X 1/4 ANGLE	8	N/A
66	96	10	41	2 IN PIPE OR 2 X 2 X 3/8 ANGLE	8	2 X 2 X 3/8 ANGLE
72	102	10	44	2 IN PIPE OR 2 X 2 X 3/8 ANGLE	8	2 1/2 X 2 1/2 X 3/8 ANGLE
78	114	10	47	2 1/2 IN PIPE OR 2 X 2 X 3/8 ANGLE	8	2 1/2 X 2 1/2 X 3/8 ANGLE
84	120	10	50	2 1/2 IN PIPE OR 2 1/2 X 2 1/2 X 3/8 ANGLE	8	2 1/2 X 2 1/2 X 3/8 ANGLE

NOTE: THE ABOVE TRASH RACK AND ANTI-VORTEX DEVICE INFORMATION IS FOR CORRUGATED METAL PIPE ONLY. CONCRETE RISERS MUST MEET THE REQUIREMENTS OF MD 376.

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

AS-BUILT CERTIFICATION

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

CHARLES J. CROW SR. P.E. #13804 02/20/20 Date

SEDIMENT AND EROSION CONTROL NOTES & DETAILS

FAIRLANE FARM PHASE TWO

LOTS 19-44,
BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS '1' THRU 'N'

A subdivision of Non-Buildable Bulk Parcels 'C' & 'H' And A Subdivision to Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'U', Parcel 'F' And Non-Buildable Bulk Parcels 'C' And 'H'

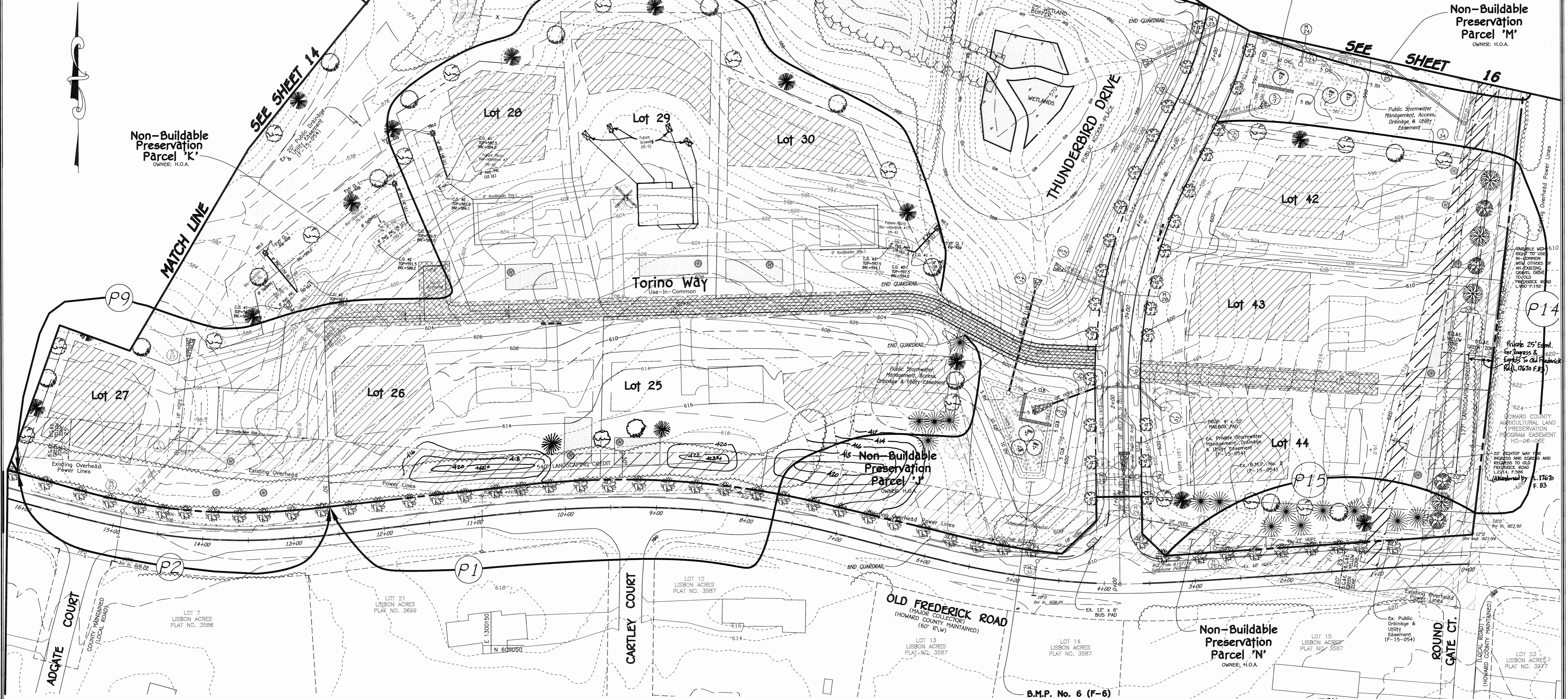
ZONED: RC-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT: HOWARD COUNTY, MARYLAND
DATE: NOVEMBER 11, 2016
SHEET 12 OF 36

ALDO M. VITUCCI, P.E. 11/4/16
"Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20749, Expiration Date 2-22-17"

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062



Approved: Department Of Planning And Zoning	<i>Karl Schuch</i>	3-16-17
Chief, Division Of Land Development		Date
Approved: Department Engineering Division	<i>J. Melanin</i>	12/09/16
Chief, Department Engineering Division		Date
Approved: Howard County Department Of Public Works	<i>J. Melanin</i>	12/6/2016
Chief, Bureau Of Highways		Date
REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD ACCESS ESMT. TO ADJACENT PROPERTIES	3/23/18



B.M.P. No. 4 (F-6)
 BIO-RETENTION FACILITY
 (TO BE OWNED BY THE FAIRLANE FARM HOMEOWNERS
 ASSOCIATION AND JOINTLY MAINTAINED)
 (SEE SHEET 23 FOR PLAN & DETAILS)

**Non-Buildable
 Preservation
 Parcel 'M'**
 OWNER: H.O.A.

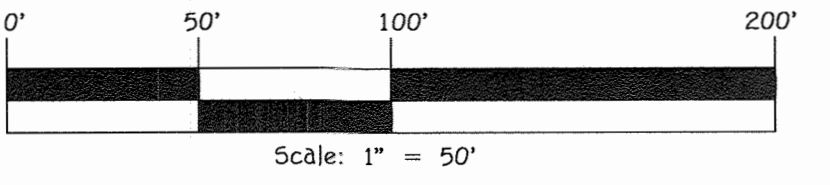
**Non-Buildable
 Preservation
 Parcel 'K'**
 OWNER: H.O.A.

**Non-Buildable
 Preservation
 Parcel 'J'**
 OWNER: H.O.A.

**Non-Buildable
 Preservation
 Parcel 'N'**
 OWNER: H.O.A.

B.M.P. No. 6 (F-6)
 BIO-RETENTION FACILITY
 (TO BE OWNED BY THE FAIRLANE FARM HOMEOWNERS
 ASSOCIATION AND JOINTLY MAINTAINED)
 (SEE SHEET 24 FOR PLAN & DETAILS)

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



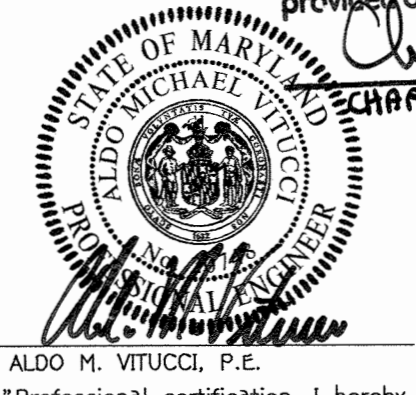
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21104
 (410) 461 - 2095

OWNER
 DAISYCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUNNALL ROAD
 WOODBINE, MD 21797
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8310 FOREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21043
 (410)-922-4600

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.

Jan B. Rutz 11/16/16
 NAME DATE



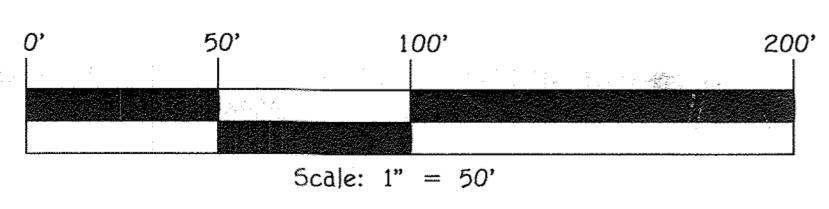
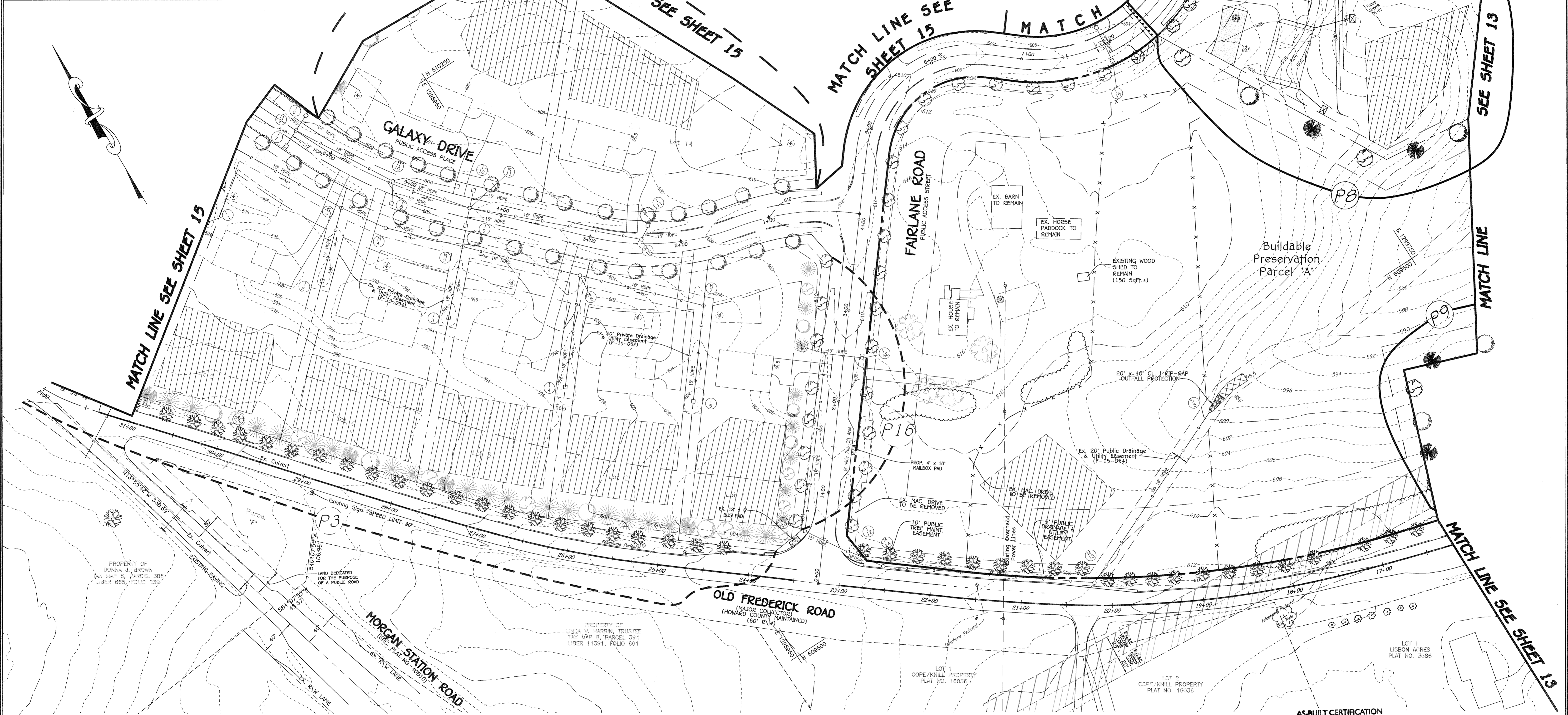
ALDO M. VITUCCI, P.E.
 I HEREBY CERTIFY THAT THESE DOCUMENTS
 WERE PREPARED BY ME OR APPROVED BY ME, AND THAT I AM A DULY
 LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF
 MARYLAND, LICENSE NO. 20740, EXPIRATION DATE 2-22-17.

**STREET TREE & LANDSCAPE PLAN
 FAIRLANE FARM
 PHASE TWO**
 LOTS 19-44,
 BUILDABLE PRESERVATION PARCELS 'A' THRU 'N'
 A Consolidation of Non-Buildable Bulk Parcels 'C' & 'H' And A Deviation to Buildable
 Preservation Parcel 'X', Recorded As "Fairlane Farm Phase One Lots 1 thru 18, Buildable
 Preservation Parcel 'X', Non-Buildable Preservation Parcels 'D' Thru 'I', Parcel 'J' And
 Non-Buildable Bulk Parcels 'K' And 'M'

ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 9 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 13 OF 36

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062

Approved: Department of Planning And Zoning		
<i>Victor Calver</i>	3-16-17	Date
Chief, Division Of Land Development		
<i>John</i>	12/14/16	Date
Chief, Department Engineering Division		
Approved: Howard County Department Of Public Works		
<i>Michael</i>	12/6/2016	Date
Chief, Bureau Of Highways		
REVISIONS		
NO.	DESCRIPTION	DATE



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CONFIDENTIAL SOURCE OFFICE PARK - 1872 BALTIMORE NATIONAL PKWY
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2855

OWNER
 DAISYCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUVALL ROAD
 WOODBINE, MD 21797
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8318 FORREST STREET
 SUITE 200
 ELICOTT CITY, MARYLAND 21043
 (410)-922-4600

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.

John R. ... 11/16/16
 NAME DATE



ALDO M. VIUCCI, P.E.
 11/16/16 DATE
 "Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17."

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

Charles J. ... 03/30/20
 Date
CHARLES J. ... P.E. #13204

**STREET TREE & LANDSCAPE PLAN
 FAIRLANE FARM
 PHASE TWO**
 LOTS 19-44,
 BUILDABLE PRESERVATION PARCELS 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
 A Resubdivision of Non-Buildable Bulk Parcels 'Q' & 'R' And A Revision To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E', Parcel 'F' And Non-Buildable Bulk Parcels 'G' And 'H'"

ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 14 OF 36

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062



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.

John Smith NAME 11/15/16 DATE

OWNER
 DAISYCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUVALL ROAD
 WOODBINE, MD 21797
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8318 FORREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21043
 (410)-922-4600

Approved: Department Of Planning And Zoning

Charles J. Carter 3-16-17
 Chief, Division Of Land Development Date

John Smith 11/15/16
 Chief, Development Engineering Division Date

Approved: Howard County Department Of Public Works

Alfredo Vitucci 12/6/2016
 Chief, Bureau Of Highways Date

NO.	REVISIONS	DESCRIPTION	DATE

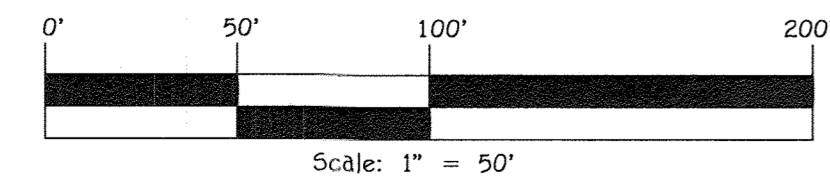


ALDO M. VITUCCI, P.E.
 11/14/16 DATE
 Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17.

AS-BUILT CERTIFICATION
 Note: There is no "AS BUILT" information provided on this sheet.
Charles J. Carter DATE
 CHARLES J. CARTER, P.E. #133047

STREET TREE & LANDSCAPE PLAN
FAIRLANE FARM
PHASE TWO
 LOTS 19-44, AND NON-BUILDABLE PRESERVATION PARCELS 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
 A Subdivision of Non-Buildable Sub-Parcels 'C' & 'D' And A Revision To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E', Parcel 'F' And Non-Buildable Sub-Parcels 'C' And 'D'"
 ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 15 OF 36

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10725 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2899

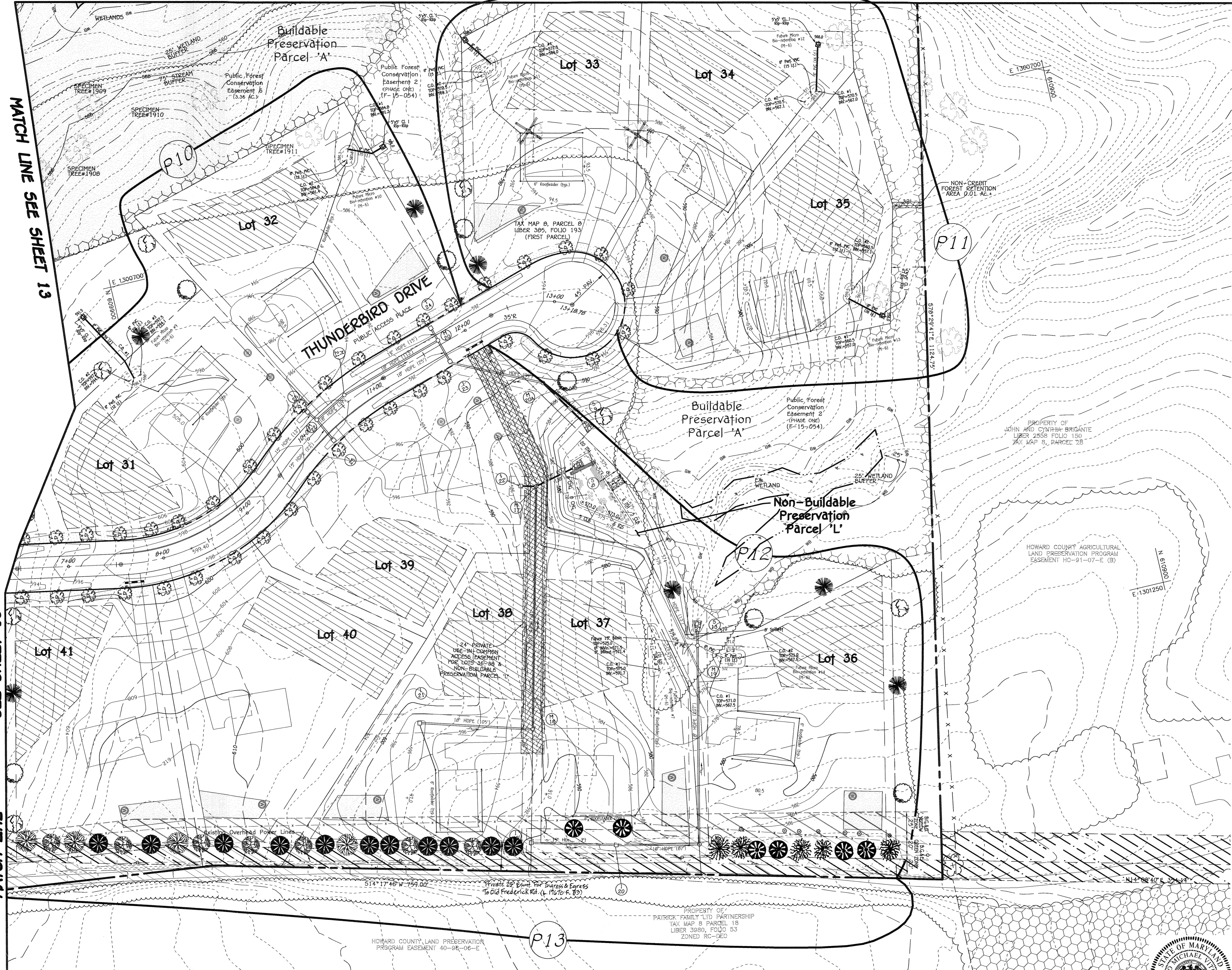


THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062

I:\2015\05\106\dwg\F Plan\F Plan phase 2\05106 Sheet 13-18 landscape plans.dwg 11/11/2016 8:55:32 AM, 11

MATCH LINE SEE SHEET 17

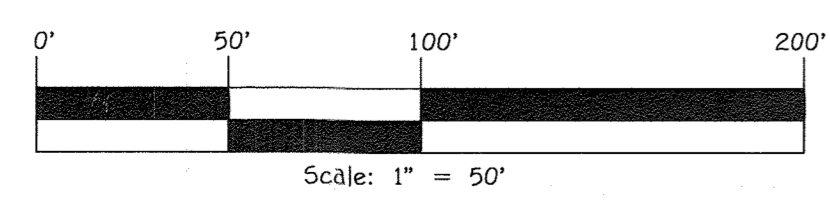
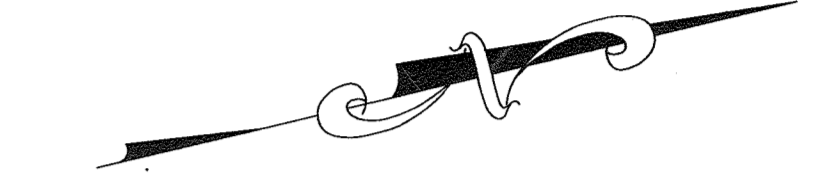
Approved: Department of Planning And Zoning		
Karl DeWolfe Chief, Division of Land Development		3-16-17 Date
Chief, Development Engineering Division		12/14/16 Date
Approved: Howard County Department of Public Works		
D. Meunier Chief, Bureau of Highways		12/16/16 Date
REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD ACCESS ESMT. FOR ADJACENT PROPERTIES	3/23/18



MATCH LINE SEE SHEET 13

SEE SHEET 13

MATCH LINE



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2099

OWNER
 DAISYCOOP, LLC
 c/o ESTATE OF FRANCIS JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUVALL ROAD
 WOODBINE, MD 21797
 410-977-1027

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8319 FOREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21043
 (410)-922-4600

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

[Signature] 11/15/16
 DATE



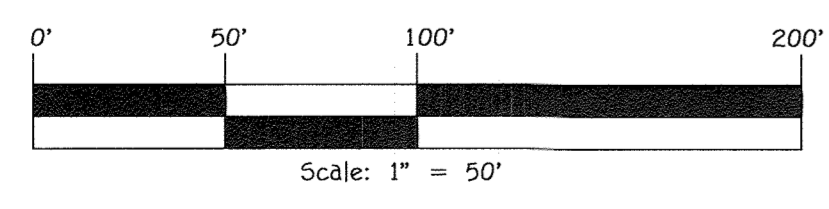
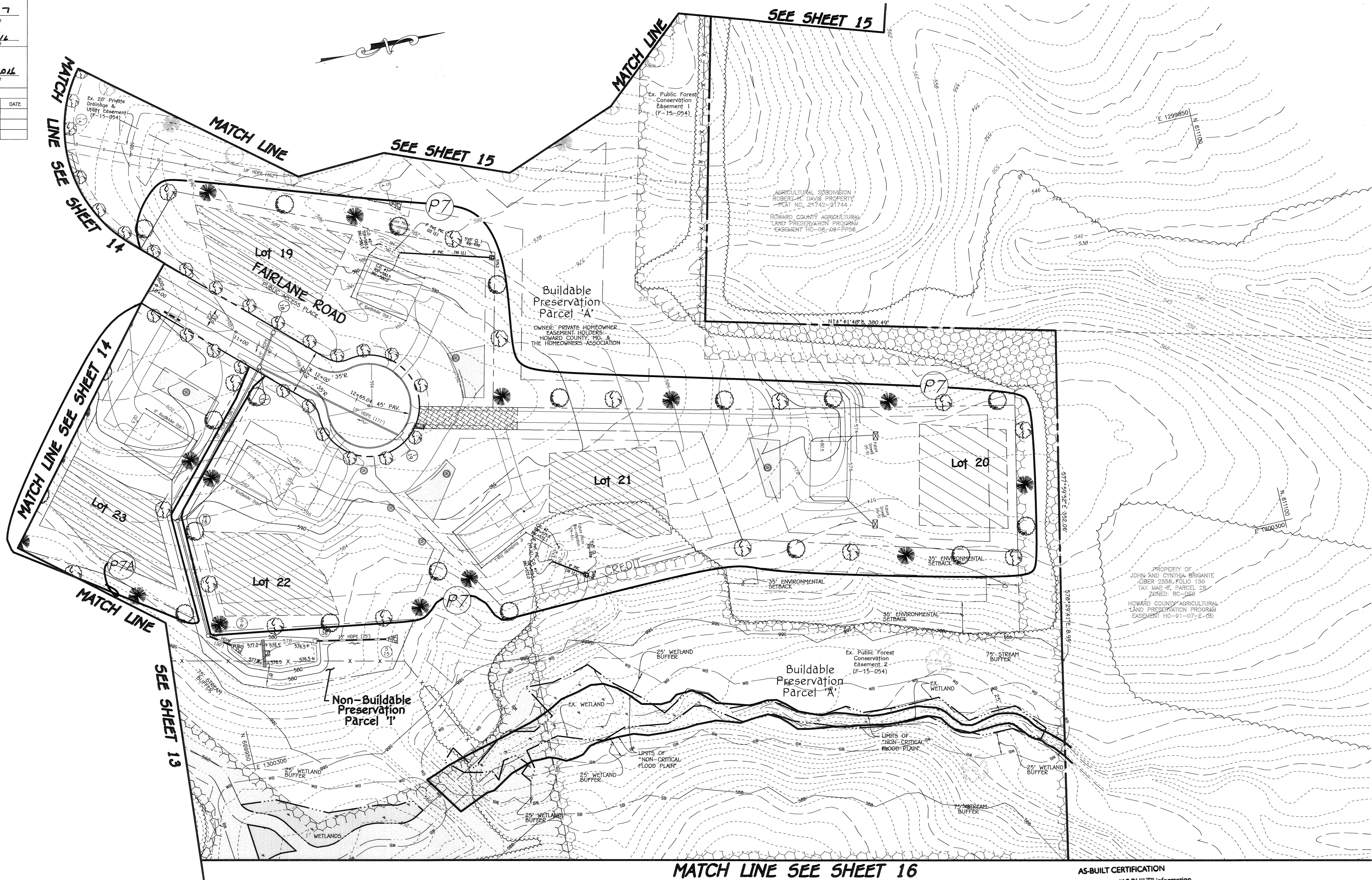
ALDO M. VITUCCI, P.E.
 DATE 11/16/16
 "Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17."

STREET TREE & LANDSCAPE PLAN
FAIRLANE FARM
PHASE TWO
 LOTS 19-44, BUILDABLE PRESERVATION PARCELS 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'L' THRU 'N'
 A Re subdivision of Non-Buildable Bulk Parcels 'C' & 'H' And A Revision To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'L' Thru 'N', Parcel 'N' And Non-Buildable Bulk Parcels 'C' And 'H'."
 ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 16 OF 36

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062

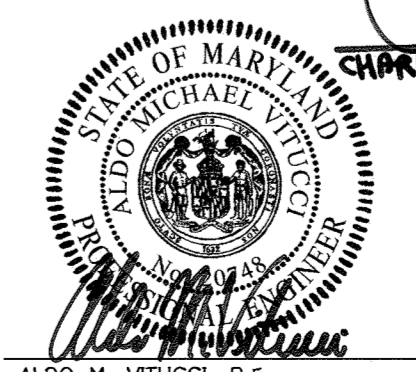
F:\2005\05106\dwg\F Plan\Plan phase 2\05106 Sheet 13-18 landscape plans.dwg, 11/11/2016 8:40:51 AM, 11

Approved: Department Of Planning And Zoning		
<i>Kent Seawall</i>	3-16-17	Date
Chief, Division Of Land Development		
Approved: Howard County Department Of Public Works		
<i>M. McManis</i>	12/6/2016	Date
Chief, Bureau Of Highways		
REVISIONS		
NO.	DESCRIPTION	DATE



MATCH LINE SEE SHEET 16

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



02/20/20
 STREET TREE & LANDSCAPE PLAN
FAIRLANE FARM
PHASE TWO
 LOTS 19-44
 BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS '1' THRU 'N'
 A subdivision of Non-Buildable Bulk Parcel 'C' & '1' And A Section To Buildable Preservation Parcel 'A', Recorded as Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E', Parcel 'F' And Non-Buildable Bulk Parcels 'G' And 'H'

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.

John R. Smith
 DATE: 11/15/16

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10227 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461 - 2995

OWNER
 DANSYCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUVALL ROAD
 WOODBINE, MD 21797
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8318 FOREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21043
 (410)-922-4600

ALDO M. VITUCCI, P.E.
 DATE: 11/14/16
 "Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland. License No. 20749, Expiration Date 2-22-17."

ZONED: RC-DEO
 TAX MAP NO.: B GRID NO.: 2, PAR.: B
 TAX MAP NO.: B GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 17 OF 36

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062

L:\2015\05106\dwg\Fairlane Plan phase 2\AS-BUILT Sheet 13-18 landscape plans.dwg, 11/17/2016 9:43:23 AM, 11

Approved: Department of Planning And Zoning
 Chief, Division of Land Development
 Chief, Development Engineering Division
 Approved: Howard County Department of Public Works
 Chief, Bureau of Highways

3-16-17
 12/19/16
 12/6/2014
 3/23/18

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISE LANDSCAPING CREDIT FOR PERIMETER P-1	3/23/18

SCHEDULE 'A' - PERIMETER LANDSCAPE EDGE

PERIMETER	P-1	P-2	P-3	P-3A	P-3B	P-3C	P-4	P-5	P-6	P-7	P-7A	P-8	P-9	P-10	P-11	P-12	P-13	P-14	P-15	P-16	TOTALS (PHASE ONE)	TOTALS (PHASE TWO)
CATEGORY	SFD (REAR) TO ROAD	SFD (FRONT) TO ROAD	SFD (REAR) TO ROAD	SFD TO ALL USES	SFD TO ALL USES	SFD (REAR) TO ROAD	SFD TO ALL USES	SFD TO ALL USES	SFD TO ALL USES	SFD TO ALL USES	SFD TO ALL USES	SFD TO ALL USES	SFD TO ALL USES	SFD TO ALL USES	SFD TO ALL USES	SFD TO ALL USES	SFD TO ALL USES	SFD (SIDE) TO ROAD	SFD (SIDE) TO ROAD			
LANDSCAPE TYPE	B	NONE	B	A	A	B	A	A	A	A	A	A	A	A	A	A	A	B	B			
LINEAR FEET OR ROADWAY FRONTAGE/PERIMETER	850'	348'	910'	301'	178'	695'	1432'	738'	2036'	2556'	805'	850'	1612'	932'	1324'	951'	1238'	712'	366'	300'		
CREDIT FOR EXISTING VEGETATION (YES, NO LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	-	-	-	-	-	YES (457')	YES (528') F.C.E.	-	-	YES (170') F.C.E.	-	-	-	YES (400') F.C.E.	YES (1119') F.C.E.	YES (442')	-	YES (177')	-	-		
CREDIT FOR WALL, FENCE OR BERM (YES, NO LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES - BERM (540')	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
NUMBER OF PLANTS REQUIRED																						
SHADE TREES	6	-	18	5	3	5	15	12	34	40	13	14	27	9	3	8	21	9	7	6	98	157
EVERGREEN TREES	0	-	23	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	9	8	37	17
SHRUBS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED																						
SHADE TREES	6	-	18	5	3	5	15	12	34	40	13	14	27	9	3	8	4	5	7	6	98	136
EVERGREEN TREES	0	-	23	-	-	6	-	-	-	-	-	-	-	-	-	-	17	9	8	8	37	34
SHRUBS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	0	25
SUBSTITUTIONS (Ornamental)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

P-3 - DENOTES OBLIGATION UNDER PHASE ONE (F-15-054)

TRASH/RECYCLE PAD LANDSCAPING

LINEAR FEET OF PERIMETER	LOTS 7-10 PAD: 12 L.F.	LOTS 15-18 PAD: 12 L.F.	LOTS 20-21 PAD: 12 L.F.	LOTS 25-30 PAD: 12 L.F.	LOTS 36-38 PAD: 12 L.F.
NUMBER OF SHRUBS PROVIDED:	7	7	7	7	7

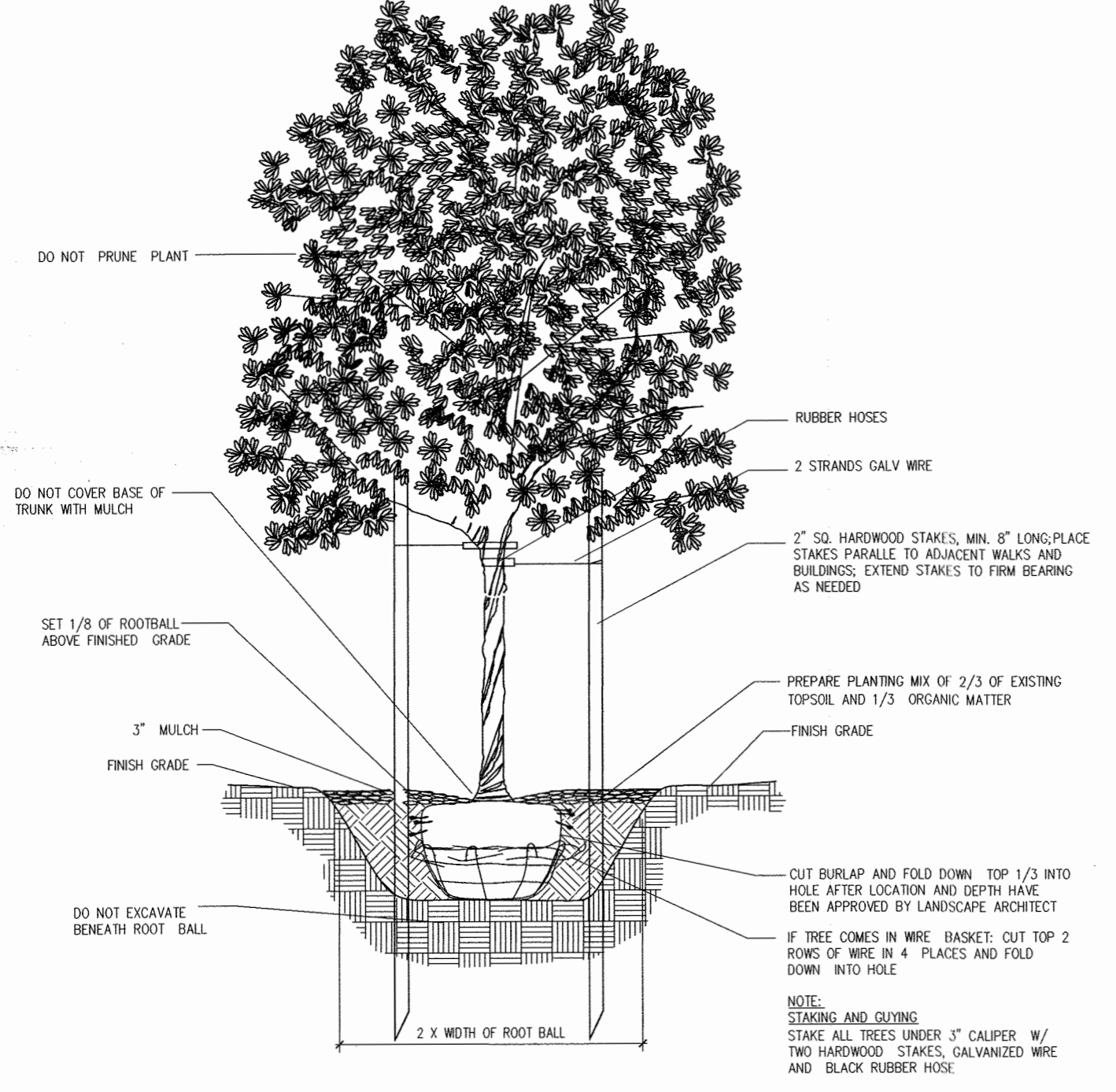
NOTES: 1. THE TRASH/RECYCLE PAD LANDSCAPING WILL BE MAINTAINED BY THE USERS OF THE PRIVATE USE-IN-COMMON MAINTENANCE AGREEMENT.
 2. THE LANDSCAPING SHALL BE INSTALLED AROUND THE PERIMETER OF THE PAD EXCLUDING THE SIDE ADJACENT TO THE PUBLIC ROAD RIGHT-OF-WAY.
 7 - DENOTES OBLIGATION UNDER PHASE ONE (F-15-054)

STREET TREE SCHEDULE

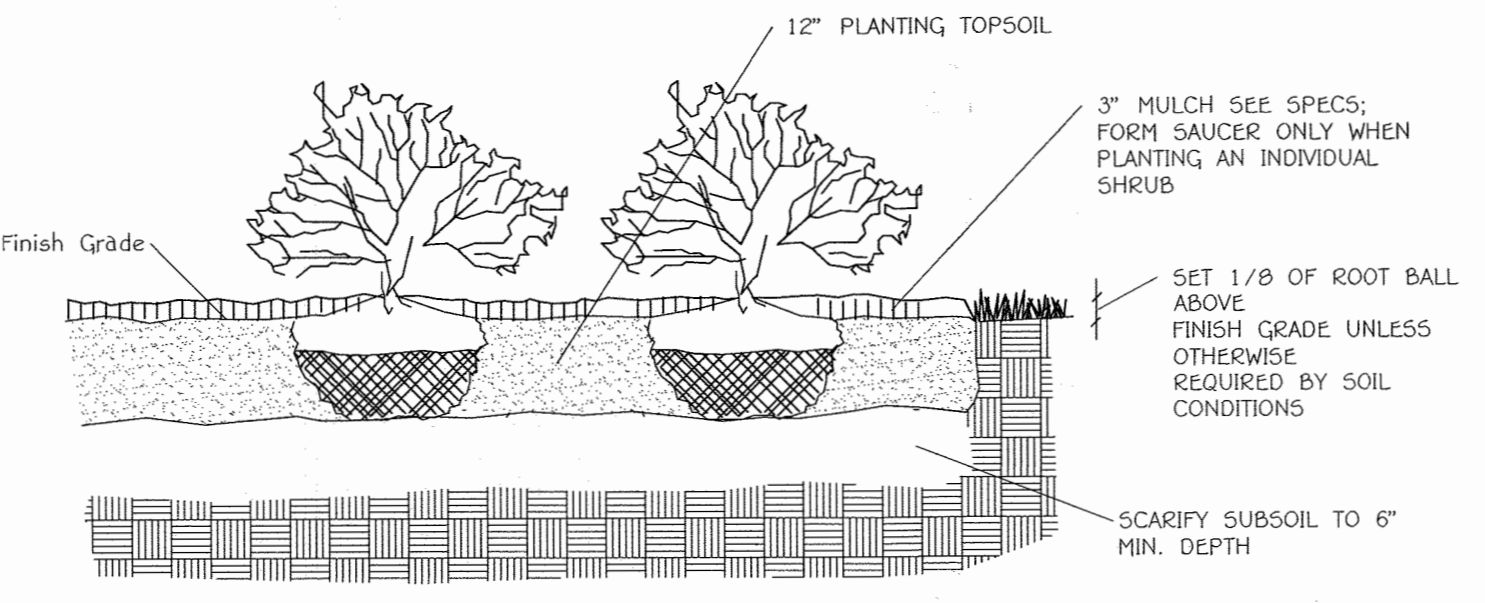
QTY. REQ'D.	QTY. PROV'D.	SIZE	BOTANICAL AND COMMON NAME	COMMENTS
* ROW LENGTH = 1265' 2530'/40 = 63.25 64 TREES	29 TREES (PHASE TWO)	2 1/2" - 3" CAL.	CLADRASTIS LUTEA YELLOWWOOD	40' APART ON PUBLIC R/W (Fairlane Road)
ROW LENGTH = 1319' 2,638'/40 = 65.95 66 TREES	66 TREES	2 1/2" - 3" CAL.	PRUNUS SARGENTII SARGENT CHERRY	40' APART ON PUBLIC R/W (Thunderbird Drive)

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.

* DENOTES ENTIRE RIGHT-OF-WAY LENGTH (PHASE ONE AND PHASE TWO)
 (35 TREES PROVIDED IN PHASE ONE)



DECIDUOUS TREE - TYPICAL PLANTING DETAIL



SHRUB AND HEDGEROW - TYPICAL PLANTING DETAIL

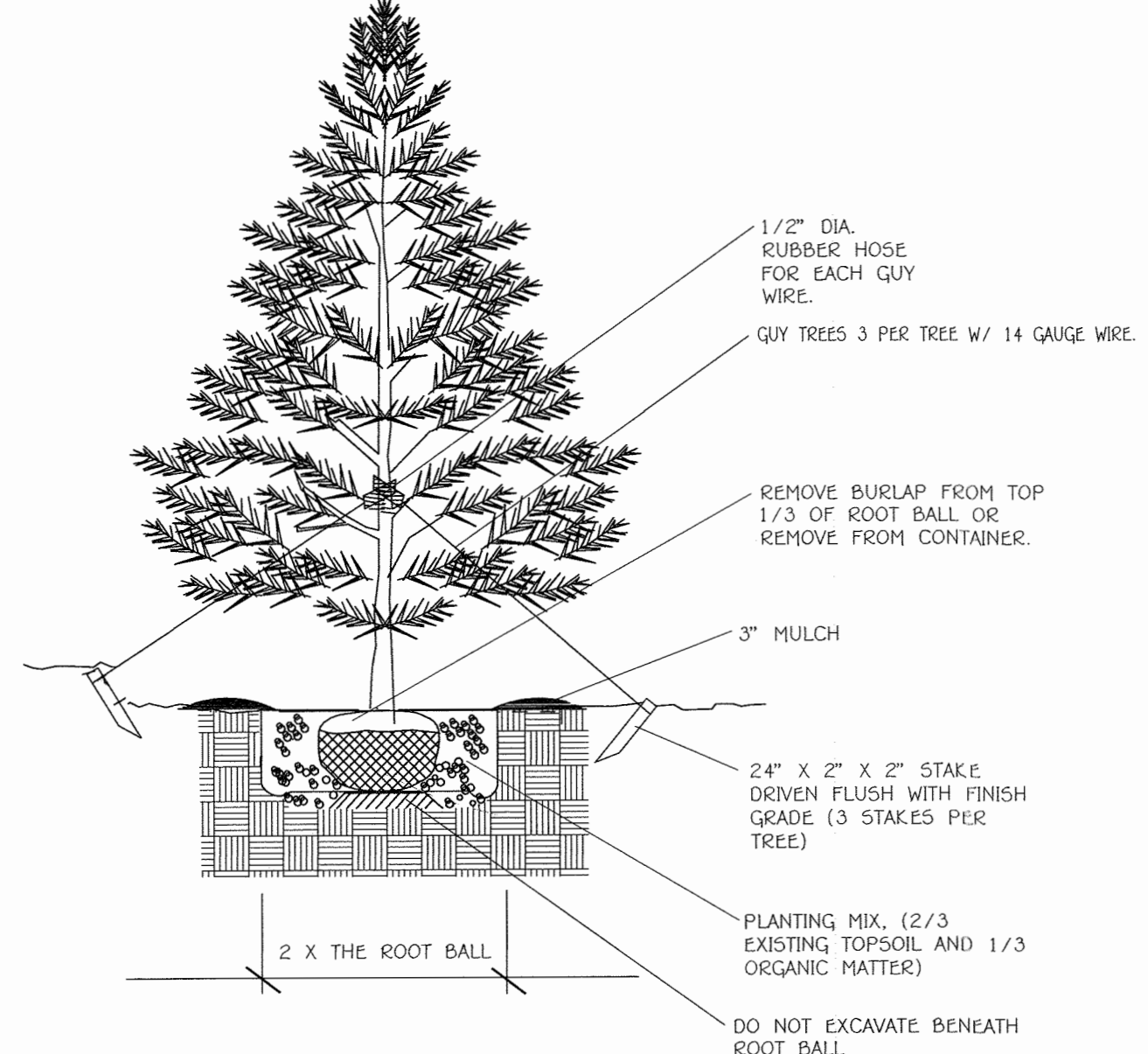
PLANTING SPECIFICATIONS

- CLEAR & GRUB ALL PLANTING AREAS AS INDICATED ON THE DRAWINGS.
- PROVIDE PROTECTION FOR TREES, SHRUBS, AND PERENNIALS/GROUND COVERS THAT ARE TO BE PRESERVED.
- CONTRACTOR SHALL VERIFY THE CORRECT LOCATION OF ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO INSTALLATION OF ANY PLANT MATERIALS.
- ALL PLANTING SHALL BE DONE AS PER PLANTING DETAILS AND SPECIFICATIONS.
- NO CHANGES SHALL BE MADE WITHOUT WRITTEN CONSENT OF THE OWNER OR LANDSCAPE ARCHITECT.
- 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.
- 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.
- 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.
- ALL PLANT BEDS SHALL BE CONTAINED WITH A SPADED EDGE UNLESS OTHERWISE NOTED ON DRAWINGS.
- 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.
- 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.
- 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.
- ALL DISTURBED AREAS SHALL BE FINE GRADED AND SEEDED OR SOODED; SEE PLAN FOR LOCATIONS.
- 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
46	46	ACER RUBRUM "OCTOBER GLORY" RED MAPLE	2 1/2" - 3" CAL.
46	46	PRUNUS SARGENTII SARGENT CHERRY	2 1/2" - 3" CAL.
44	44	CLADRASTIS LUTEA YELLOWWOOD	2 1/2" - 3" CAL.
13	*	ACER GINNALA AMUR MAPLE	2 1/2" - 3" CAL.
12	*	ACER GRISEUM PAPERBARK MAPLE	2 1/2" - 3" CAL.
17	*	LILLEX "NELLIE R. STEVENS" NELLIE R. STEVENS HOLLY	5' - 6' HT.
17		PINUS STROBUS EASTERN WHITE PINE	6' - 8' HT.
21		AZALEA "EXBURRY" EXBURRY AZALEA (red, pink, yellow, orange, white)	18" - 24" SPREAD

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



EVERGREEN TREE - TYPICAL PLANTING DETAIL

NOTES:

- "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."
- "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 substitutions 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."
- "The Owner, tenants and/or their agents shall be responsible for maintenance 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."
- 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 136 Shade, 34 Evergreen Trees, 25 Ornamental Trees & 21 Shrubs Has been Posted As Part Of The Developer's Agreement In The Amount Of \$50,280.00.

ESD SHRUBS/PERENNIALS/TREES

QTY.	SYM.	BOTANICAL/COMMON NAME	SIZE	CONT.	REMARKS
31	CHG	Chelone glabra White Turtlehead	#1	Cont.	24" O.C.
25	CLB	Caryopteris x clandonensis 'Longwood Blues'	#1	Cont.	30" O.C.
26	IGS	Ilex glabra 'Shamrock' Inkberry	24"-30" Ht.	Cont.	30" o.c./Male Cultivar
56	ITH	Itea virginica 'Little Henry' Dwarf Virginia Sweetpire	18" - 24" Ht.	3 Gal.	30" o.c. min.
6	BNH	Betula nigra 'Heritage' River Birch	10' - 12' ht.	B & B	Multistem (3 stems min.)

AS-BUILT CERTIFICATION

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

CHARLES J. CARROLL, P.E. #133404
 Date



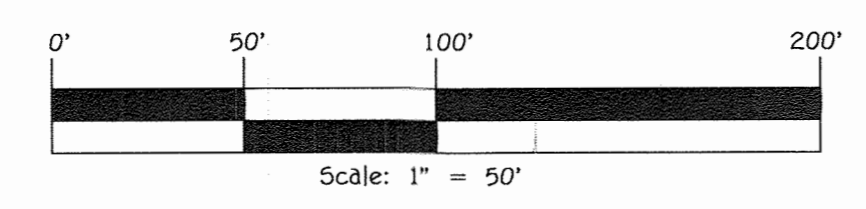
LANDSCAPE NOTES & DETAILS
FAIRLANE FARM
 PHASE TWO
 LOTS 19-44,
 BUILDABLE PRESERVATION PARCELS 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'T' THRU 'V'
 A Resubdivision of Non-Buildable Bulk Parcels 'Q' & 'R' And A Parcel to Be Subdivided
 Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1, Thru 18, Buildable
 Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'U', Parcel 'V' And
 Non-Buildable Bulk Parcels 'Q' And 'R'
 ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 18 OF 36

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.

1/28/16
 DATE

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21142
 (410) 461-2999



OWNER
 DAISYCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUVALL ROAD
 WOODBINE, MD 21797
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8310 FORREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21143
 (410)-922-4600

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062

Sand Filter Specifications

1. Material Specifications for Sand Filters
The allowable materials for sand filter construction are detailed in Table B.3.1.
2. Sand Filter Testing Specifications

Underground sand filters, facilities within sensitive groundwater aquifers, and filters designed to serve urban hot spots are to be tested for water tightness prior to placement of filter media. Entrances and exits should be plugged and the system completely filled with water to demonstrate water tightness. Water tightness means no leakage for a period of 8 hours.

All overflow weirs, multiple orifices and flow distribution slots are to be field-tested to verify adequate distribution of flows.

3. Sand Filter Construction Specifications

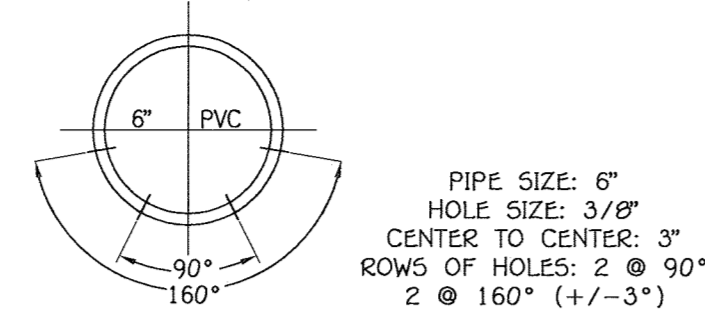
Provide sufficient maintenance access (i.e., 12-foot-wide road with legally recorded easement). Vegetated access slopes are to be a maximum of 10% ; gravel slopes to 15% ; paved slopes to 25%.

Absolutely no runoff is to enter the filter until all contributing drainage areas have been stabilized. Surface of filter bed is to be level.

All underground sand filters should be clearly delineated with signs so that they may be located when maintenance is due.

Surface sand filters may be planted with appropriate grasses; see MAA Approved Species List.

"Pocket" sandfilters (and residential bio-retention facilities treating areas larger than an acre) shall be sized with a stone "window" that covers approximately 10% of the filter area. This "window" shall be filled pea gravel (3/4 inch stone).



SCH 40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE
NO SCALE

NOTES:
UNDERDRAIN PIPE SHALL BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 758, TYPE P5 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 OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQ.FT.) TO PROVIDE A CLEANOUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

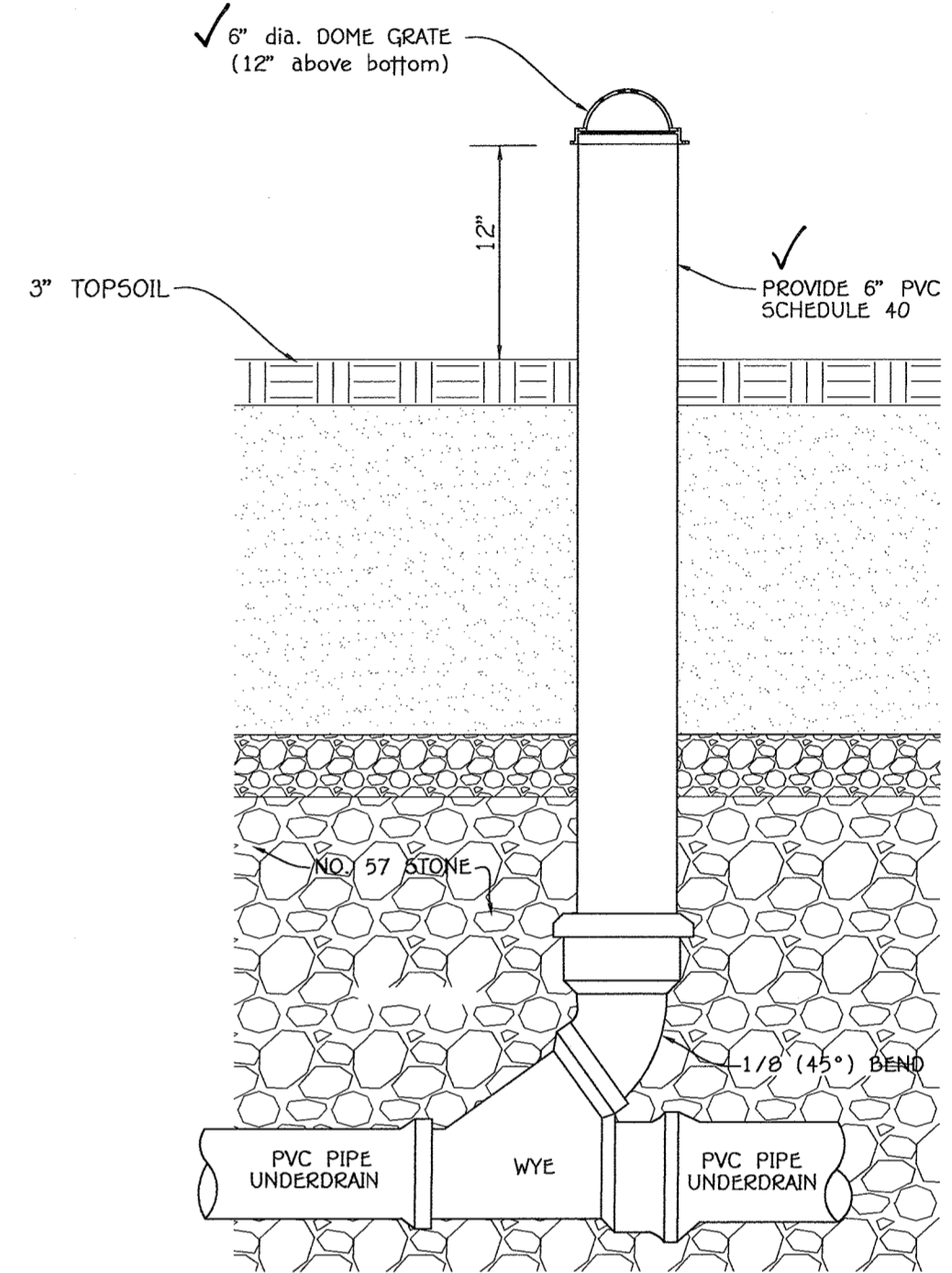
A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

Operation And Maintenance Schedule For Homeowners Association Owned & Maintained Surface Sand Filter (F-1)

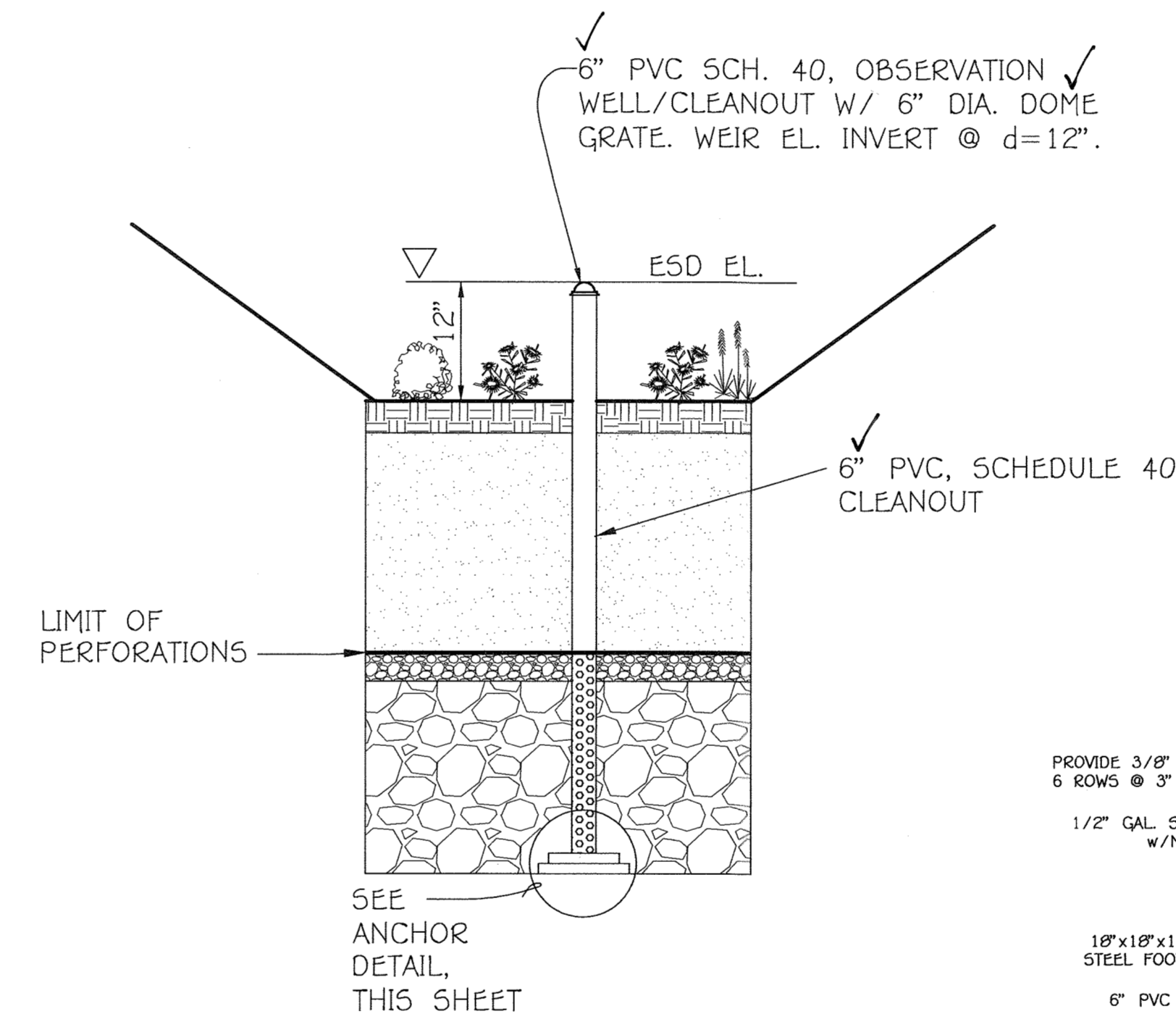
1. THE STORMWATER WETLAND FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
2. THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
3. FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF THREE (3) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES.
4. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
5. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
6. REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY.
7. 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 AFTER A 10 YEAR STORM EVENT.
8. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
9. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
10. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM 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.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS *[Signature]* 12/6/2014 DATE
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* 3-16-17 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* 12/14/16 DATE

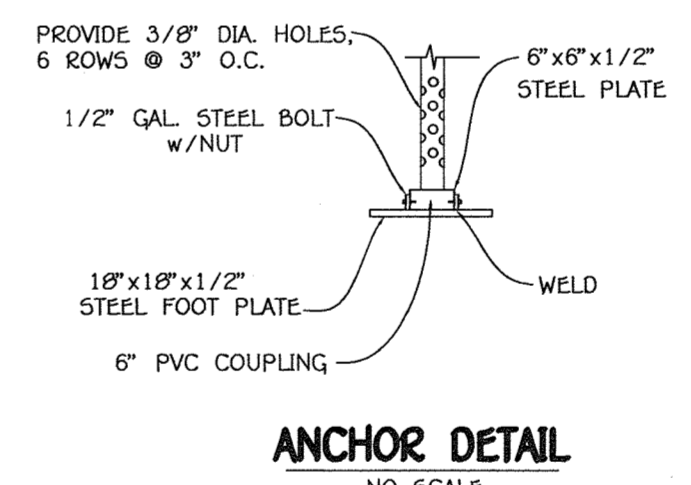
REVISIONS		
NO.	DESCRIPTION	DATE



Typical Clean-Out Detail
NO SCALE



SECTION @ OBSERVATION WELL LOCATION
NOT TO SCALE

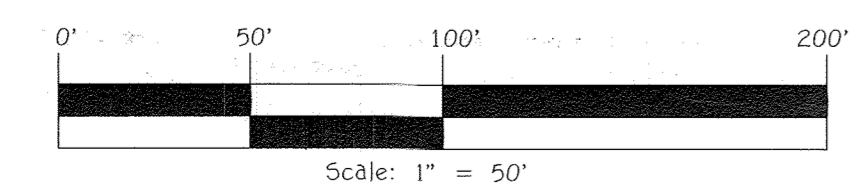


ANCHOR DETAIL
NO SCALE

Table B.3.1 Material Specifications for Sand filters

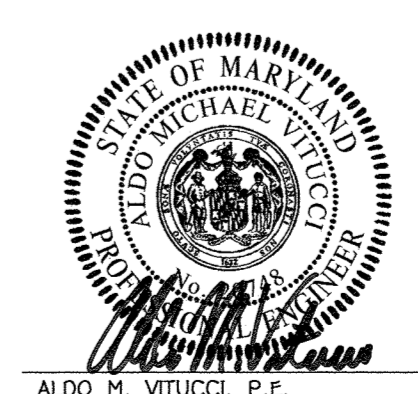
Material	Specifications/Test Method	Size	Notes
sand	clean AASHTO-M-6 of ASTM-C-concrete sand	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone #10 are note acceptable. No calcium carbonated or dolomitic sand substitutions are: acceptable. No "rock dust" can be used for sand:
peat	ash content: < 15% pH range: 5.2 to 4.9 loose bulk density 0.12 to 0.15 g/cc	N/A	The material must be reed-sedge hemic peat, shredded, uncompacted, uniform, and clean.
leaf compost		N/A	
underdrain gravel	AASHTO-M-43	0.375" to 0.75"	
geotextile fabric (if required)	ASTM-D-4833 (puncture strength lb.) ASTM-D-4632 (Tensile Strength lb.)	0.08" thick equivalent opening size of #80 sieve	Must maintain 125 gpm per sq. ft. flow rate. Note: a 4" pea gravel layer may be substituted for geotextiles meant to "separate" sand filter layers.
impermeable liner (if required)	ASTM-D-4833 (thickness) ASTM-D-412 (tensile strength 1,100 lb., elongation 200%) ASTM-D-624 (Tear resistance - 150 lb./in) ASTM-D-471 (water adsorption: +8 to -2% mass)	30 mil thickness	Liner to be ultraviolet resistant. A geotextile fabric should be used to protect the liner from puncture.
underdrain piping	F 758, Type P5 28 or AASHTO-M-278	4" - 6" rigid schedule 40 PVC or 5DR35	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes
concrete (cast-in-place)	MSHA Standards and Specs. Section 902, Mix No. 3, f'c = 3500 psi, normal weight, air-entrained; reinforcing to meet ASTM-615-60	N/A	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or precast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland
concrete (pre-cast)	per pre-cast manufacturer	N/A	SEE ABOVE NOTE
non-rebar steel	ASTM A-36	N/A	structural steel to be hot-dipped galvanized ASTM-A-123

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 18272 BALDORP NATIONAL PARK
 ELICOTT CITY, MARYLAND 21042
 (410) 461 - 2222



OWNER
 DAISYCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUVALL ROAD
 WOODBINE, MD 21797
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8318 FOREST STREET
 SUITE 200
 ELICOTT CITY, MARYLAND 21043
 (410)-922-4600



ALDO M. VITUCCI, P.E.
 DATE: 11/4/16
 "Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17"



AS-BUILT CERTIFICATION
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan meet the approved plans and specifications.
 CHARLES J. CRIVELLO, P.E. Date: 02/20/20

STORMWATER MANAGEMENT NOTES AND DETAILS (SURFACE SAND FILTER)
FAIRLANE FARM PHASE TWO
 LOTS 19-44,
 BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'IV'
 A Re subdivision of Non-Buildable Bulk Parcels 'C' & 'H' And A Division To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'C', Parcel 'I' And Non-Buildable Bulk Parcels 'G' And 'H'."
 ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 19 OF 36

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

Table A.3 Planting Soil Characteristics

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

Mulch Layer

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

The mulch layer should be standard landscape style, single or double shredded hardwood mulch or chips. The mulch layer should be well aged (stockpiled or stored for at least 12 months), uniform in color, and free of other materials, such as weed seeds, soil, roots, etc. The mulch should be applied to a maximum depth of three inches. Grass clippings should not be used as 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 drier 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 principles 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 Clayton and Schueler, 1997.

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 (50%), 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 hoses 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 may 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 restructure 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 soil and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

4. Plant Material

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

5. Plant Installation

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

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

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

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

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

6. Underdrains

Underdrains should meet the following criteria:

Pipe - Should be 4 to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 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 4x) 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 (1/8" 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".

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 established.

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 11, 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.

NOTES:

UNDERDRAIN PIPE SHALL BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 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).

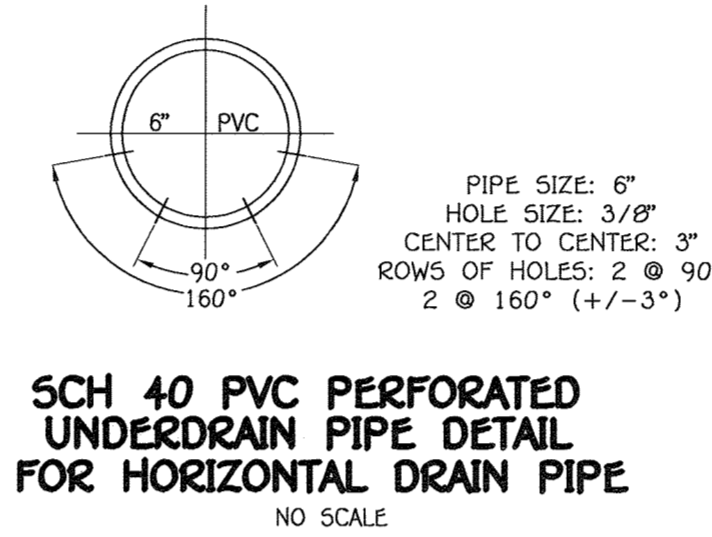
PERFORATIONS SHALL BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (No. 4 OR 4 x 4) GALVANIZED HARDWARE CLOTH.

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.

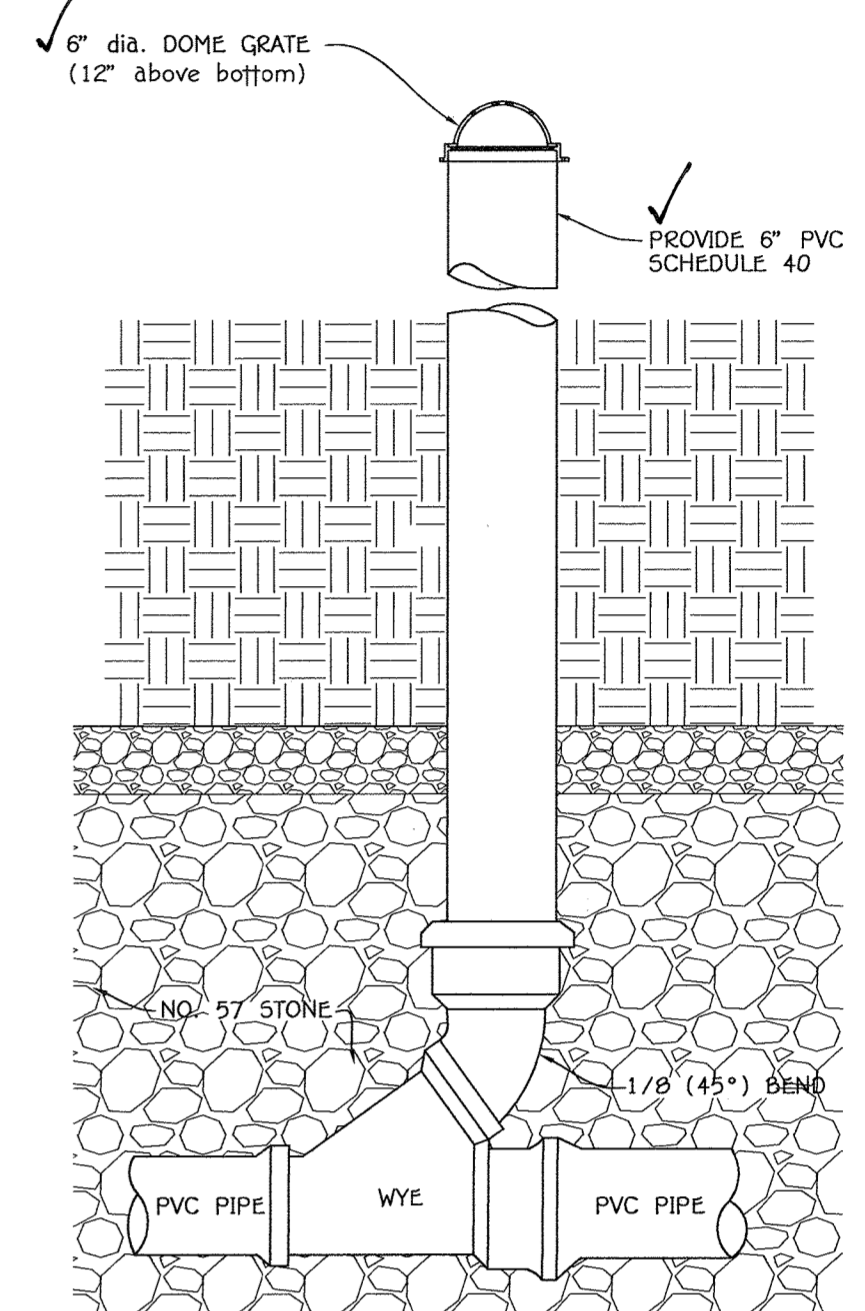
A RIGID, NON PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQ.FT.) TO PROVIDE A CLEANOUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

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".

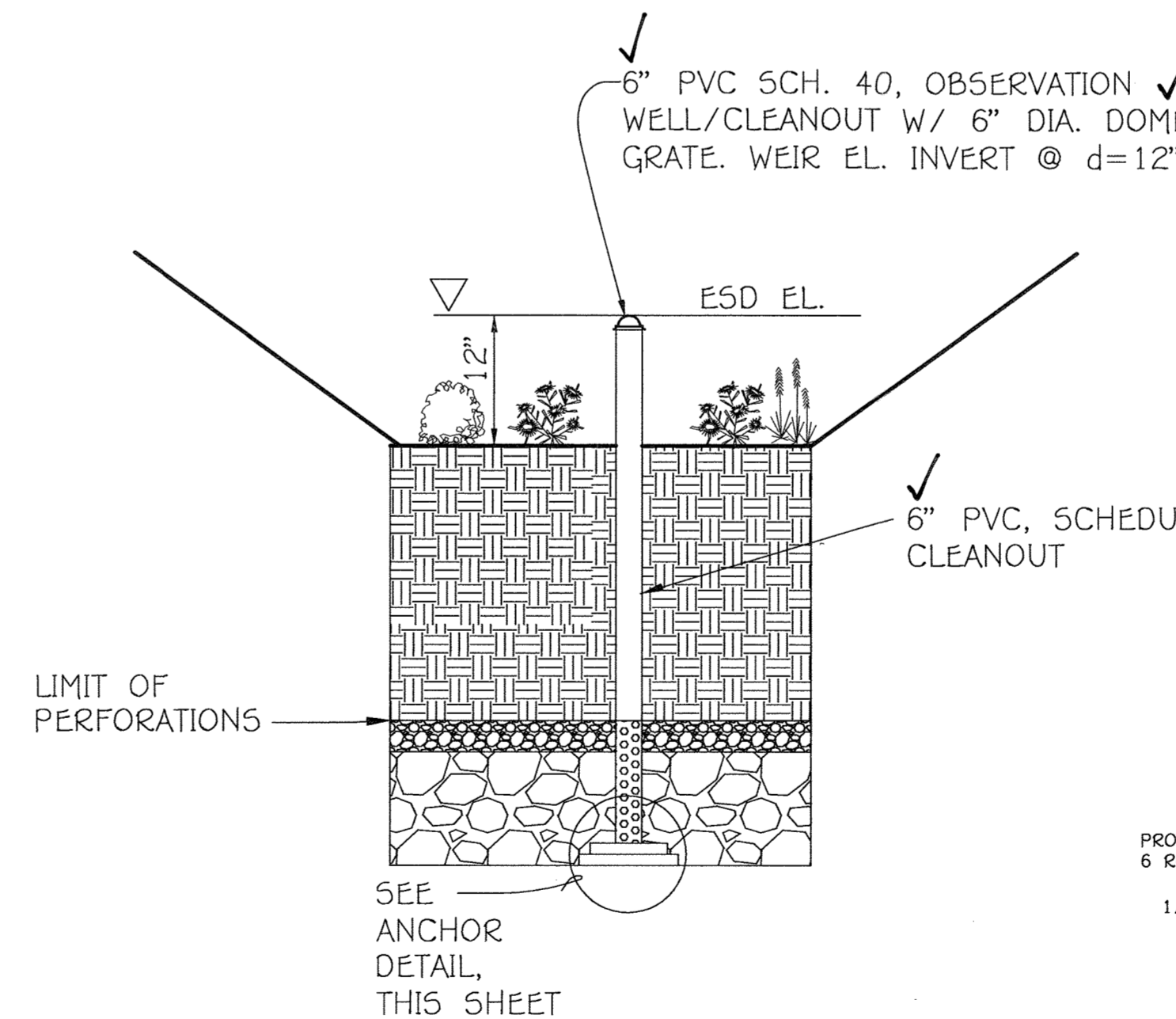


SCH 40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE
NO SCALE

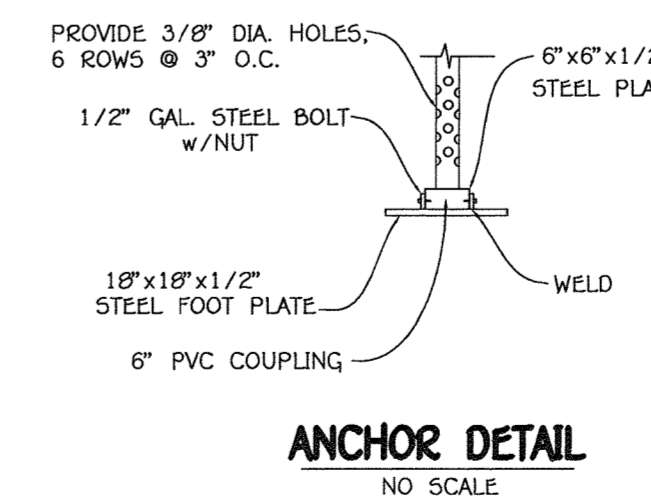
APPROVED: DEPARTMENT OF PUBLIC WORKS	<i>M. M. M.</i>	12/6/2016
CHIEF, BUREAU OF HIGHWAYS		DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	<i>Kent Slovic</i>	3-16-17
CHIEF, DIVISION OF LAND DEVELOPMENT		DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	<i>[Signature]</i>	12/14/16
		DATE
REVISIONS		
NO.	DESCRIPTION	DATE



Typical Clean-Out Detail
NO SCALE



SECTION @ OBSERVATION WELL LOCATION
NOT TO SCALE



ANCHOR DETAIL
NO SCALE

NOTE: SEE SHEET 13 & 16 FOR BIO-RETENTION PLANTING PLANS AND SHEET 18 FOR ESD PLANT SCHEDULE.



AS-BUILT CERTIFICATION
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS BUILT plan meet the approved plans and specifications.
 CHARLES J. CRAIN, P.E. #13364
 Date: 02/20/16

STORMWATER MANAGEMENT NOTES AND DETAILS (BIO-RETENTION)

FAIRLANE FARM PHASE TWO

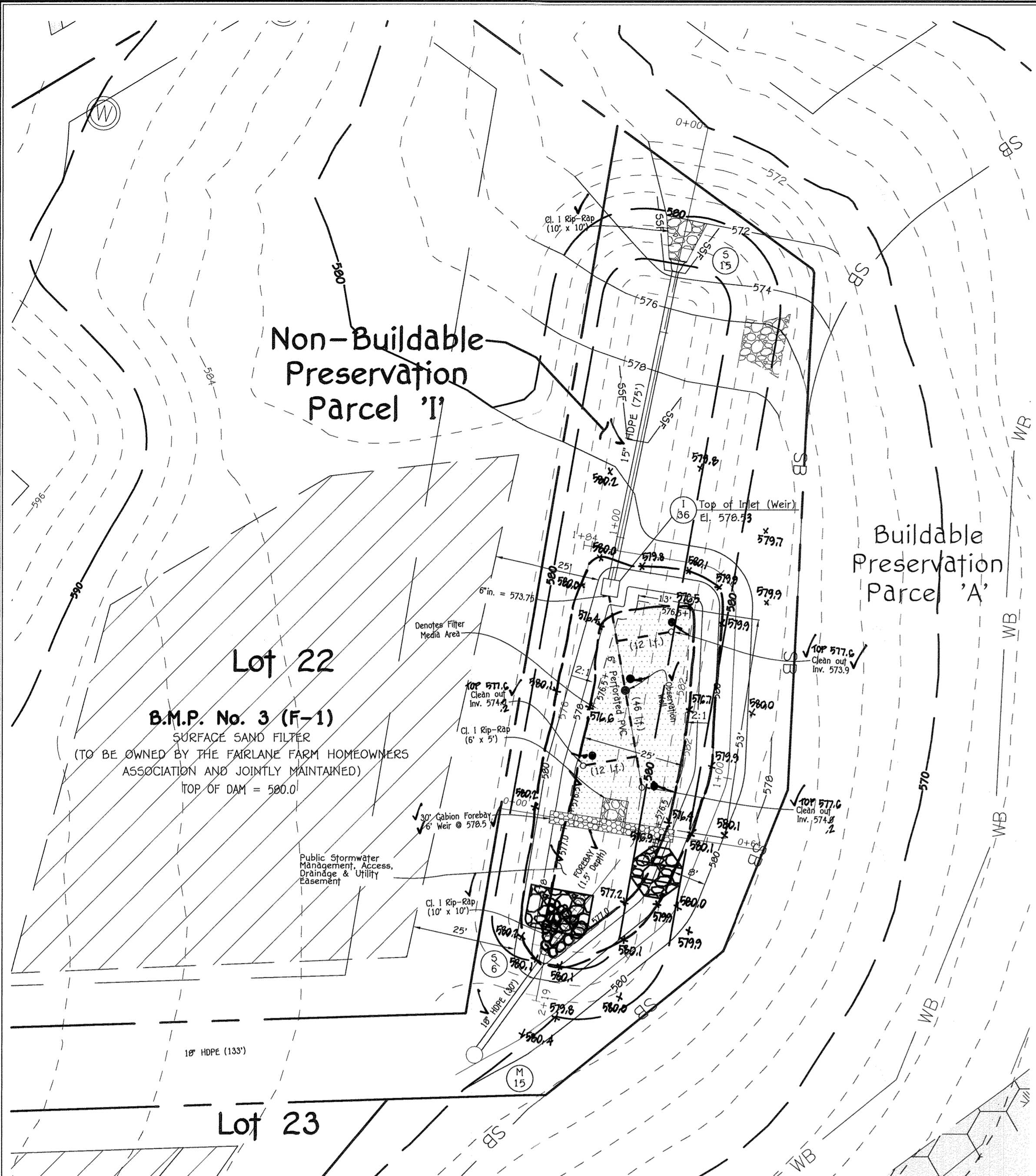
LOTS 19-44
 BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
 A Re-division of Non-Buildable Bulk Parcels 'Q' & 'H' And A Revision To Buildable Preservation Parcel 'A', Successed As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E', Parcel 'F' And Non-Buildable Bulk Parcels 'G' And 'I'



ALDO M. VITUCCI, P.E.
 I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17.
 DATE: NOVEMBER 11, 2016
 SHEET 20 OF 36

ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 20 OF 36

"AS BUILT" F-16-062



Non-Buildable
Preservation
Parcel 'I'

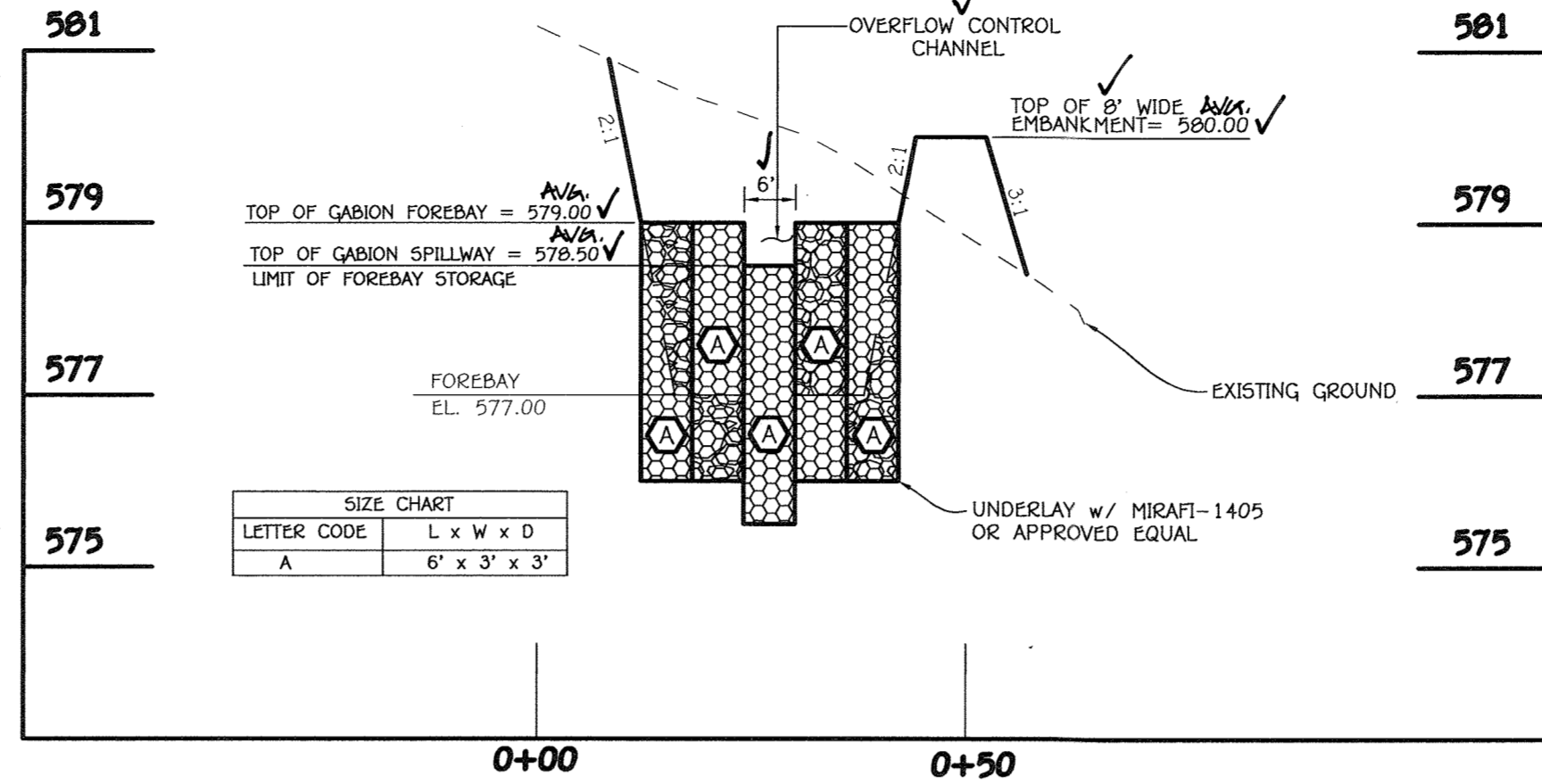
Buildable
Preservation
Parcel 'A'

Lot 22

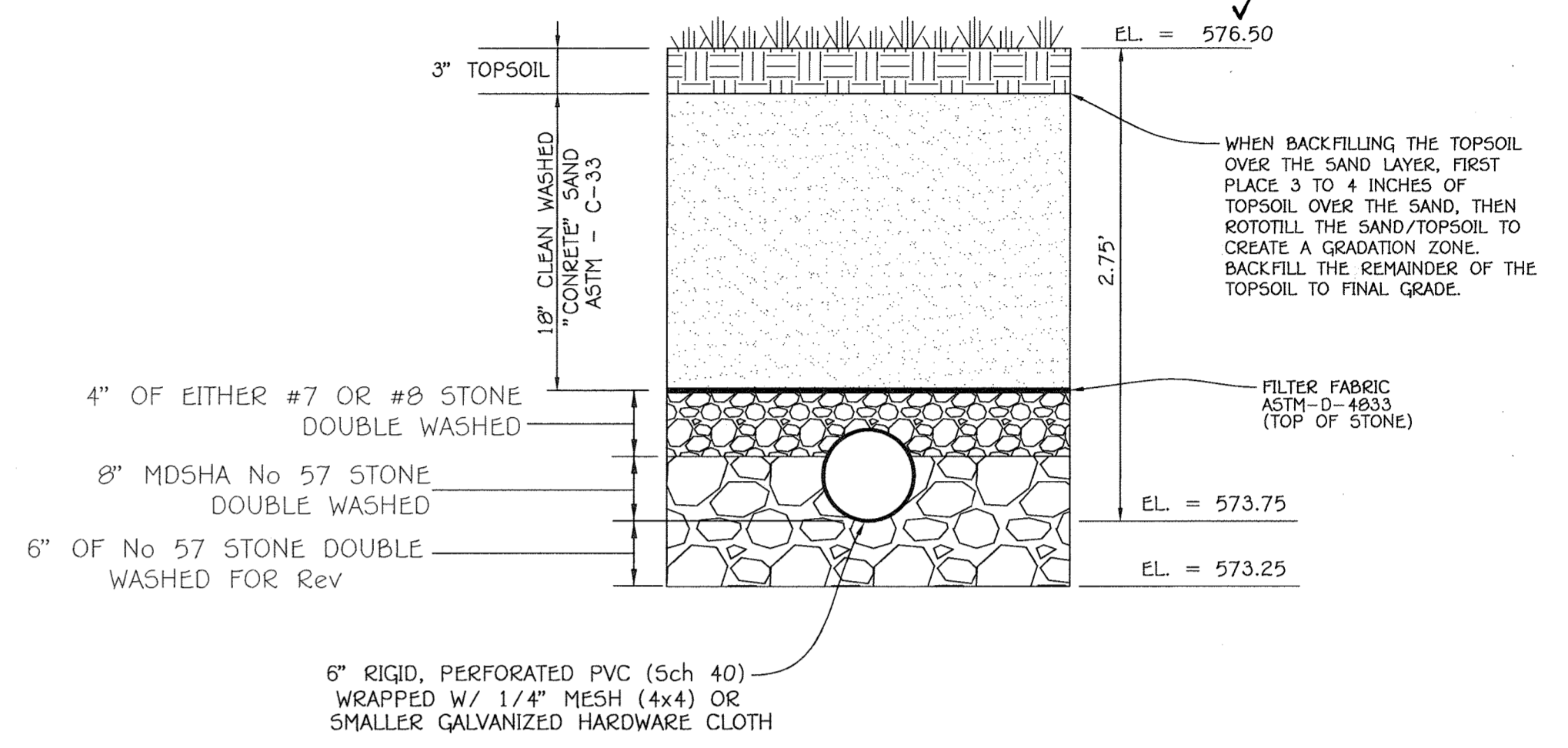
B.M.P. No. 3 (F-1)

SURFACE SAND FILTER
(TO BE OWNED BY THE FAIRLANE FARM HOMEOWNERS
ASSOCIATION AND JOINTLY MAINTAINED)
TOP OF DAM = 580.0

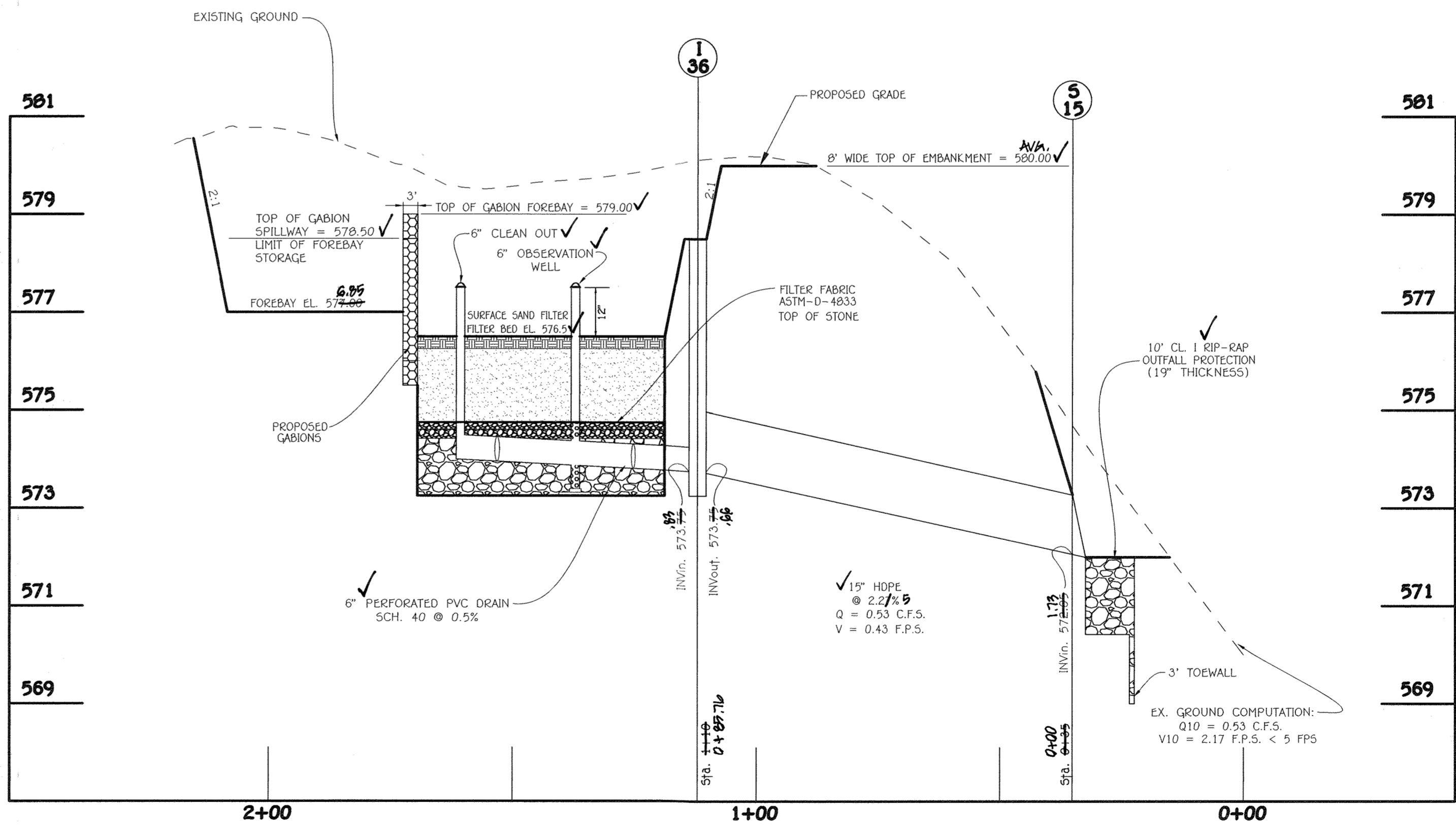
**PROPOSED SURFACE SAND FILTER (F-1)
BMP No. 3 PLAN VIEW**
SCALE: 1" = 20'



GABION FOREBAY PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



TYPICAL SECTION - SURFACE SAND FILTER (F-1)
NO SCALE



SECTION THRU SURFACE SANDFILTER
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 12/6/2016
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 3-16-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF ENGINEERING
[Signature] 12/14/16
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

REVISIONS		
NO.	DESCRIPTION	DATE



AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS BUILT" plan meet the approved plans and specifications.
[Signature] 02/20/20
CHARLES J. CRON • 20748 • 02/20/20
Date

**STORMWATER MANAGEMENT
PLAN AND DETAILS
B.M.P. No. 3 (F-1)**

**FAIRLANE FARM
PHASE TWO**

LOTS 19-44,
BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE
PRESERVATION PARCELS 'I' THRU 'N'
A Subdivision of Non-Buildable Bulk Parcels 'G' & 'H' and A Deviation To Buildable
Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable
Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E', Parcel 'F' and
Non-Buildable Bulk Parcels 'G' and 'H'."
ZONED: RC-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: NOVEMBER 11, 2016
SHEET 21 OF 36

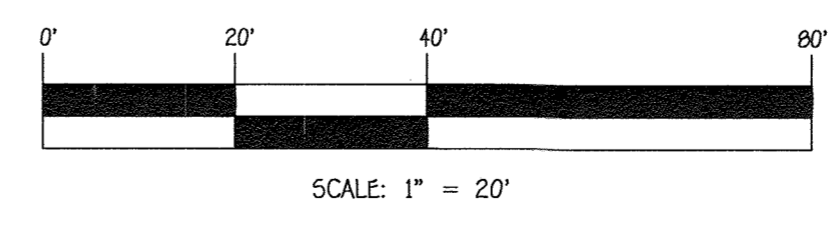


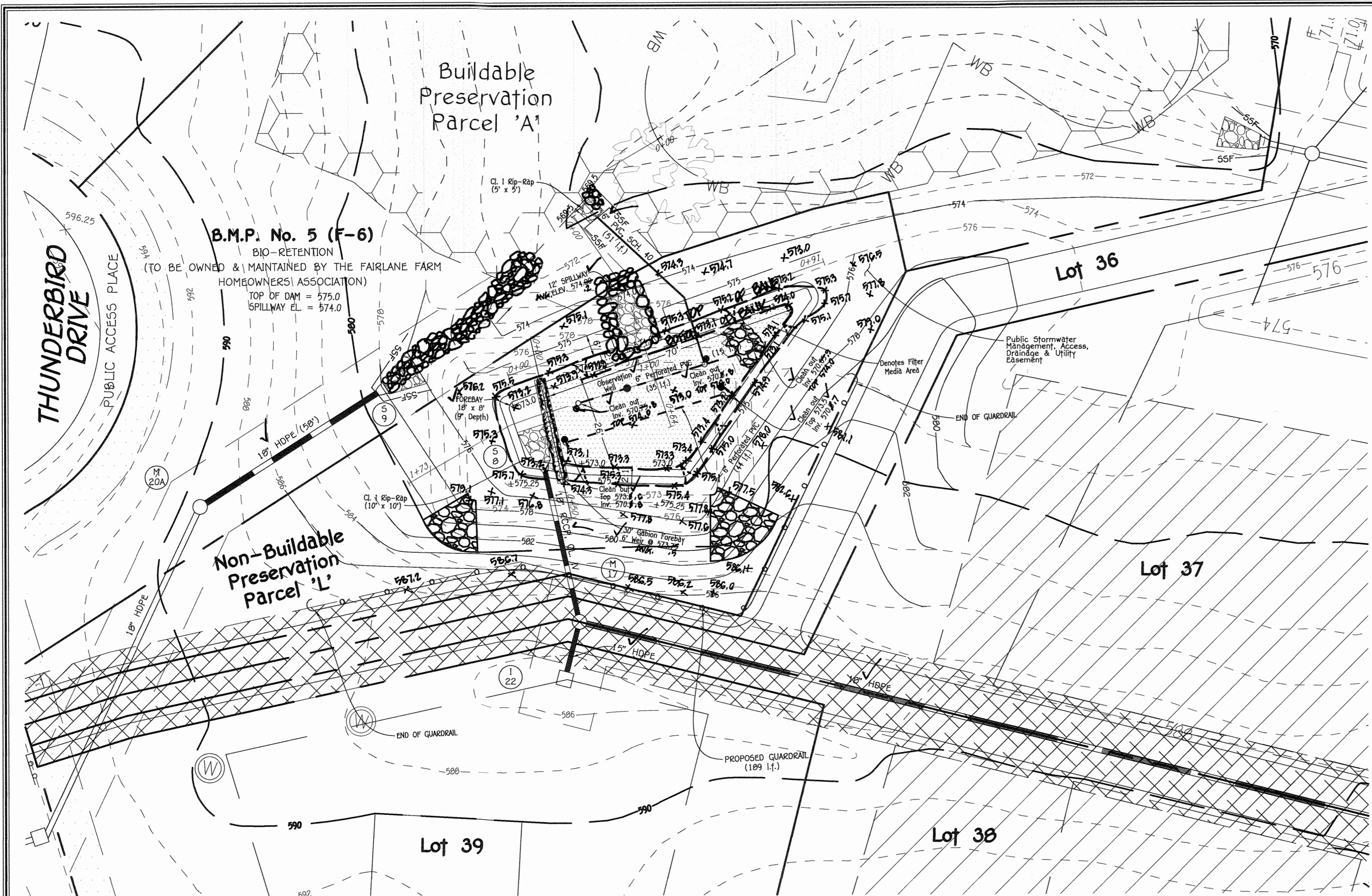
ALDO M. VITUCCI, P.E.
DATE: 11/14/16
"Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, expiration Date 2-22-17."

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK • 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21114
(410) 461-2899

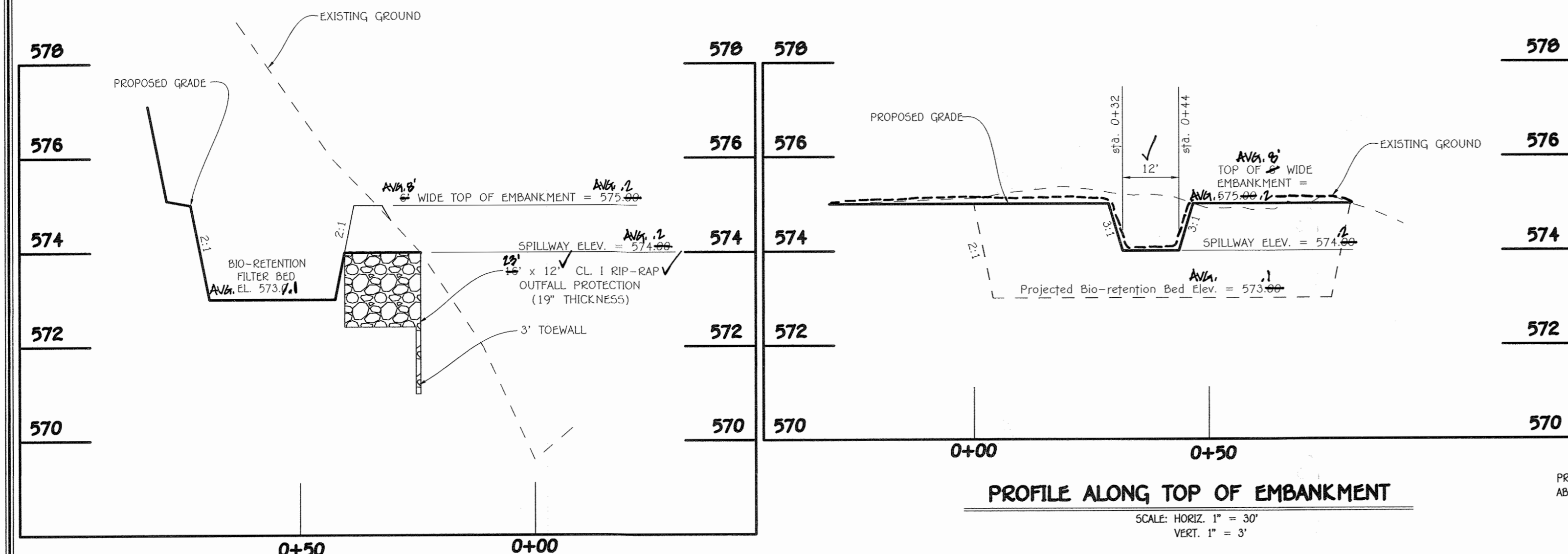
OWNER
DANSYCOOP, LLC
c/o ESTATE OF FRANCES JEAN SCHULTE
DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
2215 DUVALL ROAD
WOODBINE, MD 21797
410-977-1327

DEVELOPER
LAND DESIGN & DEVELOPMENT
8318 FORREST STREET
SUITE 200
ELLICOTT CITY, MARYLAND 21143
(410)-922-4600





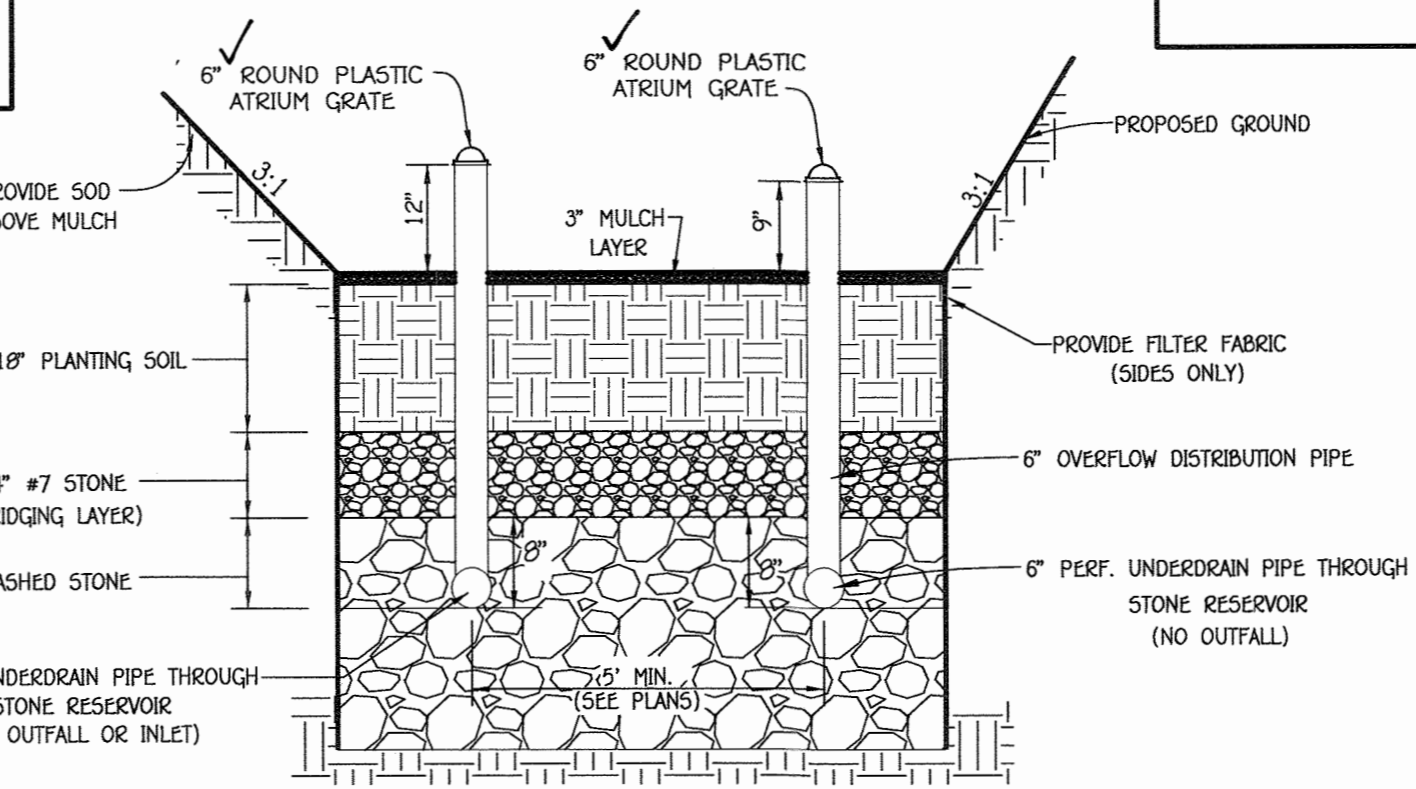
PROPOSED BIO-RETENTION FACILITY (F-6) BMP No. 5 PLAN VIEW
SCALE: 1" = 20'



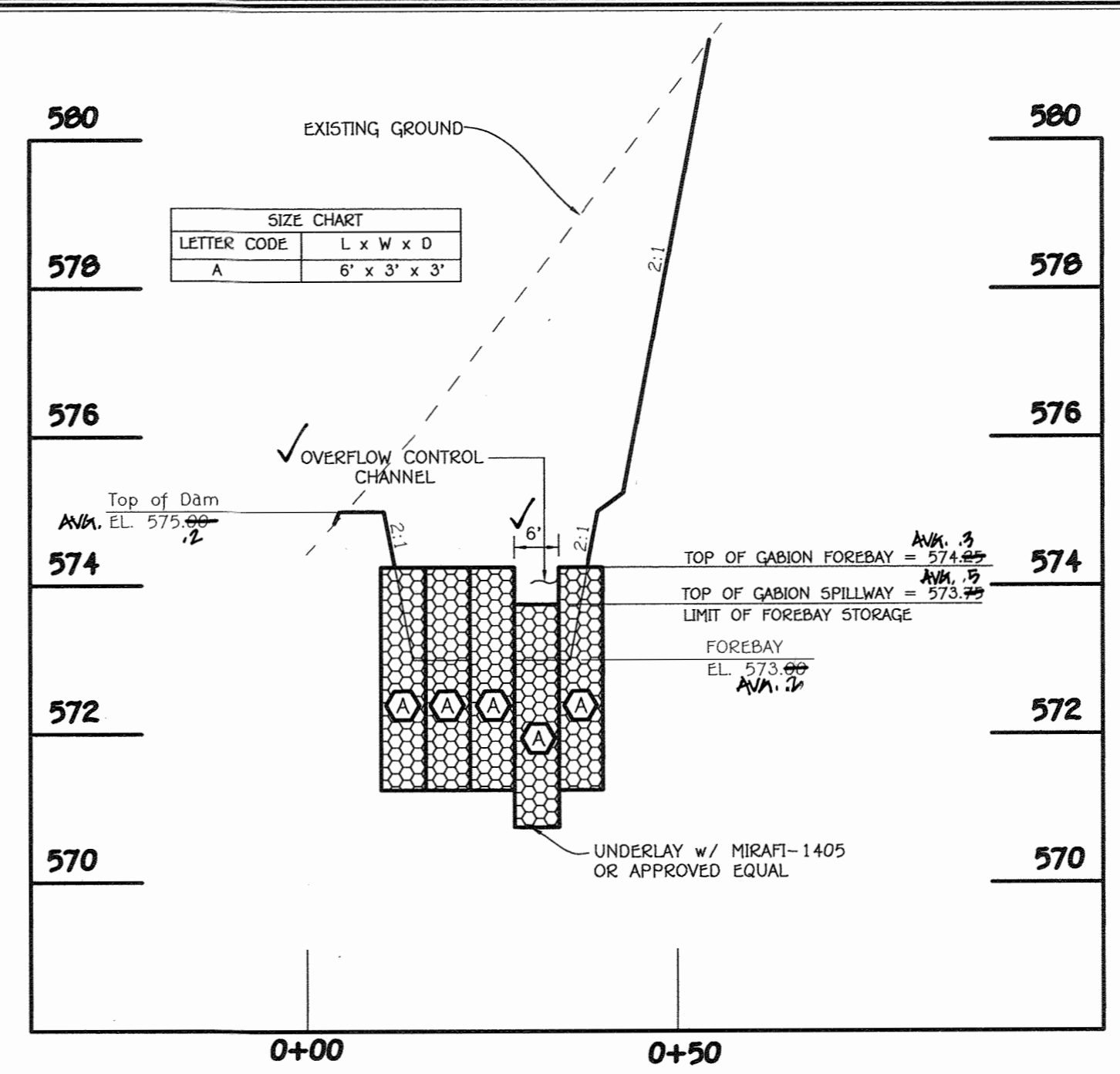
PROFILE ALONG TOP OF EMBANKMENT
SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



SECTION THRU SPILLWAY
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



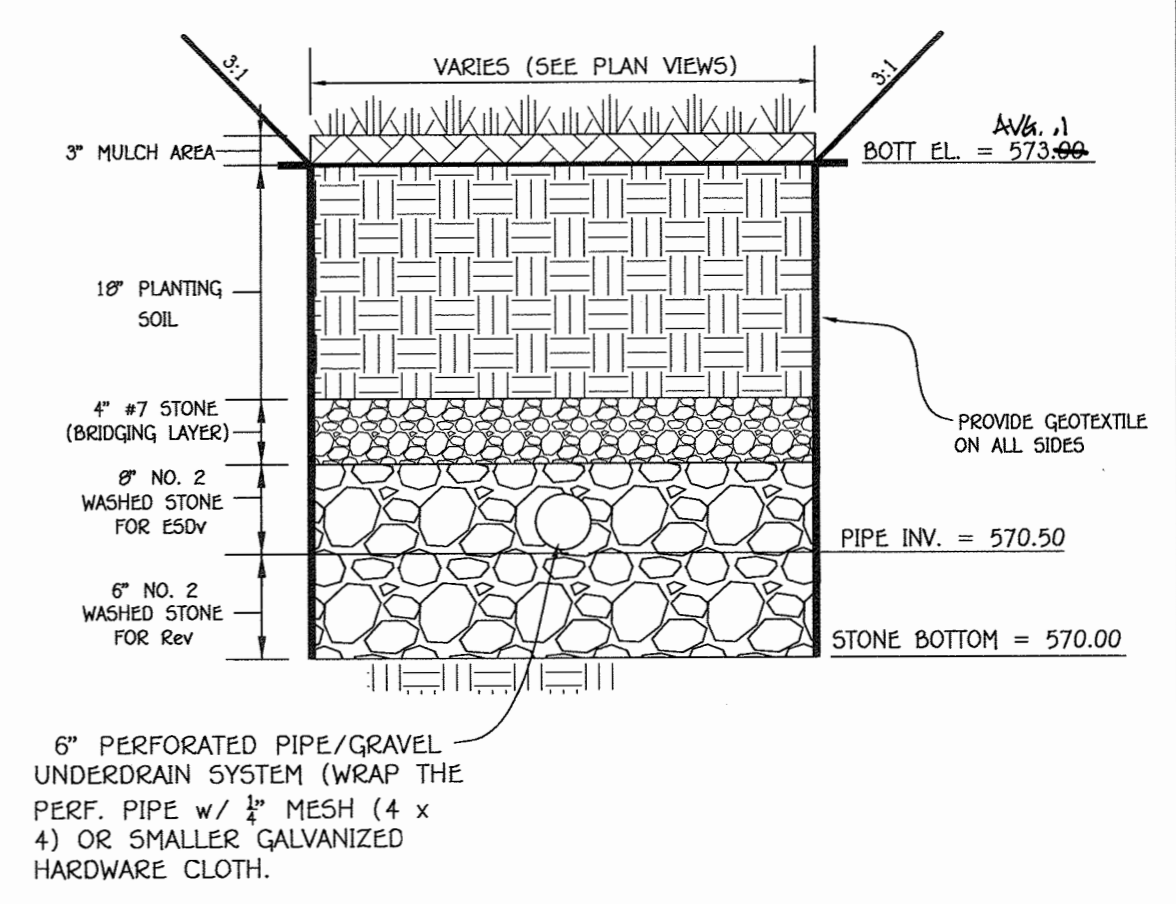
MICRO BIO-RETENTION SECTION WITH 6" OVERFLOW DISTRIBUTION PIPE
NO SCALE



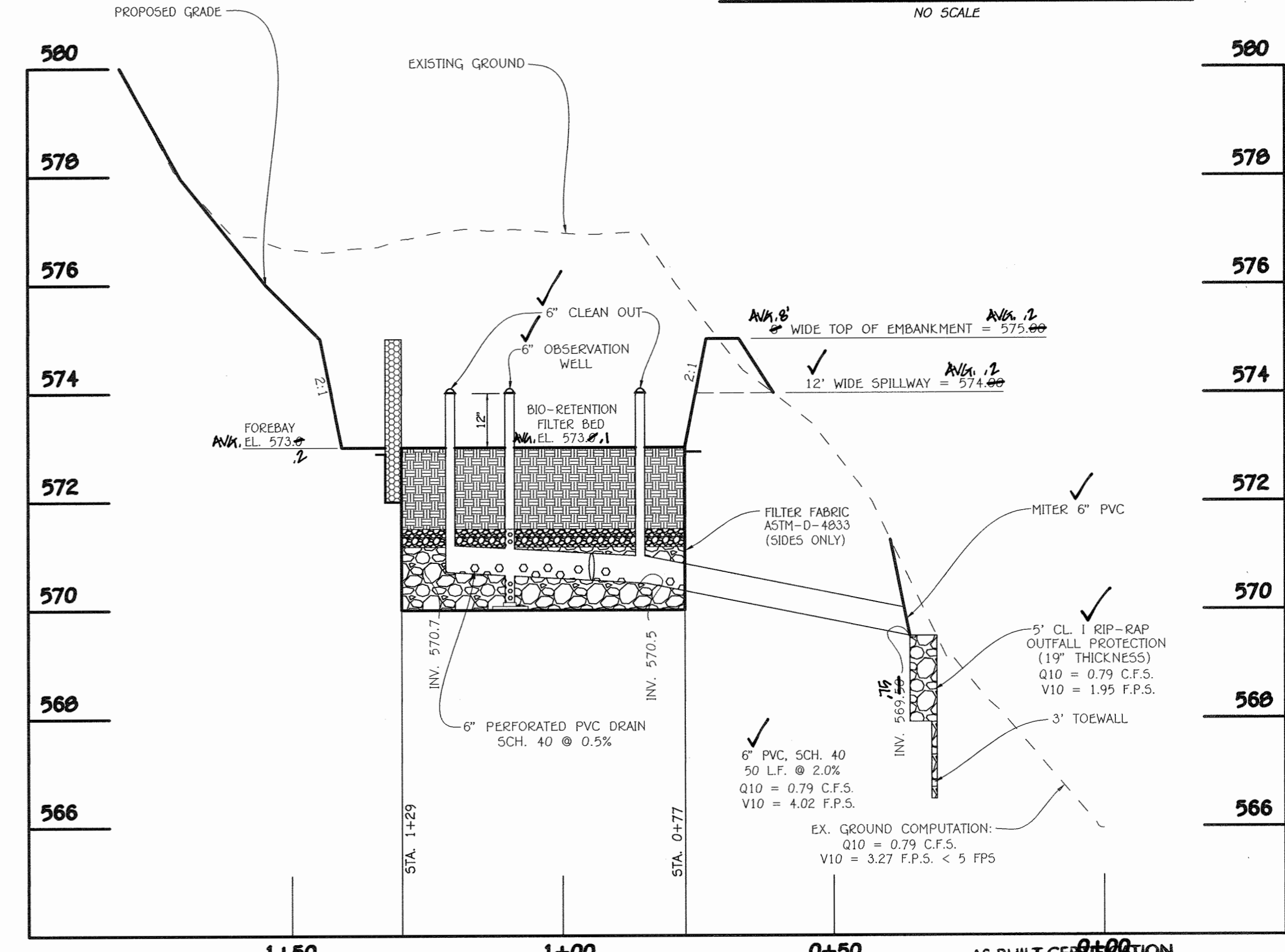
GABION FOREBAY PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS *[Signature]* 12/6/2016 DATE
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* 3-Nov-17 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* 12/14/16 DATE

REVISIONS		
NO.	DESCRIPTION	DATE



BIO-RETENTION SECTION (F-6)
NO SCALE



SECTION THRU BIO-RETENTION
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

AS-BUILT CERTIFICATION
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS BUILT" plan meet the approved plans and specifications.
[Signature] 03/30/20 Date
 CHARLES J. CROVO, S.E., P.E., 113601 Date



ALDO M. VITUCCI, P.E. DATE: 11/16/16
 "Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17."

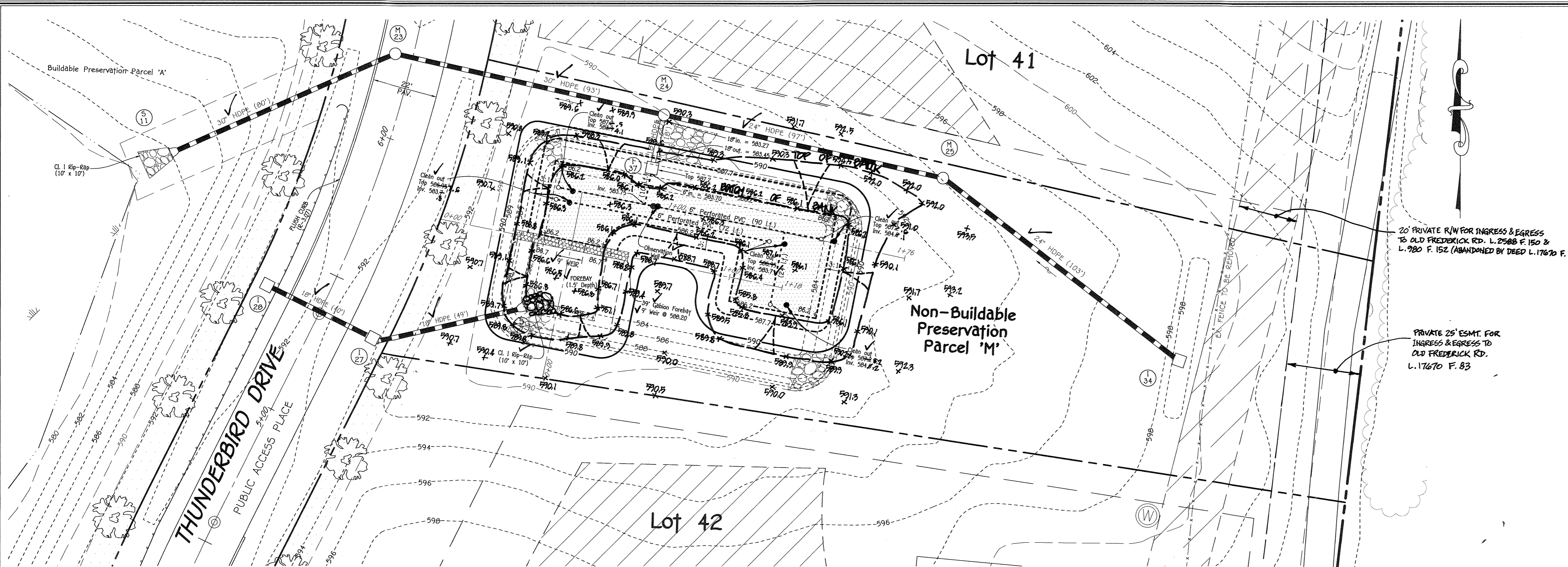
STORMWATER MANAGEMENT PLAN AND DETAILS
B.M.P. No. 5 (F-6)
FAIRLANE FARM PHASE TWO
 LOTS 19-44
BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'L' THRU 'N'
 A Subdivision of Non-Buildable Lots Parcels 'L' & 'N' and a Revision To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'L', Parcel 'M' And Non-Buildable Lots Parcels 'N' And 'O'"
 ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 22 OF 36

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21144
 (410) 461-2000

Scale: 1" = 50'

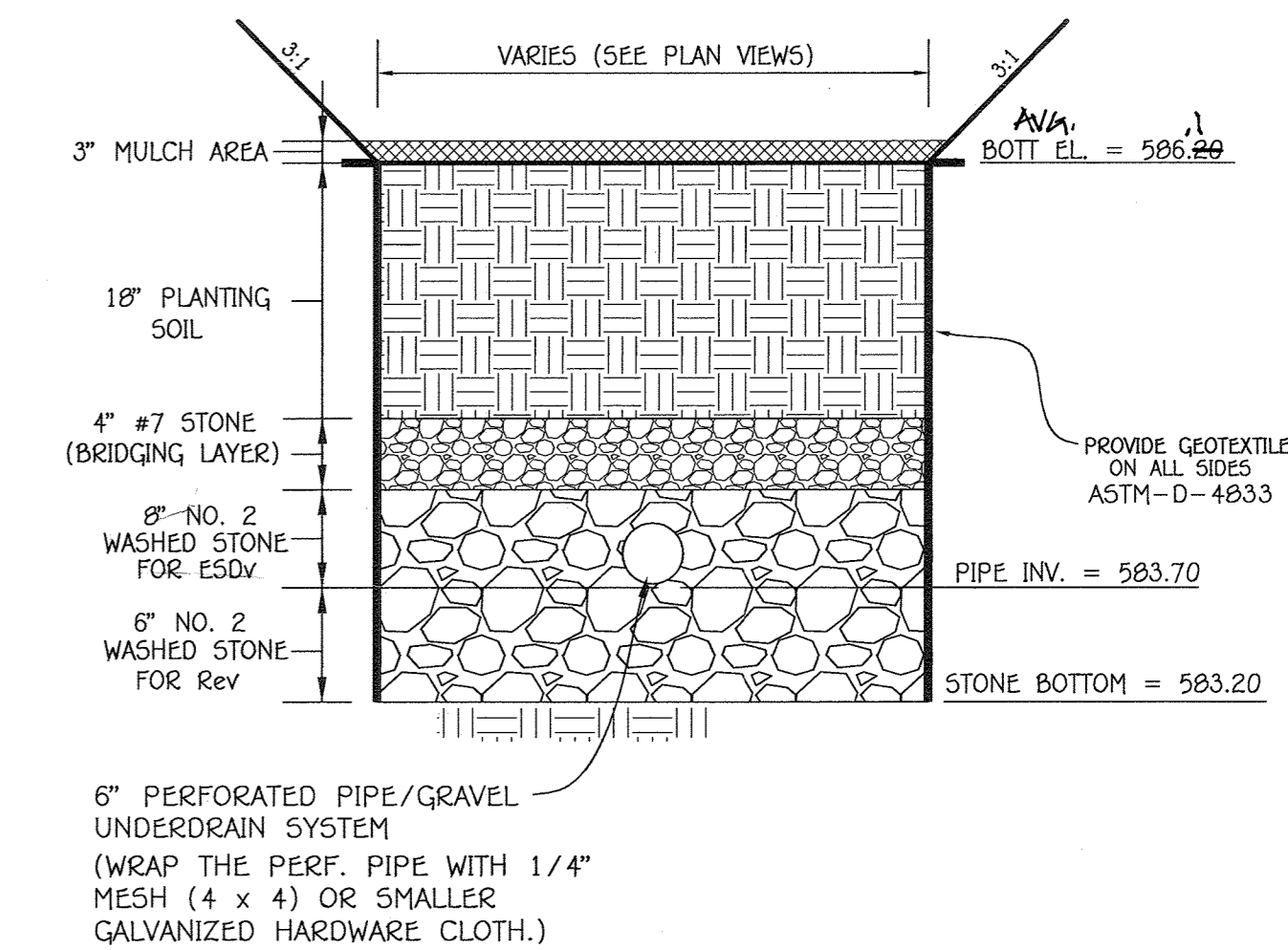
OWNER
 DAISYCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUWALL ROAD
 WOODBINE, MD 21197
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8310 FORREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21143
 (410)-922-4600



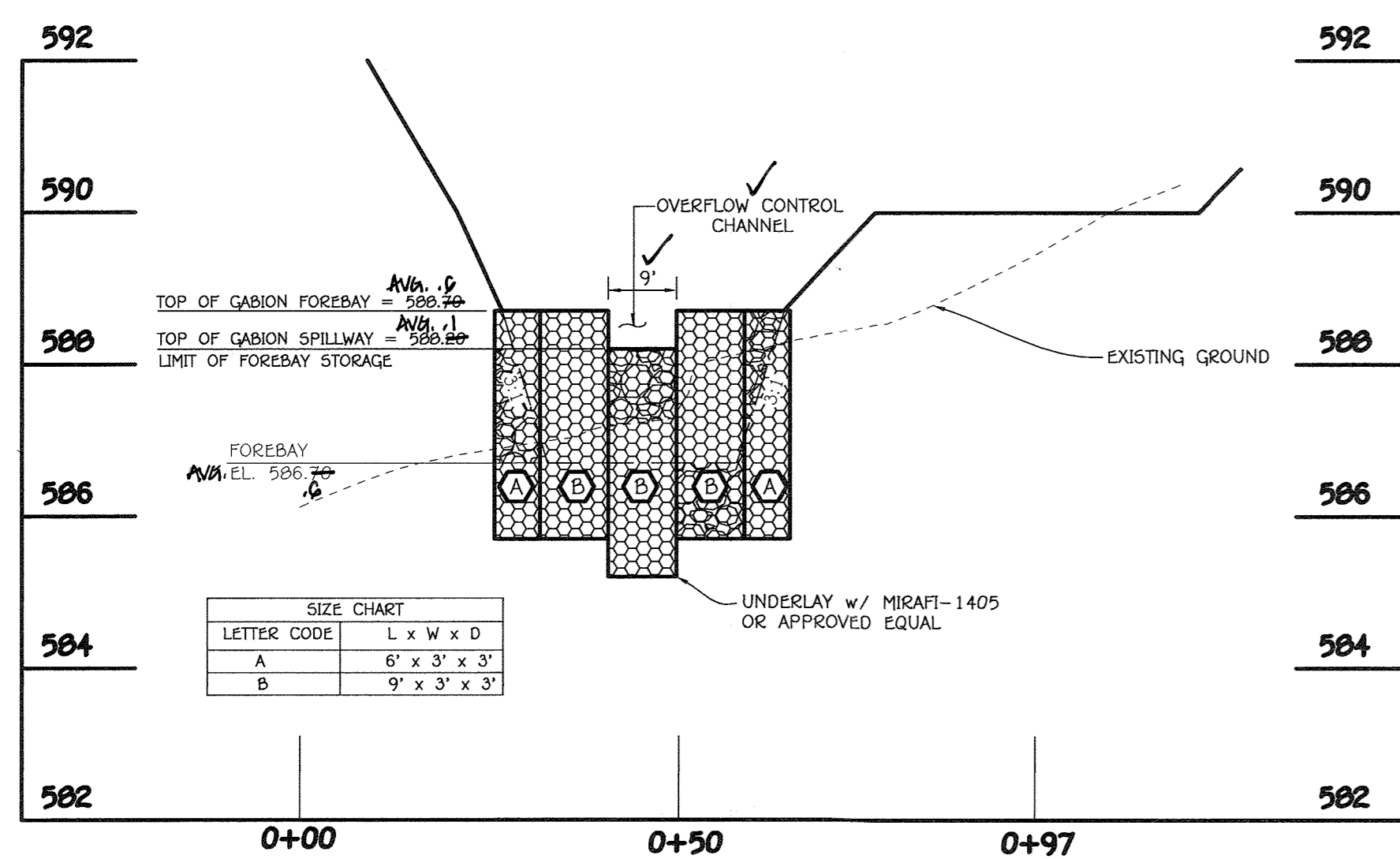
PROPOSED BIO-RETENTION FACILITY (F-6)
BMP No. 4 PLAN VIEW

SCALE: 1" = 20'



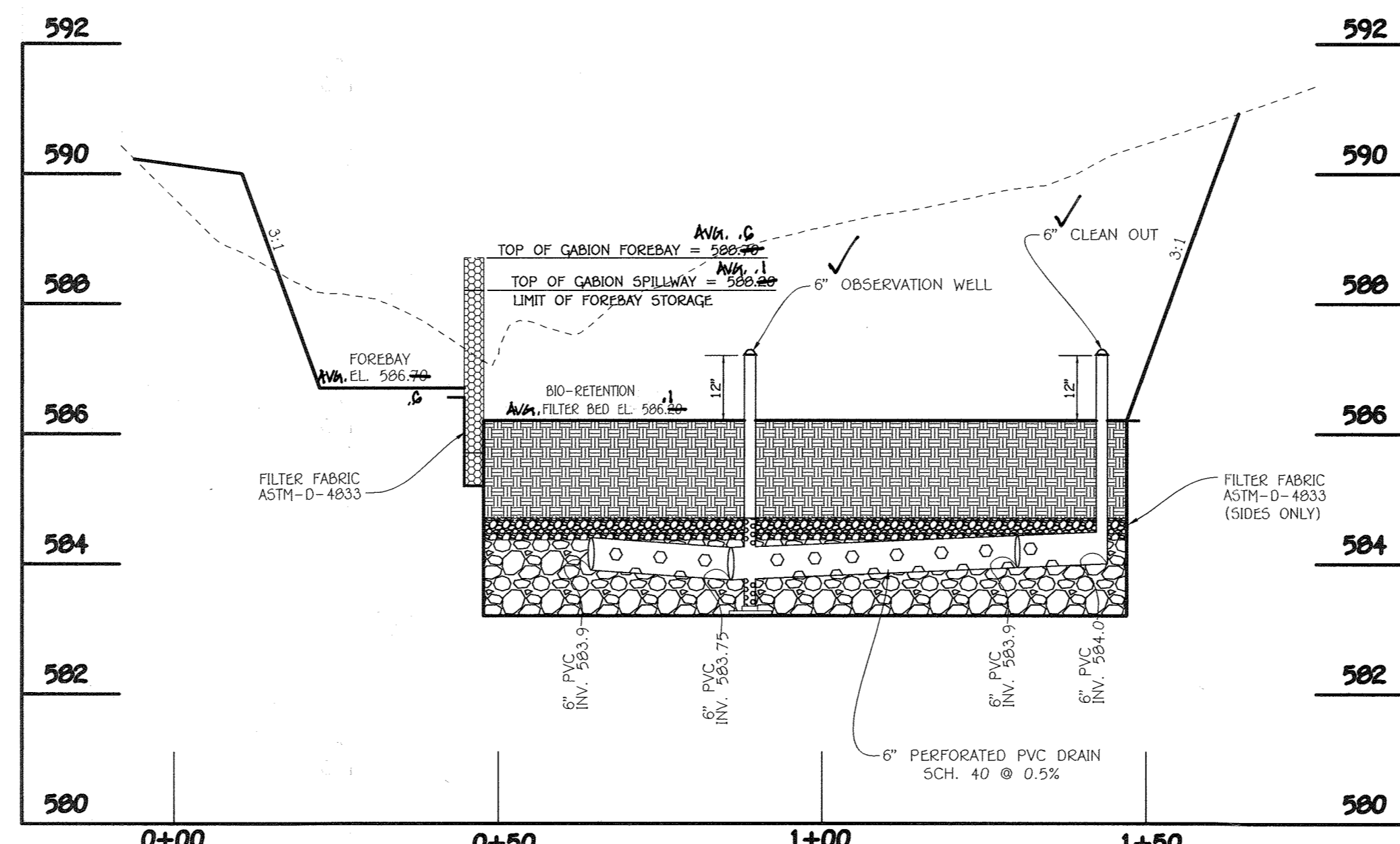
BMP No. 4
BIO-RETENTION SECTION (F-6)

NO SCALE



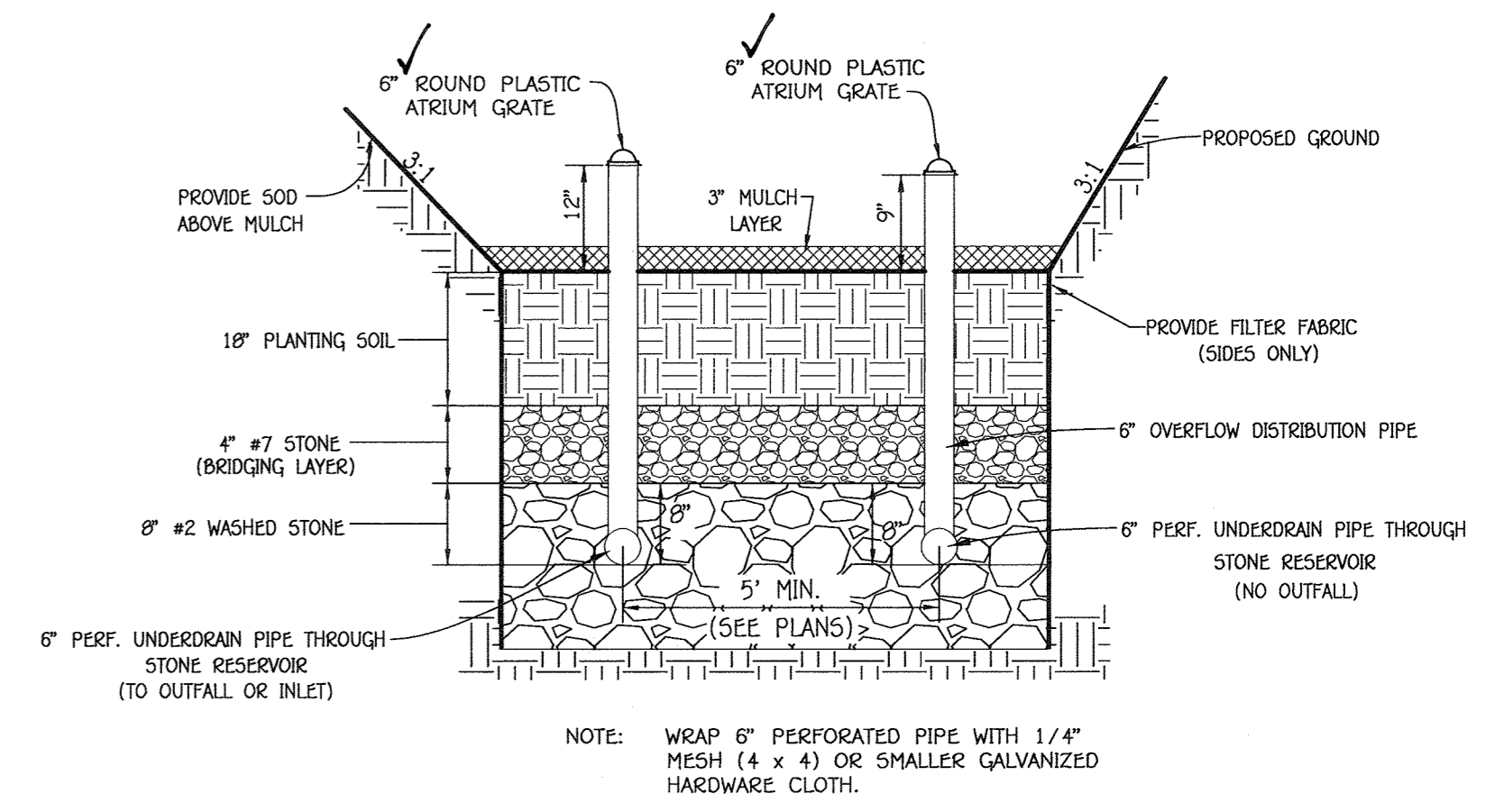
B.M.P. No. 4
GABION FOREBAY PROFILE

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



B.M.P. No. 4
SECTION THRU SAND FILTER

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



BIO-RETENTION SECTION
WITH 6" OVERFLOW DISTRIBUTION PIPE

NO SCALE

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS BUILT" plan meet the approved plans and specifications.
CHARLES J. CARROLL, P.E. 04/16/2016 Date

STORMWATER MANAGEMENT
PLAN AND DETAILS
B.M.P. No. 4 (F-6)

**FAIRLANE FARM
PHASE TWO**

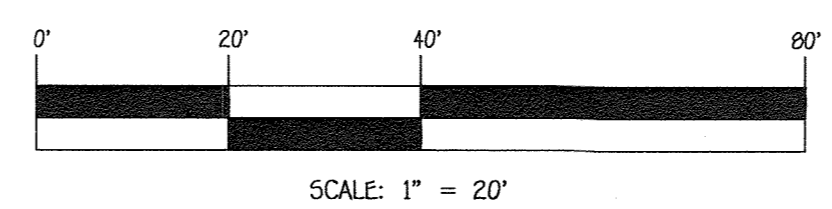
LOTS 19-44,
BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'

A Subdivision of Non-Buildable Bulk Parcels 'I' & 'N' and a Revision to Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1' Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'I' Thru 'N', Parcel 'I' And Non-Buildable Bulk Parcels 'I' And 'N'
ZONED: RC-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: NOVEMBER 11, 2016
SHEET 23 OF 36

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2899

OWNER
DAISYCOOP, LLC
c/o ESTATE OF FRANCES JEAN SCHULTE
DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
2215 DUVALL ROAD
WOODBINE, MD 21797
410-977-1327

DEVELOPER
LAND DESIGN & DEVELOPMENT
8318 FOREST STREET
SUITE 200
ELICOTT CITY, MARYLAND 21043
(410)-922-4600

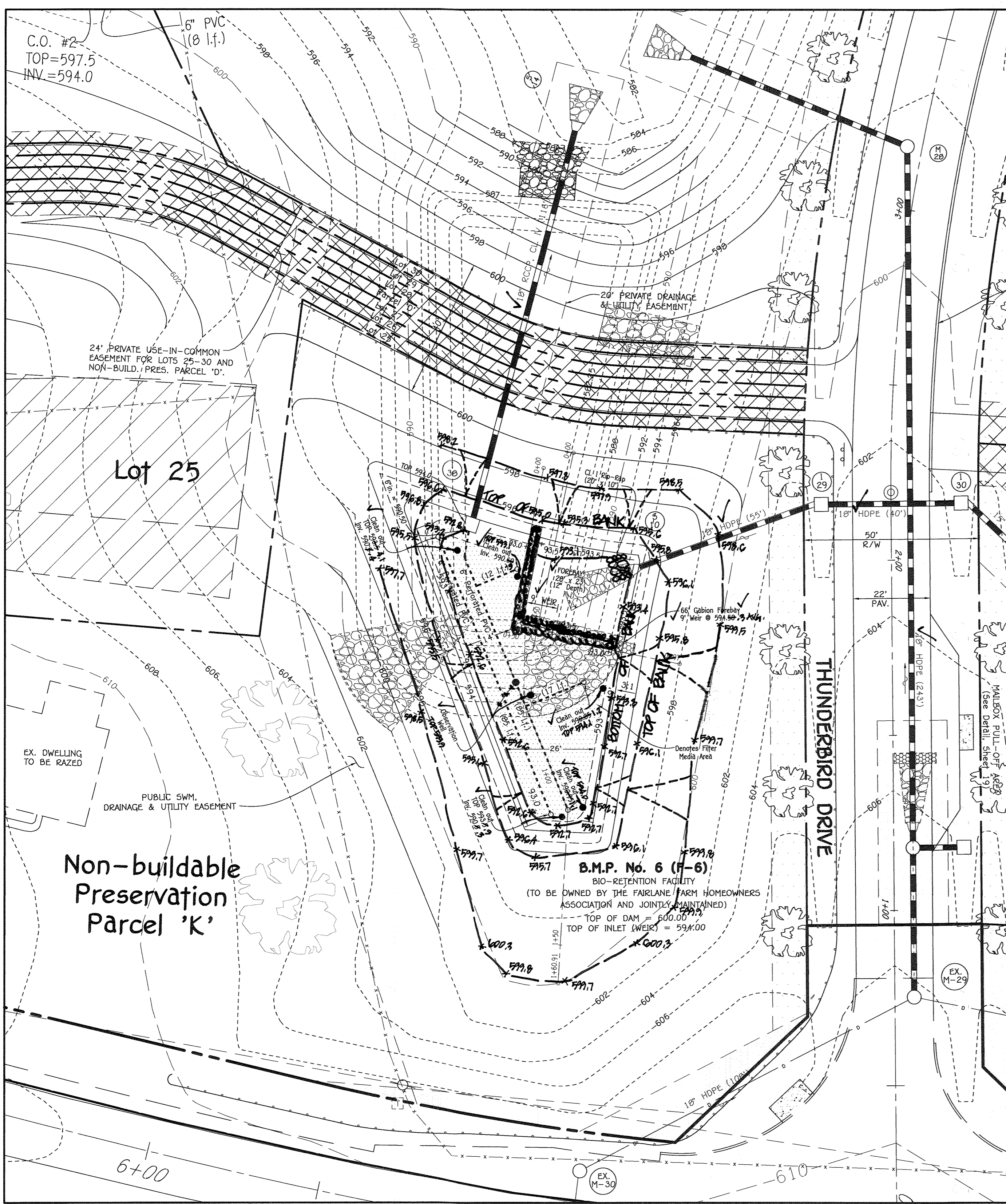


SCALE: 1" = 20'

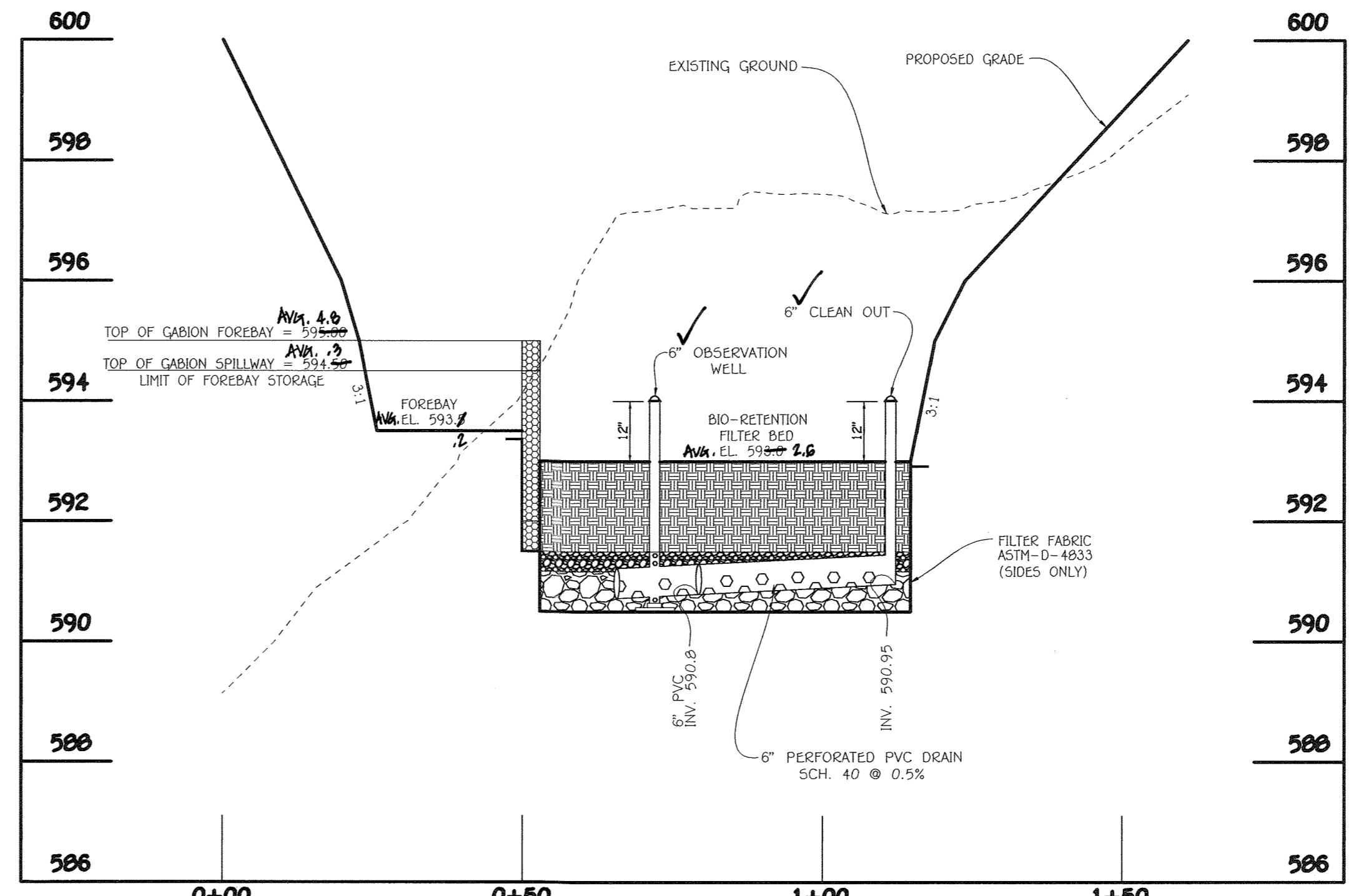
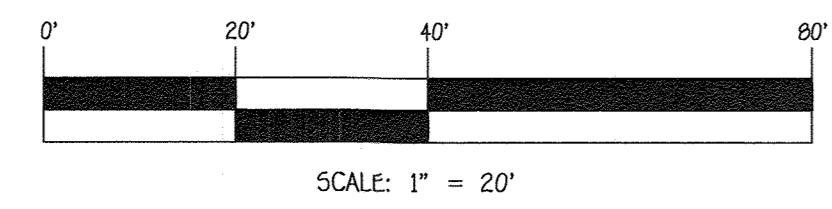


ALDO M. VITUCCI, P.E.
DATE: 4/16/16
"Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20742, Expiration Date 2-22-17."

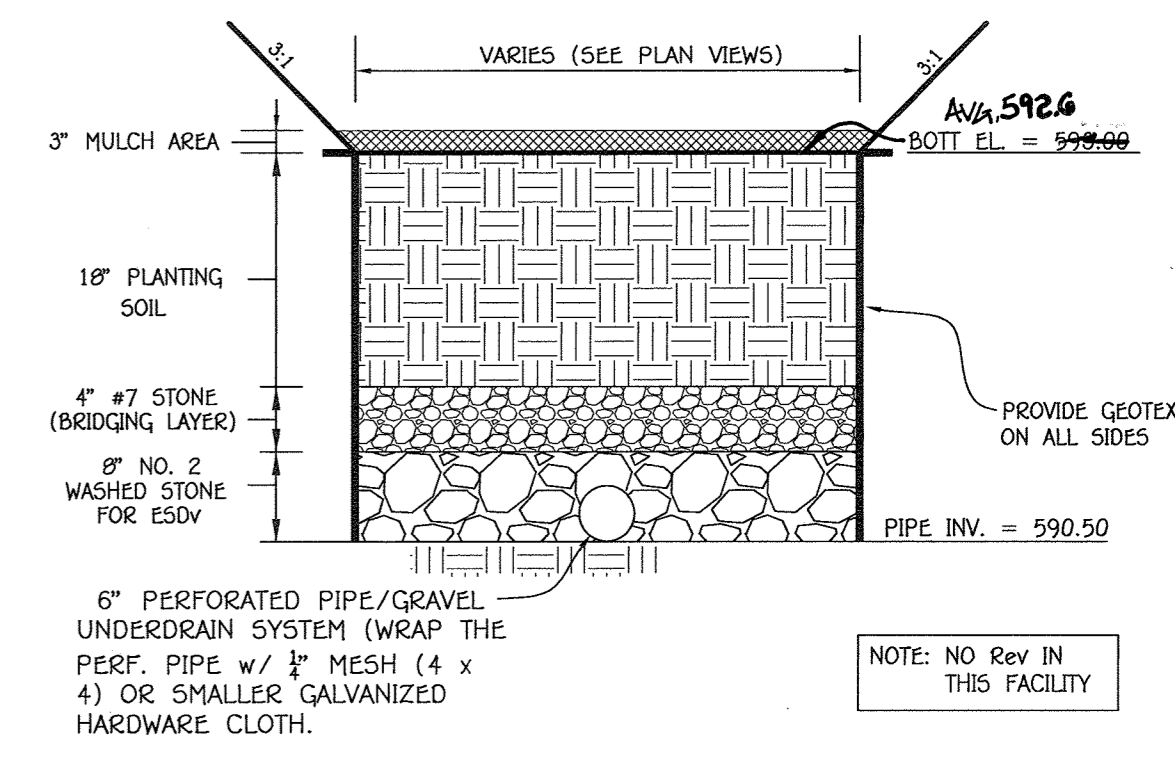
"AS BUILT" F-16-062



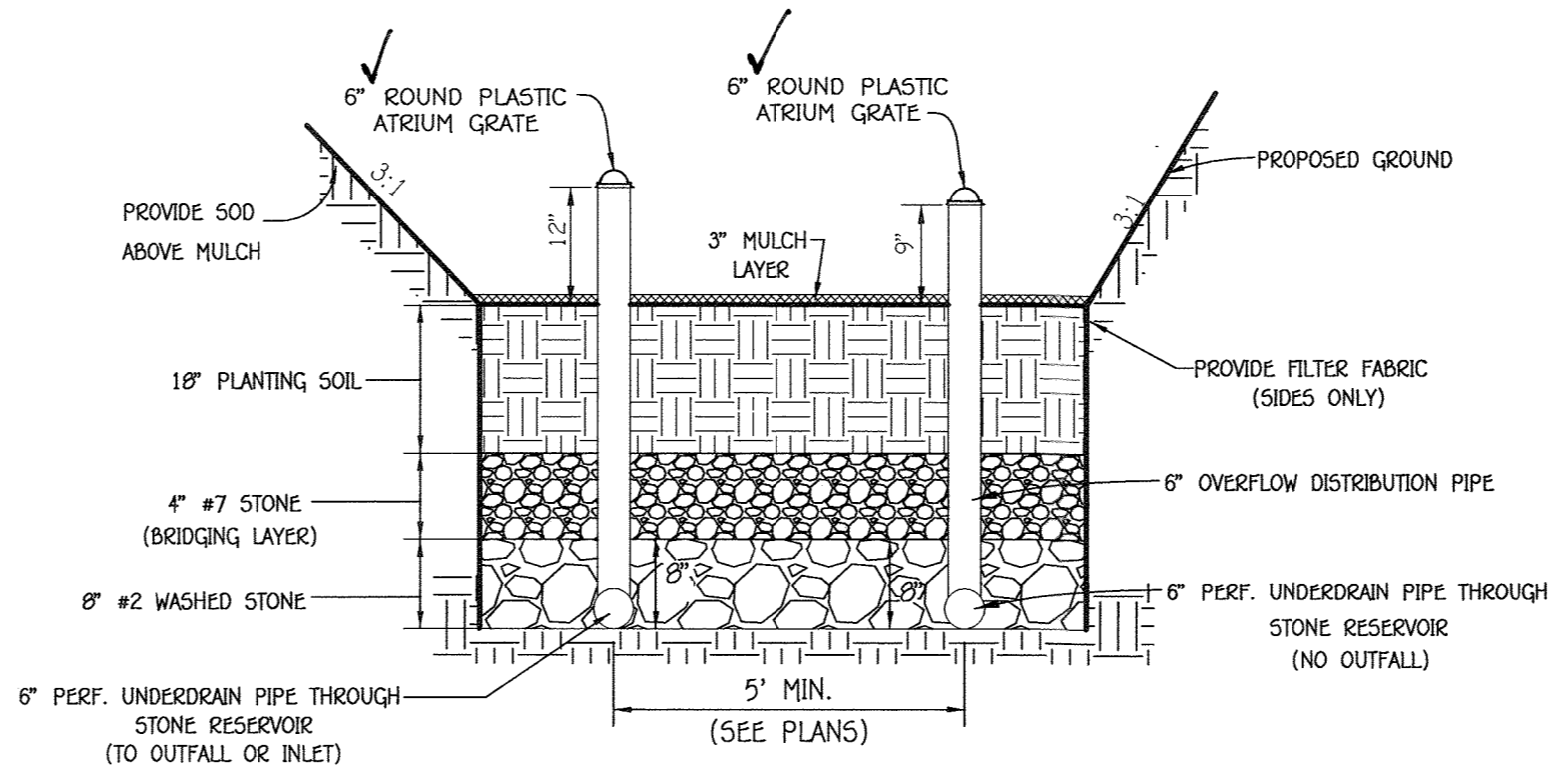
**PROPOSED BIO-RETENTION FACILITY (F-6)
BMP No. 6 PLAN VIEW**
SCALE: 1" = 20'



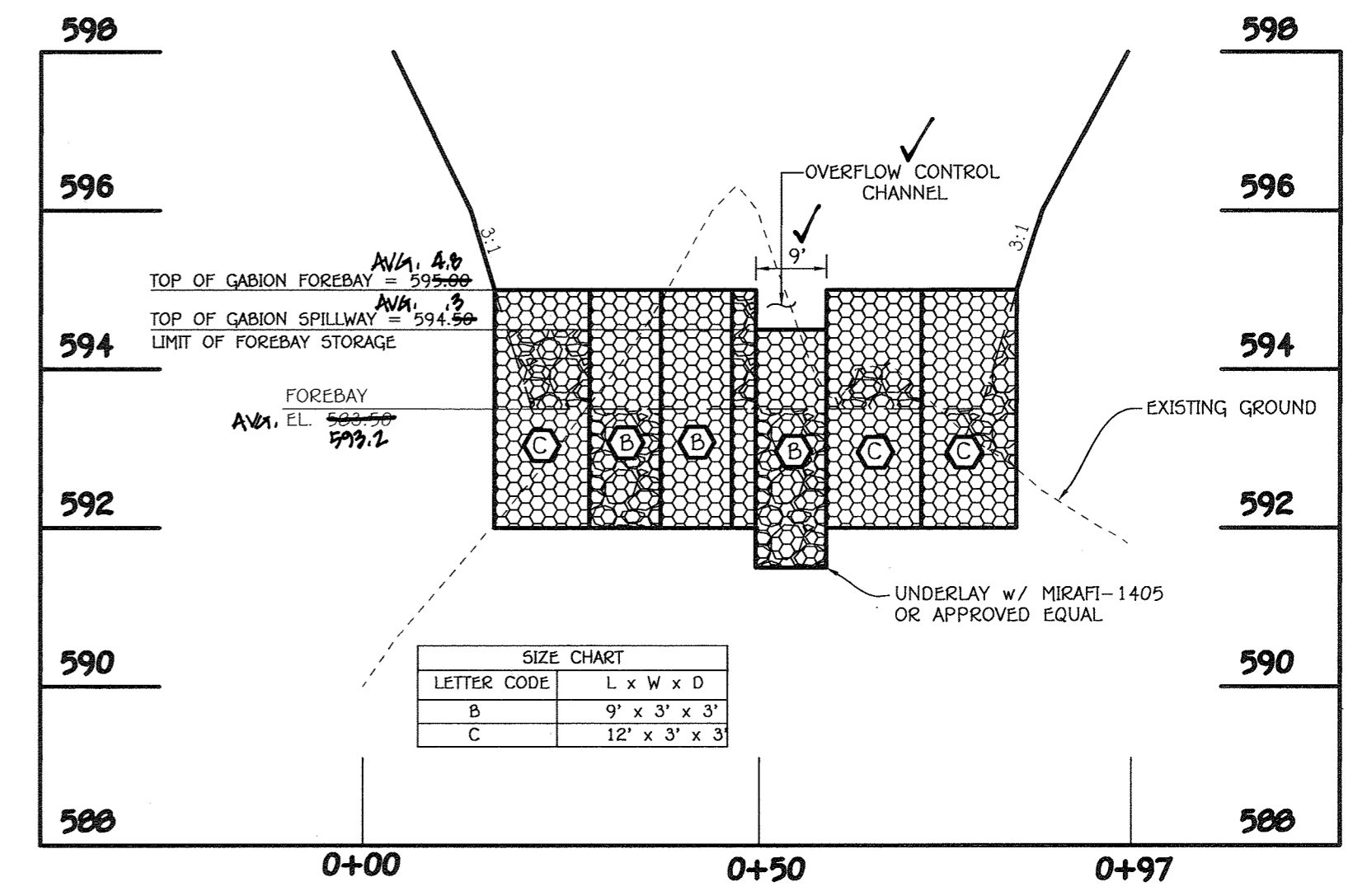
**B.M.P. No. 6
SECTION THRU BIO-RETENTION**
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



**BMP No. 6
BIO-RETENTION SECTION (F-6)**
NO SCALE



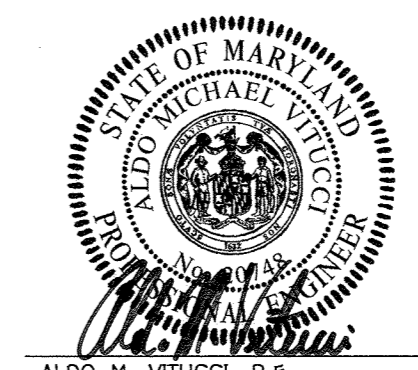
**MICRO BIO-RETENTION SECTION
WITH 6" OVERFLOW DISTRIBUTION PIPE**
NO SCALE



**B.M.P. No. 6
GABION FOREBAY PROFILE**
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS BUILT" plan meet the approved plans and specifications.
CHARLES J. CRAVO SR. P.E. #13304 Date: 02/20/20



AS-BUILT CERTIFICATION
I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17.

**STORMWATER MANAGEMENT
PLAN AND DETAILS
B.M.P. No. 6 (F-6)
FAIRLANE FARM
PHASE TWO
LOTS 19-44,
BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE
PRESERVATION PARCELS 'I' THRU 'N'**
A Resubdivision of Non-Buildable Bulk Parcels 'C' & 'H' And A Revision To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'D' Thru 'E', Parcel 'F' And Non-Buildable Bulk Parcels 'I' And 'N'."
ZONED: RC-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: NOVEMBER 11, 2016
SHEET 24 OF 36

FISHER, COLLINS & CARTER, INC.
Civil Engineering Consultants & Land Surveyors
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2895

OWNER
DAISYCOOP, LLC
c/o ESTATE OF FRANCES JEAN SCHULTE
DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
2215 DUVALL ROAD
WOODBINE, MD 21797
410-977-1327

DEVELOPER
LAND DESIGN & DEVELOPMENT
8310 FORREST STREET
SUITE 200
ELLCOTT CITY, MARYLAND 21043
(410)-922-4600

APPROVED: DEPARTMENT OF PUBLIC WORKS
A. M. M... 12/6/2016
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
B. S. S... 7-16-17
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
C. J. C... 3-10-17
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO.	REVISIONS DESCRIPTION	DATE

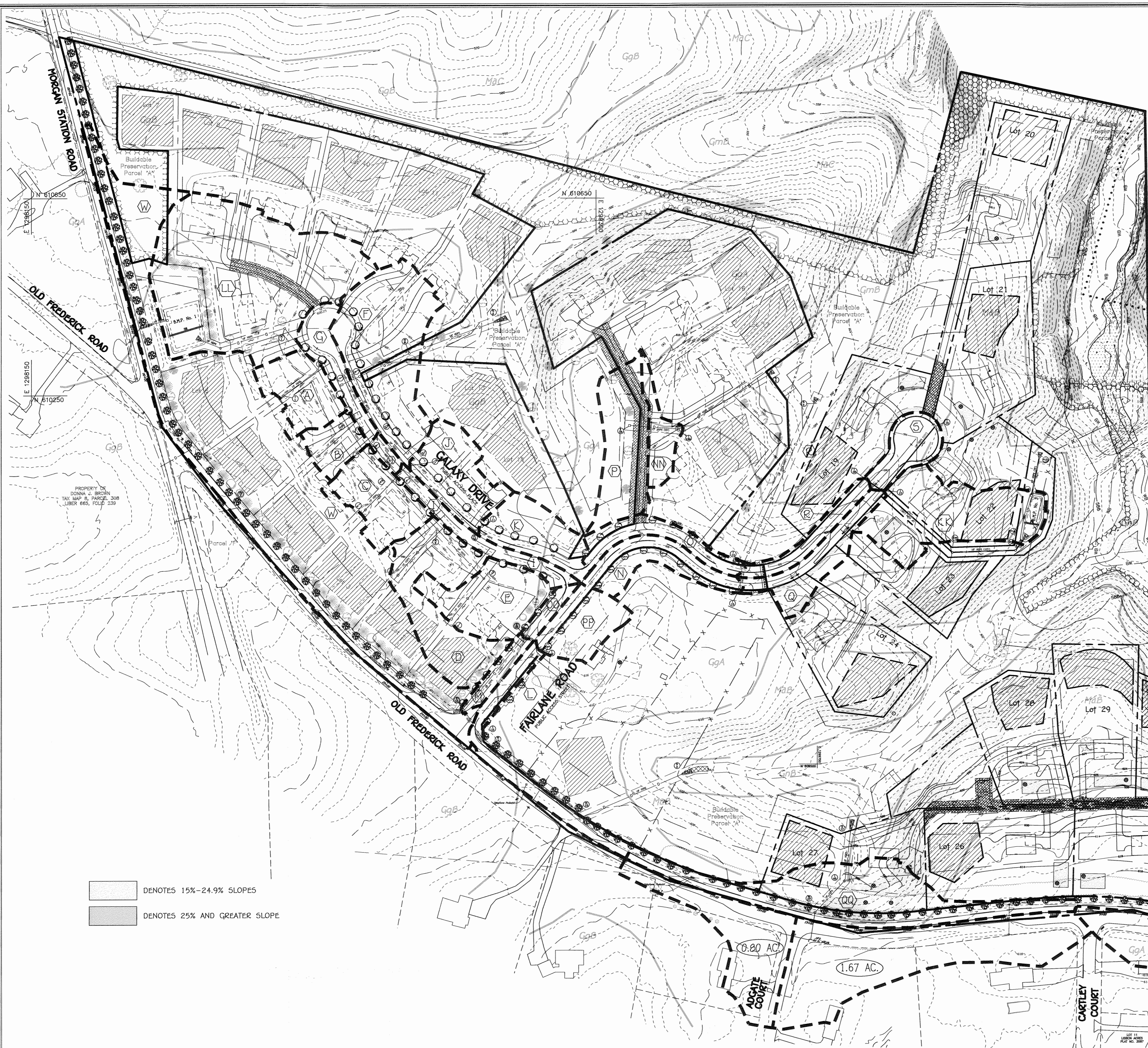
SOILS LEGEND			
SOIL	NAME	CLASS	Kw
GbB	Gladstone loam, 3 to 8 percent slopes	B	0.28
MdB	Manor loam, 3 to 8 percent slopes	B	0.27
MhC	Manor loam, 8 to 15 percent slopes	B	0.27
GmB	Glenville silt loam, 3 to 8 percent slopes	C	(e) 0.43
GgB	Glenville loam, 3 to 8 percent slopes	B	0.27
GnB	Glenville-Balte silt loams, 0 to 8 percent slopes	C	(e) 0.43
GgA	Glenville loam, 0 to 3 percent slopes	B	0.31
OcC	Ocoquan loam, 8 to 15 percent slopes	B	0.28
MhF	Manor-Brinklow complex, 25 to 65 percent slopes, very rocky	B	(e) 0.34

SOIL TYPES TAKEN FROM MAP 19 OF THE SOIL SURVEY OF HOWARD COUNTY, MARYLAND FOUND ON THE HSCD WEBSITE.

NOTES:

- * Hydric soils and/or contains hydric inclusions
- ** May contain hydric inclusions
- † Generally only within 100-year floodplain areas
- (e) highly erodible soil

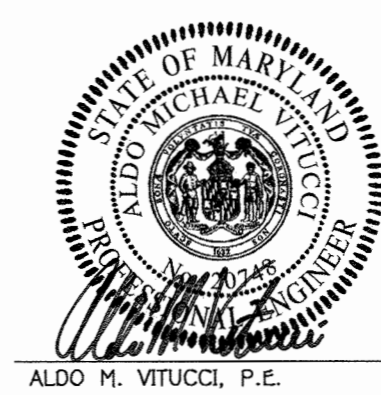
DRAINAGE AREA DATA					
STRUCTURE NO.	DRAINAGE AREA	AREA	"C"	ZONED	% IMP.
I-17	Q	0.30 AC.	0.42	RC-DEO	25%
I-18	R	0.22 AC.	0.47	RC-DEO	33%
I-19	S	0.20 AC.	0.95	RC-DEO	100%
I-20	T	2.78 AC.	0.24	RC-DEO	0%
I-21	U	0.34 AC.	0.24	RC-DEO	0%
I-22	V	0.78 AC.	0.42	RC-DEO	25%
I-23	W	0.32 AC.	0.41	RC-DEO	24%
I-24	X	0.74 AC.	0.44	RC-DEO	28%
I-25	Y	0.70 AC.	0.41	RC-DEO	24%
I-26	Z	0.27 AC.	0.44	RC-DEO	28%
I-27	AA	1.33 AC.	0.52	RC-DEO	40%
I-28	BB	0.46 AC.	0.24	RC-DEO	0%
I-29	CC	0.16 AC.	0.47	RC-DEO	32%
I-30	DD	0.13 AC.	0.43	RC-DEO	27%
I-31	EE	0.90 AC.	0.40	RC-DEO	7%
I-32	FF	0.57 AC.	0.38	RC-DEO	27%
I-33	HH	0.43 AC.	0.58	RC-DEO	48%
I-34	II	5.93 AC.	0.51	RC-DEO	38%
I-35	LL	2.41 AC.	0.49	RC-DEO	35%
I-36	KK	1.03 AC.	0.68	RC-DEO	63%
I-37	⊙ BMP#3	3.29 AC.	0.32	RC-DEO	35%
I-38	⊙ BMP#6	1.06 AC.	0.28	RC-DEO	5%
Ex. Culvert	GG	3.61 AC.	0.58	RC-DEO	48%
I-39	MM	0.07 AC.	0.63	RC-DEO	95%
I-40	JJ	1.00 AC.	0.42	RC-DEO	25%



MATCH LINE SEE SHEET 26

DENOTES 15%-24.9% SLOPES
 DENOTES 25% AND GREATER SLOPE

AS-BUILT CERTIFICATION
 Note: There is no "AS BUILT" information provided on this sheet.
[Signature] 02/20/20
 CHIMMERSVILLE, VA SR.P.E.#13204 Date



ALDO M. VITUCCI, P.E. 11/14/16
 DATE
 "Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17."

OVERALL STORM DRAIN DRAINAGE AREA MAP & SOILS MAP FAIRLANE FARM PHASE TWO
 LOTS 19-44
 BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
 A Re-division of Non-Buildable Bulk Parcels 'Q' & 'H' And A Revision To Buildable Preservation Parcel 'M', Successed As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'I', Parcel 'J' And Non-Buildable Bulk Parcels 'K' And 'L'."
 ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 25 OF 36

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL, P.O. BOX 11000
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2995

OWNER
 DAISYCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUVALL ROAD
 WOODBINE, MD 21797
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8318 FOREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21043
 (410)-922-4600

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
Aldo M. Vitucci 12/6/2016
 DATE

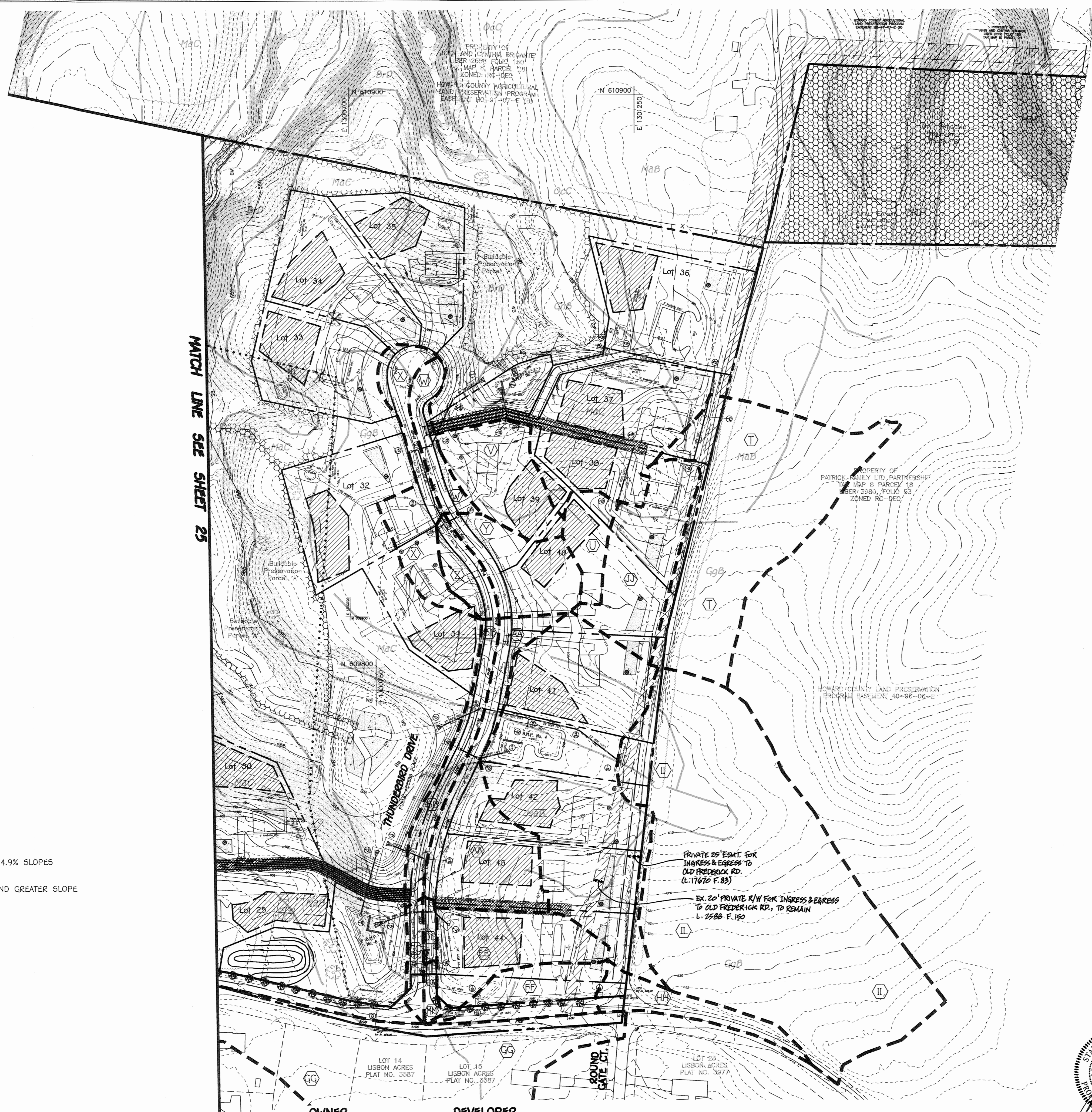
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
Kentel DeWitt 3-16-17
 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION
David Edwards 3-10-17
 DATE

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD NEW ACCESS ESMT.	3/23/18

SOILS LEGEND			
SOIL	NAME	CLASS	Kw
GbB	Gladstone loam, 3 to 8 percent slopes	B	0.28
MaB	Manor loam, 3 to 8 percent slopes	B	0.27
MaC	Manor loam, 8 to 15 percent slopes	B	0.27
GmB	Glenville silt loam, 3 to 8 percent slopes	C	(e) 0.43
GgB	Glenelig loam, 3 to 8 percent slopes	B	0.27
GnB	Glenville-Bible silt loams, 0 to 8 percent slopes	C	(e) 0.43
GgA	Glenelig loam, 0 to 3 percent slopes	B	0.31
OcC	Occoquan loam, 8 to 15 percent slopes	B	0.28
MkF	Manor-Brinklow complex, 25 to 65 percent slopes, very rocky	B	(e) 0.34

SOIL TYPES TAKEN FROM MAP 19 OF THE SOIL SURVEY OF HOWARD COUNTY, MARYLAND FOUND ON THE HSCD WEBSITE.
 NOTES:
 * Hydric soils and/or contains hydric inclusions
 ** May contain hydric inclusions
 † Generally only within 100-year floodplain areas
 (e) highly erodible soil



MATCH LINE SEE SHEET 25

□ DENOTES 15%-24.9% SLOPES
 □ DENOTES 25% AND GREATER SLOPE

FISHER, COLLINS & CARTER, INC.
 CIVIL, ENGINEERING, CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21040
 (410) 461-2855

<p>OWNER DAISYCOOP, LLC c/o ESTATE OF FRANCES JEAN SCHULTE DIANE G. SCHULTE, PERSONAL REPRESENTATIVE 2215 DUVALL ROAD WOODBINE, MD 21797 410-977-1327</p>	<p>DEVELOPER LAND DESIGN & DEVELOPMENT 8318 FORREST STREET SUITE 200 ELLICOTT CITY, MARYLAND 21043 (410)-922-4600</p>
--	---

AS-BUILT CERTIFICATION
 Note: There is no "AS BUILT" information provided on this sheet.
Charles J. Cray
 CHARLES J. CRAY, P.E. #13204
 Date: 02/20/20
 ALDO M. VITUCCI, P.E.
 ALDO M. VITUCCI, P.E.
 DATE: 11/14/16



OVERALL STORM DRAIN DRAINAGE AREA MAP & SOILS MAP FAIRLANE FARM PHASE TWO
 LOTS 19-44, AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
 A Re-subdivision of Non-Buildable Bulk Parcels 'G' & 'H' And A Revision to Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'K', Non-Buildable Preservation Parcels 'B', 'C', 'D', 'E', 'F', 'I' And Non-Buildable Bulk Parcels 'G' And 'H'."
 ZONED: RC-DEO
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 26 OF 36

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062

I:\2015\05106\dwg\Plan\plan phase 2\05106 Sheet 25-26.dwg, 11/11/2016, 10:21:41 AM, 11

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 phosphorus and metals. Vegetation planted in the facility will aid in nutrient uptake and water storage. Additionally, plant roots will provide aeration for stormwater to permeate soil for groundwater recharge. Finally, successful plantings provide aesthetic value and wildlife habitat making these facilities more desirable to the public.

Design Constraints:

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

Bio-retention

Soil Bed Characteristics

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

The planting soil should be a sandy loam, loamy sand, loam (USDA), or a loam/sand mix (should contain a minimum 35 to 60% sand, by volume). The clay content for these soils should be less than 25% by volume (Environmental Quality Resources (EQR), 1996; Engineering Technology Inc. and Biohabitats, Inc. (ETAB), 1993). Soils should fall within the SM, ML, SC classifications or the Unified Soil Classification System (USCS). A permeability of at least 1.0 feet per day (0.5"/hr) is required (a conservative value of 0.5 feet per day is used for design). The soil should be free of stones, stumps, roots, or other woody material over 1" in diameter. Brush or seeds from noxious weeds (e.g., Johnson Grass, Mugwort, Nutcracker, 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.

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

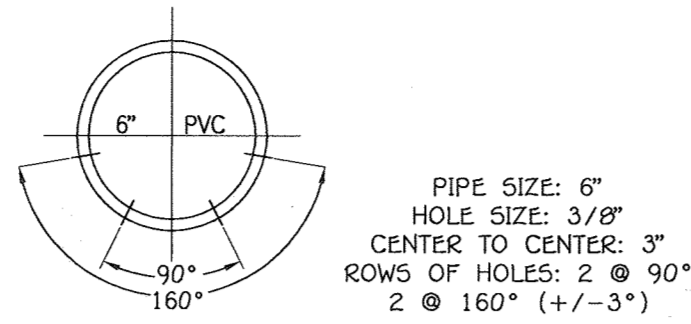
Mulch Layer

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

The mulch layer should be standard landscape style, single or double shredded hardwood mulch or chips. The mulch layer should be well aged (stockpiled or stored for at least 12 months), uniform in color, and free of other materials, such as weed seeds, soil, roots, etc. The mulch should be applied to a maximum depth of three inches. Grass clippings should not be used as 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 Clayton and Schueler, 1997.



SCH 40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE
NO SCALE

NOTES:
UNDERDRAIN PIPE SHALL BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 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).

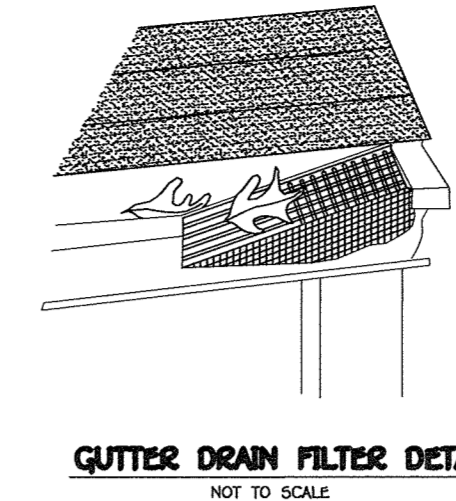
PERFORATIONS SHALL BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (No. 4 OR 4 x 4) GALVANIZED HARDWARE CLOTH.

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.

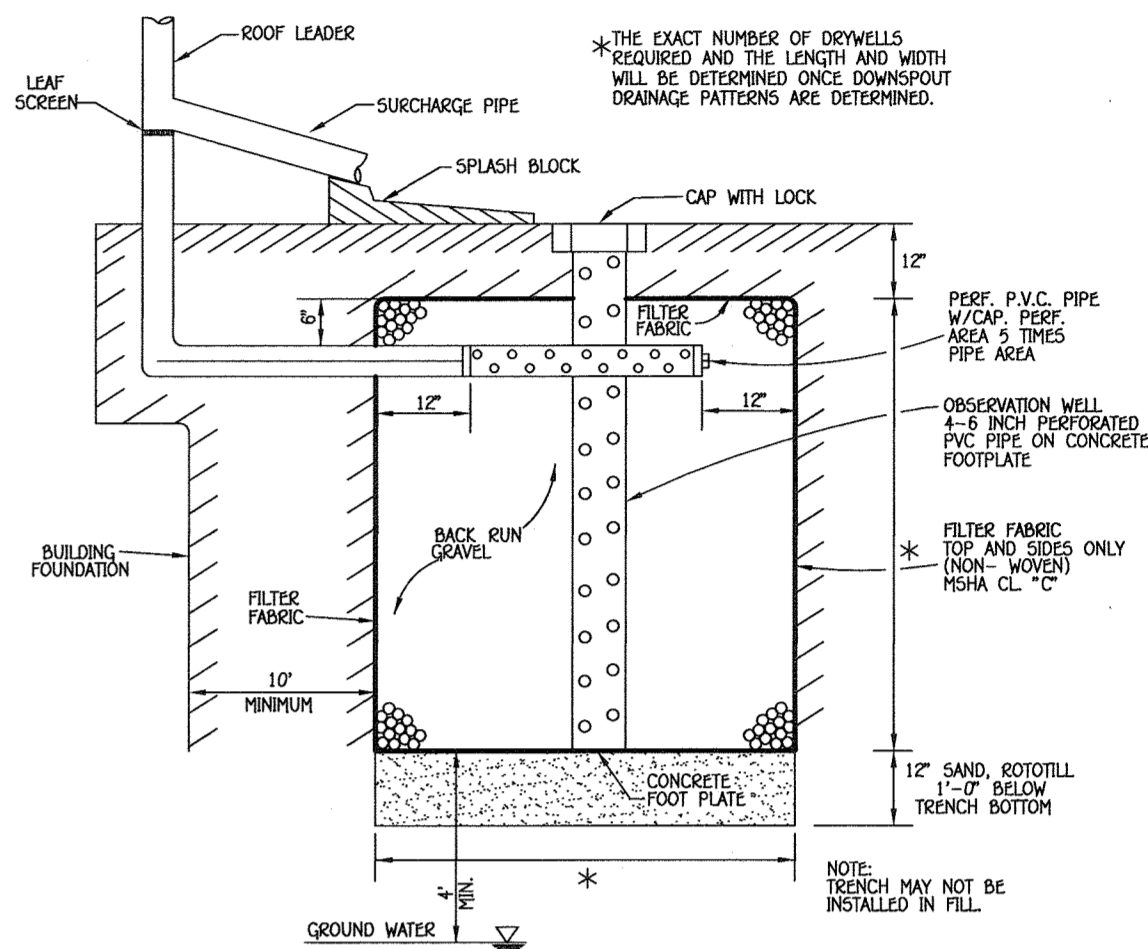
A RIGID, NON PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQ.FT.) TO PROVIDE A CLEANOUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

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 2".



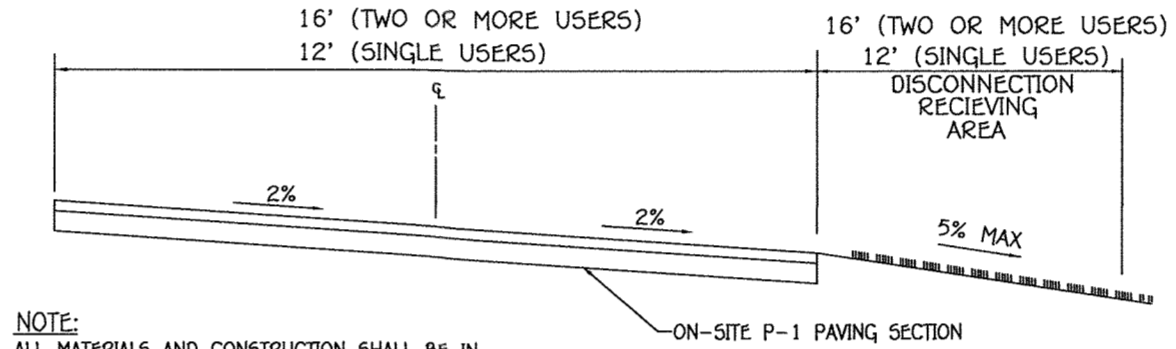
GUTTER DRAIN FILTER DETAIL
NOT TO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS	12/6/2016	
CHIEF, BUREAU OF HIGHWAYS	DATE	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	3-16-17	
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	3-10-17	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE	
REVISIONS		
NO.	DESCRIPTION	DATE



OPERATION AND MAINTENANCE SCHEDULE FOR DRYWELLS (M-5)

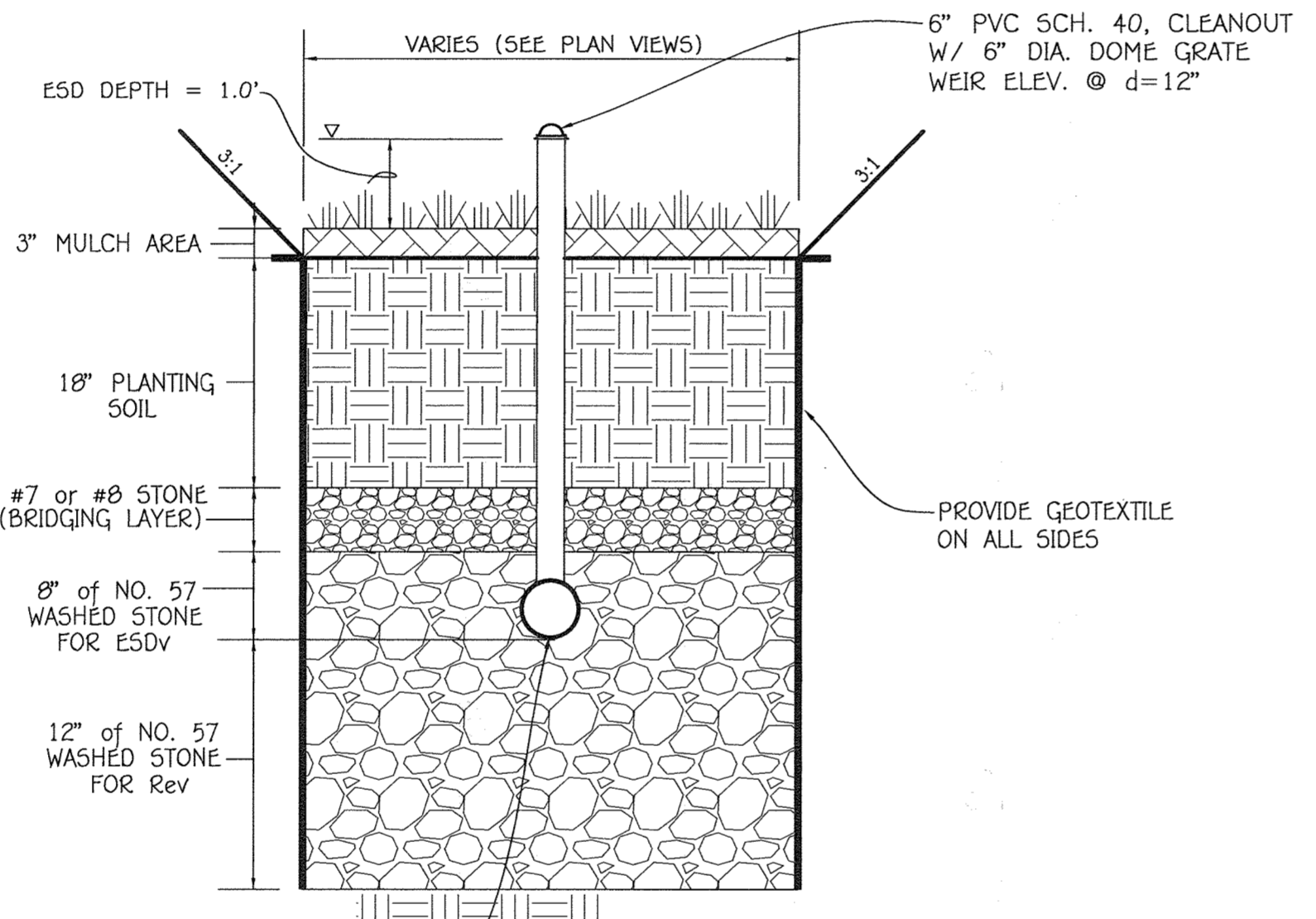
- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- 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.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- 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.



Typical Private Drive Cross Slope Section

Operation & Maintenance Schedule For Privately Owned And Maintained Disconnection Of Nonrooftop Runoff (N-2)

- 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 Impermeous Area. In Commercial Areas, Foot Traffic Should Be Discouraged As Well.

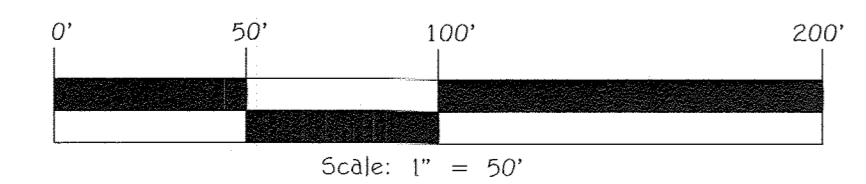


Micro Bio-Retention (M-6) Section

Operation and Maintenance Schedule For Privately Owned And Maintained Bio-Retention Areas (M-6)

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

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PKE.
ELICOTT CITY, MARYLAND 21042
(410) 461-2995



OWNER
DAISYCOOP, LLC
c/o ESTATE OF FRANCES JEAN SCHULTE
DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
2215 DUVALL ROAD
WOODBINE, MD 21797
410-977-1327

DEVELOPER
LAND DESIGN & DEVELOPMENT
8318 FOREST STREET
SUITE 200
ELICOTT CITY, MARYLAND 21043
(410)-922-4600



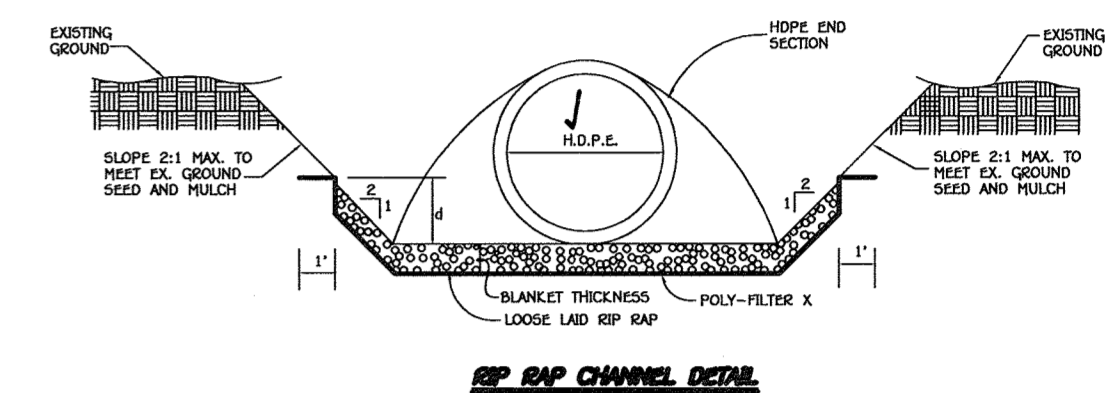
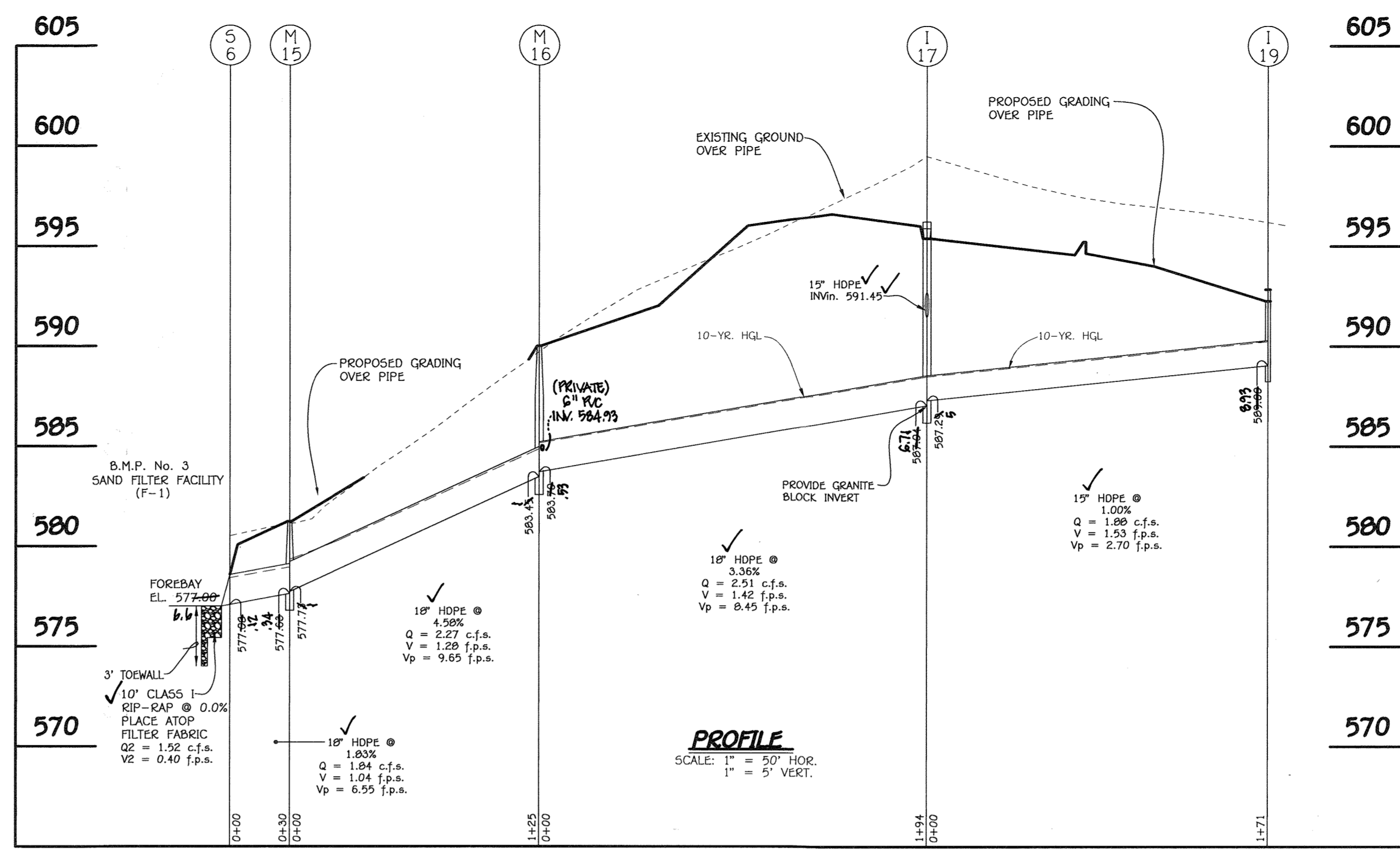
ALDO M. VITUCCI, P.E.
"Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17."

PRIVATE STORMWATER MANAGEMENT NOTES AND DETAILS
FAIRLANE FARM PHASE TWO
LOTS 19-44,
BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
A Resubdivision of Non-Buildable Bulk Parcel 'C' & 'H' And A Revision to Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'I' Thru 'C', Parcel 'I' And Non-Buildable Bulk Parcels 'G' And 'H'"
ZONED: RC-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: NOVEMBER 11, 2016
SHEET 27 OF 36

STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	LOCATION	ROAD STA.	OFFSET	TYPE AND WIDTH	REMARKS
I-17	* 595.39	591.45 (15')	587.25 (15')	FAIRLANE ROAD	11+41.32	12.7	✓ TYPE 'D'	D - 4.10
I-18	* 595.53	---	592.25 (15')	FAIRLANE ROAD	11+35.16	20.0	✓ TYPE 'D'	D - 4.10
I-19	592.84	591.50 (15')	588.25 (15')	FAIRLANE ROAD	L.P. STA. 11+63.00	16.0	✓ A-10 (2.5')	D - 4.03
I-20	585.50	581.50 (15')	581.25 (18')	N 610.281.1	E 1.301.389.9	---	✓ YARD INLET	D - 4.14
I-21	595.50	591.95 (2) - FUTURE 6'	590.25 (18')	N 610.117.07	E 1.301.215.0	---	✓ YARD INLET	D - 4.14
I-22	585.50	581.50 (15')	582.25 (15')	N 610.270.1	E 1.300.999.0	---	✓ YARD INLET	D - 4.14
I-23	* 590.44	586.50 (18')	586.25 (18')	THUNDERBIRD DRIVE	11+70.99	19.7	✓ TYPE 'D'	D - 4.10
I-24	* 590.44	586.50 (18')	587.25 (15')	THUNDERBIRD DRIVE	11+70.99	20.1	✓ TYPE 'D'	D - 4.10
I-25	* 593.60	589.25 (15')	589.25 (15')	THUNDERBIRD DRIVE	10+18.16	20.7	✓ TYPE 'D'	D - 4.10
I-26	* 593.60	589.25 (15')	589.25 (15')	THUNDERBIRD DRIVE	10+19.50	20.9	✓ TYPE 'D'	D - 4.10
I-27	* 590.55	587.25 (15')	587.25 (18')	THUNDERBIRD DRIVE	5+36.78	1	✓ TYPE 'D'	D - 4.10
I-28	* 590.55	587.25 (15')	587.25 (18')	THUNDERBIRD DRIVE	5+36.78	1	✓ TYPE 'D'	D - 4.10
I-29	* 601.57	594.0 (18')	593.25 (18')	THUNDERBIRD DRIVE	2+16.00	5.70	✓ TYPE 'D'	D - 4.10
I-30	* 601.57	594.5 (15')	594.25 (18')	THUNDERBIRD DRIVE	2+16.00	5.70	✓ TYPE 'D'	D - 4.10
I-31	* 597.57	---	594.25 (15')	N 609.307.2	E 1.300.888.7	---	✓ TYPE 'D'	D - 4.22
I-34	597.25	---	592.25 (24')	N 609.618.99	E 1.301.213.0	---	✓ YARD INLET	D - 4.14
I-36	* 578.53	573.25 (16')	573.25 (15')	N 610.041.43	E 1.300.186.3	---	✓ TYPE 'S'	D - 4.22
I-37	* 587.00	583.25 (16')	583.25 (18')	N 609.668.82	E 1.300.000.0	---	✓ TYPE 'S'	D - 4.22
I-38	* 594.60	590.50 (16')	589.25 (18')	N 609.325.2	E 1.300.719.0	---	✓ TYPE 'S'	D - 4.22
I-39	* 605.49	594.5 (15')	594.25 (15')	THUNDERBIRD DRIVE	1+17.94	20.7	✓ TYPE 'D'	D - 4.10
I-40	589.05	---	583.25 (15')	N 610.197.50	E 1.301.363.3	---	✓ YARD INLET	D - 4.14
M-15	581.25	577.75 (18')	577.75 (18')	N 609.912.93	E 1.300.151.3	---	✓ SHALLOW MANHOLE	G - 5.12
M-16	590.05	583.25 (18')	583.25 (18')	N 609.927.74	E 1.300.027.4	---	✓ 4" DIA. MANHOLE	G - 5.12
M-17	580.00	581.00 (15')	581.00 (18')	N 610.285.1	E 1.301.007.2	---	✓ 4" DIA. MANHOLE	G - 5.12
M-18	594.00	586.25 (18')	586.25 (18')	N 610.224.0	E 1.301.248.6	---	✓ SHALLOW MANHOLE	G - 5.12
M-19	572.50	566.25 (18')	566.25 (18')	N 610.412.9	E 1.301.201.5	---	✓ 4" DIA. MANHOLE	G - 5.12
M-20	592.28	587.53 (15')	587.53 (18')	THUNDERBIRD DRIVE	11+71.44	6.7	✓ 4" DIA. MANHOLE	G - 5.13
M-20A	589.00	582.25 (18')	577.75 (18')	THUNDERBIRD DRIVE	12+84.07	25.9	✓ 4" DIA. MANHOLE	G - 5.12
M-21	593.75	588.25 (18')	588.25 (18')	THUNDERBIRD DRIVE	10+80.90	9.0	✓ 4" DIA. MANHOLE	G - 5.12
M-22	594.00	589.25 (15')	589.25 (18')	THUNDERBIRD DRIVE	10+80.90	9.0	✓ 4" DIA. MANHOLE	G - 5.13
M-23	593.46	581.25 (30')	581.25 (30')	THUNDERBIRD DRIVE	6+28.00	9.05	✓ 5" DIA. MANHOLE	G - 5.13
M-24	591.15	585.25 (24')	585.25 (18')	N 609.701.93	E 1.301.044.6	---	✓ 5" DIA. MANHOLE	G - 5.13
M-25	594.00	588.25 (24')	588.25 (24')	N 609.661.13	E 1.301.139.0	---	✓ 4" DIA. MANHOLE	G - 5.12
M-28	598.51	589.25 (18')	589.25 (18')	THUNDERBIRD DRIVE	3+19.26	0.70	✓ 4" DIA. MANHOLE	G - 5.12
M-31	606.44	598.25 (15')	597.25 (18')	THUNDERBIRD DRIVE	1+17.94	5.1	✓ 5" DIA. MANHOLE	G - 5.13
M-32	586.00	579.5 (18')	579.25 (18')	N 610.347.11	E 1.301.405.2	---	✓ 4" DIA. MANHOLE	G - 5.12
M-33	608.07	579.25 (15')	579.25 (15')	N 610.121.64	E 1.300.202.7	---	✓ 15" FLARED END SECTION	A.D.S. OR EQUAL
S-6	578.00	577.25 (18')	---	N 609.951.93	E 1.300.171.9	---	✓ 18" FLARED END SECTION	A.D.S. OR EQUAL
S-7	588.25	586.75 (18')	---	N 609.980.36	E 1.300.000.0	---	✓ 18" FLARED END SECTION	A.D.S. OR EQUAL
S-8	574.25	573.25 (18')	---	N 610.347.40	E 1.300.997.2	---	✓ 18" CONC. END SECTION	D - 5.51
S-9	577.25	576.25 (18')	---	N 610.347.93	E 1.300.947.0	---	✓ 18" FLARED END SECTION	A.D.S. OR EQUAL
S-10	590.00	593.25 (18')	---	N 609.312.1	E 1.300.767.2	---	✓ 18" FLARED END SECTION	A.D.S. OR EQUAL
S-11	583.25	580.25 (30')	---	N 609.680.10	E 1.300.800.3	---	✓ 30" FLARED END SECTION	A.D.S. OR EQUAL
S-12	584.25	582.25 (18')	---	N 609.451.71	E 1.300.789.5	---	✓ 18" CONC. END SECTION	D - 5.51
S-13	567.50	566.25 (18')	---	N 610.417.01	E 1.301.100.0	---	✓ 18" CONC. END SECTION	A.D.S. OR EQUAL
S-14	584.25	582.25 (18')	---	N 609.444.89	E 1.300.749.3	---	✓ 18" CONC. END SECTION	D - 5.51
S-15	578.00	576.25 (15')	---	N 610.121.64	E 1.300.202.7	---	✓ 15" FLARED END SECTION	A.D.S. OR EQUAL

* - DENOTES THROAT ELEVATION
TYPE 'D' INLETS TO BE OPEN ON TWO (2) SIDES



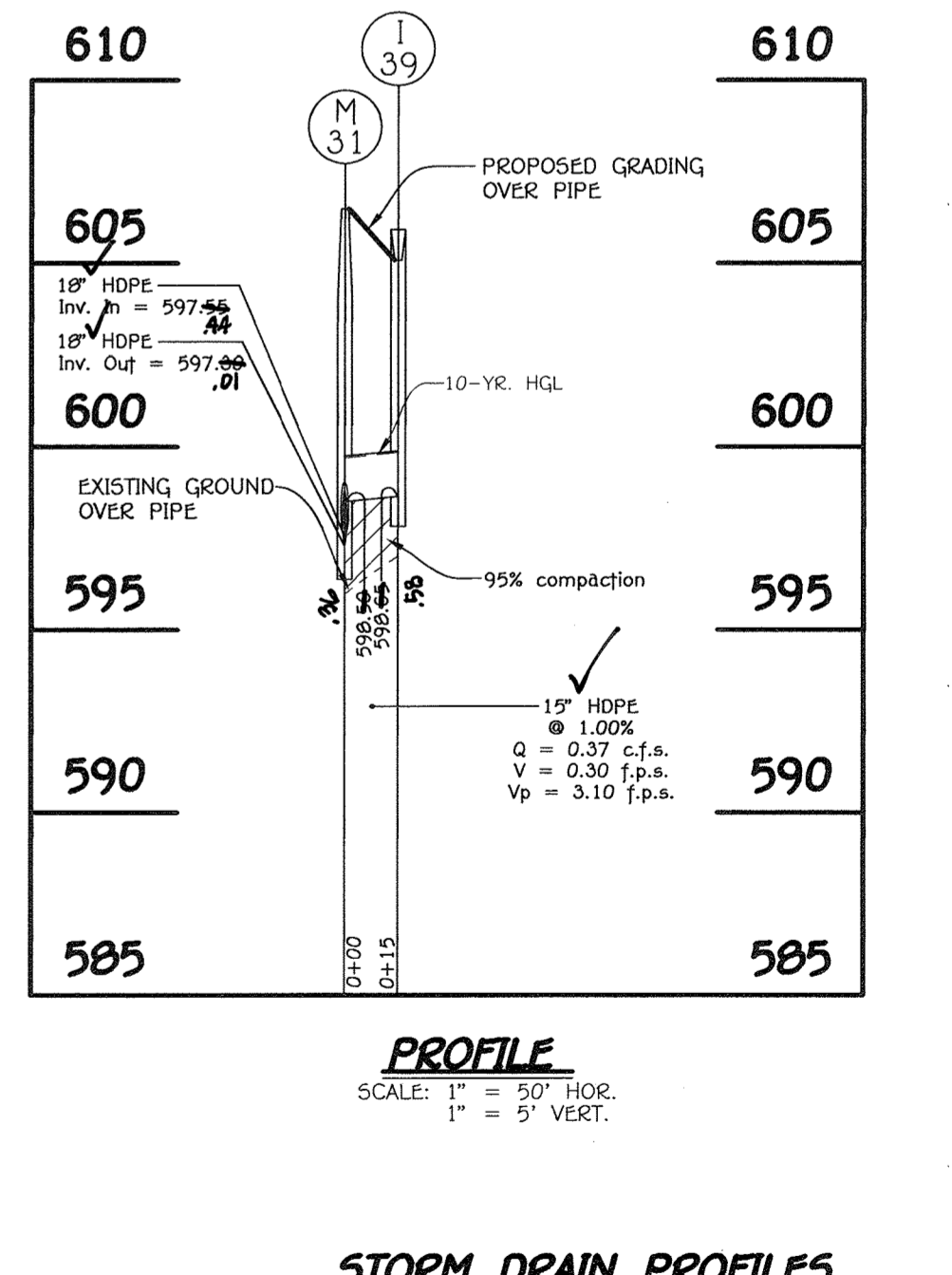
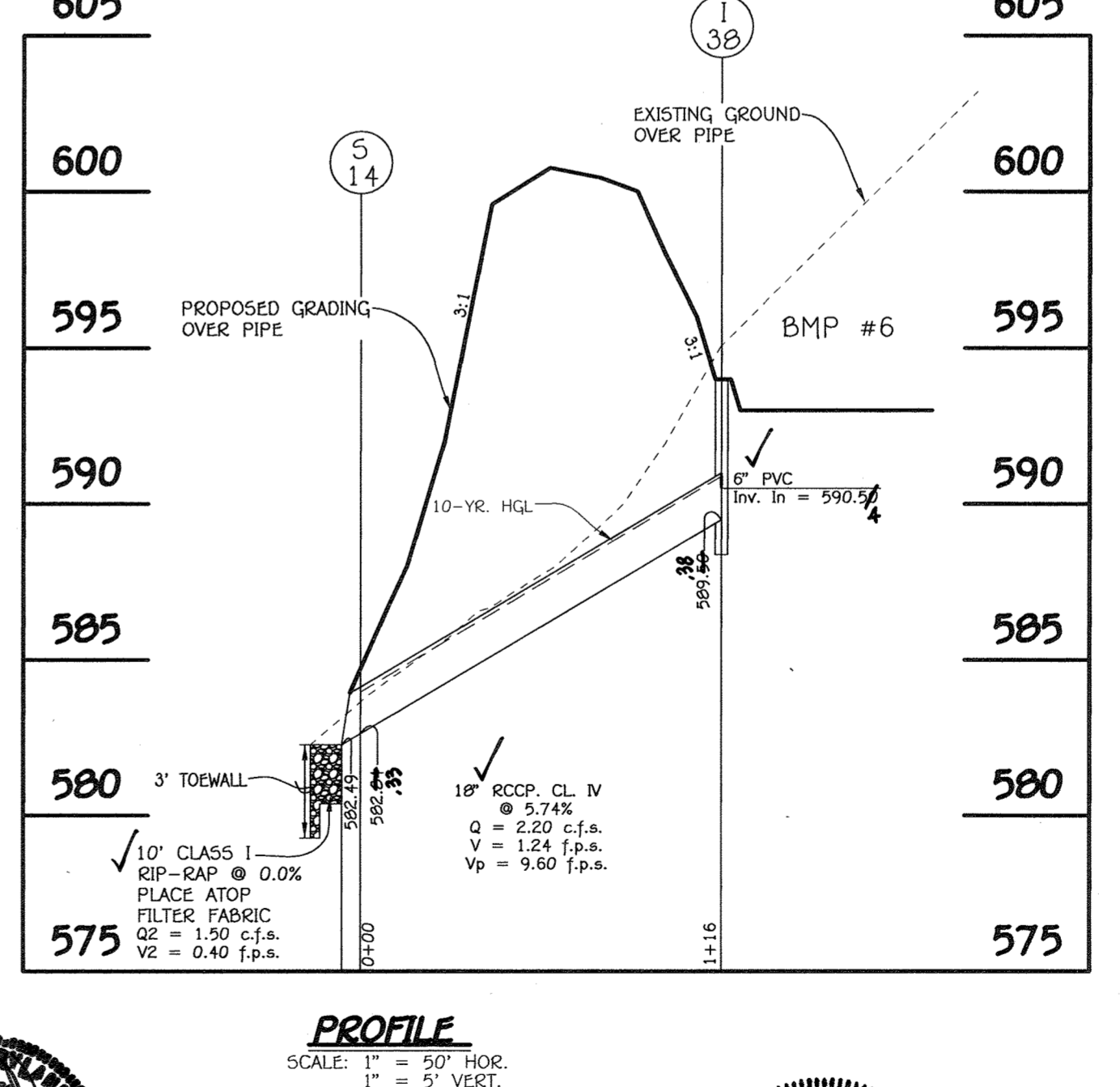
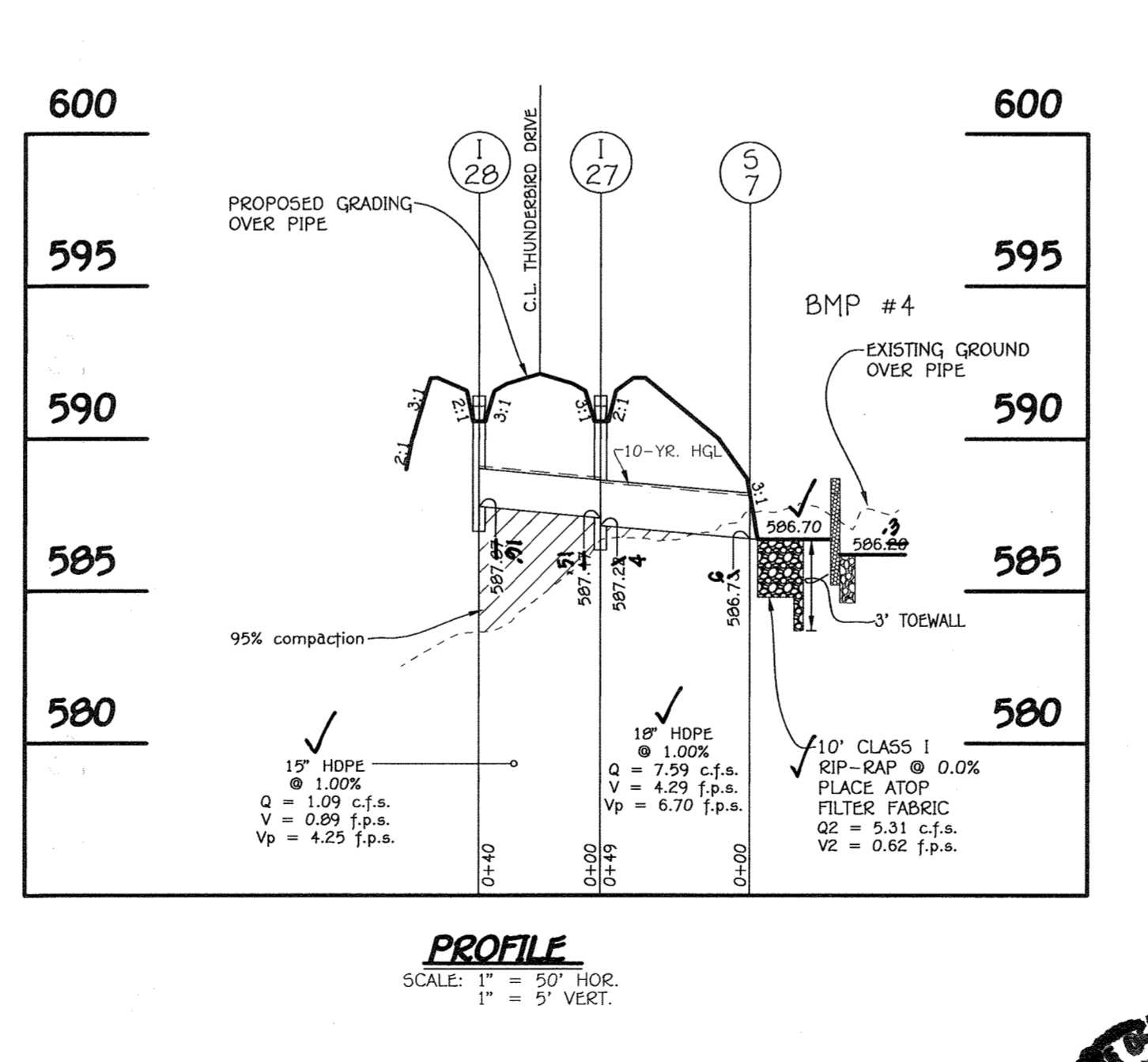
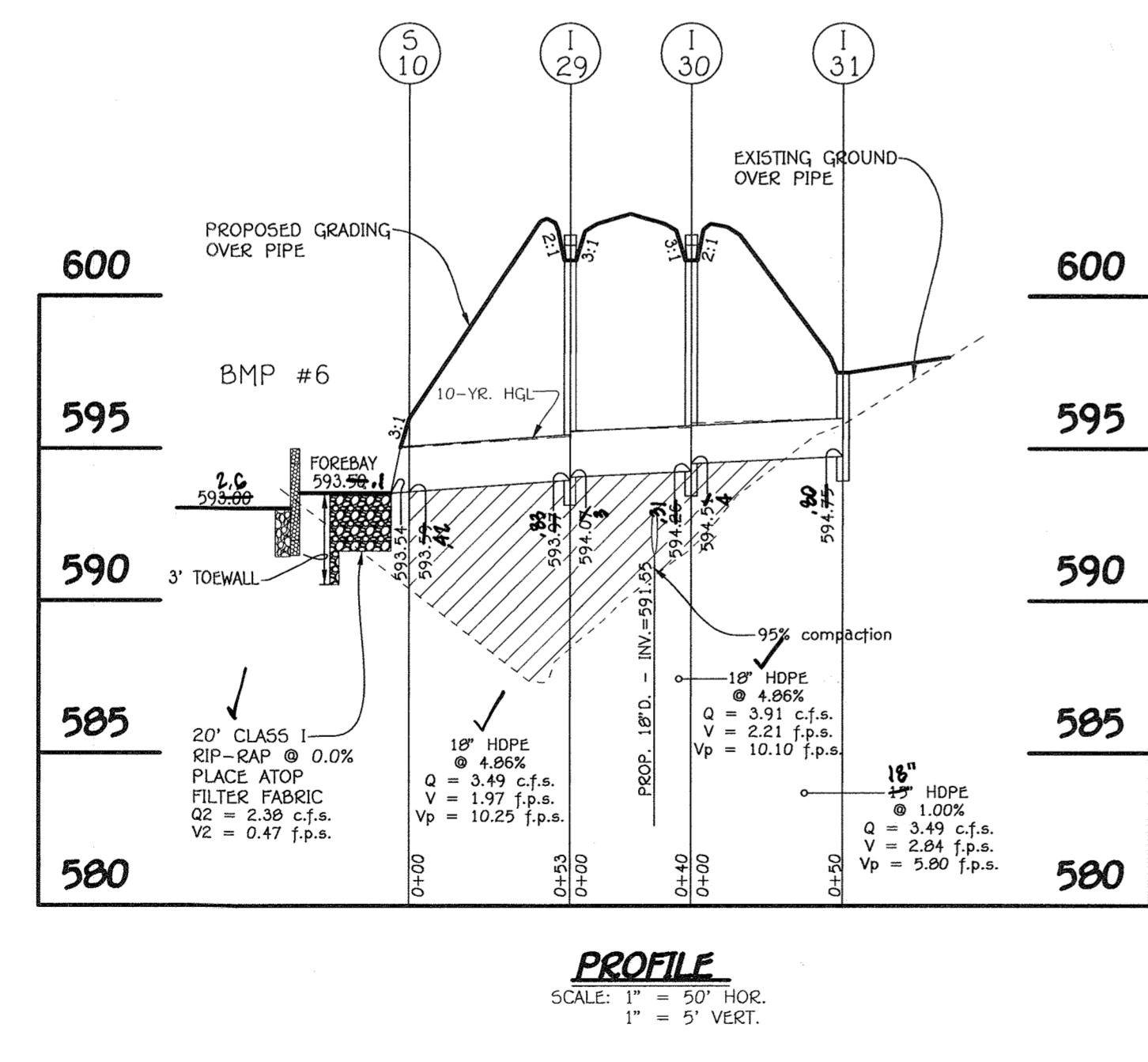
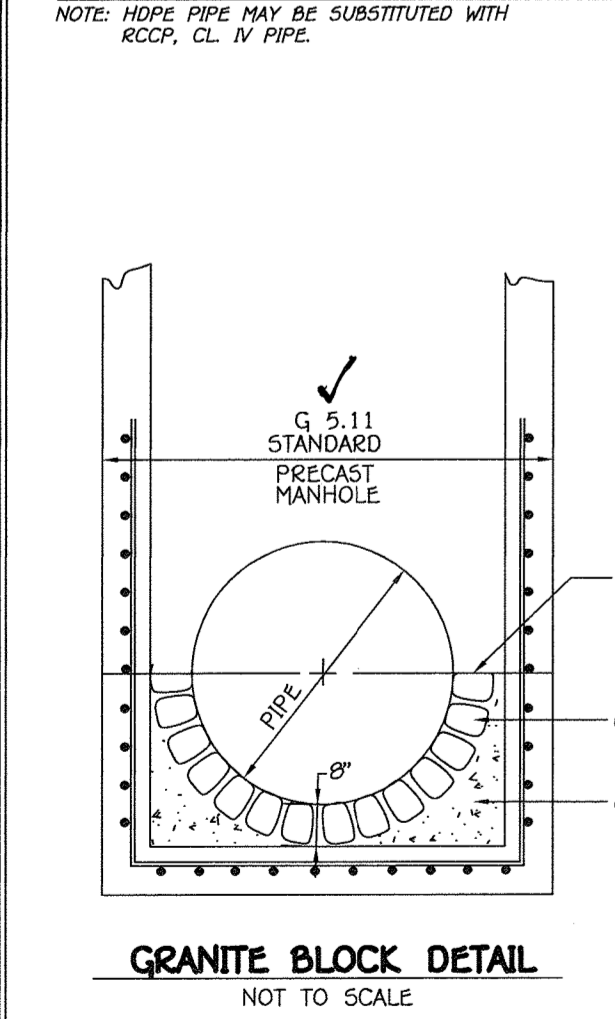
CONSTRUCTION SPECIFICATIONS FOR RIP-RAP CHANNELS

- The substrate for the filter, rip-rap or gabion shall be prepared to the required free and grades. Any fill required in the substrate shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
- Filter cloth shall be protected from puncturing, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged area or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
- Stone for the filter or gabion outlet may be placed by equipment. Both shall be constructed to the full course thickness in one operation to a maximum of 18" in any one lift. The material shall be uniformly distributed in the bed. The stone for filter or gabion outlet shall be delivered and placed in a manner that will insure that it is reasonably homogeneous and the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

PIPE SCHEDULE

SIZE	CLASS	LENGTH
6"	PVC, SCH. 40 (PERFORATED)	599 L.F.
6"	PVC, SCH. 40 (SOLID)	51 L.F.
15"	HOPE	537 L.F.
18"	HOPE	1,423 L.F.
24"	HOPE	198 L.F.
30"	HOPE	173 L.F.
18"	RCCP, CL. IV	355 L.F.

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



FISHER COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PARK
ELICOTT CITY, MARYLAND 21042
(410) 461-2895

OWNER
DAISYCOOP, LLC
c/o ESTATE OF FRANCES JEAN SCHULTE
DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
2215 OUNALL ROAD
WOODBINE, MD 21797
410-977-1327

DEVELOPER
LAND DESIGN & DEVELOPMENT
8318 FORREST STREET
SUITE 200
ELICOTT CITY, MARYLAND 21043
(410)-922-4600

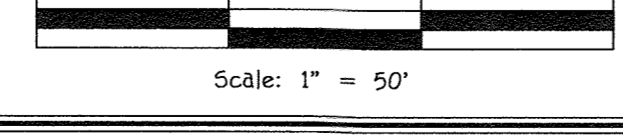


AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan meet the approved plans and specifications.
CHARLES G. GANO, P.E. #13044
Date: 02/28/20



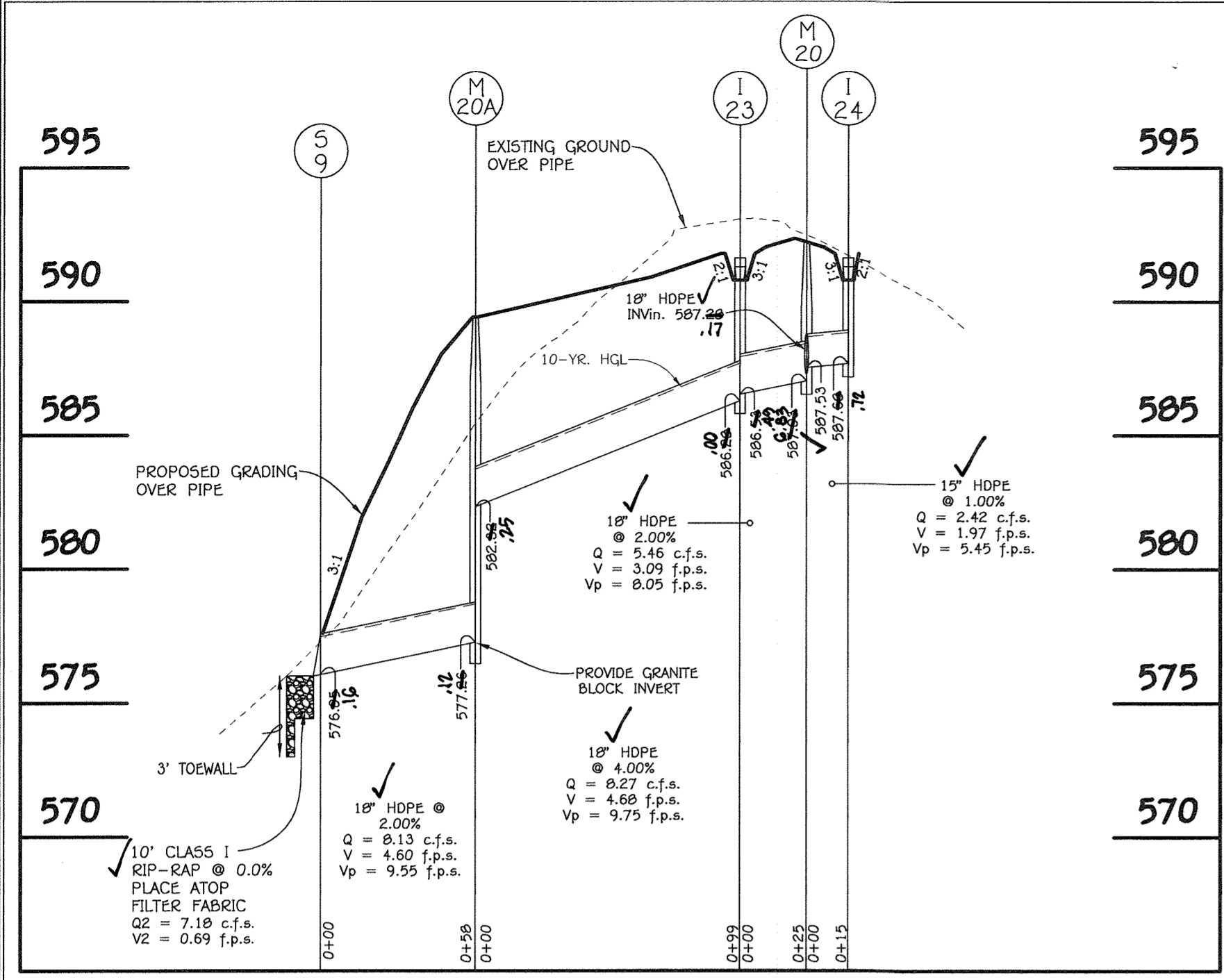
ALDO M. PUCCIO, P.E. #13044
Date: 02/28/20
Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17.

STORM DRAIN PROFILES FAIRLANE FARM PHASE TWO
LOTS 19-44,
BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
A Resubdivision of Non-Buildable Parcels 'O' & 'H' And A Revision To Buildable Preservation Parcel 'A', Accreted As "Wildlife Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'D' Thru 'U', Parcel 'T' And Non-Buildable Parcels 'O' And 'H'."
ZONED: RC-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: NOVEMBER 11, 2016
SHEET 28 OF 36

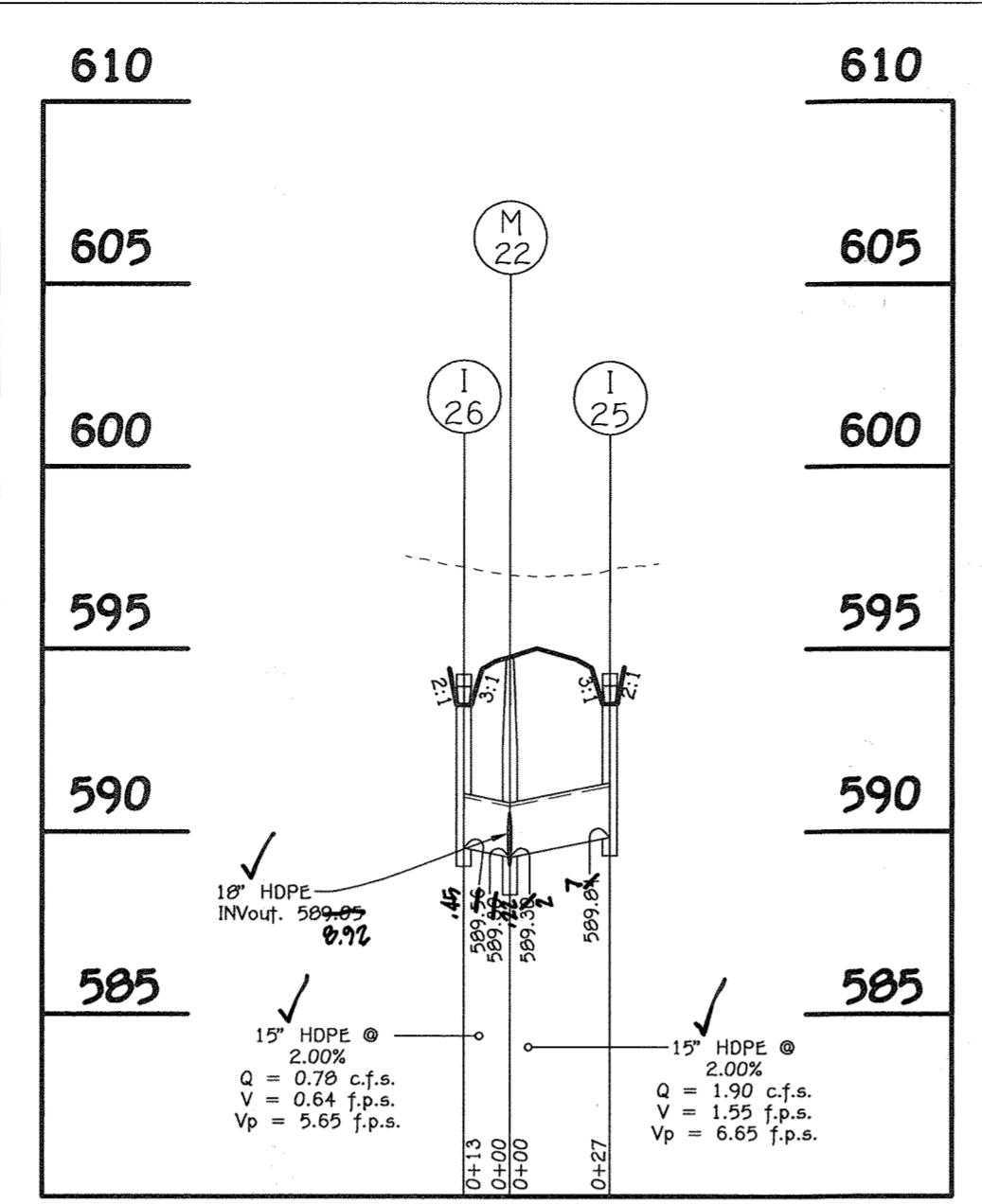


APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS *12/6/2016* DATE
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT *3-16-17* DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION *3-10-17* DATE

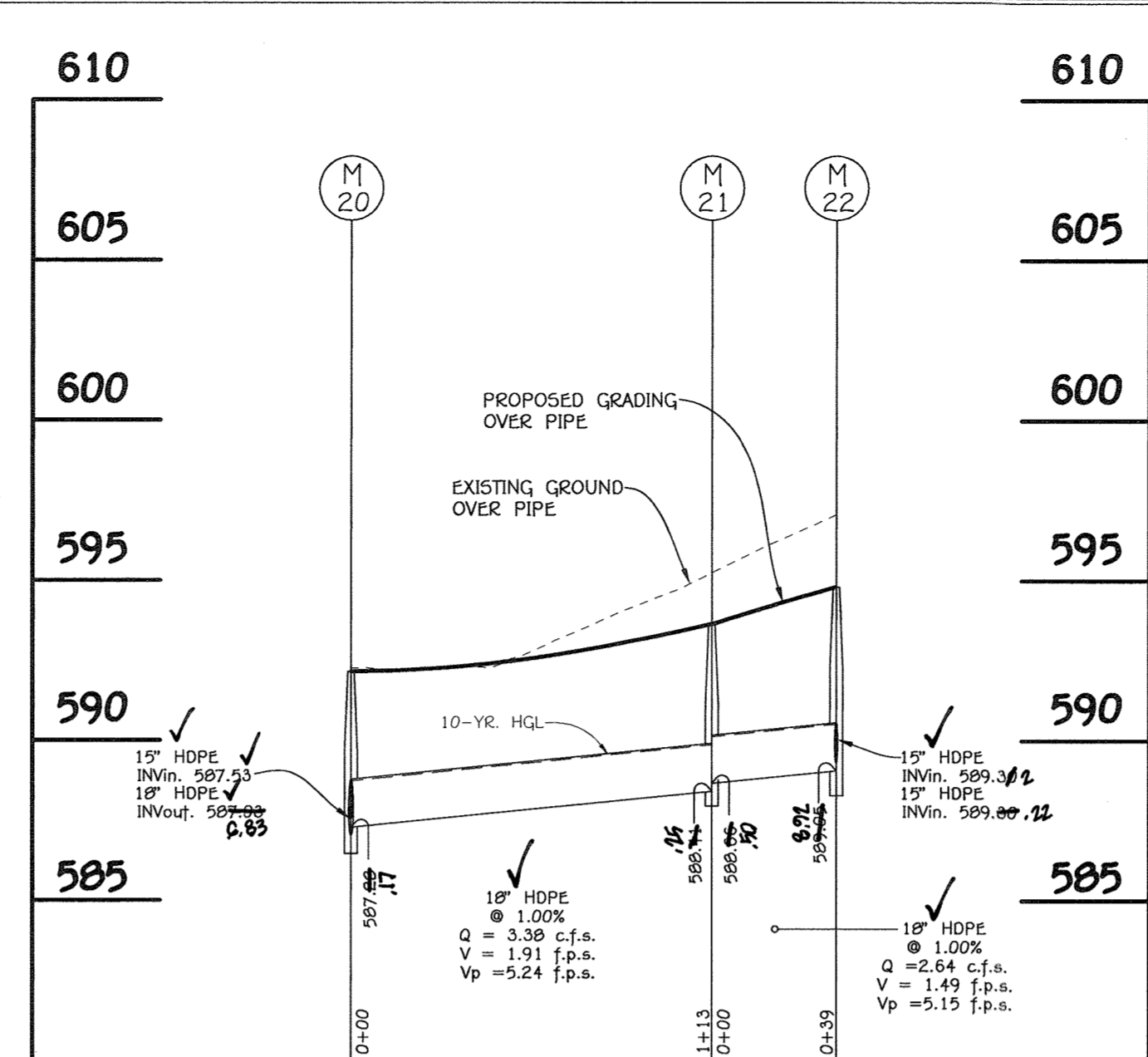
REVISIONS		
NO.	DESCRIPTION	DATE



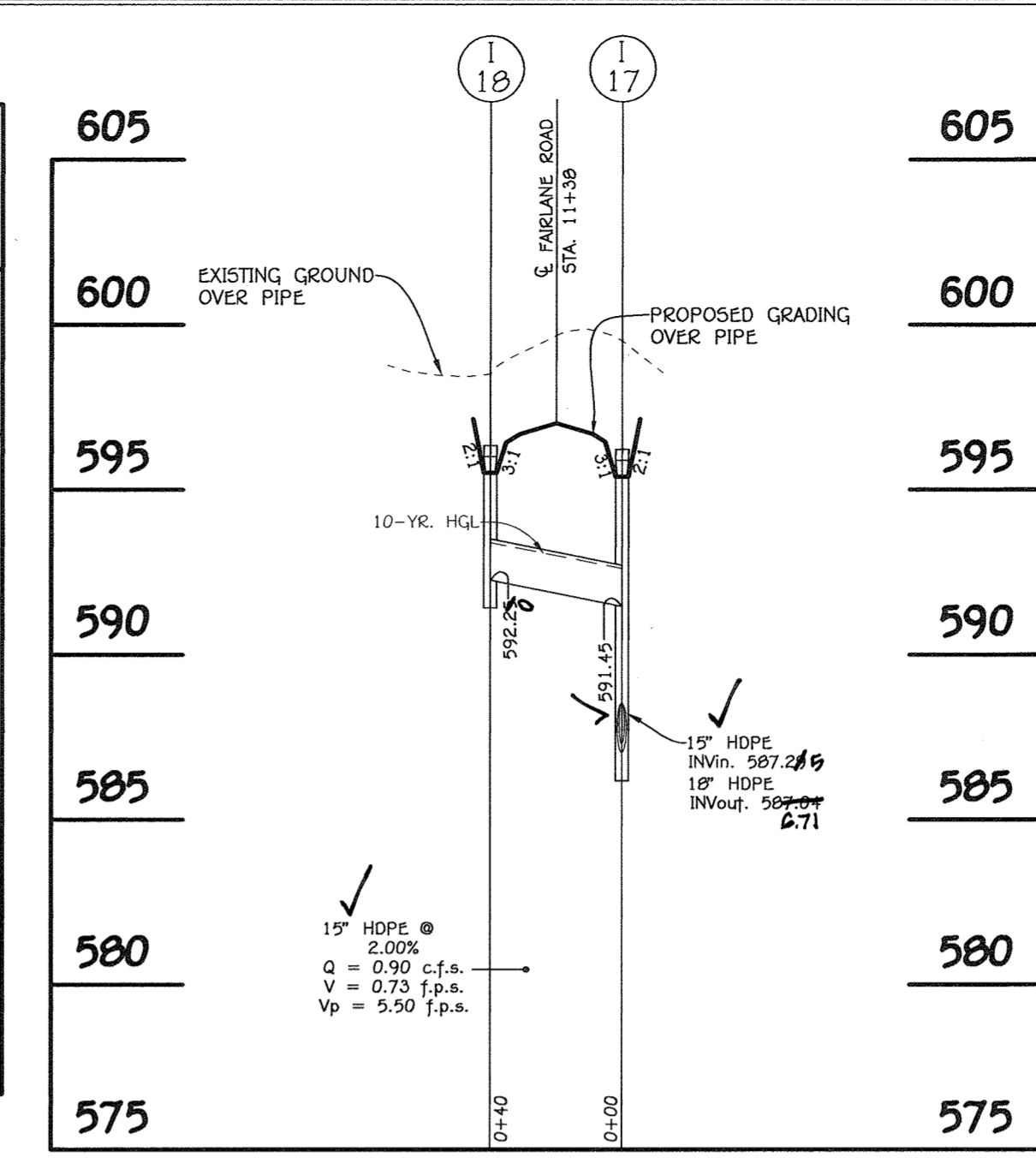
PROFILE
 SCALE: 1" = 50' HOR.
 1" = 5' VERT.



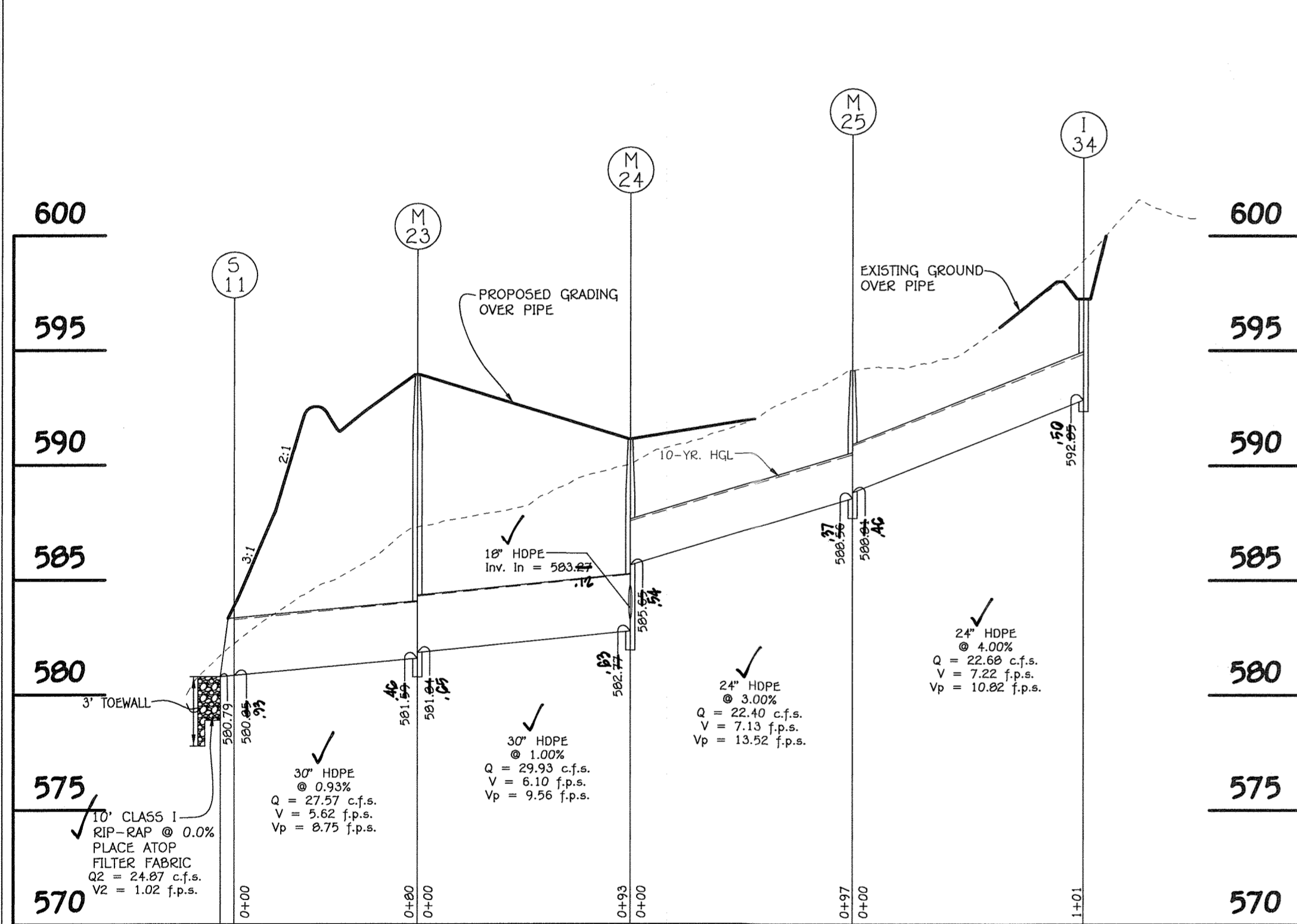
PROFILE
 SCALE: 1" = 50' HOR.
 1" = 5' VERT.



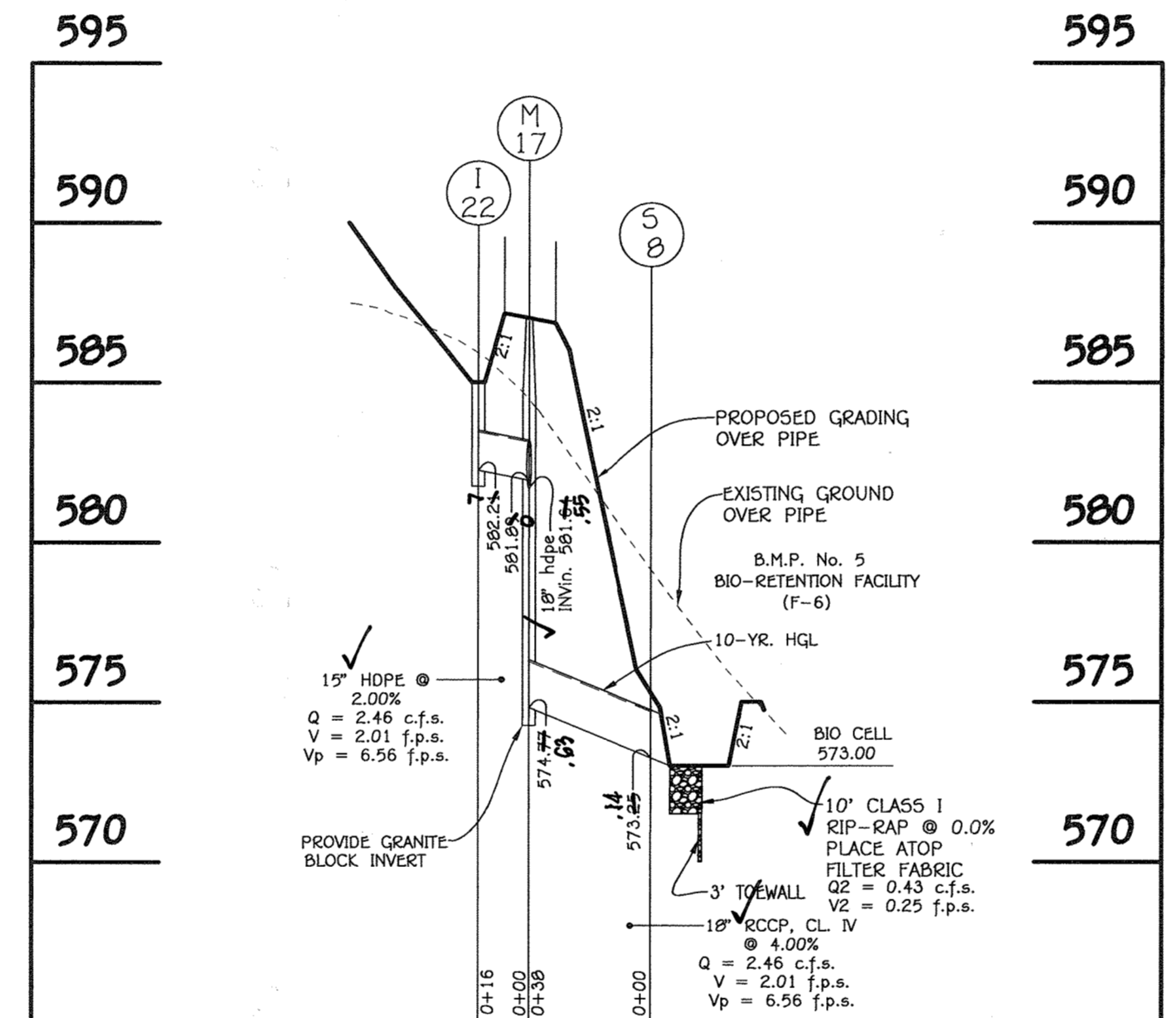
PROFILE
 SCALE: 1" = 50' HOR.
 1" = 5' VERT.



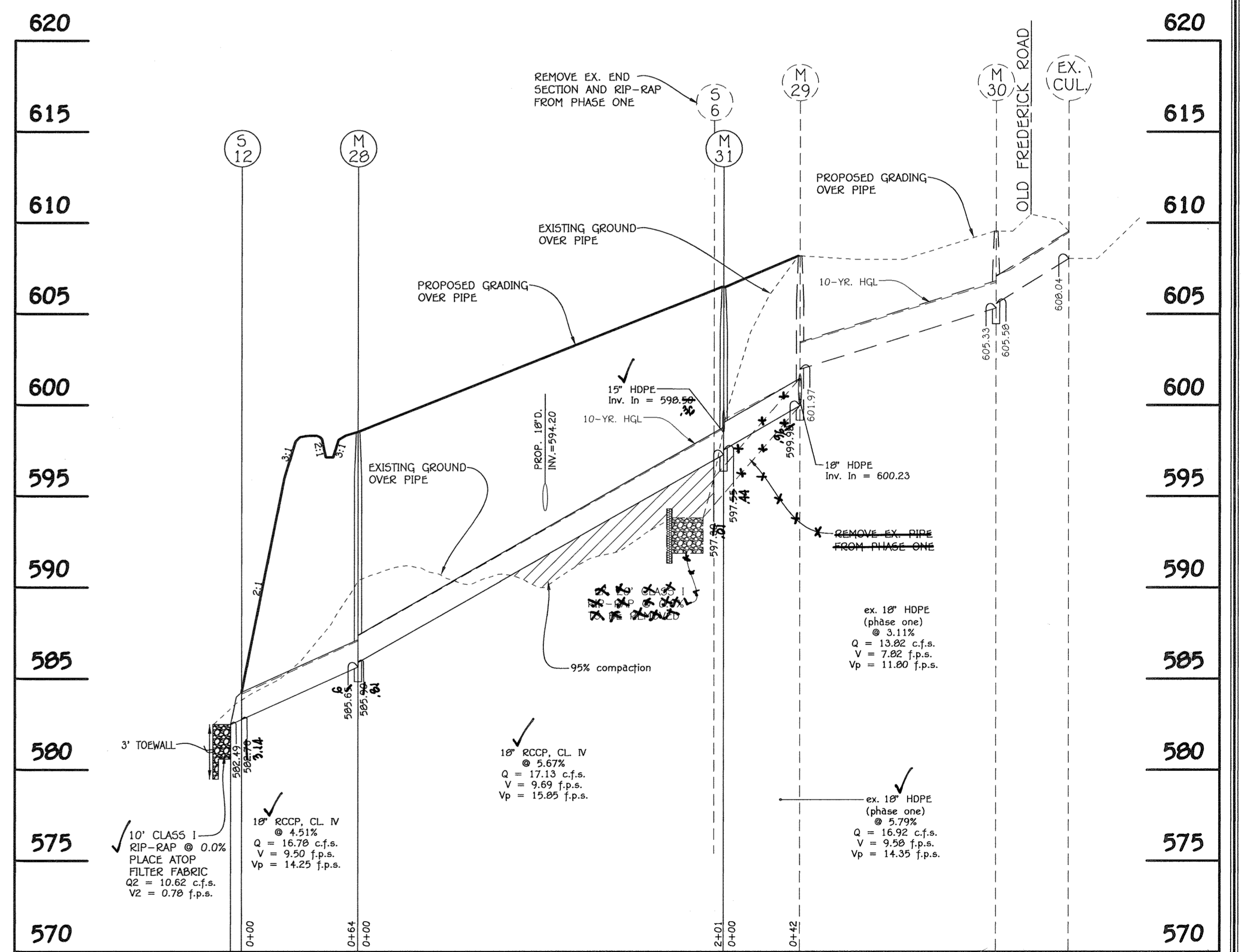
PROFILE
 SCALE: 1" = 50' HOR.
 1" = 5' VERT.



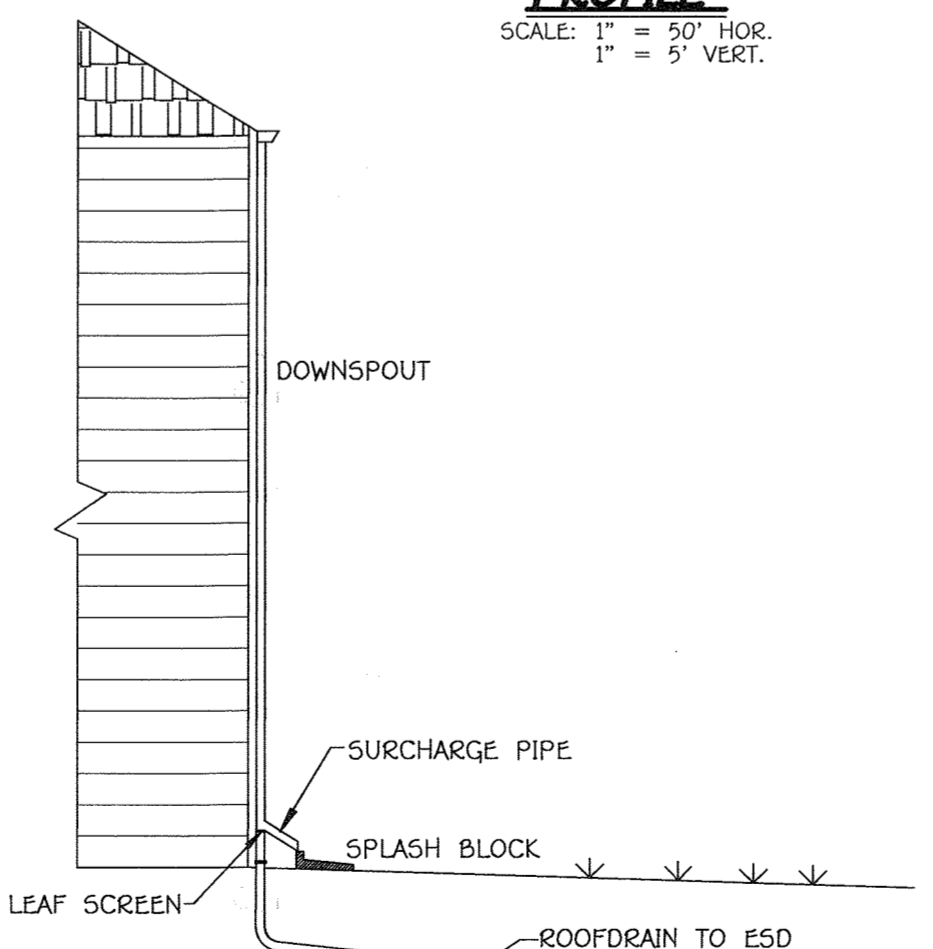
PROFILE
 SCALE: 1" = 50' HOR.
 1" = 5' VERT.



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



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



TYPICAL DOWNSPOUT FOR LOTS W/ROOFLEADERS
 NO SCALE

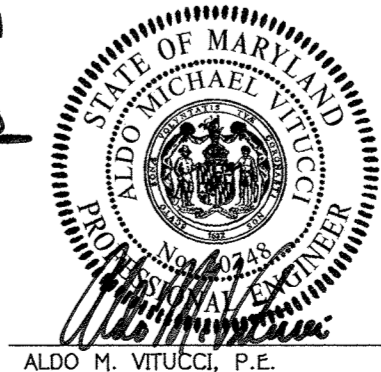
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2992

OWNER
 DAISSCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUWALL ROAD
 WOODBINE, MD 21797
 410-977-1327

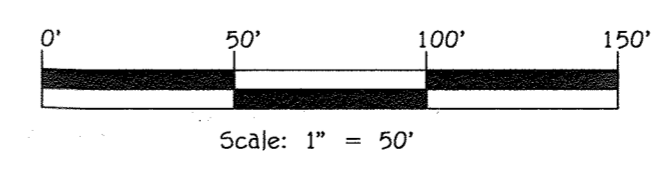
DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8319 FORREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21043
 (410)-922-4600



AS-BUILT CERTIFICATION
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the approved plans and specifications.
 CHARLES J. EWING SR., P.E. License No. 22748 Date: 03/20/16

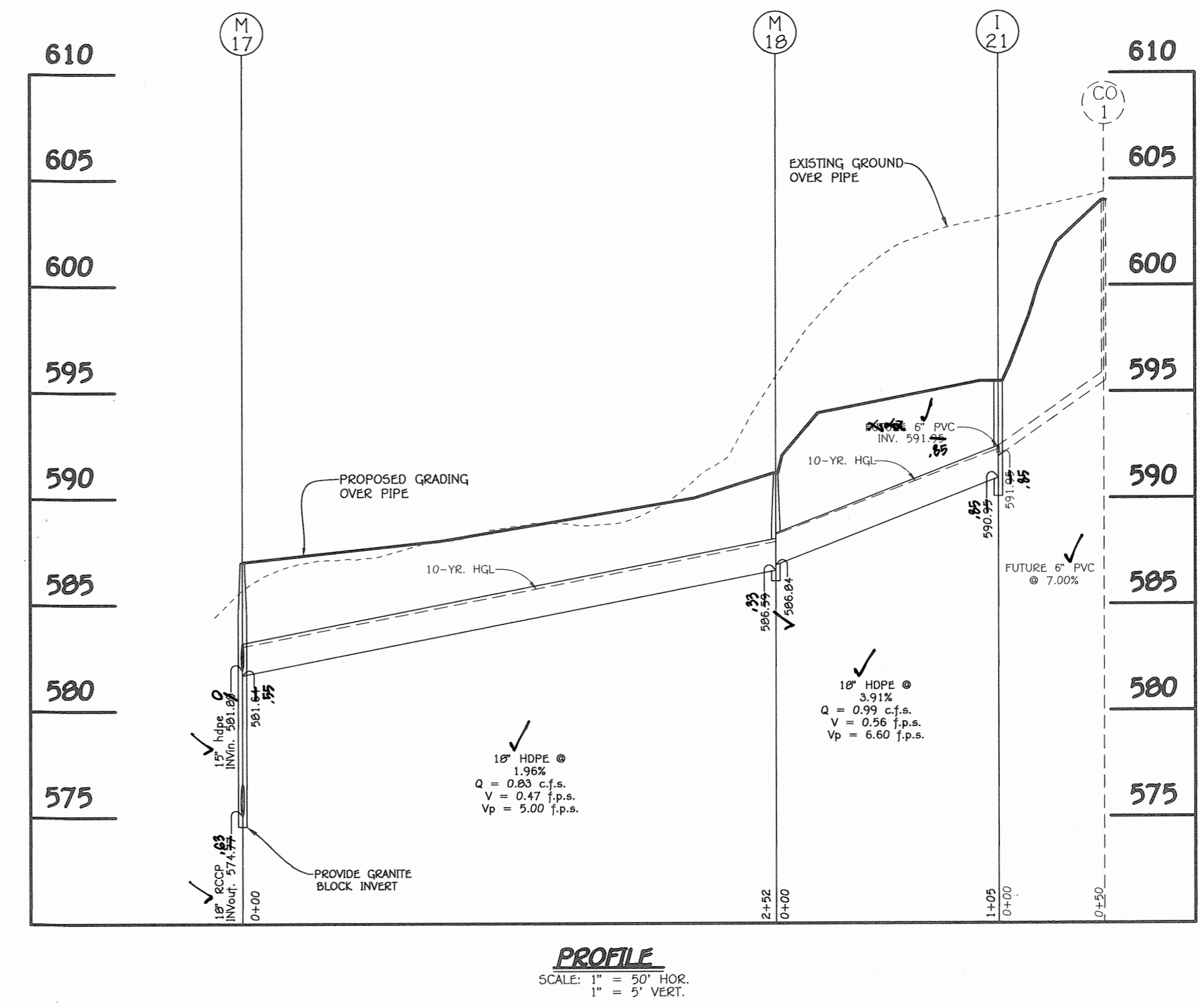
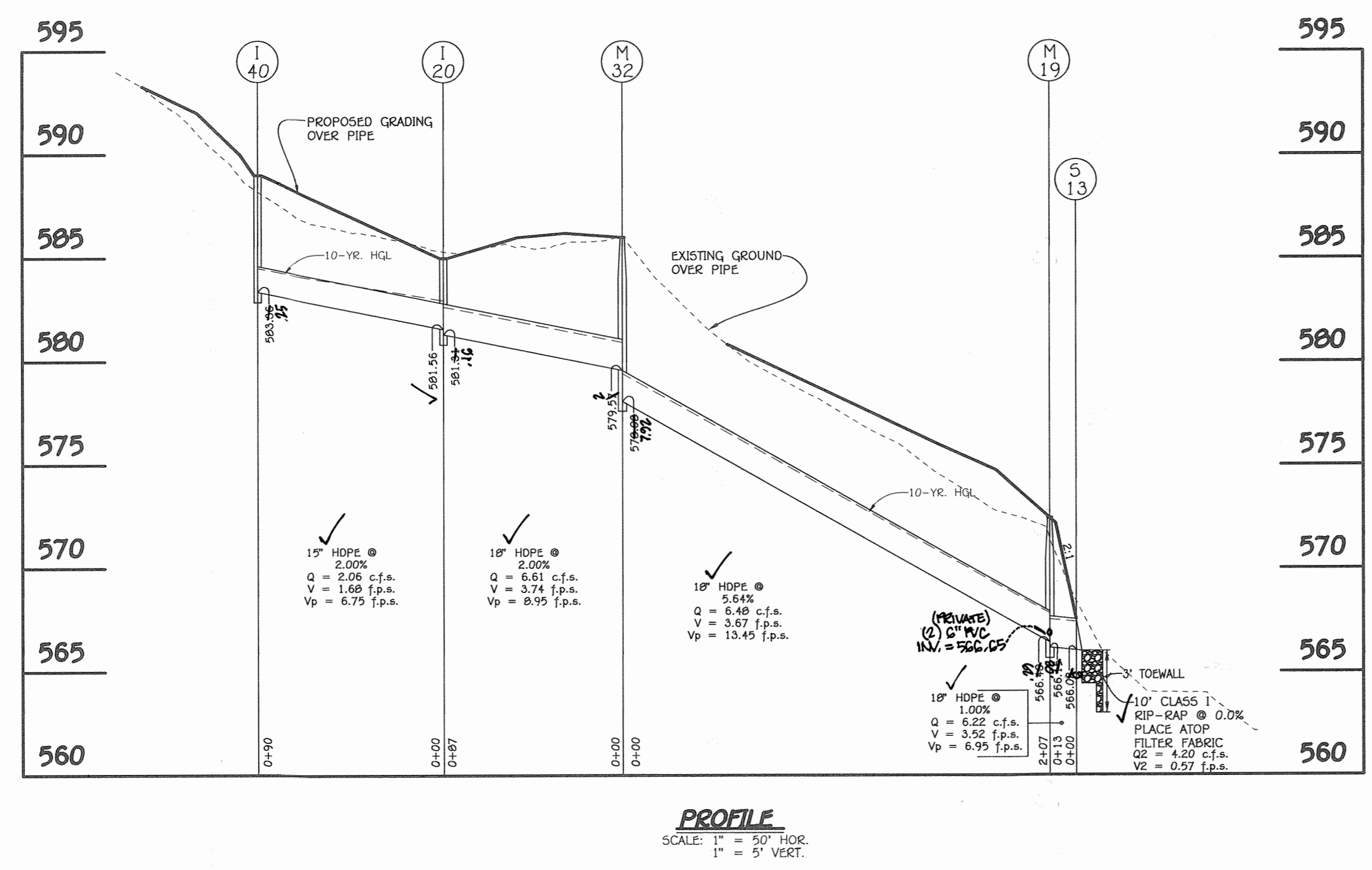


ALDO M. VITUCCI, P.E. License No. 20748 Date: 11/11/2016
 "Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17."



**STORM DRAIN PROFILES
 FAIRLANE FARM
 PHASE TWO**
 LOTS 19-44,
 BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
 A Resubdivision of Non-Buildable Bulk Parcel 'C' & 'D' And A Revision To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 16, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcel 'B' Thru 'C', Parcel 'D' And Non-Buildable Bulk Parcel 'E' And 'F'."
 ZONED: RC-D20
 TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 29 OF 38

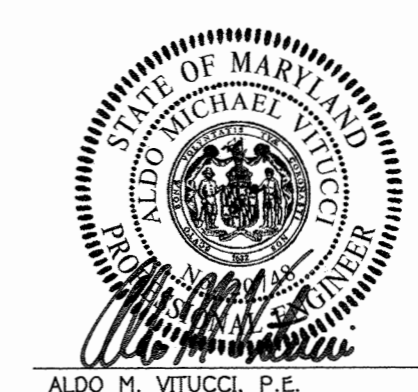
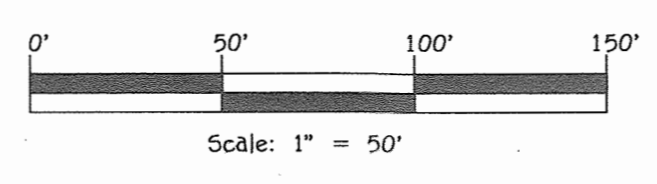
APPROVED: DEPARTMENT OF PUBLIC WORKS		
<i>[Signature]</i> CHIEF, BUREAU OF HIGHWAYS	12/6/2016 DATE	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	3-16-17 DATE	
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	3-10-17 DATE	
REVISIONS		
NO.	DESCRIPTION	DATE



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELKROTT CITY, MARYLAND 21042
(410) 461-2925

OWNER
DAISYCOOP, LLC
c/o ESTATE OF FRANCES JEAN SCHULTE
DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
2215 DUNWALL ROAD
WOODSBINE, MD 21797
410-977-1327

DEVELOPER
LAND DESIGN & DEVELOPMENT
8318 FORREST STREET
SUITE 200
ELLCOTT CITY, MARYLAND 21043
(410)-922-4600



ALDO M. VITUCCI, P.E.
DATE: 11/14/16
"Professional certification. I hereby certify that these documents were prepared by me or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20749, Expiration Date 2-22-17."

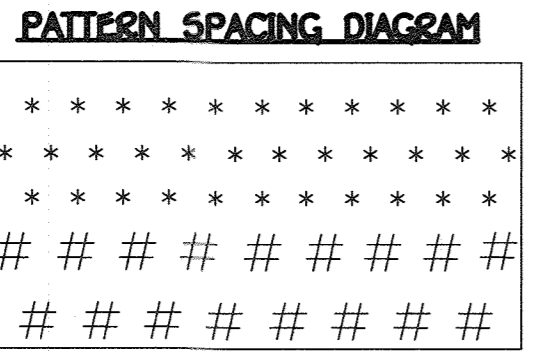


AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS BUILT" plan meet the approved plans and specifications.
[Signature]
CHARLES J. GONZA, P.E. 11/20/16
Date

STORM DRAIN PROFILES
FAIRLANE FARM
PHASE TWO
LOTS 19-21,
BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
A. Resubdivision of Non-Buildable Bulk Parcels 'C' & 'D' And A Revision To Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E', Parcel 'F' And Non-Buildable Bulk Parcels 'C' And 'D'."
ZONED: RC-C-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: NOVEMBER 11, 2016
SHEET 30 OF 36

"AS BUILT" F-16-062

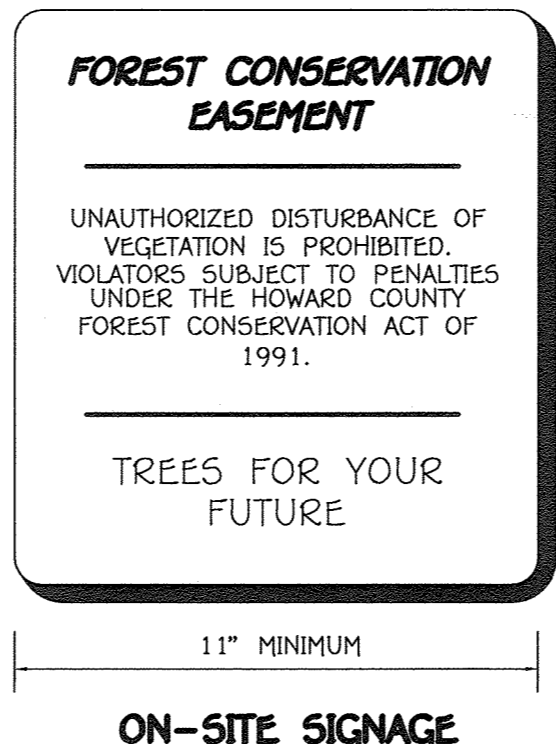
Approved: Department of Planning And Zoning
 Kent Schulte, Chief, Division of Land Development
 Date: 3-16-17
 Revisions: 3-16-17
 Chief, Development Engineering Division
 DATE: 3/23/16



FCE Planting Area # 6 - 2.12 acres

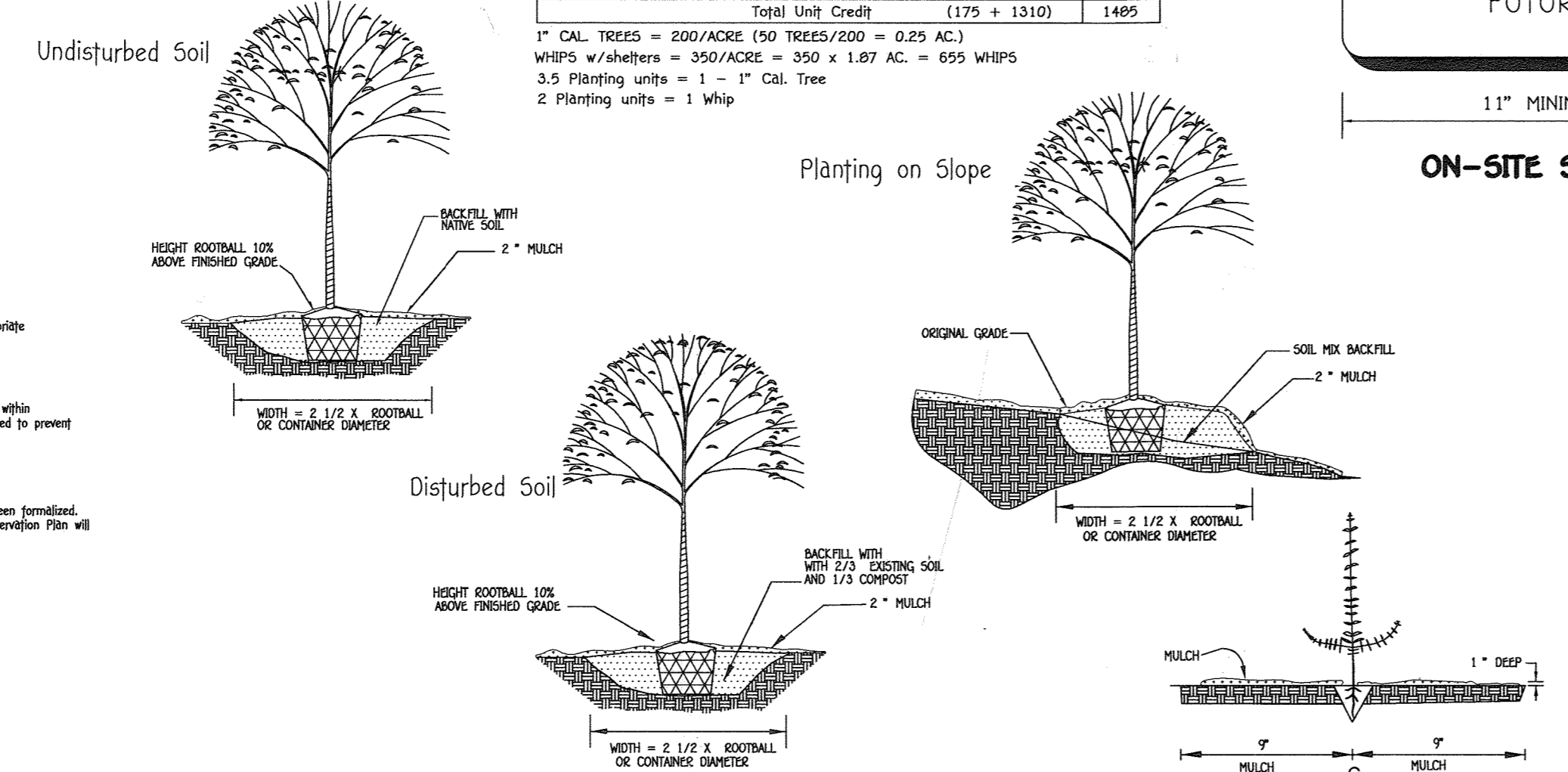
Planting units required: 1484 (742 whips)
 Planting units provided: 1495 (655 whips and 50 trees)

Qty	Species	Size	Spacing	Total FCA Units
25	Acer x Fraxinifolia 'Autumn Blaze' - Freeman Maple	1" cal.	15' o.c.	175
25	Ulmus americana 'Valley Forge' Valley Forge American Elm	1" cal.	15' o.c.	175
50	Total 1" caliper trees (3.5 planting units per tree)			175 Total FCA unit credit
95	Acer x Fraxinifolia 'Autumn Blaze' - Freeman Maple	2-3" whip	11' o.c.	175
95	Cornus canadensis - Red bud	2-3" whip	11' o.c.	175
95	Claytonia virginiana - American Hornbeam	2-3" whip	11' o.c.	175
95	Lonicera canadensis - Tule golden	2-3" whip	11' o.c.	175
95	Michxlia naya 'Heritage' - Silver Birch	2-3" whip	11' o.c.	175
95	Ostrya virginiana - American Hophornbeam	2-3" whip	11' o.c.	175
95	Ulmus americana 'Valley Forge' Valley Forge American Elm	2-3" whip	11' o.c.	175
95	Acer campestre - Hedge Maple	2-3" whip	11' o.c.	175
655	Total whip plantings (2 planting units per tree)			1310 Total FCA unit credit
	Total Unit Credit			(175 + 1310) 1485



Construction Period Protection Program

- A. Forest Protection Techniques**
- 1. Soil Protection Area (Critical Root Zone)**
 The soil protection area, or critical root zone, of a tree is that portion of the soil column where most of its roots may be found. The majority of roots responsible for water and nutrient uptake are located just below the soil surface.
 The limit of disturbance (LOD) from proposed construction activities on the site shall be determined by the developer, in consultation with the County, and shall be approved by the County. The LOD shall be established by the developer, in consultation with the County, and shall be approved by the County. The LOD shall be established by the developer, in consultation with the County, and shall be approved by the County. The LOD shall be established by the developer, in consultation with the County, and shall be approved by the County.



- B. Pre-Construction Meeting**
 Upon obtaining limits of disturbance and installation of all signage, a pre-construction meeting will be held between the developer, contractor and appropriate County inspector. The purpose of the meeting will be to verify that all tree protection measures outlined in the FCP are in place, that all sediment control is in place, and to verify the contractor's knowledge of the FCP.

- C. Storage Facilities/Equipment Cleaning**
 All equipment storage, parking, material stockpiling, etc. associated with construction of the project will be restricted to those areas shown within the limit of disturbance. Material of equipment will be prohibited from all forest retention areas. Material remaining from equipment cleaning will be controlled to prevent soil erosion, debris and other environmentally sensitive areas.

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

- E. Construction Monitoring**
 Eco-Science Professionals, or another qualified professional designated by the developer, will monitor construction of the project to ensure that all activities are in compliance with the Forest Conservation Plan. This will include inspections to ensure that signage is properly maintained and that no unauthorized activities have taken place in forest retention areas.

- F. Activities Permitted During Construction**
 The forest conservation plan will allow the following activities within forest resources during the construction phase of the project:
 1. Passive recreation (birdwatching, hiking, etc.)
 These activities will not damage or negatively impact the forest resources on the property.

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

- Post-Construction Management Plan**
 The post-construction management plan will further ensure that all Forest Conservation Easement Areas are maintained. The developer will be responsible for implementation of the post-construction management plan.

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

- Planting/Soil Specifications**

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

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

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

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

- Surety for Forestation**
- The developer shall post a surety (bond, letter of credit) to ensure that forestation plantings are completed. See GENERAL NOTE 3, SHEET 1.

- Planting Notes**
- When possible, plants shall be installed within 24 hours of delivery. If installation cannot be performed within this time frame, plant stock shall be watered and protected from desiccation.
 Application of herbicide, Round-up or equivalent, may be used to reduce plant competition from old field successional growth at the time of installation. Mowing, re-application of herbicide, or a combination thereof, may be used to control unwanted, competing vegetation.
 Planting shall be installed within one year or two growing seasons of subdivision approval. Plantings may be installed in accordance with the time schedule included in Note 1 of the planting/seeding specifications.

- Forest Easement Metes And Bounds**
 See Record Plats Titled "Fairlane Farm Lots 19 Thru 44 & Non-Buildable Preservation Parcels 'A' Thru 'N'."

- Planting Notes:**
- Planting units defined by the spacing requirements established in the FCA Manual. One plant unit is defined as 1 seedling or whip without shelter. The Manual states that 700 seedlings/whips without shelters are required per acre, or 350 whips w/shelters, or 200 1" caliper trees, or 100 2" caliper trees. By conversion it has been determined that a seedling or whip without shelter = 1 unit, whip with shelter = 2 units, 1" caliper tree = 3.5 units and 2" caliper tree = 7 units. The use of plant units simplifies the plant density calculations when mixing stock size.
 * - These species should not be planted within the wetland limits.
 1" caliper trees should be staggered along the outer perimeter of the planting area to serve as demarcation of the boundary. The trees should be no closer than 15 foot spacing. Whip spacing to be placed on 11 foot centers, shelters will be required per Howard County policy.
 Planting shall be made in a curvilinear fashion along contour. The planting should avoid a grid appearance but should be spaced to facilitate maintenance.
 Multifloral rose/heavy brush removal/control may be required prior to installation of planting.
 All whips are required to be installed with tree shelters per Howard County FCA requirements.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21142
 (410) 461-1099

OWNER
 DAISYCOOP, LLC
 c/o ESTATE OF FRANCES JEAN SCHULTE
 DIANE G. SCHULTE, PERSONAL REPRESENTATIVE
 2215 DUVALL ROAD
 WOODBINE, MD 21797
 410-977-1327

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8318 FOREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21143
 (410)-922-4600

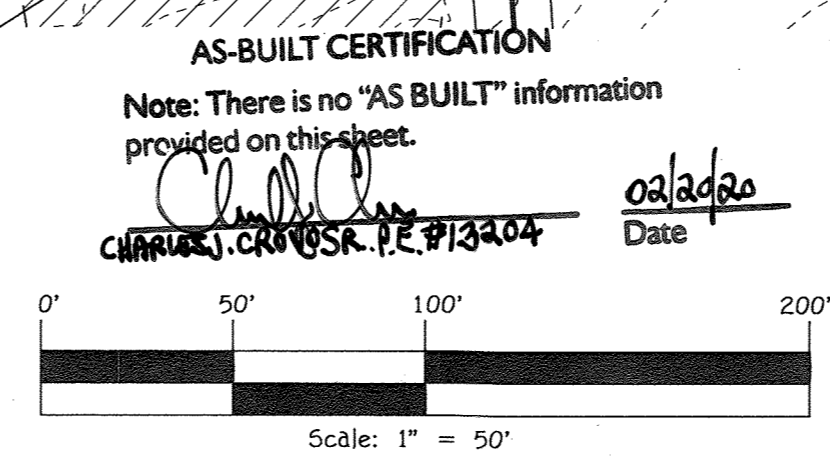
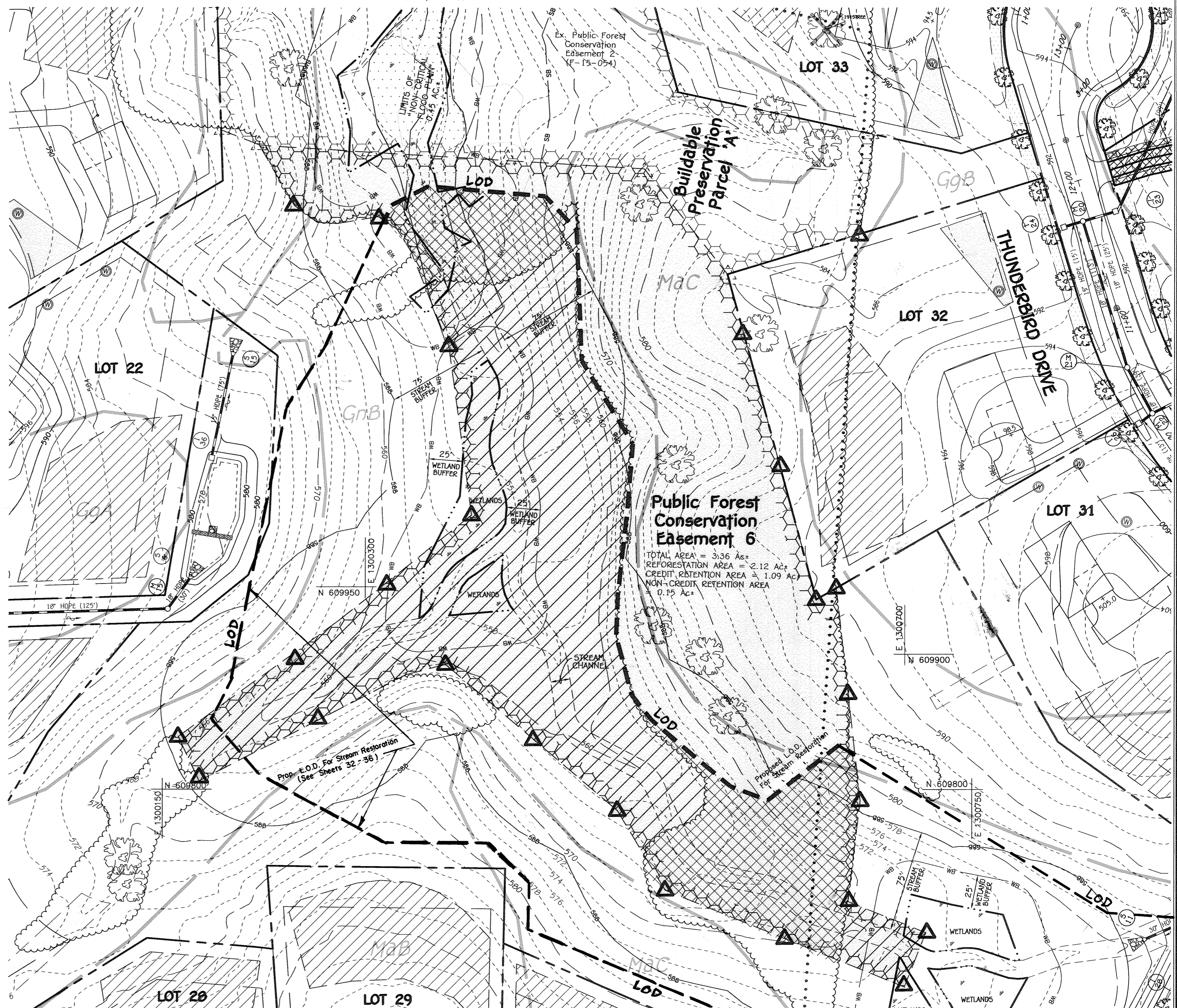
**FOREST CONSERVATION WORKSHEET
 VERSION 1.0
 (PHASE ONE & TWO)**

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	138.60
B. DEDUCTIONS (AREA WITHIN 100 YEAR FLOODPLAIN)	6.01
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	---
D. NET TRACT AREA	132.59
LAND USE CATEGORY: MEDIUM DENSITY RESIDENTIAL	
E. AFFORESTATION THRESHOLD (NET TRACT AREA (D) x 20%)	26.5
F. CONSERVATION THRESHOLD (NET TRACT AREA (D) x 25%)	33.2
EXISTING FOREST COVER	
G. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	38.99
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	12.5
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	5.8
BREAK-EVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	34.35
BREAK-EVEN POINT	
K. CLEARING PERMITTED WITHOUT MITIGATION	4.6
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE	9.08
M. TOTAL AREA OF FOREST TO BE RETAINED	29.87
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION THRESHOLD	1.45
O. REFORESTATION FOR CLEARING BELOW THE CONSERVATION THRESHOLD	6.66
Q. CREDIT FOR RETENTION ABOVE THE CONSERVATION THRESHOLD	---
R. TOTAL REFORESTATION REQUIRED	8.11
S. TOTAL AFFORESTATION REQUIRED	---
T. TOTAL PLANTING REQUIREMENT	8.11

**FOREST CONSERVATION
 AREA SUMMARY (Phase Two)**

FOREST CONSERVATION EASEMENT NO.	CREDIT RETENTION AREA	NON-CREDIT RETENTION AREA	REFORESTATION AREA	TOTAL AREA
FCE No. 6	1.09 AC.	0.15 AC.	2.12 AC.	3.36 AC.

NOTE: THE FOREST CONSERVATION OBLIGATION FOR PHASE ONE AND TWO WILL BE MET BY 29.87 ACRES OF RETENTION AND 8.11 ACRES OF REFORESTATION. PHASE ONE (F-15-054) OF THE SUBDIVISION PROVIDED 29.87 ACRES OF FOREST RETENTION AND 2.19 ACRES OF FOREST PLANTING UNDER THE DEVELOPER'S AGREEMENT. THE REMAINING 1.09 ACRES OF FOREST RETENTION AND 2.12 ACRES OF FOREST PLANTING OBLIGATION WILL BE FULFILLED WITH THIS PLAN (F-16-062) UNDER THE DEVELOPER'S AGREEMENT. PHASE ONE ALSO INCLUDED A FOREST CONSERVATION MITIGATION BANK WITH 10.31 ACRES OF REFORESTATION.



Professional Engineer Seal
 ALDO M. VIUCCI, P.E.
 License No. 20748, Expiration Date 2-22-17

Professional Engineer Seal
 ALDO M. VIUCCI, P.E.
 License No. 20748, Expiration Date 2-22-17

**FOREST CONSERVATION PLAN
 FAIRLANE FARM
 PHASE TWO**
 LOTS 19-44,
 BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'I' THRU 'N'
 A Resubdivision of Non-Buildable Bulk Parcel 'C' & 'H' And A Division to Buildable Preservation Parcel 'A', Recorded As "Fairlane Farm Phase One Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'C', Parcel 'I' And Non-Buildable Bulk Parcels 'G' And 'H'."
 ZONED: RC-DEO
 TAX MAP NO.: 8 - GRID NO.: 2, PAR.: 8
 TAX MAP NO.: 8 - GRID NO.: 3, PAR.: 17
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: NOVEMBER 11, 2016
 SHEET 31 OF 36

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F-16-062

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

- 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:
 - Prior to the start of earth disturbance,
 - Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,
 - Prior to the start of another phase of construction or opening of another grading unit,
 - 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.
- 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.
- 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.
- 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-4-6) 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).
- 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.
- Site Analysis:

Total Area of Site:	±93 Acres
Area Disturbed:	4.59 Acres
Area to be roofed or paved:	NA
Area to be vegetatively stabilized:	4.59 Acres
Total Cut:	5,491.36 Cu. Yards
Total Fill:	6,969.03 Cu. Yards
Offsite waste/borrow area location:	
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- 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)
- Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be backfilled and stabilized by the end of each workday, whichever is shorter.
- 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 be allowed by the CID per the list of HSCD-approved field changes.
- Disturbance shall not occur outside the LOD. 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 HSCD, no more than 30 acres cumulatively may be disturbed at a given time.
- Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
- Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.
- All Silt Fence and Super Silt Fence shall be placed on the contour, and be imbricated at 25' minimum intervals, with lower ends curved uphill by 2' in elevation.
- 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
- 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.

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

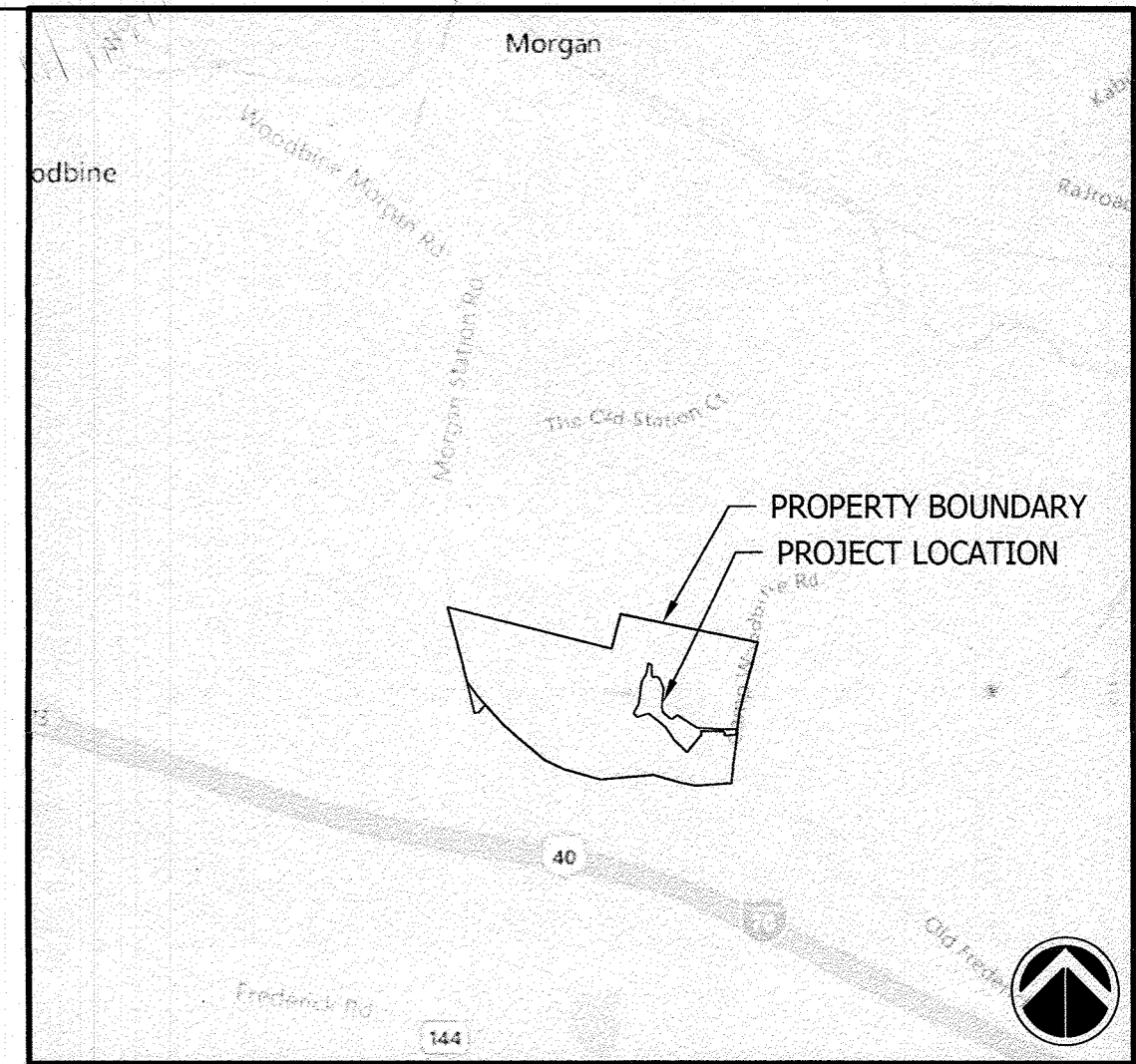
- No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
- Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
- Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
- All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Ryegrass (*Lolium multiflorum*), Millet (*Setaria italica*), Barley (*Hordeum sp.*), Oats (*Avena sp.*), and/or Rye (*Secale cereale*). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. **Kentucky 31 fescue shall not be utilized in wetland or buffer areas.** The area should be seeded and mulched to reduce erosion after construction activities have been completed.
- After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
- To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:
 - Use I waters: In-stream work shall not be conducted during the period March 1 through June 15, inclusive, during any year.
 - Use III waters: In-stream work shall not be conducted during the period October 1 through April 30, inclusive, during any year.
 - Use IV waters: In-stream work shall not be conducted during the period March 1 through May 31, inclusive, during any year.
- Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
- Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.
- A dewatering pump will be utilized in conjunction with a dirt bag (see detail this sheet) to remove standing water in the project area during construction. The dirt bag will be placed on a vegetated area a sufficient distance from subject reach so that any sediment leaving the dirt bag has time/distance to settle out before reaching the waterway.

- GENERAL NOTES**
- This plan has been prepared to remove two existing farm pond and restore approximately 1,000 linear feet of stream on the Schulte Property, located on Old Frederick Road in the Woodbine area of Howard County, Maryland.
 - Contours were obtained from Fisher, Collins & Carter and depict field run 2-ft topo.
 - The Contractor shall notify Ecotone, Inc. and the landowner's representative at least two (2) weeks prior to start of grading operations within the project areas.
 - The Contractor is responsible for the location of all underground utilities prior to the start of construction. Any damages to utilities as a result of grading or other activities will be the sole responsibility of the Contractor and shall be repaired at the Contractor's expense.
 - Access to the restoration area shall be from Camp Woodbine Road via existing private drive as indicated hereon.
 - The Contractor will be responsible for any damage to private property, including but not limited to fences and private roads resulting from the execution of this contract. Repairs for any such damage will be made at the Contractor's expense to the satisfaction of the private property owner and Ecotone, Inc.
 - All machinery, equipment, and supplies for the project shall be stored in an upland location, preferably the staging area shown on this plan, so as not to disturb any environmentally sensitive areas or agricultural uses on the site.
 - All rough and finish grading work will be started at the upstream end of the project.

FAIRLANE FARM STREAM RESTORATION

HOWARD COUNTY, MD

1	EXPAND LIMIT OF DISTURBANCE	3/23/18
No.		DATE
REVISIONS		



VICINITY MAP
SCALE: 1" = 2000'

STREAM RESTORATION PLAN

As part of the Fairlane Farm Development, two existing man-made ponds and their berms will be removed, and a natural headwater stream system restored. The watershed shown on this plan is classified Use I, and will restore approximately 1,000 linear feet of an unnamed tributary to South Branch Patapsco River and 0.25 acres of non-tidal wetland.

Approximately 1,000 linear feet of stream channel will be restored to a stable platform according to natural channel design concepts. The proposed structural stabilization measures include installing toe wood on the meander bends to add roughness to the outside meander and reduce shear stress, installing riffle and cascade grade controls, and installing step pool and log cross vane structures. Bioengineering practices including coir fiber matting bank stabilization and live stake and warm season grass installation will accompany the structures to provide additional stability, shade and improved aquatic habitat. Areas adjacent to the stream will be nontidal wetlands.

DEVELOPER INFORMATION
LAND DESIGN AND DEVELOPMENT
5300 DORSEY HALL DRIVE
SUITE 102
ELLCOTT CITY, MD 21042
(410) 977-0422

SITE DATA
DEED REF: 385/193
MAP 8, GRID 2, PARCELS 8 + 17
ELECTION DISTRICT 4
EXISTING ZONING RC-DEO
SITE ACREAGE: ±93 AC
8 DIGIT HUC: 02060003
MD 8 DIGIT BASIN: 02130908 (S Branch Patapsco)

PROPERTY OWNER INFORMATION
ESTATE OF F.J. SCHULTE
2215 DUNWALL ROAD
WOODBINE, MD 21797
(410) 997-1327

LIMIT OF DISTURBANCE:
±199,858 SF / 4.59 AC.

ENGINEER'S CERTIFICATE

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

Signature Of Engineer: *[Signature]* Date: 3/11/17

DEVELOPER'S CERTIFICATE

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

Signature Of Developer: *[Signature]* Date: 3/2/17

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.
Signature: *[Signature]* Date: 3/7/17

TEMPORARY BENCHMARKS

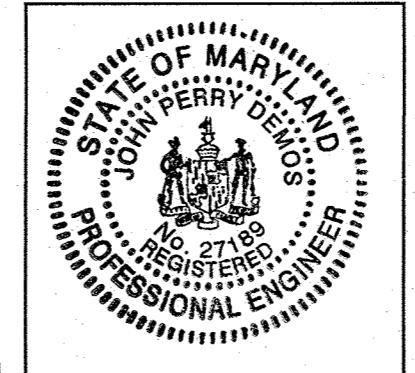
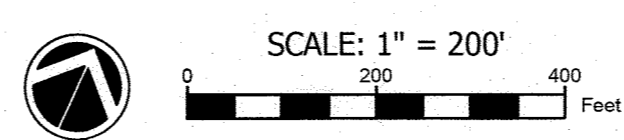
17127	591.28
17128	586.46
17129	569.14
17130	566.96
17131	564.24
17132	547.73
17133	572.65

DESIGN NARRATIVE

Stream restoration discharge values are based on post development discharge determinations from Fisher Collins & Carter. Refer to the table below and the Environmental Stream Restoration Stormwater Management Drainage Area Map for drainage areas and discharge information. Stream restoration measures utilized to ensure velocities will not result in erosive conditions include the use of step pools and cascade structures as energy dissipaters, toe wood and livestock plantings as surface protection and coir matting to provide immediate soil stabilization. Approximately 522 square feet of the project area is located within the 100-year floodplain at the downstream end of the project area. Stream monitoring post construction will be completed in accordance with MDE and COE permit conditions. Refer to permit # 2015-61942-H37 for specific monitoring requirements.

STREAM REACH	STATION	DISCHARGE (cfs)	DRAINAGE AREA (SF)
1	0+00-1+80	12.5	12.42
1	1+80-3+06	20	19.1
1	3+06-6+50	20	22.8
1	6+50-7+50	45	44.42
1	7+50-8+81	45	45.42
2	0+00-2+57	12.5	5.25
3	0+00-2+54	20	20.03

- SEQUENCE OF CONSTRUCTION**
- Beginning with sufficient time prior to construction, the ponded areas shall be drained by systematically removing or puncturing the riser structures in each pond at one half foot intervals.
 - Contractor shall notify owner and Howard County Soil Conservation District at least 48 hours prior to beginning any work and the Maryland Department of the Environment Inspection and Compliance Program (410 537-3510) at least 5 days prior to beginning any work. Miss Utility must be contacted at least 72 hours prior to beginning work. A pre-construction meeting is required with the developer, contractor, and Howard SCD prior to construction starting.
 - All necessary approvals and permits must be obtained prior to start of construction.
 - Clear and grub for the installation of sediment and erosion control measures or devices.
 - Install stabilized construction entrances and all sediment control devices.
 - Notify Howard County Soil Conservation District upon completion of said installation.
 - With the approval of Howard County Soil Conservation District, clear and grub for in-stream work. The stream is in the South Branch (Patapsco River) watershed, designated as Use I by the Maryland Department of the Environment. No in-stream work is to be completed between March 1 and June 15.
 - Install pump around practices in unnamed tributary. All pump around diversions shall be set up and running before in-stream work will be permitted to start. See Pump-Around Note, this Sheet.
 - Begin stream work starting at the upstream end of the project and work downstream. Complete installation of all in-stream structures. Remove any accumulated sediment in the stream channel at the end of each working day and prior to the removal of the pump around practice.
 - Stabilize all disturbed areas at the end of each working day or within a 3-day dry weather forecast.
 - Once stream restoration is complete, seed and stabilize any remaining work areas.
 - Upon stabilization of site with established vegetation and with permission of the Howard County Soil Conservation District field technician, remove sediment control measures and stabilize those areas disturbed by this process, including any spoils areas.
 - Install plant material during appropriate planting dates.



HOWARD COUNTY STANDARD NOTE

All vegetative and structural practices are to be installed according to the provisions of this plan are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

100-YEAR FLOODPLAIN NOTE

FEMA mapped floodplain is not present on-site according to FEMA mapping and County GIS data. FIRM panel #24027C0035D.

MAINTENANCE NOTE

Contractor shall inspect and maintain all sediment control measures and devices after every storm event. Maintenance shall include, but not be limited to the removal of all accumulated sediment. Geotextile fabric shall be replaced as needed to ensure proper function.

PUMP-AROUND NOTE

Pump around shows the maximum extents of stream to be diverted. Actual pump around length will be the length which can be completed in a working day.

UTILITY NOTIFICATION

"Ecotone, Inc. makes no representation as to the existence or non-existence of any utilities at the construction site. Shown on these construction drawings are those utilities which have been identified. It is the responsibility of the landowners or operators and contractors to assure themselves that no hazard exists or damage will occur to utilities. It is suggested that Miss Utility be contacted at: 1-800-257-7777."

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. 27189, expiration date: 03/26/18.

Signature: *[Signature]* Date: 3/11/17

COORDINATE NOTE

PLAN IS IN NAD 83 MARYLAND STATE PLANE FIPS 1900 COORDINATE SYSTEM.

TEMPORARY STOCKPILE NOTE

If necessary, a temporary stockpile shall be provided within the limits of disturbance. The stockpile shall be located such that any runoff will drain to an existing sediment control device (i.e., super silt fence). The stockpile may not protrude upon nor alter drainage divides to the sediment control device at any time.

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS DATE: 3-16-17

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 3-16-17

APPROVED: DEVELOPMENT ENGINEERING DIVISION
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 3-16-17

INDEX OF SHEETS

SHEET NO.	TITLE
32	STREAM RESTORATION COVER
33	STREAM RESTORATION GRADING AND EROSION AND SEDIMENT CONTROL
34	STREAM RESTORATION PROFILES AND CROSS SECTIONS
35-36	STREAM RESTORATION DETAILS

AS-BUILT CERTIFICATION

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

Signature: *[Signature]* Date: 02/20/18

CHARLES J. CRAIG SR., P.E. #13004

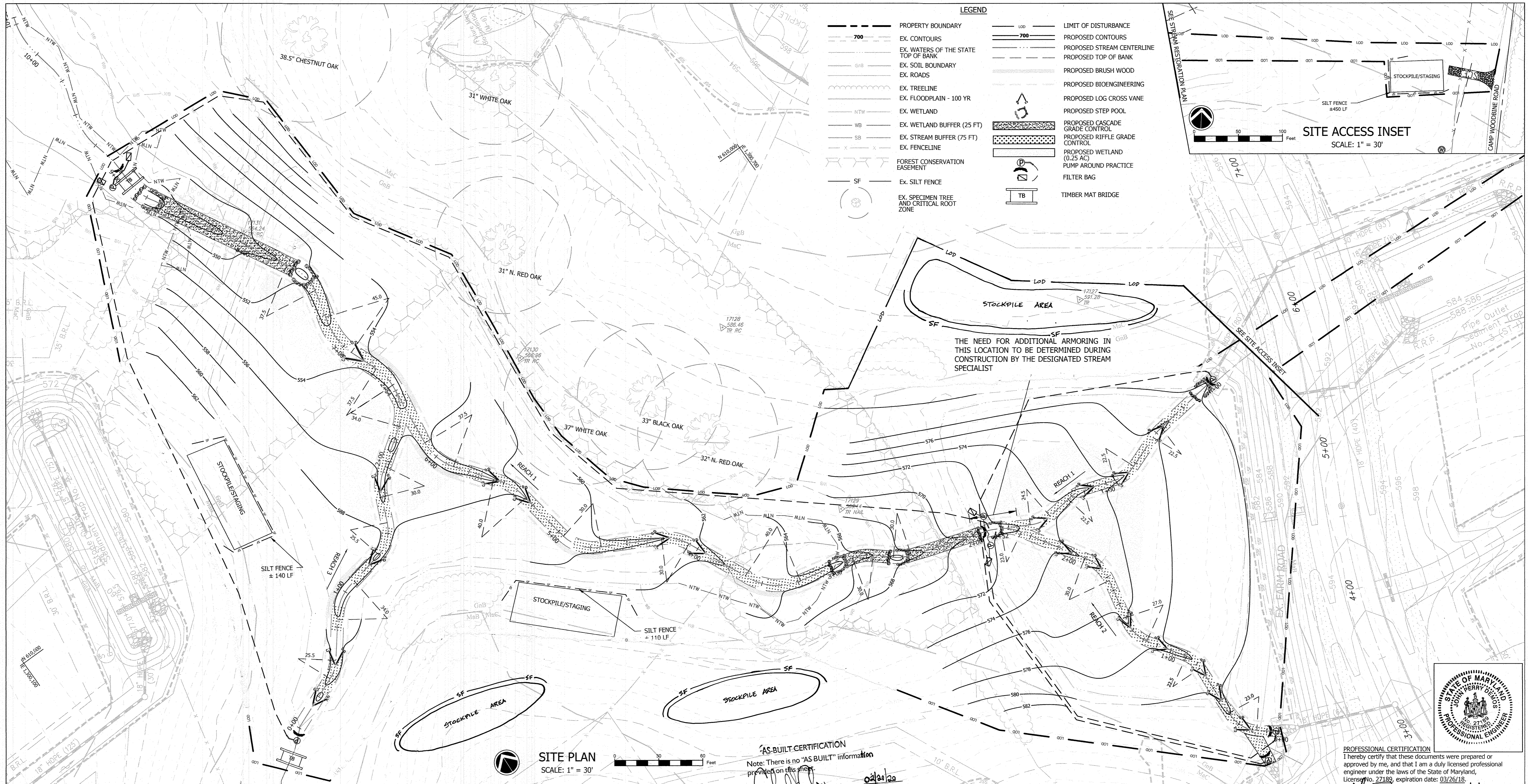
**FAIRLANE FARM
STREAM RESTORATION COVER**

15320 & 15250 OLD FREDERICK RD, WOODBINE, MD 21797

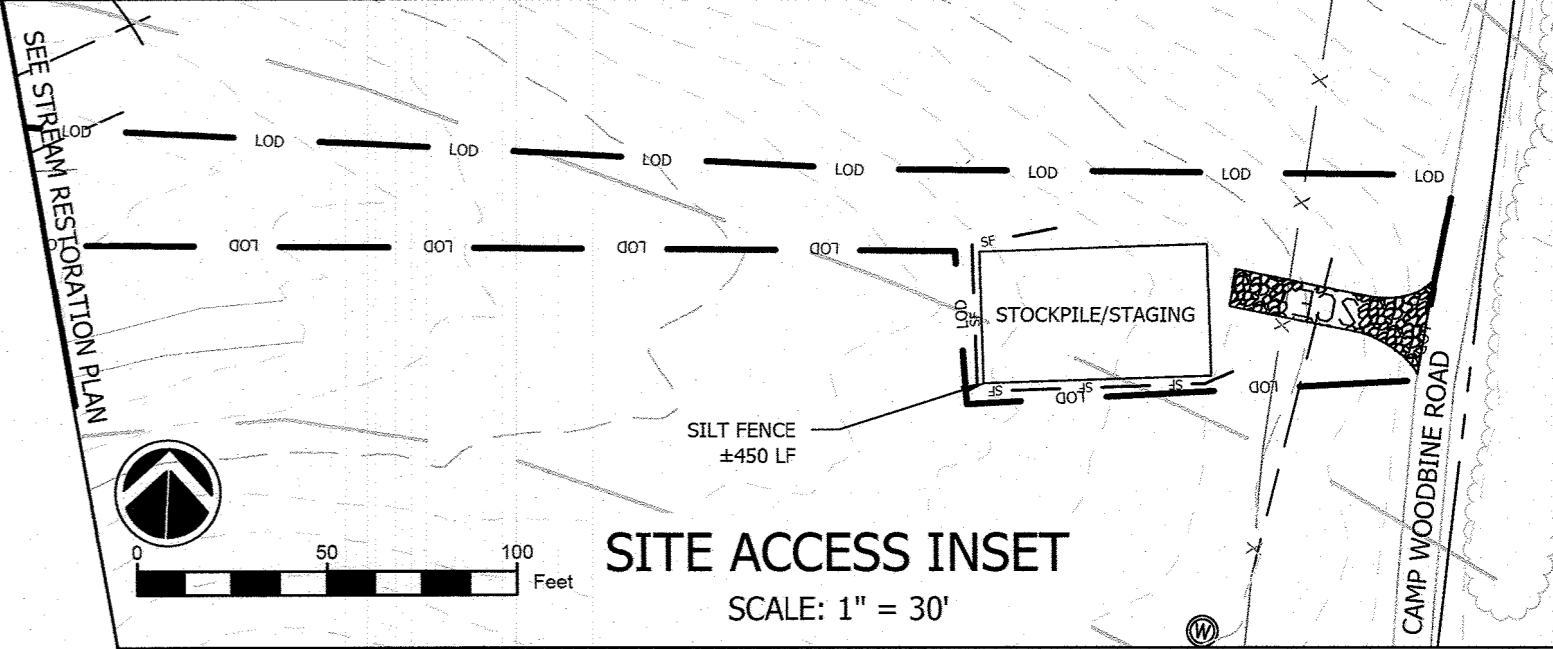
Ecotone Inc.
FORESTS • WETLANDS • RIVERS • WILDLIFE

2120 High Point Road • Forest Hill, Maryland 21050
(410) 420 2600 • Fax (410) 420 6983 • www.ecotoneinc.com

CHECKED BY: SGM
DESIGNED: CEH/CTS
DRAWN: CTS
PROJECT No.: 1541
DATE: 2/28/2017
SHEET: 32 of 36

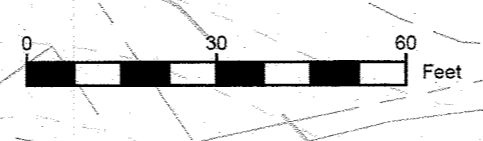


- LEGEND**
- PROPERTY BOUNDARY
 - EX. CONTOURS
 - EX. WATERS OF THE STATE TOP OF BANK
 - EX. SOIL BOUNDARY
 - EX. ROADS
 - EX. TREELINE
 - EX. FLOODPLAIN - 100 YR
 - EX. WETLAND
 - EX. WETLAND BUFFER (25 FT)
 - EX. STREAM BUFFER (75 FT)
 - EX. FENCELINE
 - FOREST CONSERVATION EASEMENT
 - EX. SILT FENCE
 - EX. SPECIMEN TREE AND CRITICAL ROOT ZONE
 - LIMIT OF DISTURBANCE
 - PROPOSED CONTOURS
 - PROPOSED STREAM CENTERLINE
 - PROPOSED TOP OF BANK
 - PROPOSED BRUSH WOOD
 - PROPOSED BIOENGINEERING
 - PROPOSED LOG CROSS VANE
 - PROPOSED STEP POOL
 - PROPOSED CASCADE GRADE CONTROL
 - PROPOSED RIFFLE GRADE CONTROL
 - PROPOSED WETLAND (0.25 AC)
 - PUMP AROUND PRACTICE
 - FILTER BAG
 - TIMBER MAT BRIDGE



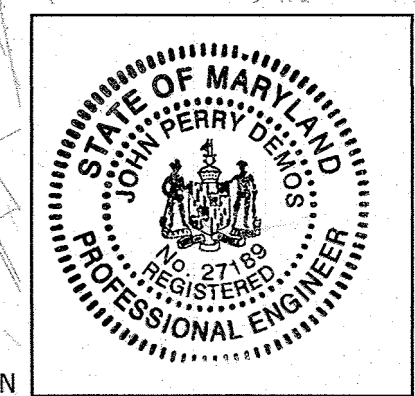
THE NEED FOR ADDITIONAL ARMORING IN THIS LOCATION TO BE DETERMINED DURING CONSTRUCTION BY THE DESIGNATED STREAM SPECIALIST

SITE PLAN
SCALE: 1" = 30'



AS-BUILT CERTIFICATION
Note: There is no "AS-BUILT" information provided on this sheet.
[Signature]
CHARLES C. CRAIG, SR., P.E. #13204 Date: 3/11/17

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. 27189, expiration date: 03/26/18.
[Signature]
DATE: 2/11/17



EXPAND LIMIT OF DISTURBANCE		3/23/18
No.	REVISIONS	

REALIGNMENT	REALIGNMENT STATIONING	RADIUS OF CURVATURE
REACH 1	0+45.1 - 0+53.9	22.5 FT
REACH 1	0+77.5 - 0+93.9	22.5 FT
REACH 1	1+15.7 - 1+28.4	22.5 FT
REACH 1	1+45.2 - 1+60.1	24.5 FT
REACH 1	2+44.2 - 2+56.6	30 FT
REACH 1	2+70.4 - 2+84.6	30 FT
REACH 1	3+23.3 - 3+62.5	40 FT
REACH 1	4+06.9 - 4+26.2	30 FT
REACH 1	4+67.6 - 4+95.4	30 FT
REACH 1	5+32.0 - 5+57.6	40 FT
REACH 1	5+86.3 - 6+12.2	37.5 FT
REACH 1	6+52.8 - 6+72.9	75 FT
REACH 1	6+93.3 - 7+23.3	45 FT
REACH 1	7+42.8 - 7+69.0	37.5 FT

STREAM CROSSING NOTE:
TIMBER MATS SHALL BE USED TO BRIDGE THE EXISTING STREAM CHANNEL WHERE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.

REALIGNMENT	REALIGNMENT STATIONING	RADIUS OF CURVATURE
REACH 2	0+16.7 - 0+39.9	23 FT
REACH 2	0+76.1 - 0+88.8	22.5 FT
REACH 2	1+17.6 - 1+39.8	27 FT
REACH 2	1+67.4 - 1+91.0	30 FT
REACH 2	2+37.2 - 2+51.5	23 FT

REALIGNMENT	REALIGNMENT STATIONING	RADIUS OF CURVATURE
REACH 3	0+39.5 - 0+52.6	25.5 FT
REACH 3	0+80.0 - 1+09.6	34 FT
REACH 3	1+34.0 - 1+57.2	25.5 FT
REACH 3	1+75.0 - 1+96.4	30 FT
REACH 3	2+25.0 - 2+54.0	34 FT

TEMPORARY BENCHMARKS

17127	591.28
17128	586.46
17129	569.14
17130	566.96
17131	564.24
17132	547.73
17133	572.65

SOILS LEGEND

SYMBOL	SOIL DESCRIPTION
GgB	Glennelg loam, 3-8% slopes
GnB	Glennville-Baile silt loams, 0-8% slopes
MnB	Manor loam, 3-8% slopes
MsC	Manor loam, 8-15% slopes

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Approved: *[Signature]*
Howard SCD 3/11/17

COORDINATE NOTE
PLAN IS IN NAD 83 MARYLAND STATE PLANE FIPS 1900 COORDINATE SYSTEM.

UTILITY NOTIFICATION
"Ecotone, Inc. makes no representation as to the existence or non-existence of any utilities at the construction site. Shown on these construction drawings are those utilities which have been identified. It is the responsibility of the landowners or operators and contractors to assure themselves that no hazard exists or damage will occur to utilities. It is suggested that Miss Utility be contacted at: 1-800-257-7777."

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS
DATE: ~~3-16-17~~

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 3-16-17

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 3-10-17

FAIRLANE FARM
STREAM RESTORATION GRADING AND EROSION AND SEDIMENT CONTROL
15320 & 15250 OLD FREDERICK RD, WOODBINE, MD 21797

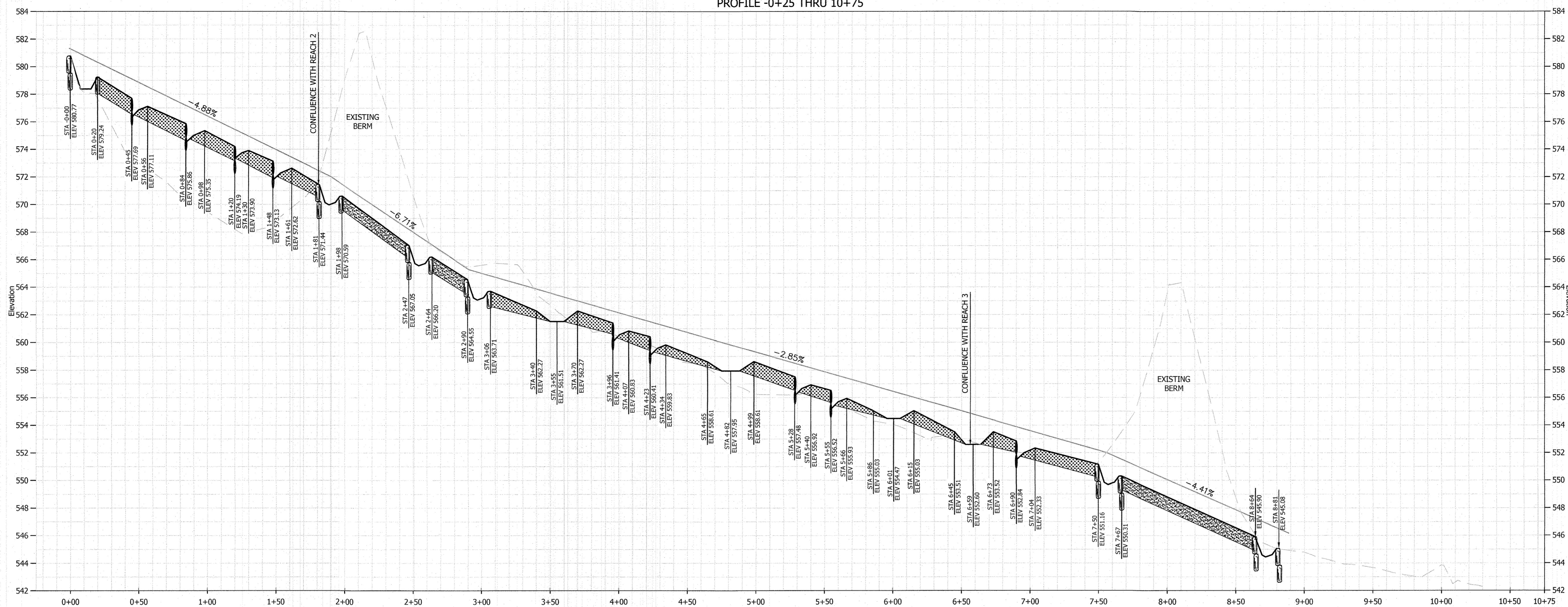
2120 High Point Road • Forest Hill, Maryland 21050
(410) 420 2600 • Fax (410) 420 6983 • www.ecotoneinc.com

REVISIONS

NO.	DATE	DESCRIPTION	REV.	BY
1	05/13/2016	COMMENTS FROM HOWARD COUNTY SCD	05	
2	12/22/2016	COMMENTS FROM HOWARD COUNTY SCD	08	
3	3/28/2017	REVISIONS PER SCD COMMENTS	09	

CHECKED BY: SGM
DESIGNED: CEH/CTS
DRAWN: CTS
PROJECT No.: 1541
DATE: 2/28/2017
SHEET:

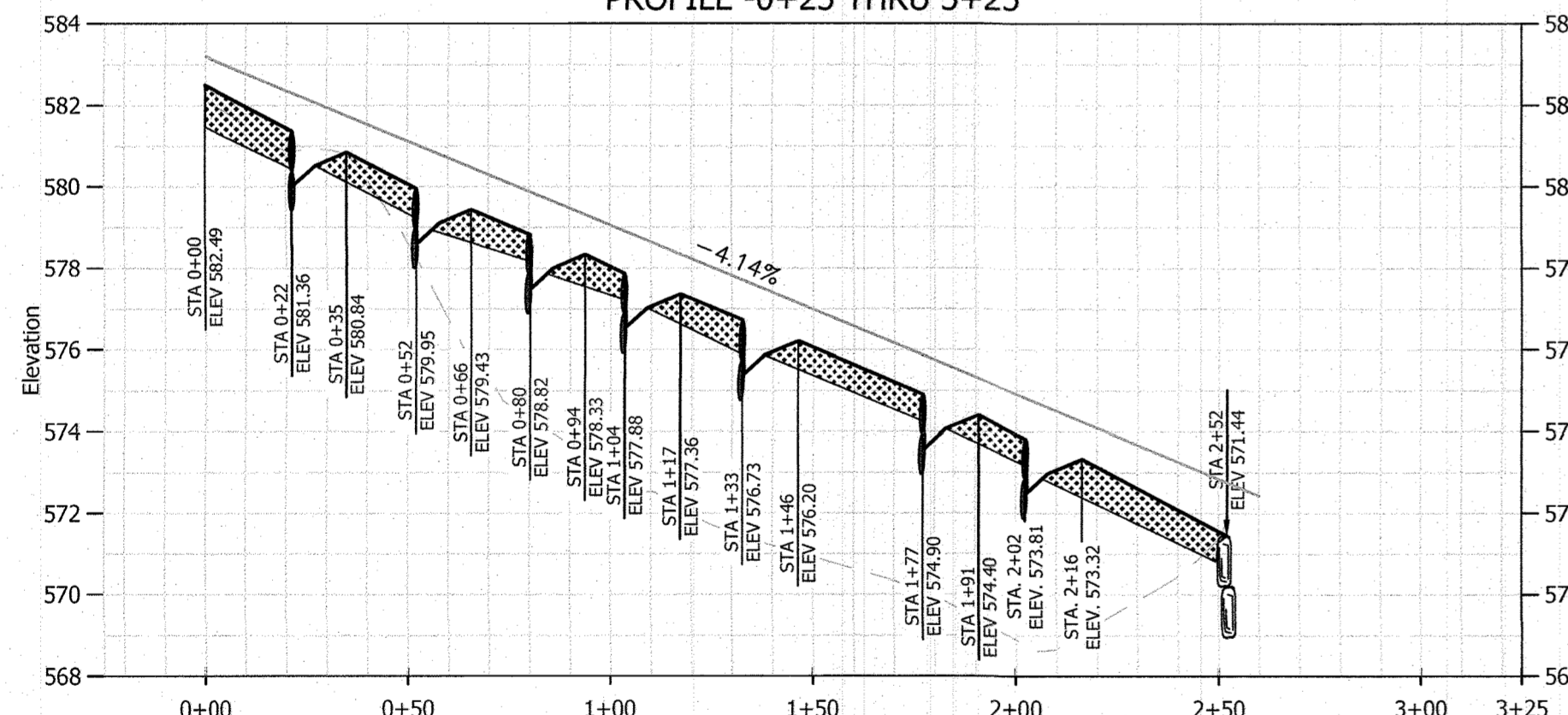
PROFILE -0+25 THRU 10+75



- LEGEND**
- EXISTING ELEVATION
 - PROPOSED ELEVATION
 - BANKFULL ELEVATION
 - STEP POOL
 - CASCADE STRUCTURE
 - WOODY RIFFLE STRUCTURE
 - LOG CROSS VANE STRUCTURE

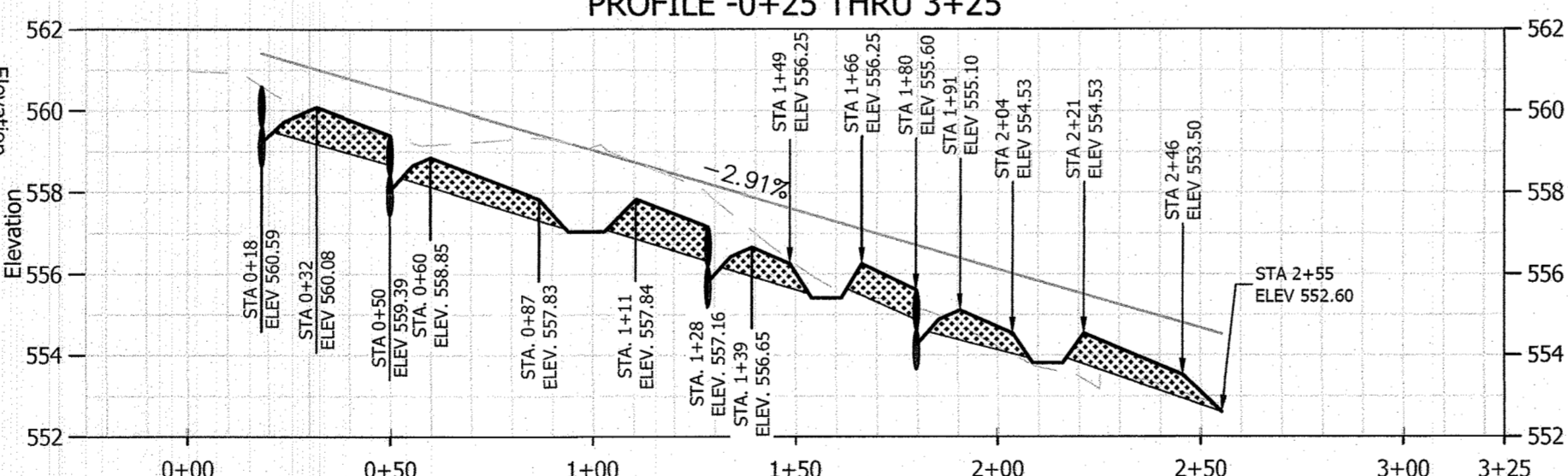
DISTANCE ALONG SECTION IN FEET
SCALE: 1" = 40'
VERTICAL EXAGGERATION: 10x

PROFILE -0+25 THRU 3+25



DISTANCE ALONG SECTION IN FEET
SCALE: 1" = 40'
VERTICAL EXAGGERATION: 10x

PROFILE -0+25 THRU 3+25



DISTANCE ALONG SECTION IN FEET
SCALE: 1" = 40'
VERTICAL EXAGGERATION: 10x

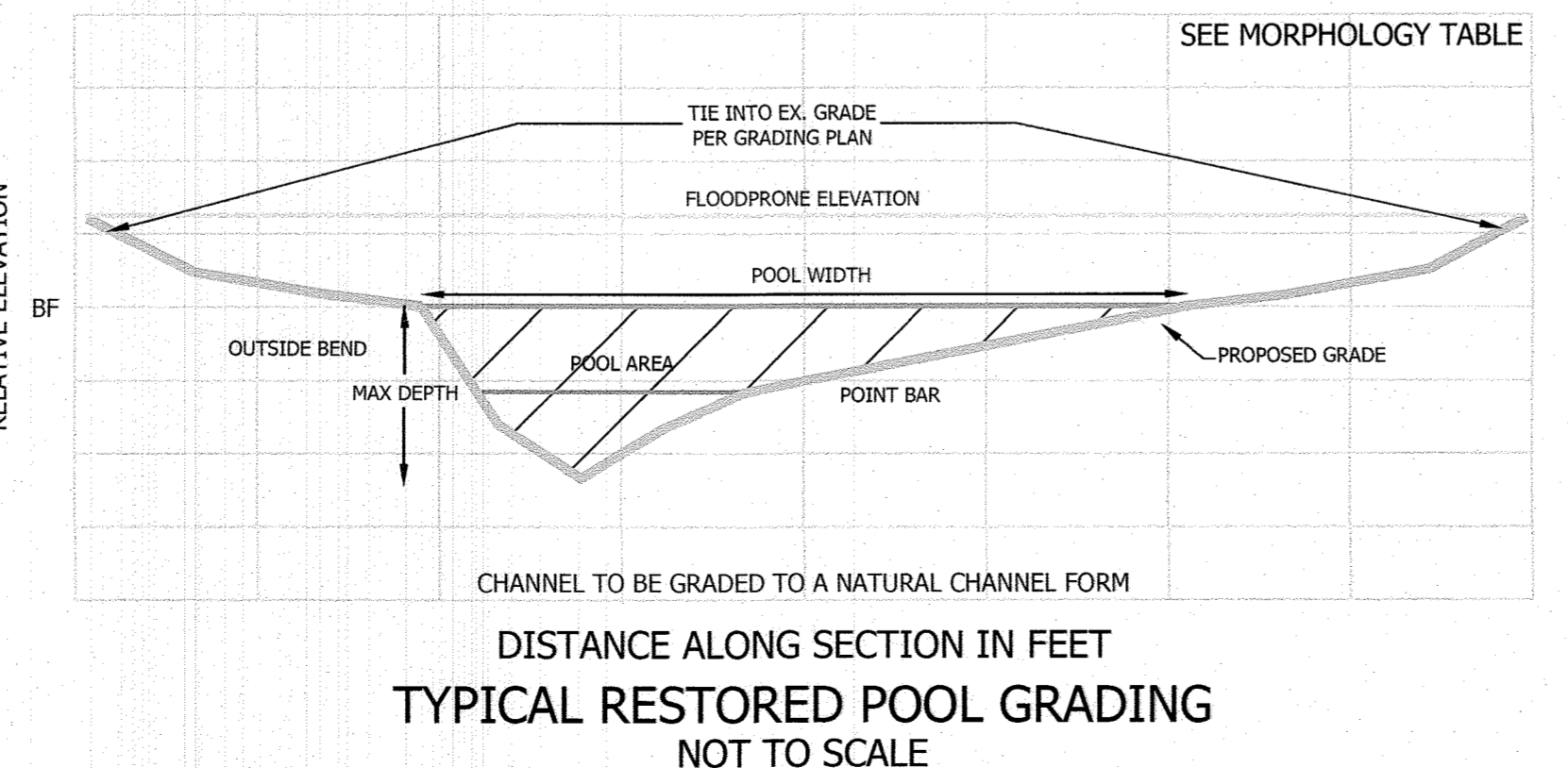
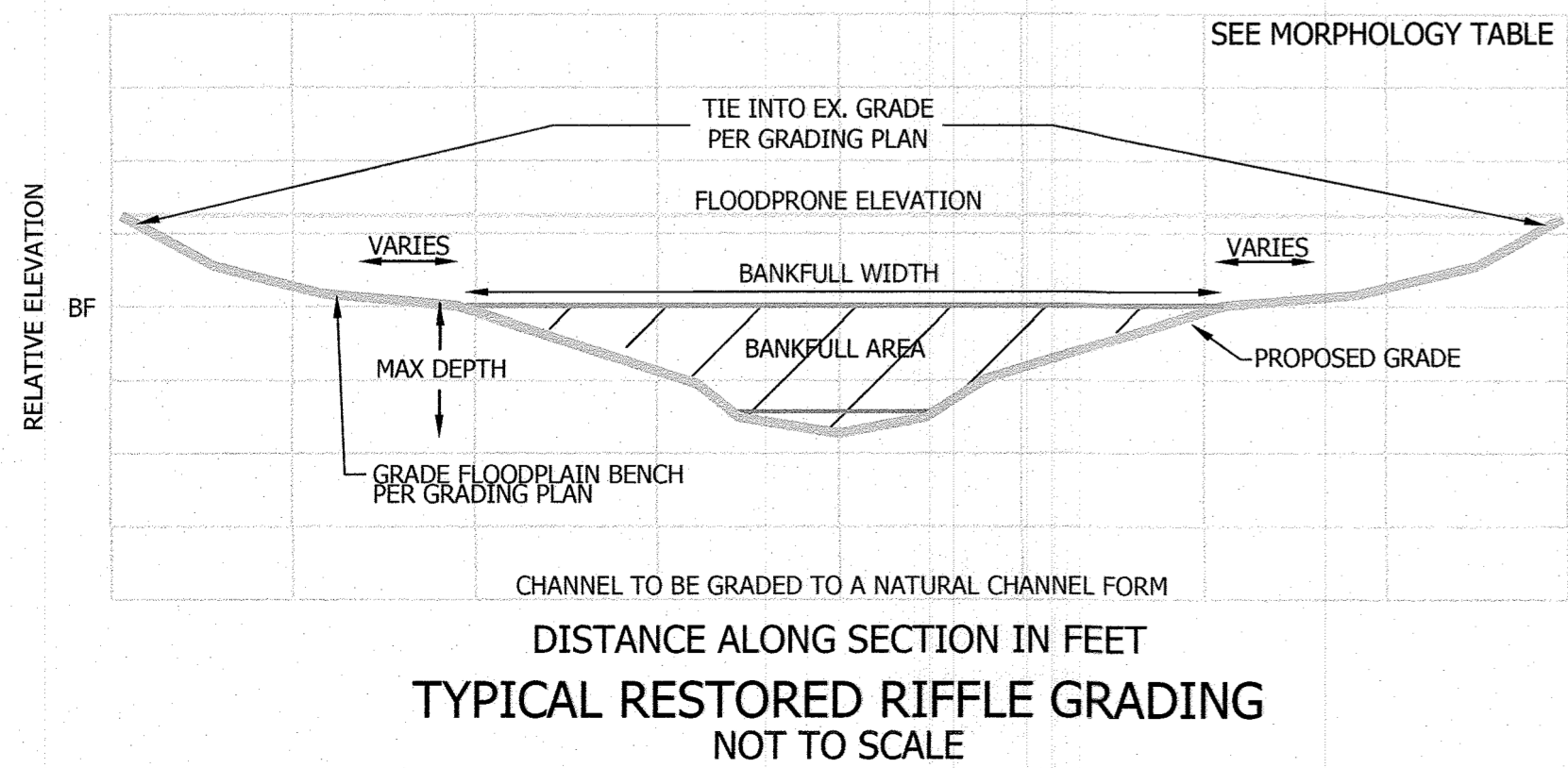
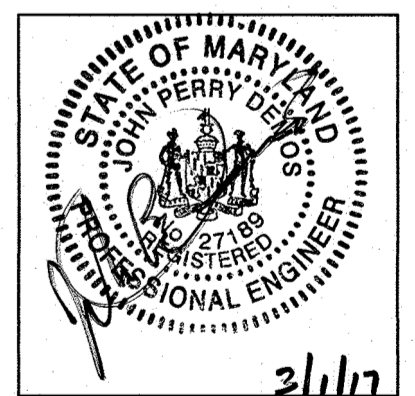
Morphology Table

Reach Stationing	Reach 1 0+00-1+80	Reach 1 1+80-3+06	Reach 1 3+06-6+50	Reach 1 6+50-7+50	Reach 1 7+50-8+81	Reach 2 0+00-2+57	Reach 3 0+00-2+54
Bankfull Width (ft)	7.25	8.5	8.5	11.75	12	7.25	8.5
Bankfull Mean Depth (ft)	0.5	0.55	0.6	0.8	0.8	0.5	0.55
Bankfull Max Depth (ft)	0.7 - 0.9	0.75 - 1.0	0.8 - 1.1	1.0 - 1.4	1.0 - 1.4	0.7 - 0.9	0.75 - 1.0
Bankfull Area (sq ft)	3.6	4.7	5.1	9.4	9.6	3.6	4.7
Pool Width (ft)	8.25 - 9.75	9.35 - 11	9.35 - 11	12.9 - 15.3	13.2 - 15.6	8.25 - 9.75	9.35 - 11
Pool Max Depth (ft)	1.25 - 1.75	1.4 - 1.9	1.4 - 1.9	2.0 - 2.8	2.0 - 2.8	1.25 - 1.75	1.4 - 1.9
Pool Area (sq ft)	3.95 - 4.7	5.2 - 6.1	5.6 - 6.6	10.3 - 12.2	10.6 - 12.5	3.95 - 4.7	5.2 - 6.1
Bankfull Slope (ft/ft)	0.0488	0.0671	0.0285	0.0285	0.0394	0.0414	0.0291
Bankfull Discharge (cfs)	12.5	20	20	45	45	12.5	20
Drainage Area (ft ²)	12.4	19.1	22.8	44.47	45.42	5.3	20.03

*MEAN DEPTH CALCULATED AS AREA/WIDTH

AS-BUILT CERTIFICATION
Note: There is no "AS BUILT" information provided on this sheet.
[Signature]
CHARLES J. CARNO SR. P.E. #13804 Date 02/20/20

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
District Engineer: *[Signature]*
Howard SCD 3/7/17



COORDINATE NOTE
PLAN IS IN NAD 83 MARYLAND STATE PLANE FIPS 1900 COORDINATE SYSTEM.

UTILITY NOTIFICATION
"Ecotone, Inc. makes no representation as to the existence or non-existence of any utilities at the construction site. Shown on these construction drawings are those utilities which have been identified. It is the responsibility of the landowners or operators and contractors to assure themselves that no hazard exists or damage will occur to utilities. It is suggested that Miss Utility be contacted at: 1-800-257-7777."

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION

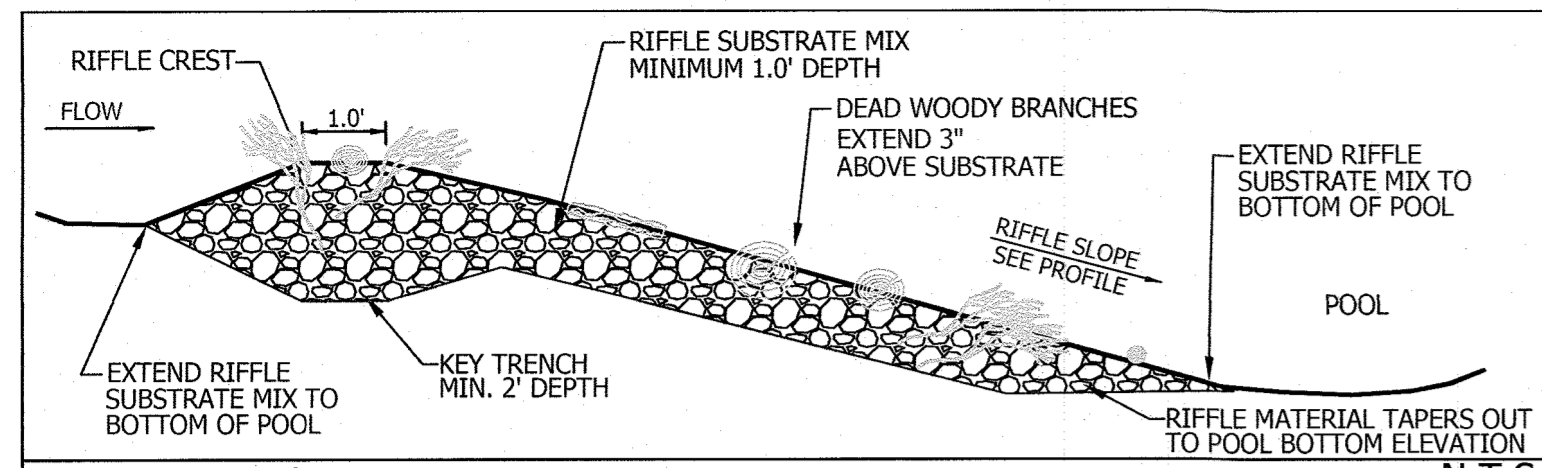
FAIRLANE FARM
STREAM RESTORATION PROFILES AND CROSS SECTIONS
15320 & 15250 OLD FREDERICK RD, WOODBINE, MD 21797

2120 High Point Road • Forest Hill, Maryland 21050
(410) 420 2600 • Fax (410) 420 6983 • www.ecotoneinc.com

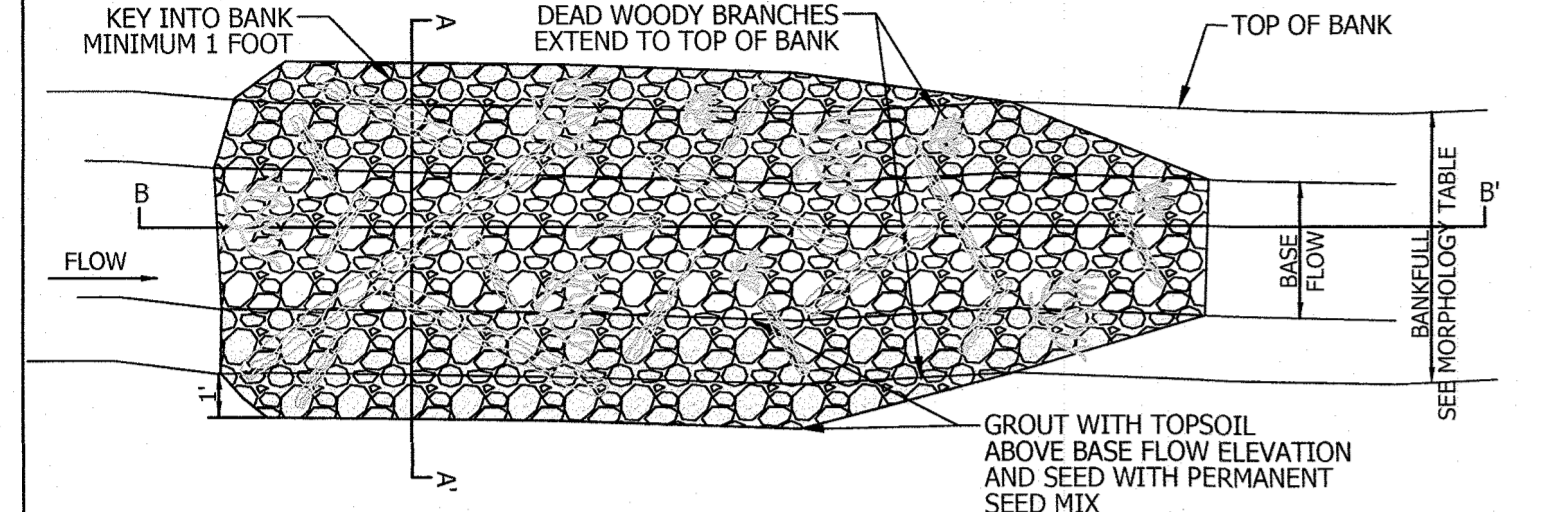
REVISIONS

NO.	DATE	DESCRIPTION	REV. BY
1	5/13/2014	COMMENTS FROM HOWARD COUNTY SCD	CEH
2	11/22/2014	COMMENTS FROM HOWARD COUNTY SCD	CEH
3	12/20/17	REVISIONS PER CED COMMENTS	CEH

CHECKED BY: SGM/CEH
DESIGNED: CEH/CTS
DRAWN: CTS
PROJECT No.: 1541
DATE: 2/28/2017
SHEET: 34 of 36

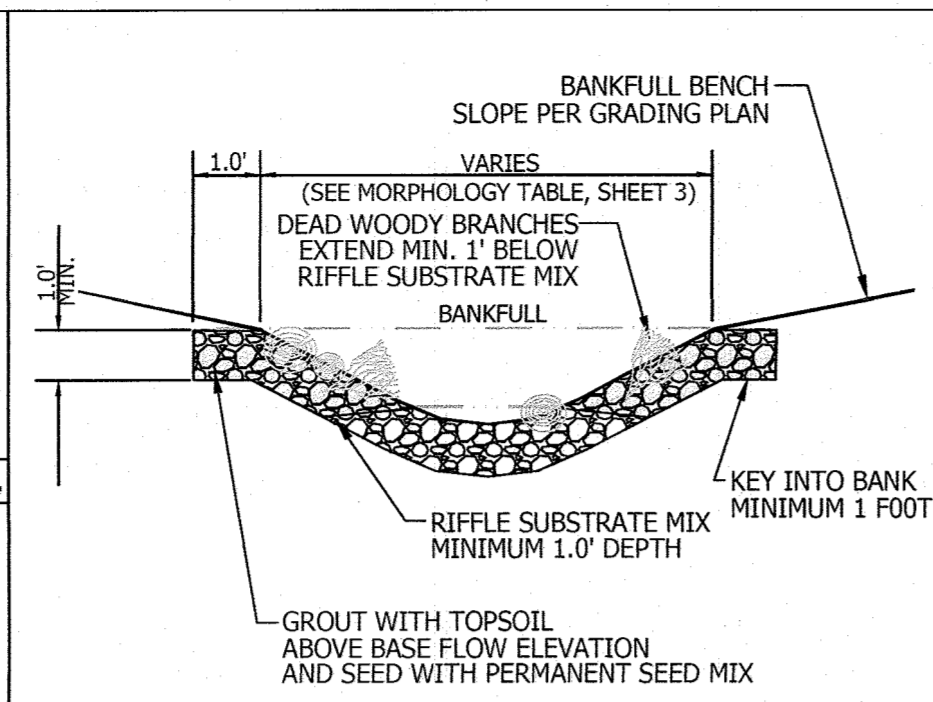


PROFILE B - B' N.T.S.



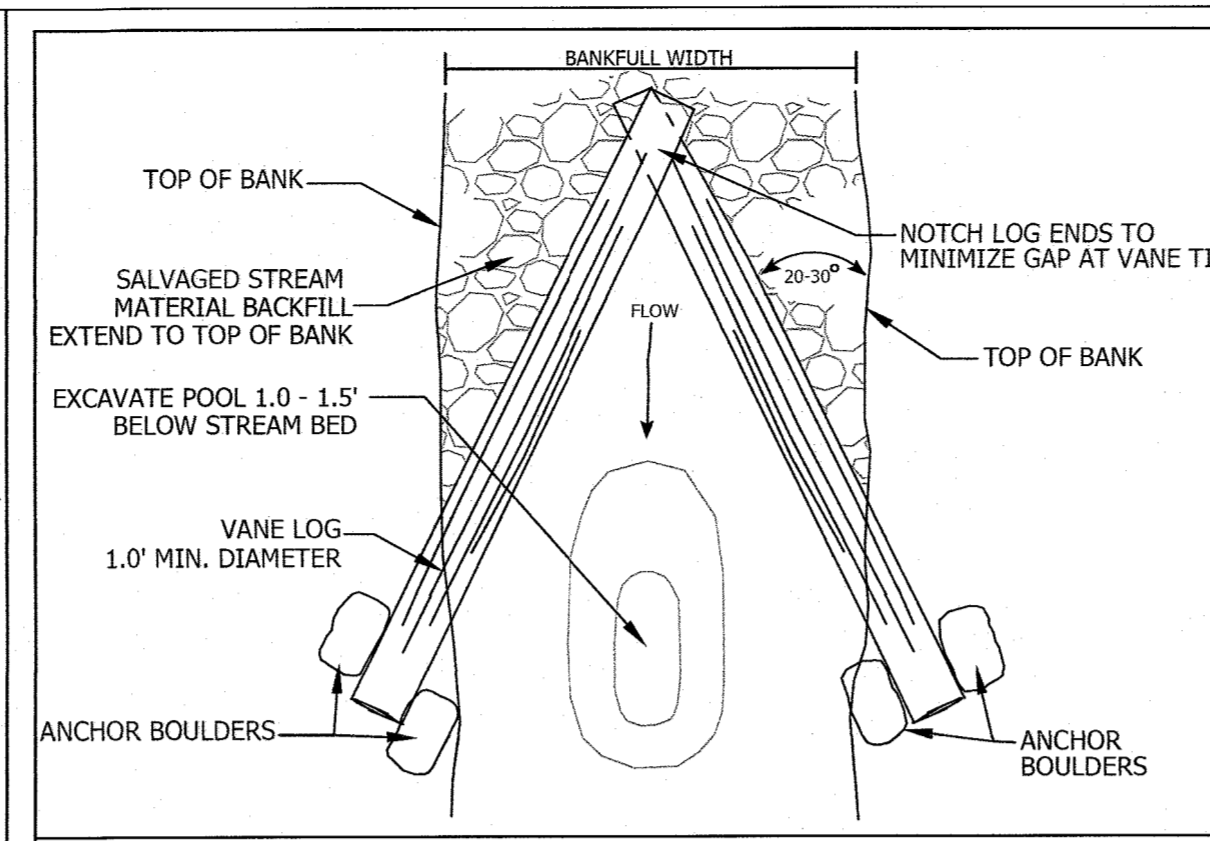
PLAN VIEW N.T.S.

RIFPLE GRADE CONTROL STRUCTURE WITH EMBEDDED WOODY MATERIAL DETAIL



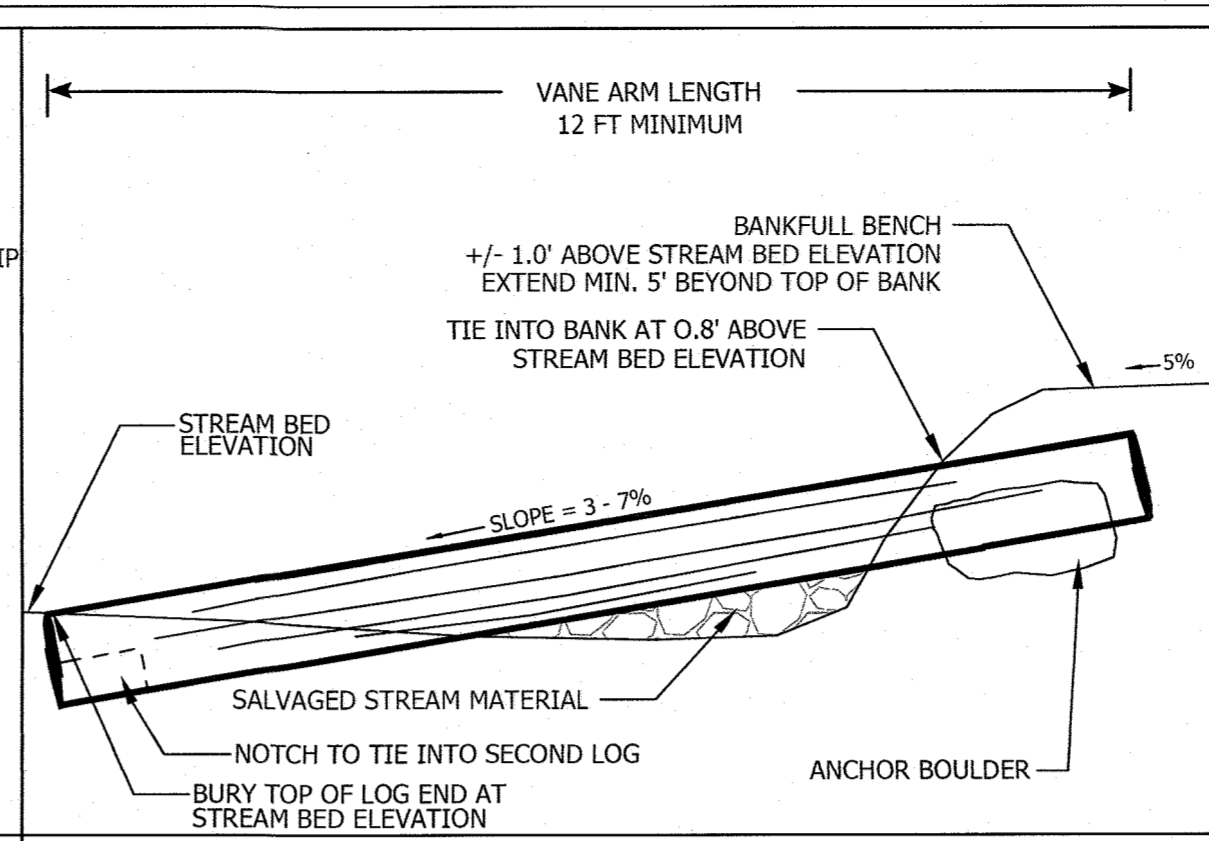
CROSS SECTION A - A' N.T.S.

NOTES:
 1. WOODY BRANCHES SHOULD BE PLACED IN LINES OR GROUPINGS SO THEY ARE CONTINUOUS ACROSS THE ACTIVE CHANNEL. STRAIGHT LINES ARE NOT REQUIRED.
 2. BRANCHES ARE TO BE PLACED WITH THE LARGER END EMBEDDED IN THE SUBSTRATE AND TIPS AT A DOWNSTREAM ANGLE.
 3. LIVE OR DORMANT BRANCHES ARE NOT TO BE USED.
 4. TIPS OF BRANCHES SHOULD EXTEND NO MORE THAN 3 INCHES BEYOND TOP OF RIFPLE SUBSTRATE.



PLAN VIEW N.T.S.

LOG CROSS VANE



VANE ARM PROFILE N.T.S.

CASCADE GRADE CONTROL STRUCTURE WITH EMBEDDED WOODY MATERIAL INSTALLATION

CASCADE GRADE CONTROL STRUCTURE WITH EMBEDDED WOODY MATERIAL INSTALLATION

- 1. DESCRIPTION**
 1. Work shall consist of furnishing and installing stone and woody materials for the creation of cascade grade control structures within the proposed stream bed. Riffle grade control structures are to be utilized at every riffle along the proposed stream alignment. See sheet Profile (Sheet 34) for specific locations.
- 2. MATERIALS**
Step Pool/Cross Vane Rocks
 Boulders shall be MDSHA Class III imbricated stone.
Micro Pool Habitat Rocks
 Boulders shall be MDSHA Class II and III stone.
Cascade Substrate Mix
 Substrate shall be a mixture conforming to the following:
 1 part MDSHA Class I stone
 2 parts MDSHA Class 0 stone
 1 part #2 stone
 0.5 parts topsoil available on-site
 Salvaged stream bed material may be used in place of similar sized material
- Woody Material**
 1. Woody material shall be 1-8" in diameter (maximum) and 18-30 inches in length.
 2. Woody material shall be from native trees and shrubs. No exotic or invasive species are to be used.
 3. No willow (Salix) or shrub dogwood (Cornus sericea, Cornus mas or Cornus racemosa) species are to be used.
- 3. CONSTRUCTION**
 1. Work shall proceed from downstream to upstream.
 2. Excavate proposed channel to form subgrade of proposed cascade sequence.
 3. Distribute branches and woody material throughout proposed riffle area.
 4. Install substrate mixture, ensuring that branch tips are not buried. Place Micro Pool Habitat Rocks within bankfull channel and grade pilot pool downstream of rock. Create low flow channel at stream centerline by grading riffle substrate mix at 15:1 slope from banks toward center of channel.
 5. Woody branches that extend more than 3" above the riffle substrate shall be trimmed.
 6. Grade banks to bankfull elevation and grade floodplain as shown on grading plan. Grout channel bank areas of cascade sequence (above base flow) with topsoil.

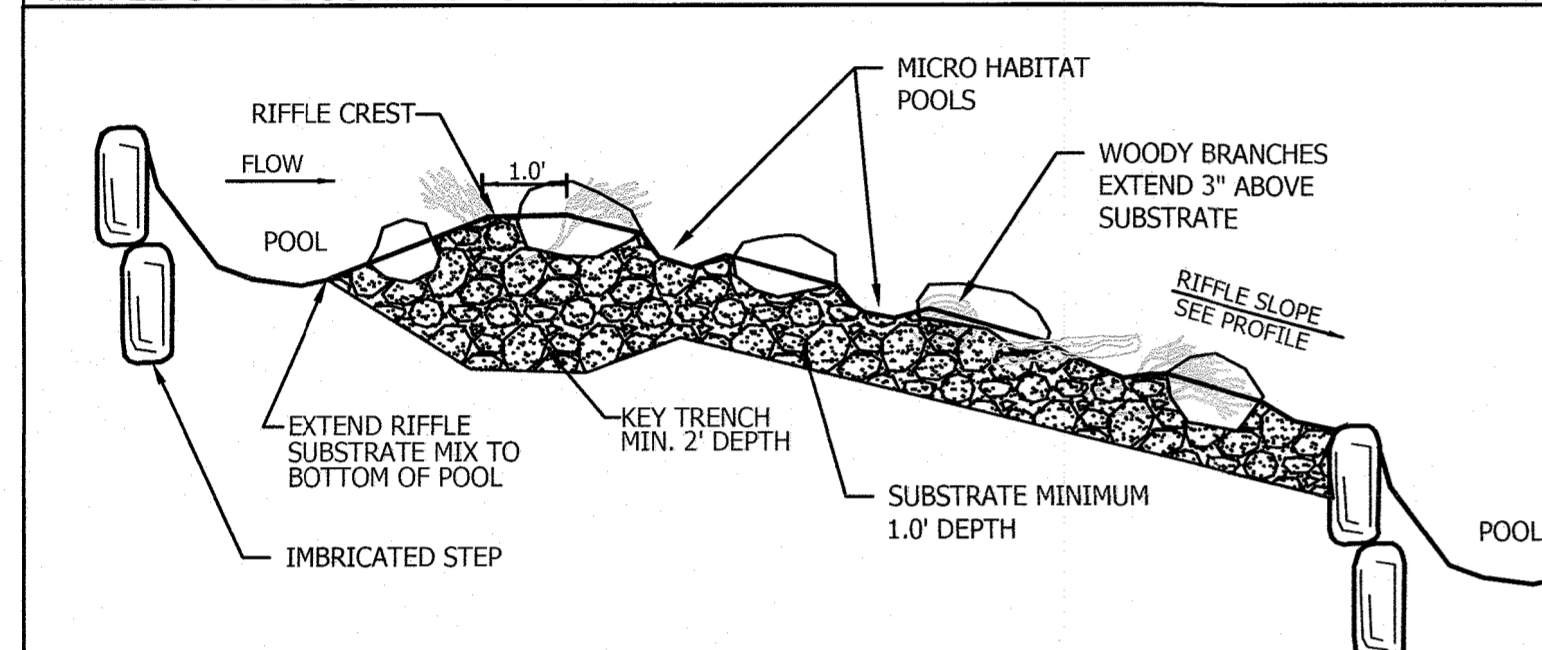
RIFPLE GRADE CONTROL STRUCTURE WITH EMBEDDED WOODY MATERIAL INSTALLATION

- 1. DESCRIPTION**
 1. Work shall consist of furnishing and installing stone and woody materials for the creation of riffle grade control structures within the proposed stream bed. Riffle grade control structures are to be utilized at every riffle along the proposed stream alignment. See sheet Profile (Sheet 34) for specific locations.
- 2. MATERIALS**
Riffle Substrate Mix
 Substrate shall be a mixture conforming to the following:
 2 parts 6-7" stone
 2 parts bank run gravel
 1 part #3 stone
 0.5 parts topsoil available on-site
 1. Riffle substrate mix material shall consist of natural field rock or crushed rock from a quarry and shall be sound, tough, dense, resistant to the action of air and water, and suitable in all respects for the purpose intended. Material may contain small amounts of fine aggregate but shall contain no amounts of soil material.
 2. Source and supply of material shall be from an approved mining operation with up-to-date regulatory permits, and shall be submitted to the Construction Manager for review and approval prior to beginning construction. Gravel tailing shall NOT be indiscriminately mined from active streams and rivers.
 3. All material shall meet the approval of the Construction Manager. The size of an individual rock particle shall be determined by measuring its diameter across the intermediate axis.
- Woody Material**
 1. Woody material shall be 1-8" in diameter (maximum) and 18-30 inches in length.
 2. Woody material shall be from native trees and shrubs. No exotic or invasive species are to be used.
 3. No willow (Salix) or shrub dogwood (Cornus sericea, Cornus mas or Cornus racemosa) species are to be used.
- 3. CONSTRUCTION**
 1. Work shall proceed from downstream to upstream.
 2. Excavate proposed channel to form subgrade of proposed riffle sequence.
 3. Distribute branches and woody material throughout proposed riffle area.
 4. Install gravel and cobble, ensuring that branch tips are not buried. Create low flow channel at stream centerline by grading riffle substrate mix at 15:1 slope from banks toward center of channel.
 5. Woody branches that extend more than 3" above the riffle substrate shall be trimmed.
 6. Grade banks to bankfull elevation and grade floodplain as shown on grading plan. Grout channel bank areas of riffle structure (above base flow) with topsoil.

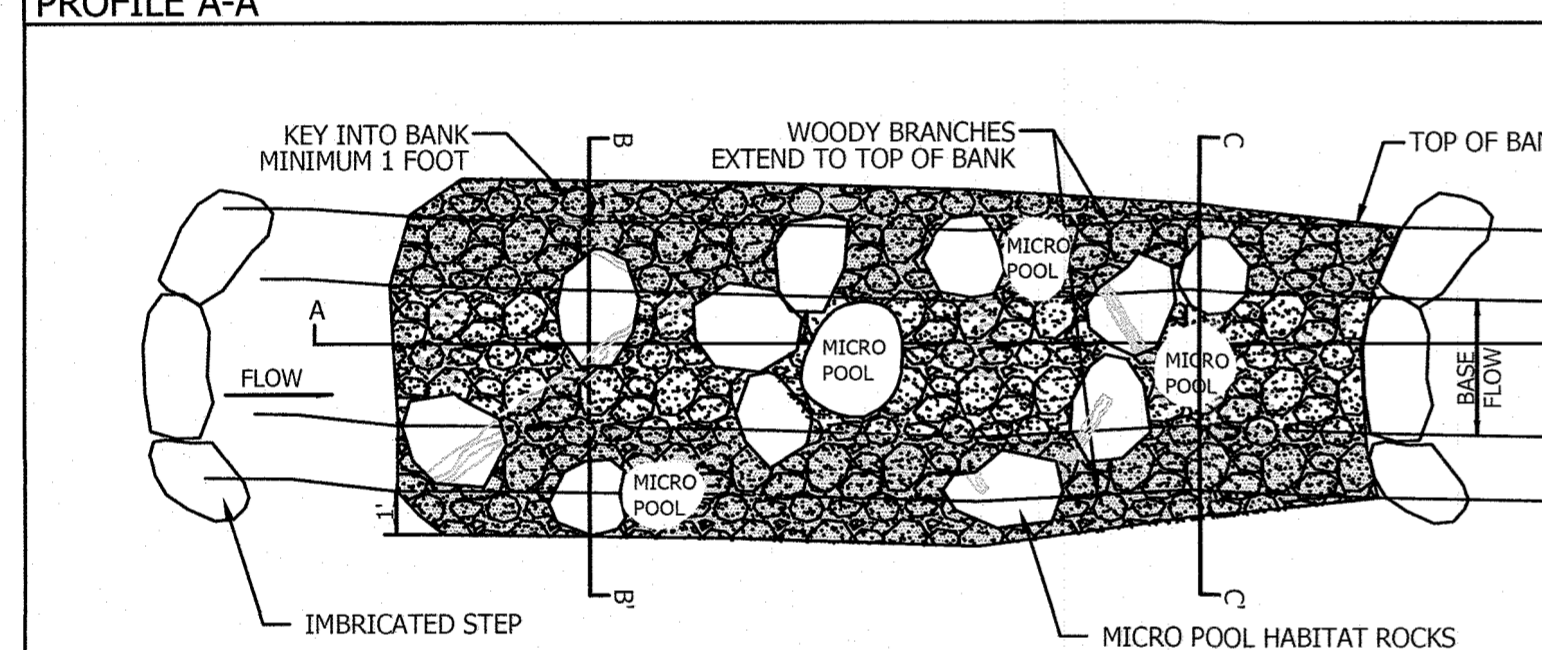
LIVE BRANCH LAYERING PLANT LIST	
Botanical Name	Common Name
Salix interior	Sandbar Willow
Salix nigra	Black Willow
Cornus amomum	Silky Dogwood
Salix sericea	Silky Willow

WARM SEASON GRASSES PLANT LIST			
Botanical Name	Common Name	Spacing	Quantity
Panicum virgatum	Switchgrass	5' triangular	470
Schizachyrium scoparium	Little Bluestem	5' triangular	470

LIVE STAKE PLANT LIST			
Botanical Name	Common Name	Spacing	Quantity
Cornus sericea	Red Osier Dogwood	2-3' triangular	250
Cornus amomum	Silky Dogwood	2-3' triangular	250
Salix nigra	Black Willow	2-3' triangular	250

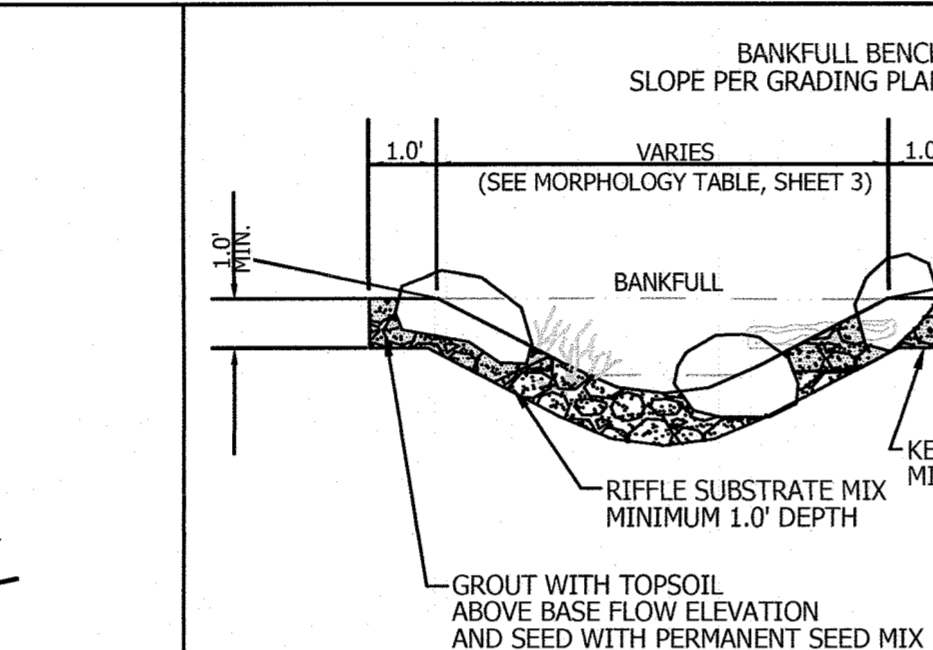


PROFILE A-A' N.T.S.

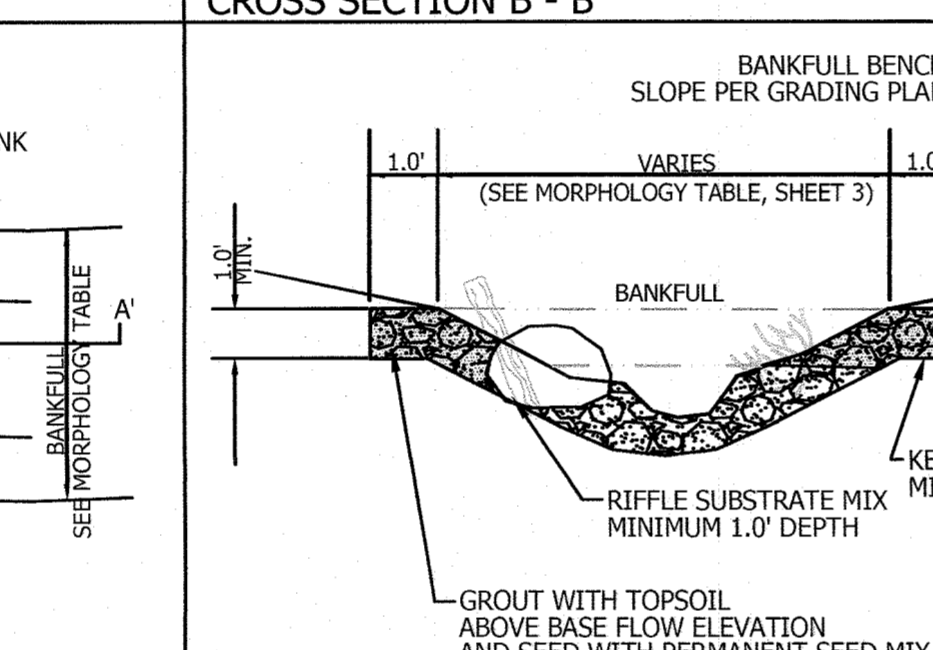


PLAN VIEW N.T.S.

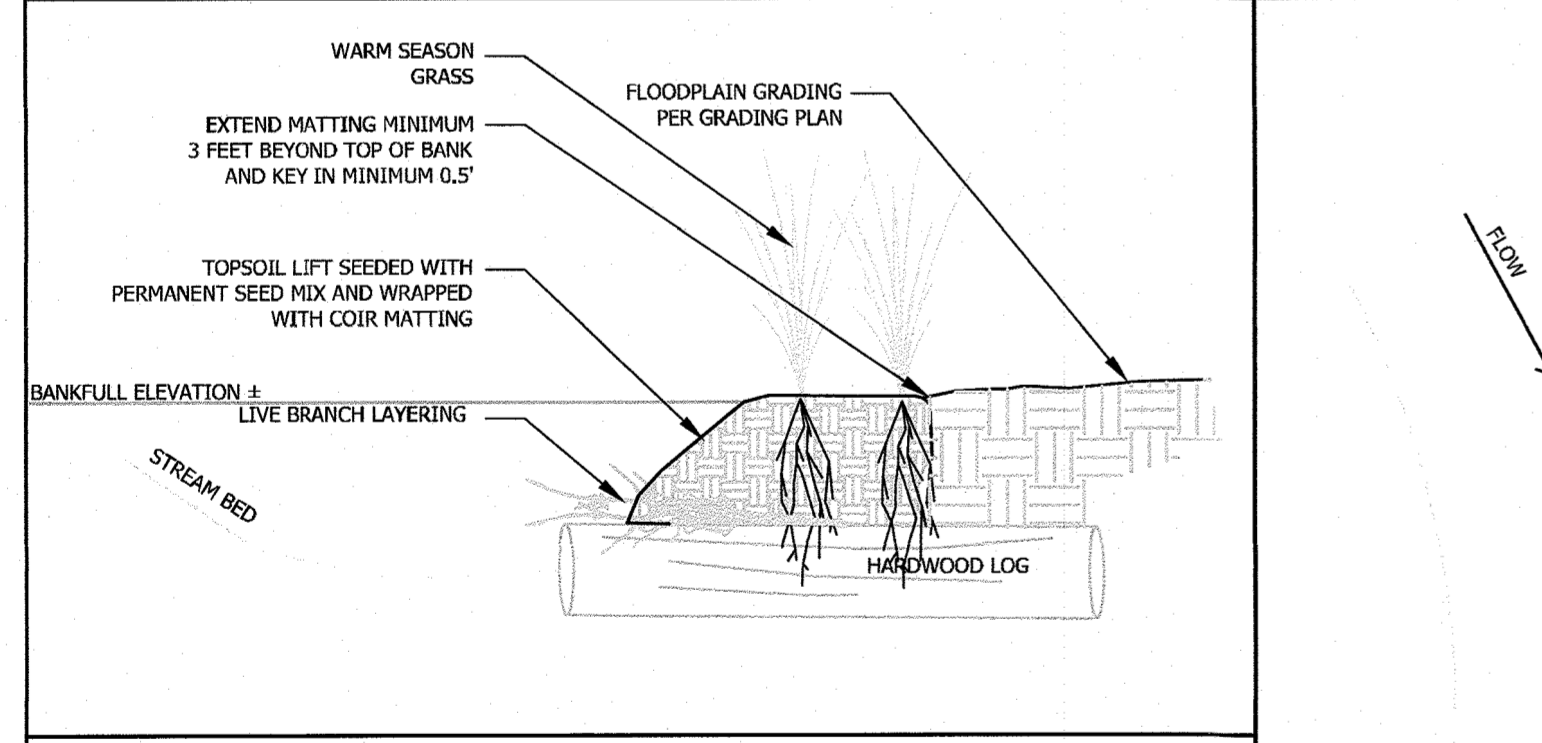
CASCADE GRADE CONTROL STRUCTURE WITH EMBEDDED WOODY MATERIAL DETAIL



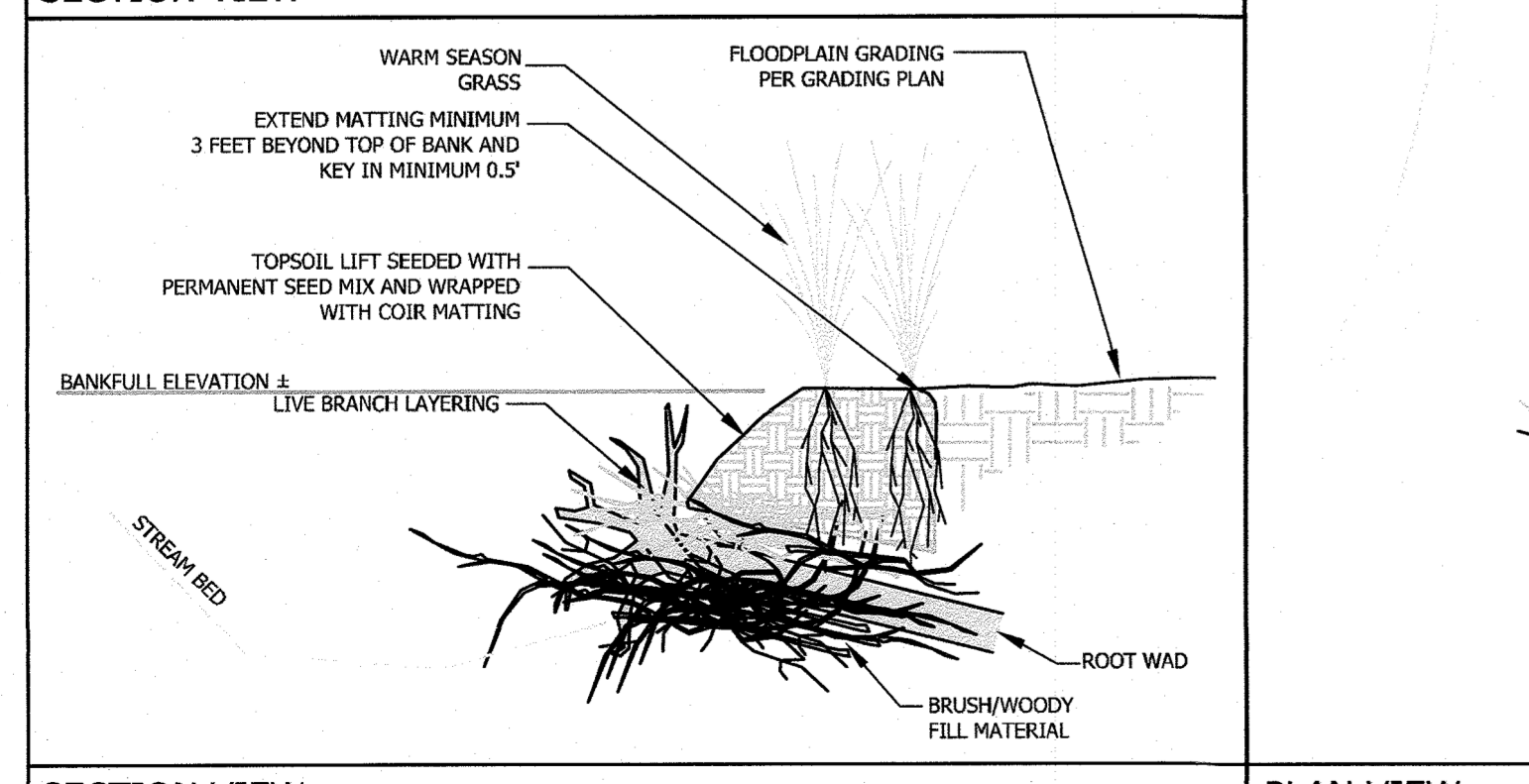
CROSS SECTION B - B' N.T.S.



CROSS SECTION C - C' N.T.S.

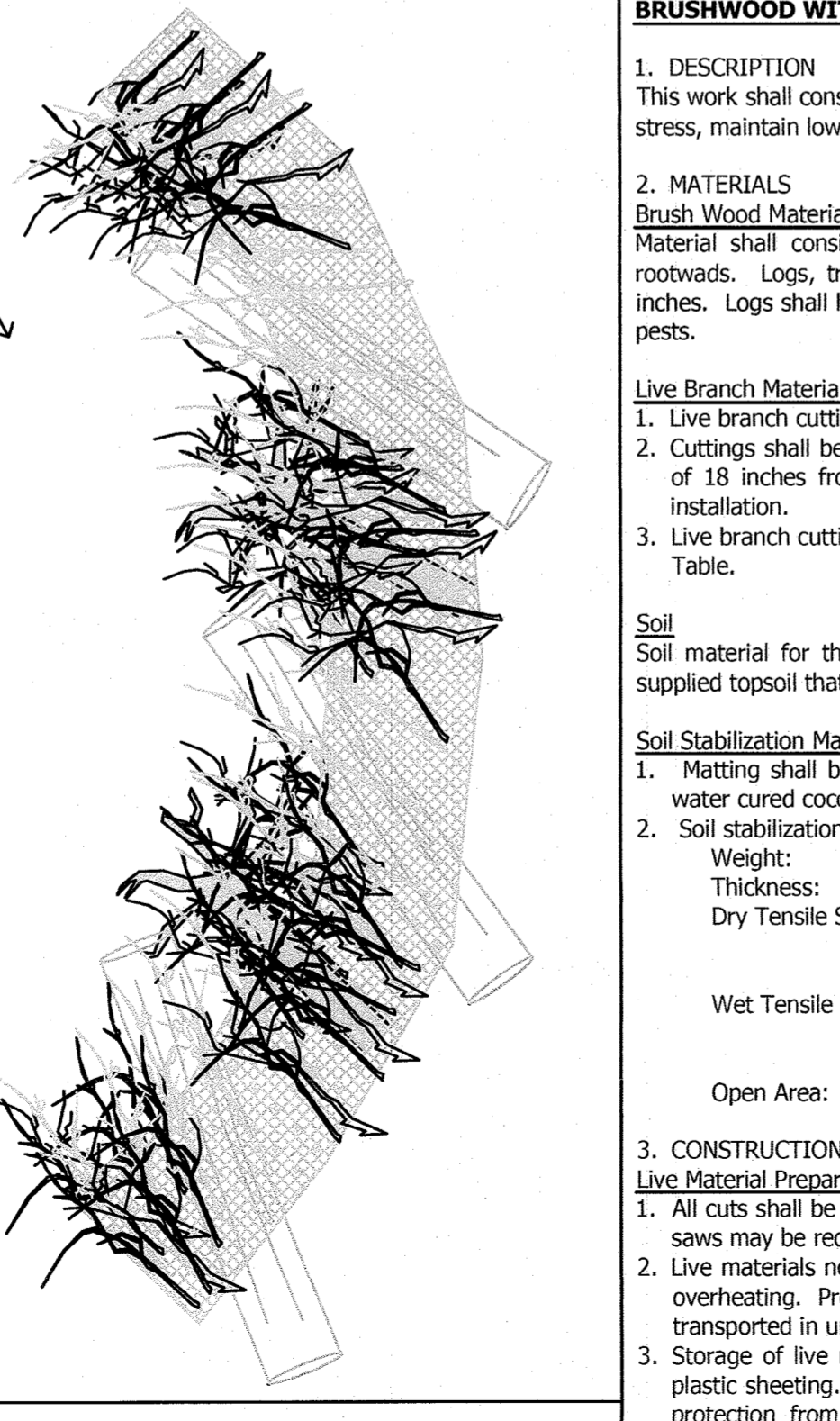


SECTION VIEW



SECTION VIEW

BRUSHWOOD WITH BIOENGINEERING



PLAN VIEW

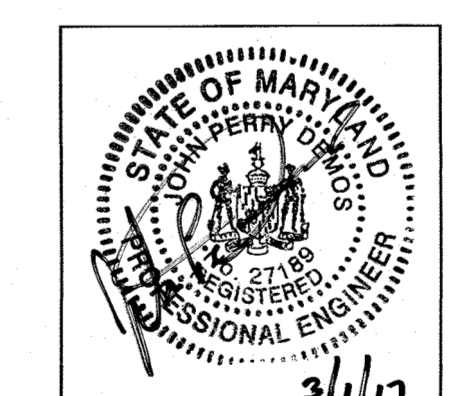
NTS

BRUSHWOOD WITH BRANCH LAYERING INSTALLATION

- 1. DESCRIPTION**
 This work shall consist of installing brush wood structure to provide bank stability, minimize near bank stress, maintain low width/depth ratio, and enhance aquatic habitat.
- 2. MATERIALS**
Brush Wood Material
 Material shall consist of woody material such as large limbs, branches, brush, logs, trunks, and rootwads. Logs, trunks and rootwads shall be solid hardwood with minimum trunk diameter of 2 inches. Logs shall have a minimum length of 8 feet. All material shall be free of rot and evidence of pests.
- Live Branch Material**
 1. Live branch cuttings shall be approximately one 1/2 inch in diameter.
 2. Cuttings shall be 24-36" in length and long enough to extend a minimum of 1 foot and maximum of 18 inches from the rebuilt slope face. Side branches and bark shall remain intact prior to installation.
 3. Live branch cuttings shall consist of the species and quantity indicated on the Live Stake Planting Table.
- Soil**
 Soil material for the soil lifts shall consist of soil excavated from within the construction limits or supplied topsoil that meets the specifications for topsoil in the Sediment and Erosion Control Plans.
- Soil Stabilization Matting**
 1. Matting shall be woven machine spun brittle coir twine made of coir fiber obtained from fresh water cured coconut husks.
 2. Soil stabilization matting shall conform to the following specifications:
 Weight: 700 gsm (ASTM D 5261)
 Thickness: 0.36 in. (ASTM D 5199)
 Dry Tensile Strength: Machine Direction - 77 lb/in
 Cross Direction - 86 lb/in
 (ASTM D 4595)
 Wet Tensile Strength: Machine Direction - 78 lb/in
 Cross Direction - 87 lb/in
 (ASTM D 4595)
 Open Area: 49%
- 3. CONSTRUCTION**
Live Material Preparation
 1. All cuts shall be smooth and the cut surface kept small. The use of large pruning shears or power saws may be required.
 2. Live materials not installed within 8 hours of harvesting shall be protected against drying out and overheating. Protection against drying out shall be accomplished by keeping the material covered, transported in unheated vehicles, moistened and/or kept in soak pits.
 3. Storage of live materials shall include continuous shade by covering with evergreen branches or plastic sheeting. Proper storage shall also include sheltering live plant material from the wind and protection from drying by being heeled into moist soils and/or sprayed with anti-transparent chemicals. Where water is available, live branch cuttings shall be sprayed or immersed.

AS-BUILT CERTIFICATION

Note: There is no "AS BUILT" information provided on this sheet.
 CHARLES J. CARO SR. P.E. #13804 Date 09/20/20



THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Approved: Howard SCD 3/1/17

- 4. Live materials shall be installed the same day that the cuttings are harvested. If installation of live materials cannot be accomplished on the same day and storage is required, live materials shall be stored for a period no longer than 2 days in cold storage.**
- Brush Wood and Branch Layering Installation**
 1. Excavate/Form channel bed. Excavation/formation shall be at least the width of the brush wood section to be installed.
 2. Place large material (logs, trunks, rootwads) into excavated/formed area in a crossing, weaving pattern. Key in the material approximately 0.5 foot below the channel bottom elevation and up to base flow.
 3. Small material (limbs, branches, brush) shall be forced into the large voids. Woody debris shall not protrude more than 12" beyond the toe where the bank meets the bed.
 4. Place 0.5' backfill over branch wood material.
 5. Place live branch material over backfill such that 2/3 of the brush will be covered with soil and 1/3 of the brush is exposed, extending out beyond the face of the bank.
 6. Install soil lifts above live branch material. See "Soil Lift and Soil Stabilization Matting Installation" specification.
 7. On the opposite side (inside of the meander) of the branch wood section. Grade a point bar at 5:1 and tie into top of bank.
- Soil Lift and Soil Stabilization Matting Installation**
 1. Soil stabilization matting shall be placed beginning above live branch material up to top of bank. Secure the back end of the matting with stakes to prevent movement during backfill operations. Excess matting will extend toward the center of the channel and should be folded or rolled to avoid tears or punctures by equipment.
 2. Where soil stabilization matting roll ends overlap (perpendicular to stream profile), overlap matting a minimum of 5 feet. One width of matting (6.5 feet) is to be used for the soil lift. No overlap of matting edges is allowed.
 3. Backfill from back edge of matting to meet the proposed grade and compact (using a portable soil tamper)
 4. Apply permanent seed mix to front portion of lift.
 5. Extend excess soil stabilization matting along surface of slope and across top of lift a minimum of three feet, pulling matting taut but not stretched such that contact with sod is maintained in all areas.
 6. Extend excess soil stabilization matting along surface of slope and across floodplain a minimum of three feet, pulling matting taut but not stretched such that contact with soil is maintained in all areas.
 7. Key soil stabilization matting into floodplain a minimum of 6 inches on rear edge of soil lift.

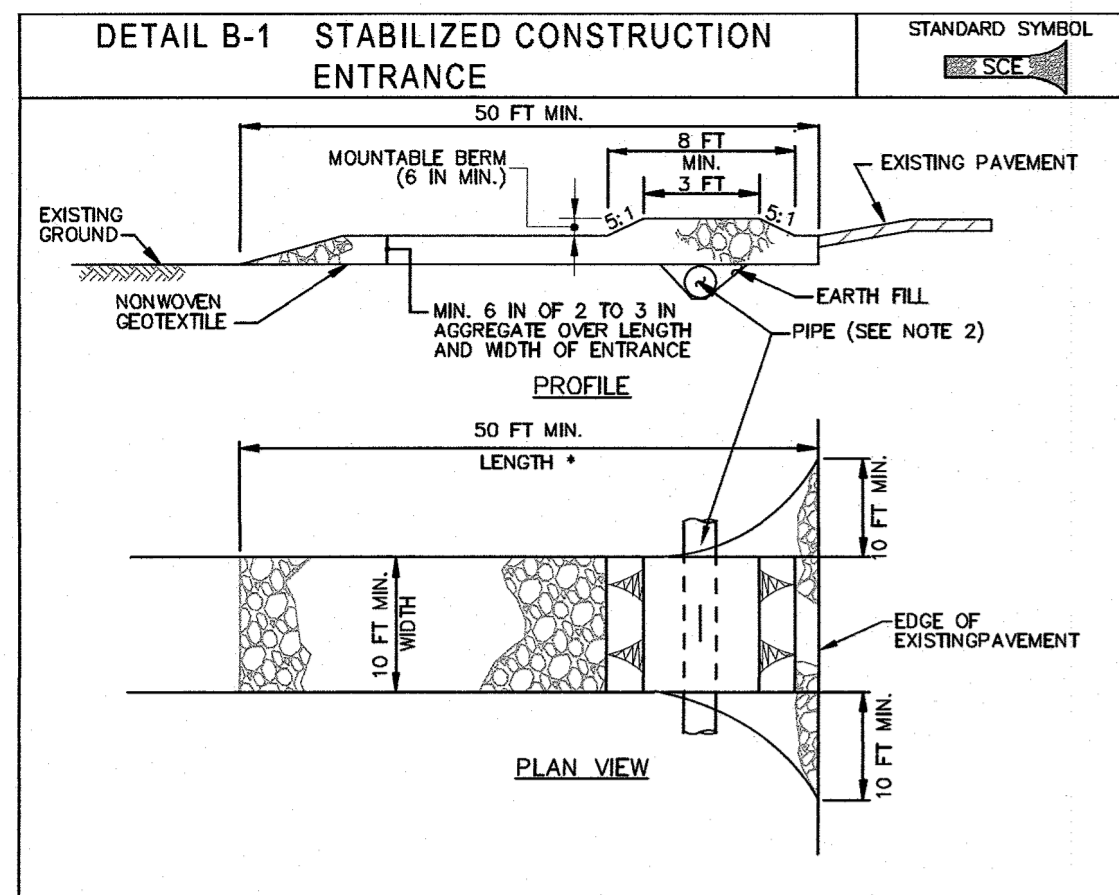
NO.	DATE	DESCRIPTION	REV. BY
1	5/1/2014	COMMENTS FROM HOWARD COUNTY SCD	JES
2	11/2/2014	COMMENTS FROM HOWARD COUNTY SCD	CSH
3	2/28/2017	REVISIONS PER ECD COMMENTS	CSH

FAIRLANE FARM
STREAM RESTORATION DETAILS
 15320 & 15250 OLD FREDERICK RD, WOODBINE, MD 21797

Checked By: SGM
 Designed: CEH/CTS
 Drawn: CTS
 Project No.: 1541
 Date: 2/28/2017
 Sheet: 35 of 36

Ecotone Inc.
 FORESTS • WETLANDS • RIVERS • WILDLIFE
 2120 High Point Road • Forest Hill, Maryland 21050
 (410) 420 2600 • Fax (410) 420 6983 • www.ecotoneinc.com

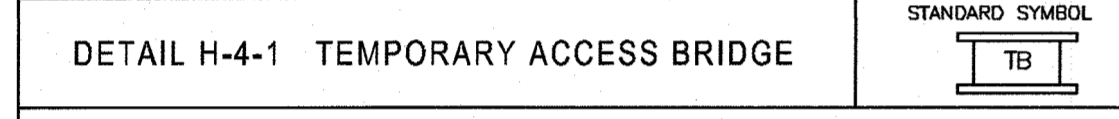
© Project 2015 Project 2541 - Fairlane Farm via Schulte Stream Restoration CAD 1541-Stream Restoration Layout.dwg



CONSTRUCTION SPECIFICATIONS

- 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 TO FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- 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.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- 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.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT, AND 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. WASHING WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

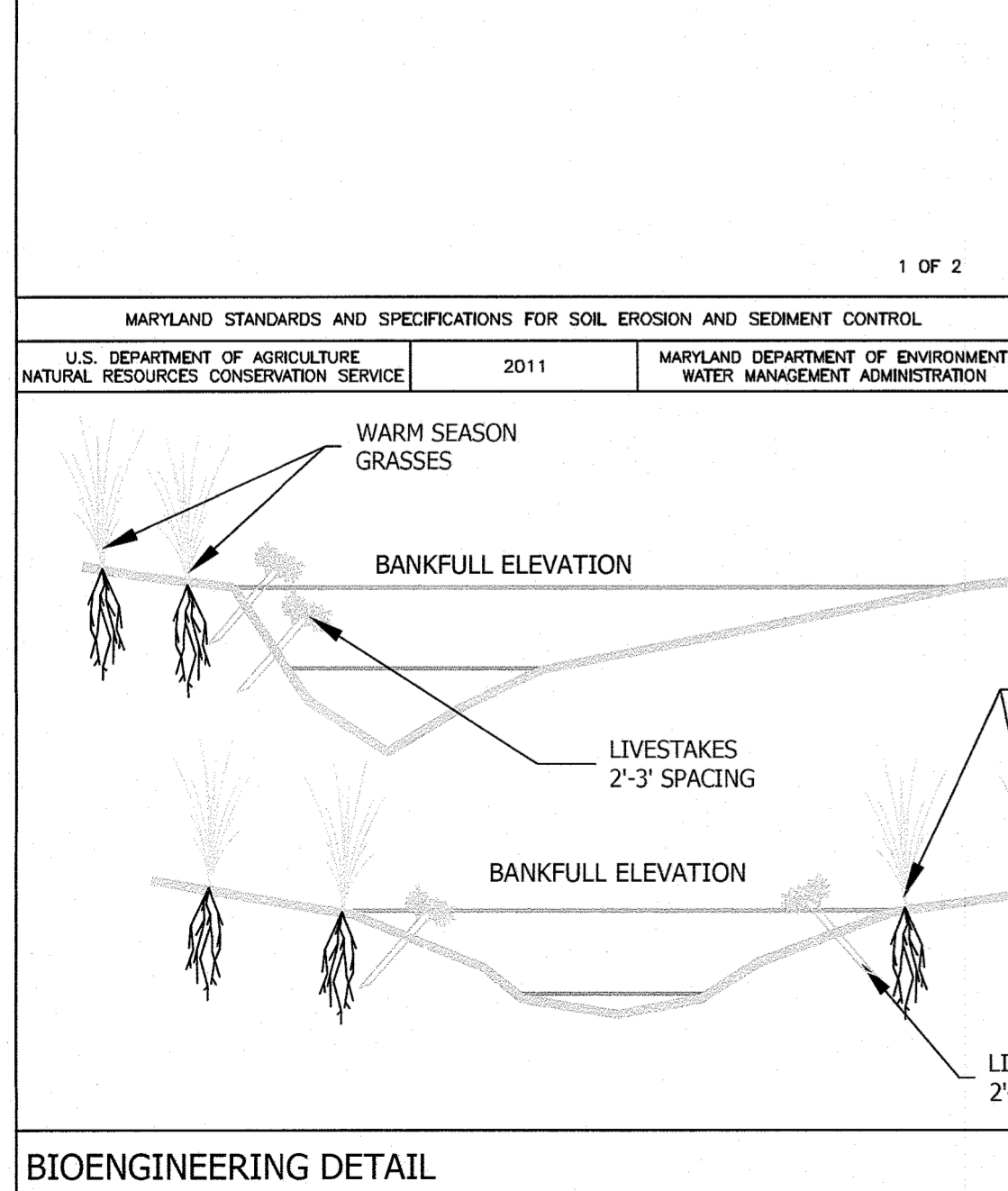
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	
U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE	2011
MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



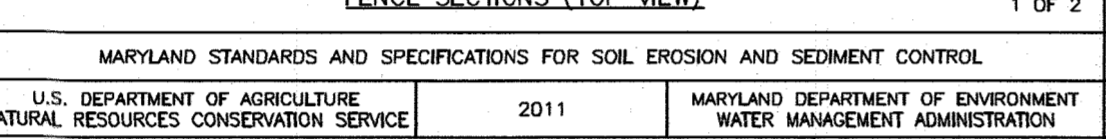
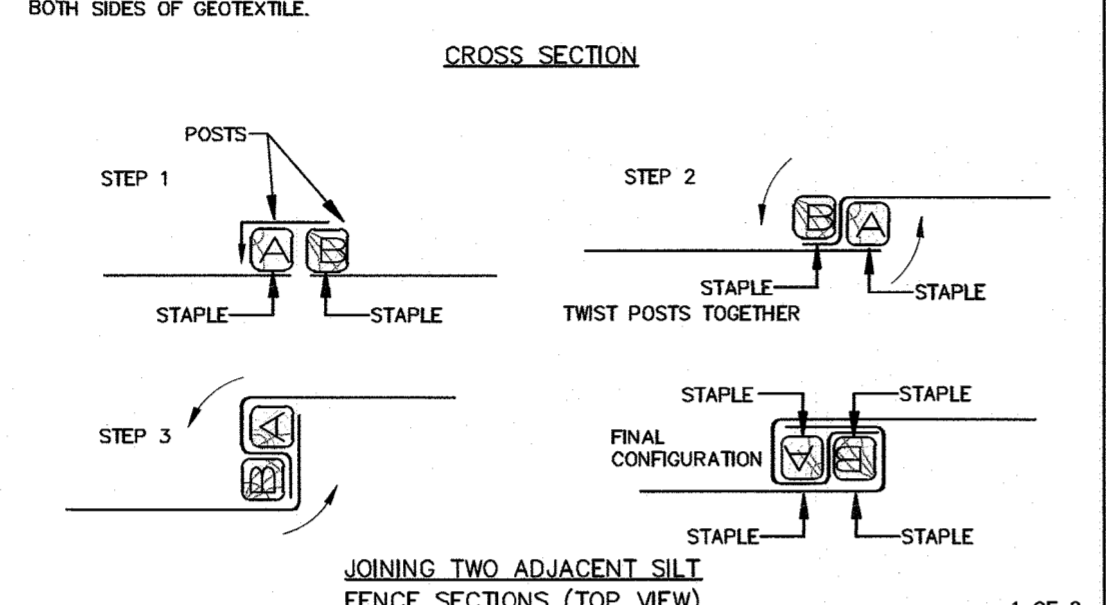
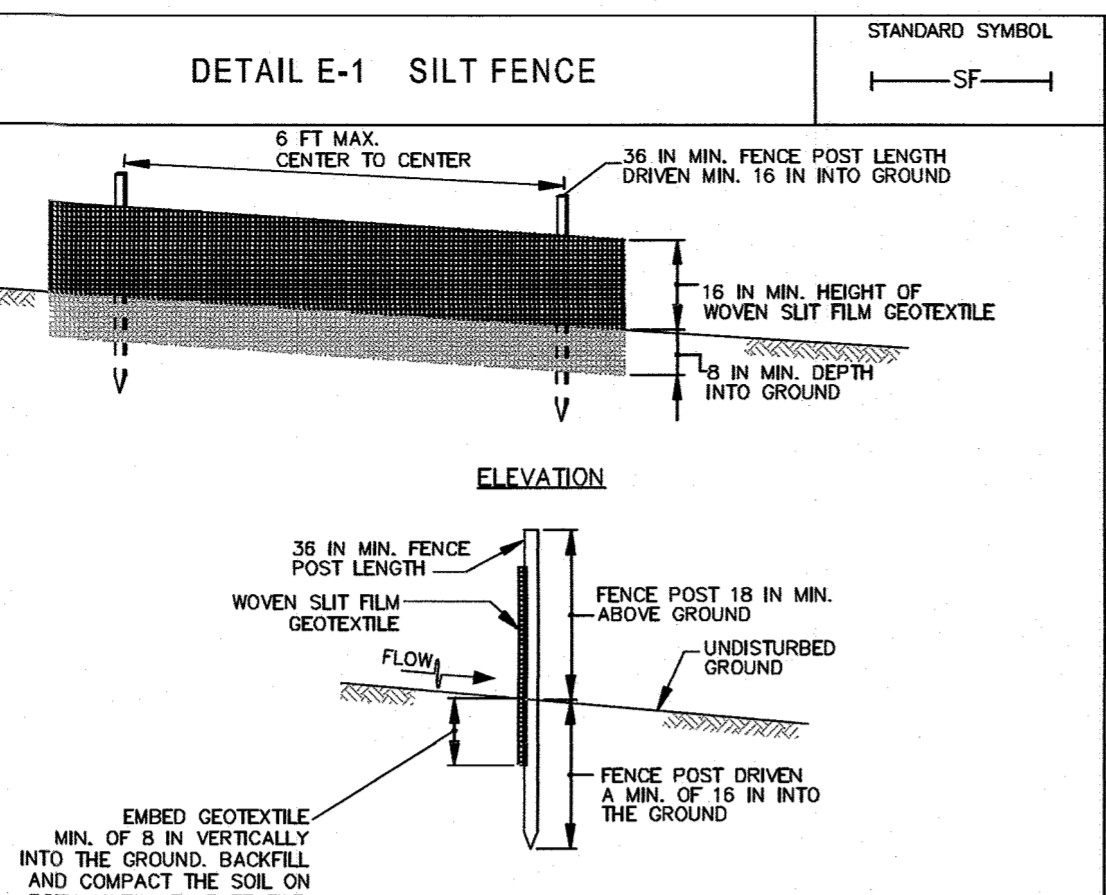
CONSTRUCTION SPECIFICATIONS

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

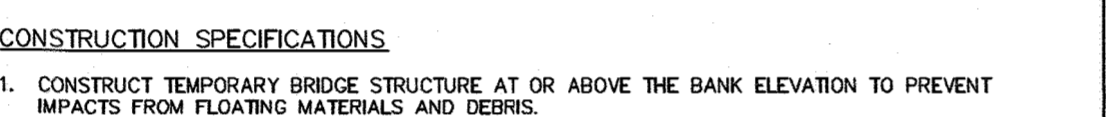
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	
U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE	2011
MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



BIOENGINEERING DETAIL



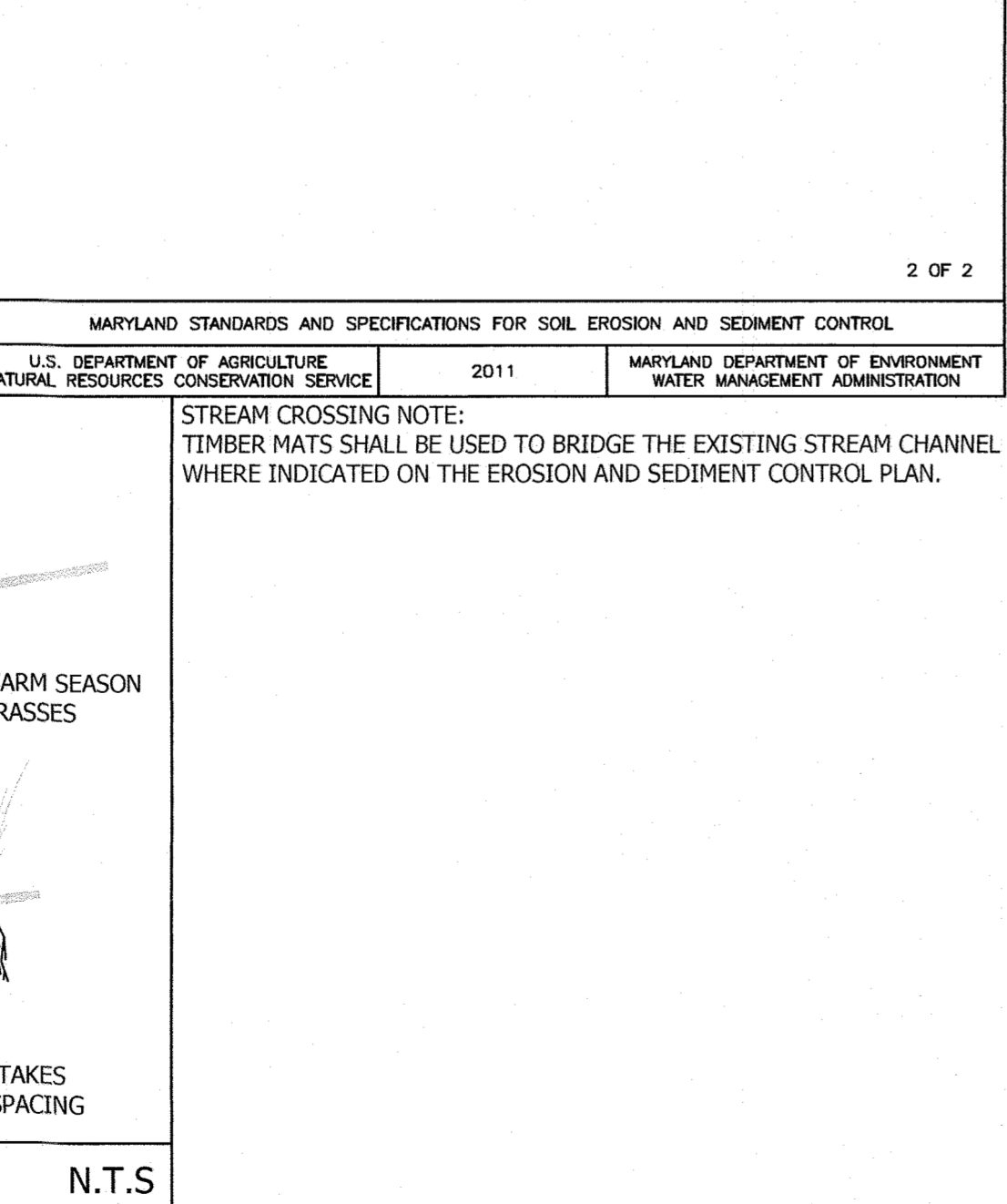
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	
U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE	2011
MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



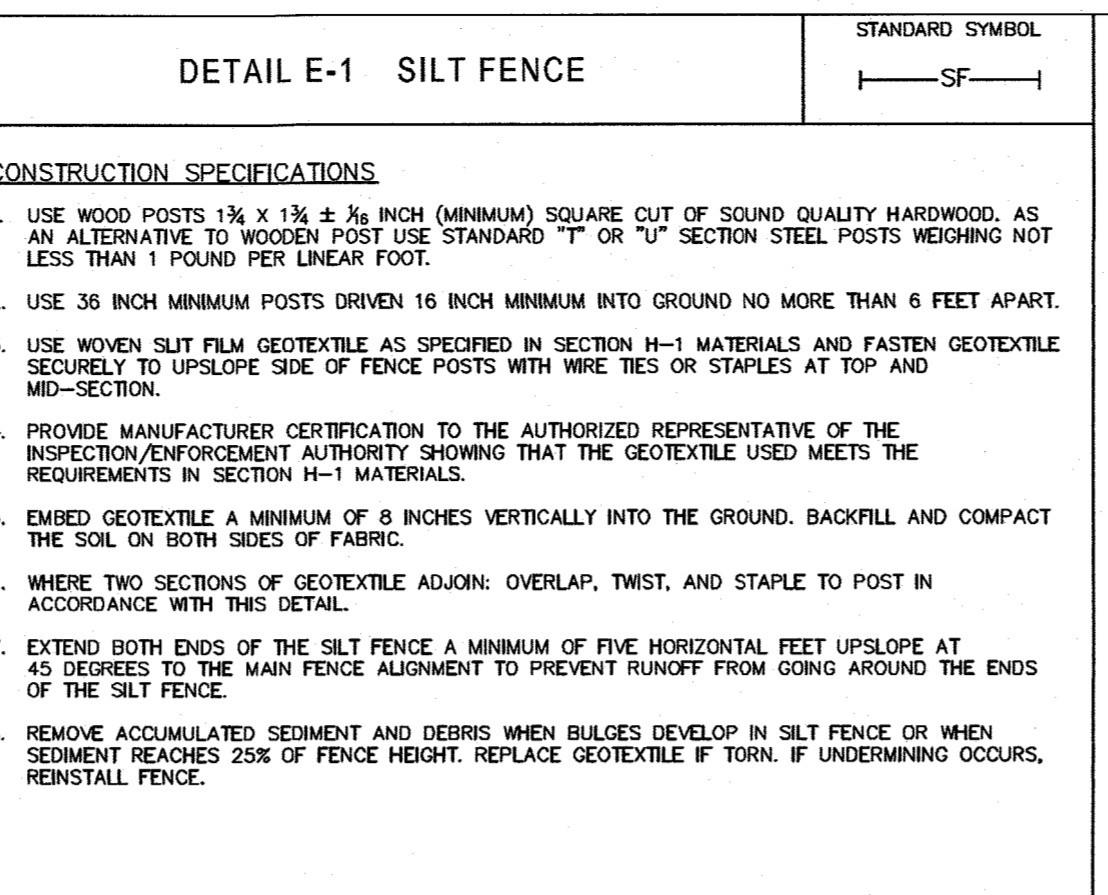
CONSTRUCTION SPECIFICATIONS

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

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	



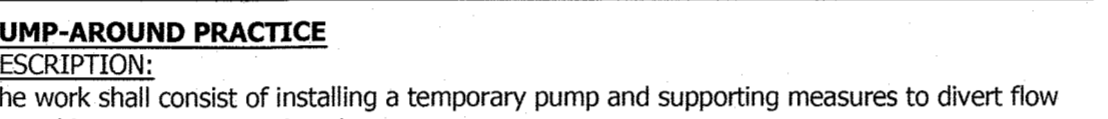
BIOENGINEERING DETAIL



CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 1/2 x 1 1/2 x 1/4 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.
- USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SILT 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.
- 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.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- 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.
- 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.

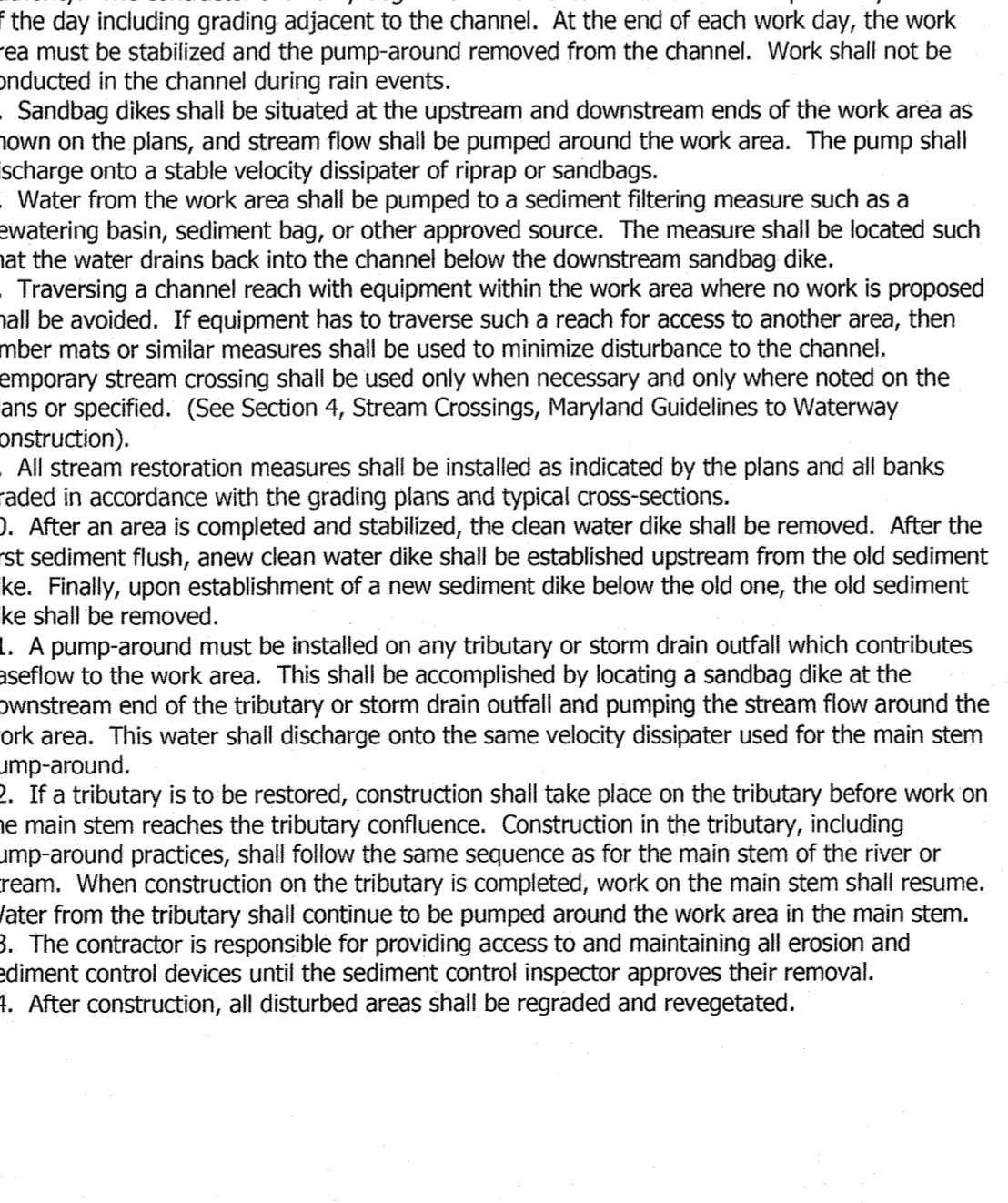
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	
U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE	2011
MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



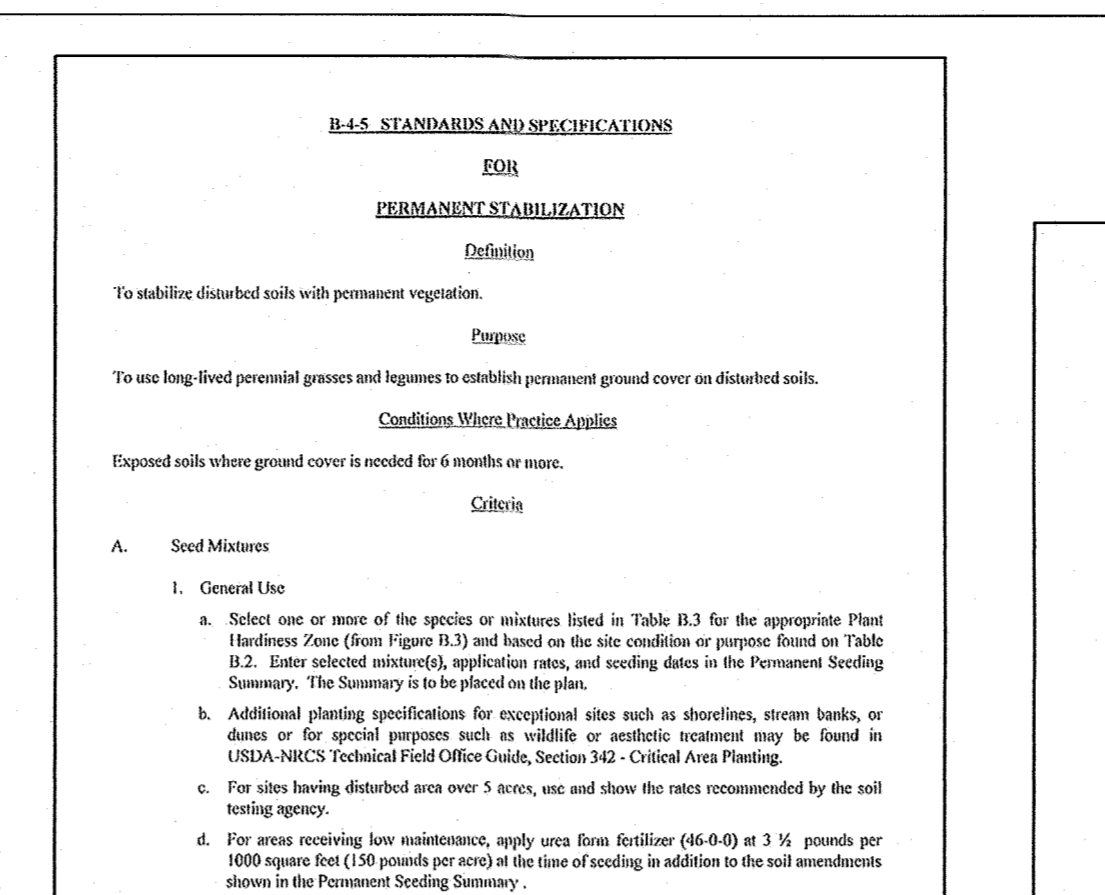
CONSTRUCTION SPECIFICATIONS

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

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	



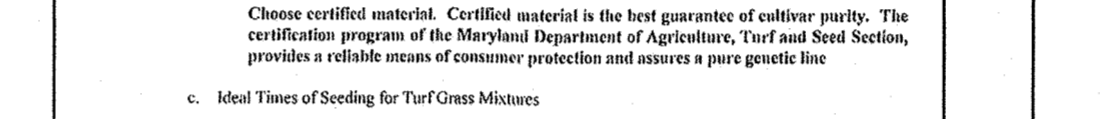
BIOENGINEERING DETAIL



CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 1/2 x 1 1/2 x 1/4 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.
- USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SILT 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.
- 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.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- 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.
- 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.

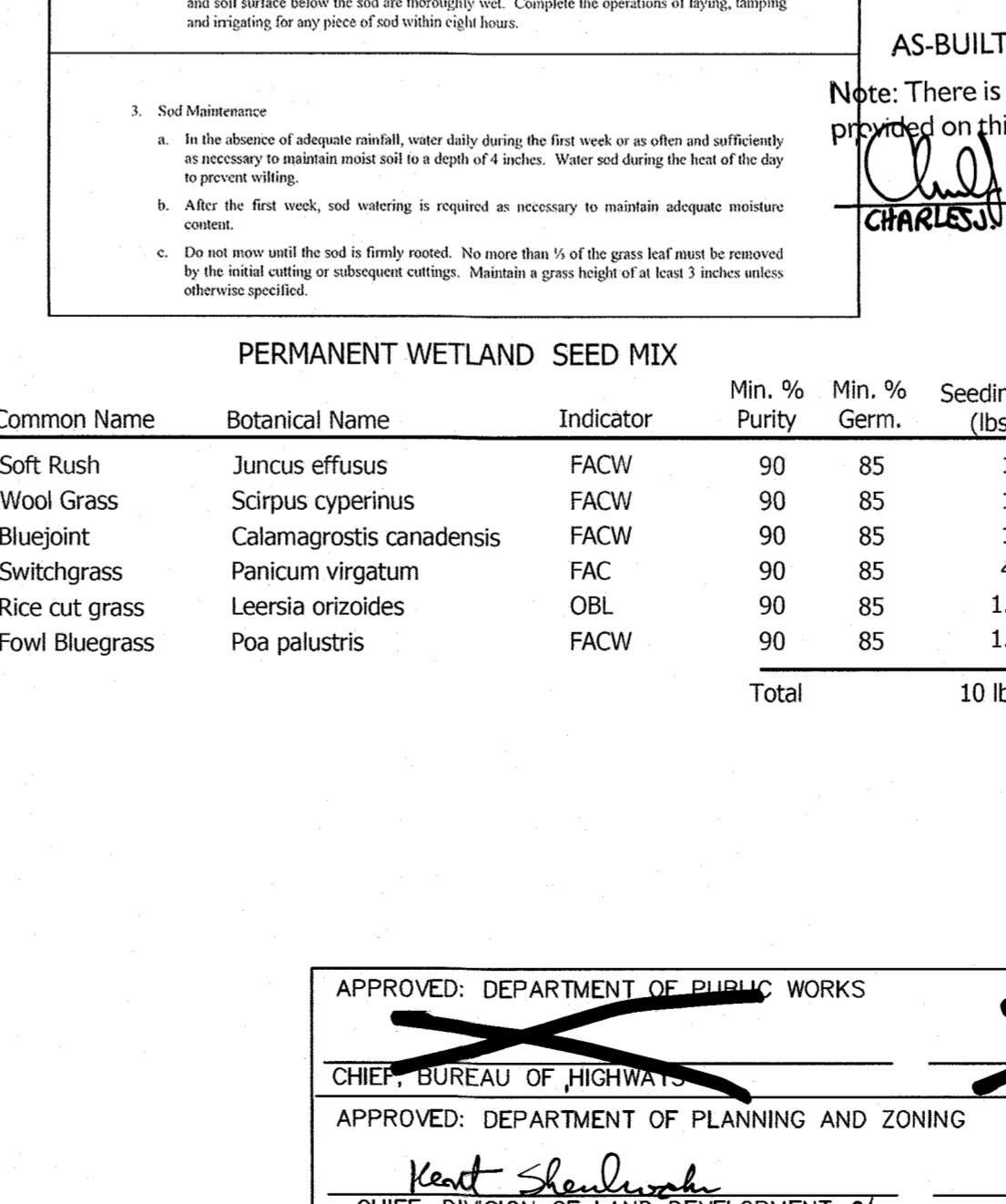
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	
U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE	2011
MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



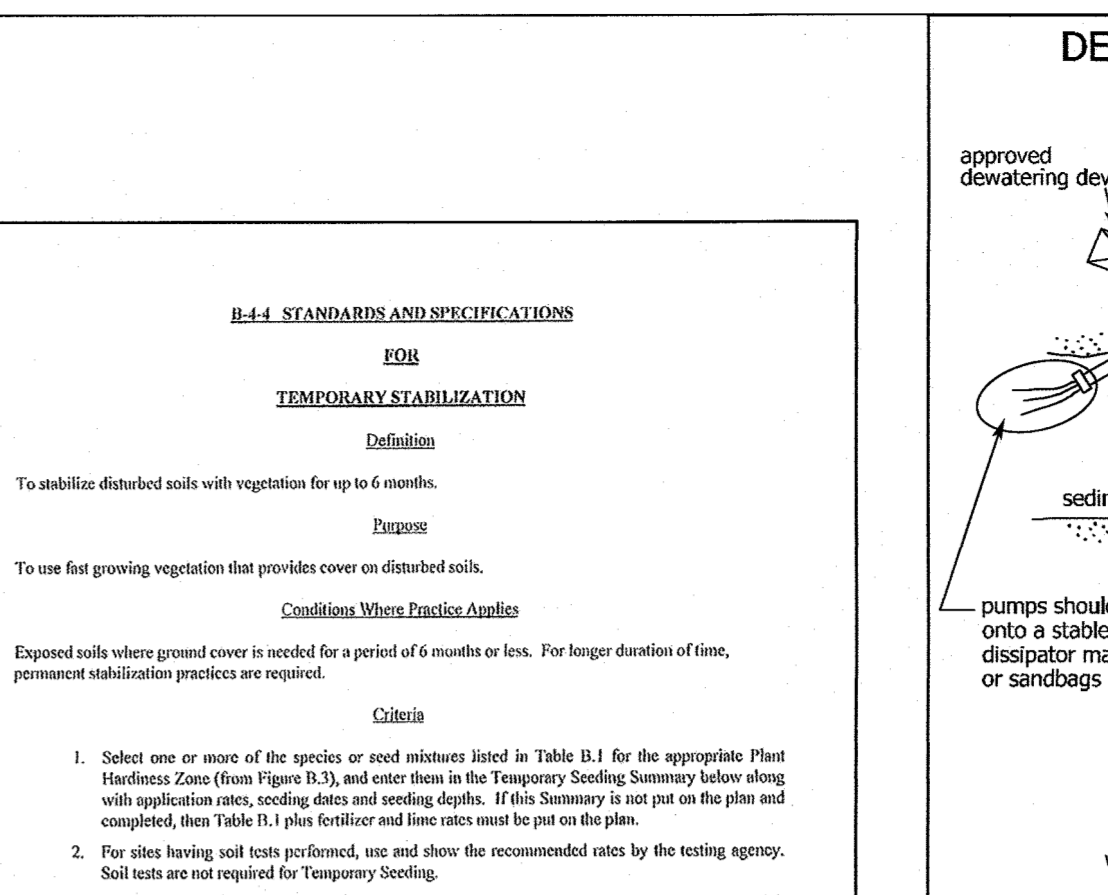
CONSTRUCTION SPECIFICATIONS

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

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	



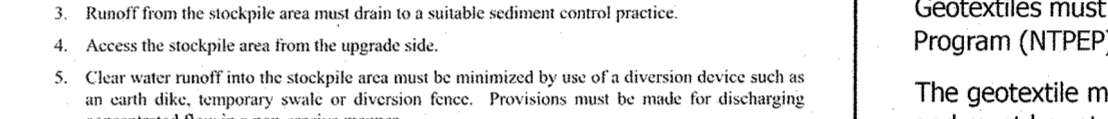
BIOENGINEERING DETAIL



CONSTRUCTION SPECIFICATIONS

- 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 TO FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- 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.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- 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.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT, AND 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. WASHING WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

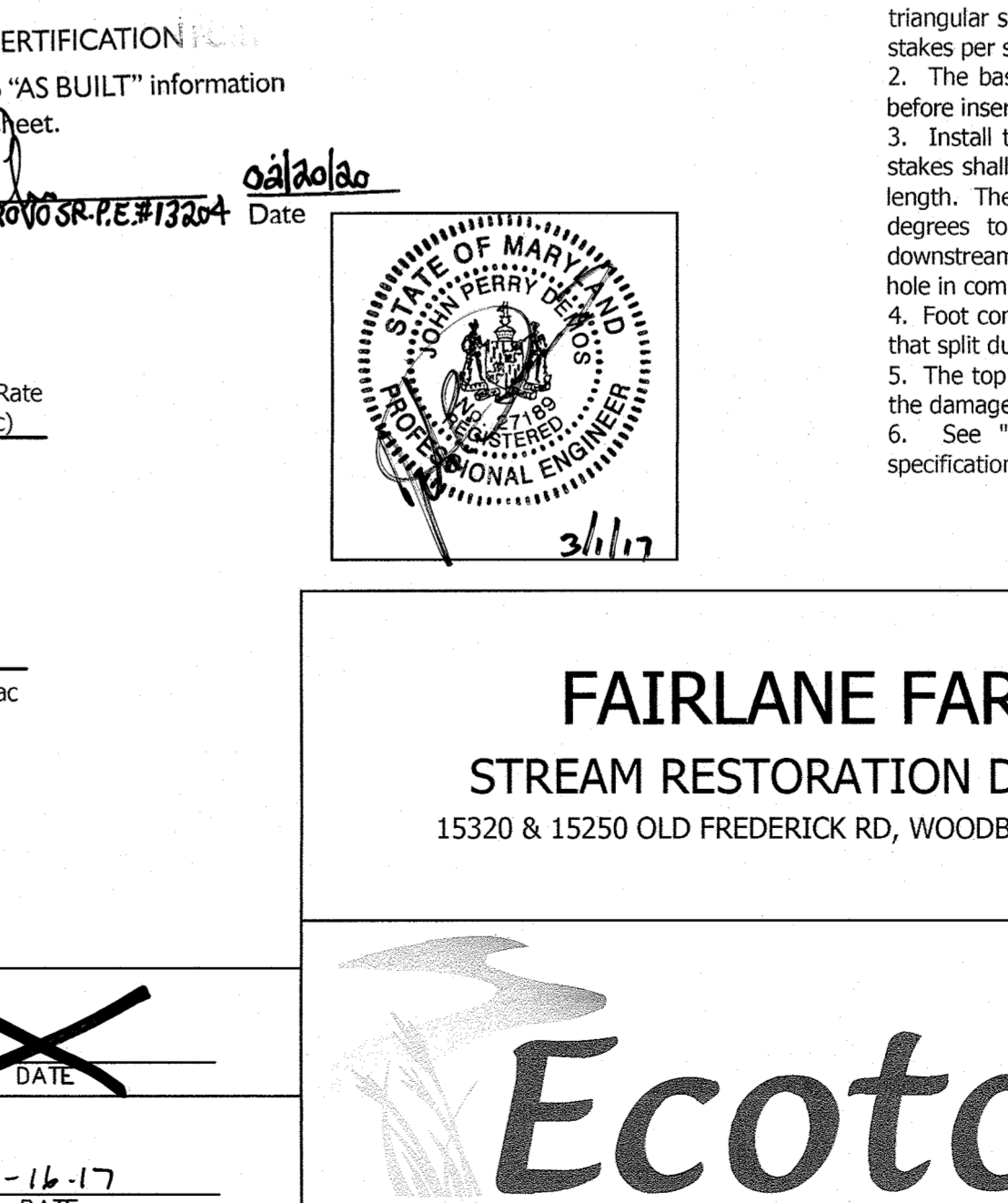
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	
U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE	2011
MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



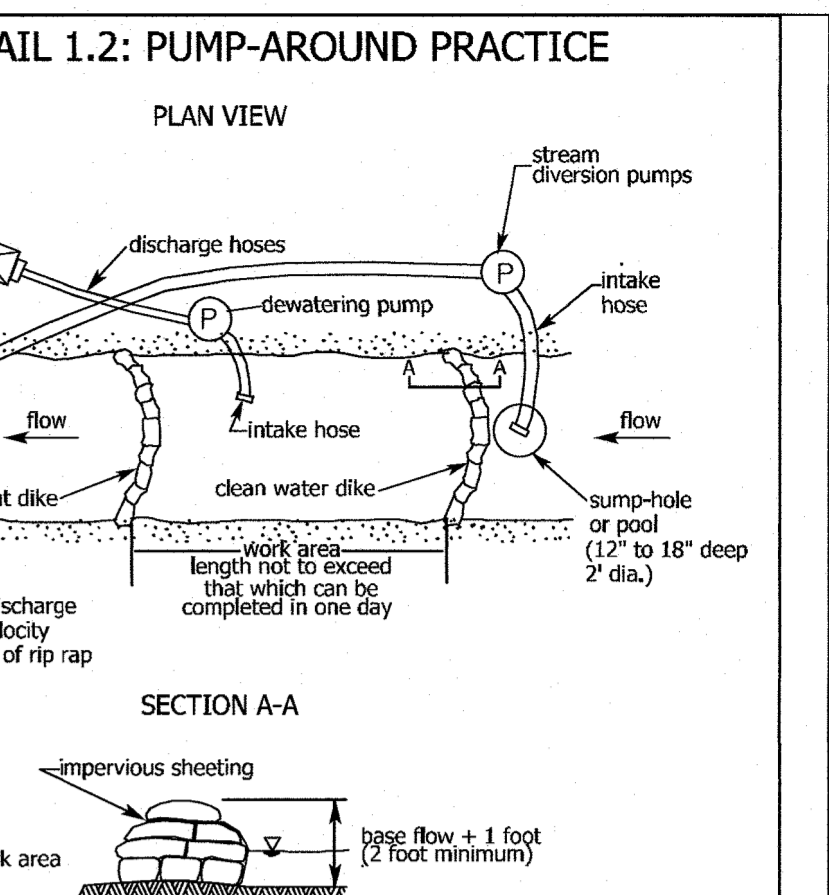
CONSTRUCTION SPECIFICATIONS

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

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	



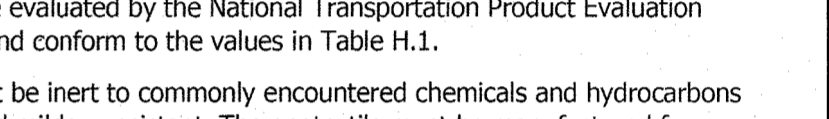
BIOENGINEERING DETAIL



CONSTRUCTION SPECIFICATIONS

- 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 TO FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- 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.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- 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.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT, AND 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. WASHING WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

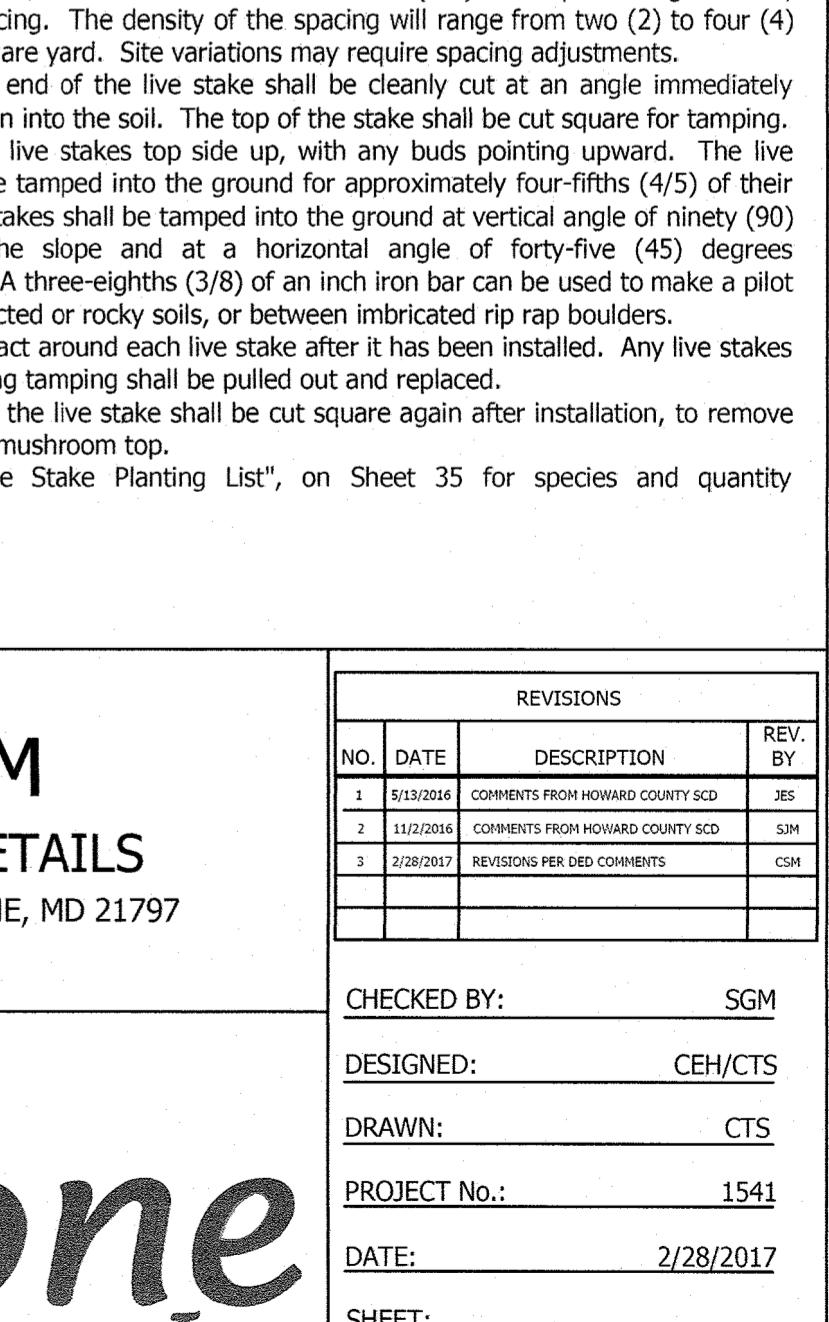
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	
U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE	2011
MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



CONSTRUCTION SPECIFICATIONS

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

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	



BIOENGINEERING DETAIL

TEMPORARY SEED MIX

Hardness Zone (from Figure B-3)		Soil		Fertilizer Rate (10-20-20)		Limn Rate
No.	Species	Application Rate (lb/ac)	Seeding Date	Seeding Depth	N	P2O5
1	Annual Ryegrass	40/85/ACRE	8/1-10/15	0.5 inches	436 lb/ac (1.0 lb/1000 sq ft)	2 tons/ac (50 lb/1000 sq ft)
2	Perennial Ryegrass	30/85/ACRE	5/16-7/31	0.5 inches		

PERMANENT SEED MIX

Hardness Zone (from Figure B-3)		Soil		Fertilizer Rate (10-20-20)		Limn Rate
No.	Species	Application Rate (lb/ac)	Seeding Date	Seeding Depth	N	P2O5
1	Soft Rush	100/85/ACRE	3/1-5/15	1/4-1/2 in.	45 pounds per acre (1.1 lb/1000 sq ft)	2 tons/ac (50 lb/1000 sq ft)
2	Wool Grass	50/85/ACRE	3/1-5/15	1/4-1/2 in.		

AS-BUILT CERTIFICATION

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

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 3-16-17

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 3-10-17

PERMANENT WETLAND SEED MIX

Common Name	Botanical Name	Indicator	Min. % Purity	Min. % Germ.	Seeding Rate (lb/ac)
Soft Rush					